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University
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Long-term Coping Strategies for Food Safety Issues: from
Consumers' Perspective

By

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Submitted in Fulfilment of the Requirements for the Degree of Doctor of
Philosophy

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Abstract

Food safety issues such as food hygiene, unsafe food and poisoned food have had a significant influence on consumers' health and their daily lives for decades. The situation is deemed to be worse in China, which has a long history of using farm chemicals and frequent scandals involving food. However, the extant research on food safety issues has not been adequately examined, especially from the perspective of the consumer. Chronic food safety issues in China are believed to be a cause of psychological distress (Mathur et al., 2006). The wellbeing of consumers might be influenced by the issues in a more serious way, both psychologically and physically, over time. Hence, it is important to advance our understanding of consumers in terms of their psychological states and corresponding behaviours when faced with long-term and ongoing food safety issues.

This thesis aims to conceptualise and empirically explore consumers' long-term coping strategies and to achieve an in-depth understanding of the factors that may predict and influence consumer coping behaviours in the context of a long-term and ongoing food safety situation.

In order to achieve the overall research aim, this research adopted a mixed-method approach comprising a qualitative study (consumer interview) and a quantitative study (questionnaire survey). Using semi-structured interview data from 20 consumers, the qualitative study identified specific psychological states and consumer coping actions when faced with food safety issues and informed and modified the conceptual framework. A total of 848 survey responses from the quantitative study were used to develop a new scale to measure and conceptualise consumer long-term coping strategies and tested the research hypotheses. Structural Equation Modelling in AMOS and regression with categorical variables in SPSS were used to test the hypotheses. The results suggest that the interplay of psychological states and cognitive appraisal and psychological states and personality traits, relate to different consumer long-term coping strategies.

The extant literature has shed some light on long-term coping in general; however, there is no literature on long-term consumer coping. This research theoretically and empirically contributes to the consumer coping theory by offering a comprehensive conceptualisation and measurement in terms of the multi-dimensional model of consumer long-term coping.

When faced with food safety issues, the specific emotions that consumers experience are under researched. Identifying specific emotions is important for two reasons: 1) the study

of emotion and coping is inextricably linked. Different emotions involve distinct appraisals of the situation, which may lead to various forms of coping. This extends our knowledge of the emotion-coping relationship by linking the specific emotions to coping behaviours; 2) the behavioural tendencies of the specific emotions in chronic stressful situation can be articulated. Therefore, the current research contributes to the growing literature on consumer psychology by identifying and validating both negative and positive emotions simultaneously in a long-term and ongoing food safety situation. This is also the first study to identify the positive emotion of hope in the chronic food safety situation and consumer coping, advancing our understanding of consumers' possible positive emotional appraisals when facing chronic food safety issues.

Furthermore, the current research challenges the transactional theory of stress, which establishes a strong correlation between the individual's experience of stress and the emergence of coping behaviours. The findings from this research show that consumers demonstrate various coping actions to deal with the problematic situation even when no stress was expressed. This provides a new angle for discussing stress and coping as previous research overlooks the conditions of eliminated stress. This corrective, thereby, optimise the theory's explanatory power.

Lastly, the antecedents of consumers' decision to employ in particular ways of coping are not well articulated. Based on the results of this research, consumers' situational cognitive appraisals and dispositional personality traits are identified as the influential moderating factors of the stress/emotion-coping relationships. This enriches extant understanding of the interactive patterns in consumers' distinct coping responses.

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Author's Declaration

Name: Kaidong Yu

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I certify that the thesis presented here for examination for a PhD degree of the University of Glasgow is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

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Signature:

(Kaidong Yu)

Chapter 1 Introduction

1.1 Introduction

This chapter provides an introduction and overview of the whole study. This chapter clarifies the study's imperative and rationale and introduces the ways in which this research was conducted. In order to achieve this aim, this chapter is organised as follows: Sections 1.2 and 1.3 provide a brief description of the identified theoretical research problems, based on an extensive review of the literature on food safety and related studies on stress, emotion and coping. Section 1.4 offers a brief description of the main research approaches; Section 1.5 presents the overall aim and objectives of the research; Section 1.6 outlines the scope for the present research; Section 1.7 highlights this research's significance, theoretical contributions and practical implications. Section 1.8 specifies the research's overall structure; finally, Section 1.9 concludes with a short summary.

1.2 Research Background and Research Problem: Food Safety

Food safety issues have existed for a long time and have now become a global problem that influences hundreds of thousands of people around the world. The World Health Organisation (2015) estimated that around 420,000 people die each year after having contaminated food. Due to strict food legislation and quality-control standards (Handschuch et al., 2013), consumers in western countries are less worried about the safety of food. However, consumers in developing countries, especially populous countries such as China and India, still suffer from the devastating consequences of food safety issues. In 30 years, China's GDP per capita has increased 26-fold from 292.5 to 7,590 USD in 2014. India's GDP per capita has grown only 5-fold from 302.5 to 1,581.5 USD in 2014 (World Bank, 2015). This shows that Chinese consumers have more money and significantly rising incomes. Therefore, their diets and lifestyles have changed dramatically over the past twenty years and consumers are now starting to pay more attention to food safety than food quantity (Ortega et al., 2011). In addition, deficiencies in government policies, the large scale of the food industry and 1.3 billion consumers all contribute to the complexity of food safety problems in China (Zhang et al., 2015). Moreover, constantly exposed food scandals and China's long history of using farm chemicals to boost food production have caused problematic food products over a long period. The exasperated situation makes China a unique food market in which Chinese consumers have suffered for decades. This justifies China as an appropriate context for the present research.

Specifically, food safety issues in China are more complex compared to those in developed countries. On the one hand, Chinese consumers have experienced severe food scandals every year since the catastrophic Hepatitis A incident that happened thirty years ago and affected 292,301 people (Halliday et al., 1991). As calculated by Xu and Meng (2012), around 20,000 major food poisoning incidents per year have been officially reported for the past ten years. These food safety hazards continue to affect consumers' health and daily lives. On the other hand, general food conditions in China have been problematic for a long time. Rapid population growth with limited arable land and water (UNESCO, 2012) means China has focused on boosting the quantity of production and food security in the past decades, rather than quality and food safety (Chen, 2007). Millions of tons of farm fertilizers and farm chemicals were adopted previously to boost production in order to produce enough food (Ashton et al., 1984; Chen, 2007). Under such challenging circumstances, China has three main food concerns: food hygiene, unsafe food and food poisoning (see Section 2.3 for further discussion). Food safety issues have affected the majority of people in China, and this problematic situation continues (Lu et al., 2015).

In the past several decades, food safety issues have attracted increasing research interest from academics. Most investigations have focused on food control systems (e.g., Jin and Zhou, 2011; Zhou and Geng, 2002), food law and regulation (e.g., Bai et al., 2007; Ortega et al., 2011), individual food scandals (e.g., Pei et al., 2011; Qiao et al., 2012), social risk (e.g., Lu et al., 2015; Yan, 2012) and biotechnology (e.g., Ho et al., 2006). Some studies have focused on consumer-related topics, for example, consumer perception (e.g., Rimal et al., 2001; Franklyn and Badrie, 2015), consumer attitude (e.g., Xiu and Klein, 2010), consumer confidence (e.g., de Jonge et al., 2004) and consumer reaction (e.g., Niewczas, 2014). Only a limited number of studies have examined consumer coping behaviour (e.g., Han et al., 2007) and these have overlooked the long-term and ongoing settings in a consumption situation. The ways in which consumers manage, regulate and act on the issues and the elicited stress and emotions remain under researched.

Despite all the aforementioned studies, the focus of the current study is to examine long-term and ongoing food safety issues from the perspective of the consumer. Consumers' psychological states when faced with the long-term and ongoing food safety issues are under explored. These states include perceived stress, emotions and corresponding behaviours to long-term and ongoing food safety issues.

First, existing research has shed light on individual food safety scandals from a consumer perspective (e.g., Halliday et al., 1991; Wu et al., 2009). However, food safety issues in

China include a range of related problems, including food hygiene, unsafe food and poisonous food. Apart from a series of individual food scandals, Chinese consumers daily suffer from generally problematic food conditions (e.g., Liu et al., 2013). The complexity of food safety problems, deficiencies in government policies (Zhang et al., 2015) and 1.3 billion Chinese consumers have together generated this critical food safety situation over a long period of time. As seen above, the extant literature has focused on individual food scandals and paid little attention to consumers facing long-term and ongoing food safety issues. However, the long-term and ongoing nature of food safety issues is stronger for predicting psychological distress compared to individual scandals (e.g., Norris and Uhl, 1993; Mathur et al., 2006). Hence, the long-term and ongoing nature of food safety issues call for attention and research.

Second, research reveals that Chinese consumers are very worried about their well-being as a result of poor food safety (Li, 2008; Yan, 2012; Zipser et al., 2016). However, little work particularly exploring and examining consumer psychological states (including stress and emotions) to food safety issues exists. Questions such as “How do consumers feel facing an unsafe food situation in the long term?” and “Do long-term food safety issues arouse any stress-related feelings?” remain unanswered. By understanding how consumers feel and what they care about in their daily food consumption, food companies may achieve a better understanding of consumers’ particular purchase and post-purchase behaviours.

Third, most studies on food safety issues from the consumer’s perspective focus consumers in Western countries, such as the UK and the US (e.g., Redmond and Griffith, 2003). As mentioned before, food safety problems in China are quite complex, so this research attempted to capture consumers’ psychological states and behaviours to more deeply understand consumer behaviours in relation to food safety issues. Therefore, this research involved efforts to extend our knowledge and address the consumer’s perspective.

1.3 Identified Research Problems: Stress, Emotions and Coping

Considering that long-term and ongoing food safety issues may have an impact on consumer stress and emotions, this research involved conducting a literature review on stress and emotions, specifically from the perspective of the consumer. In addition, theories of consumer psychology and behaviour in relation to dealing with long-term and ongoing food safety issues provide a meaningful lens for achieving a deeper understanding of the consumer.

Stress research has drawn increasing attention in the field of social and behavioural sciences, though it is still in its initial stages within the fields of marketing and consumer research (Moschis, 2007). Although studies such as Andreasen (1984), Mick and Fournier (1998), Lee et al. (2007) and Hutton (2015) have broadened our understanding of stress and the consumer to some extent, Hutton (2015) argues that no systematic work has yet been done in the fields of marketing or consumer behaviour to understand consumer stress. Chronic strains as stressors that influence consumers' daily lives have been virtually ignored in literature.

Chronic strain is defined as a situation of "continuing problematic nature and extended duration" (Gottlieb, 1997). Research on chronic strains is either from the perspective of human health and well-being, such as leukaemia, cancer and physical illness (e.g., Deimling et al., 2006), or from the developmental view, such as problems in infants and adolescents (e.g., Cummings et al., 2014). However, the context of the present research does not fit into either. Food safety issues are ongoing external demands to consumers that are experienced on a daily basis (Day and Livingstone, 2001). The concept of "long-term and ongoing food safety issues" is specifically defined in Section 3.2.2 from three perspectives. Research on issues of long-term and ongoing natures is lacking.

In their theory of the transactional view of stress and coping, Lazarus and Folkman (1984) argue that individuals continuously evaluate and appraise the stressor. Consequently, stress changes with appraisal and evaluation over time. However, the dynamic nature of stress (Pearlin et al., 1981) is somehow neglected in their research. Specifically, the extant research establishes a strong correlation between the individual's experience of stress and the emergence of coping behaviours (e.g., Lazarus and Folkman, 1984). Adaptive coping actions decrease stress (Moschis, 2007). As such, when stress is well regulated and ceases, do coping actions cease as well? In the context of the current research, it is still debatable how long-term and ongoing food safety issues impact consumers, especially in conditions where the feeling of stress has eliminated. Hence, there is a gap in the literature about whether "feeling no stress" would trigger coping behaviours and, if so, how that would work.

Emotion research, as an important aspect of stress research (Lazarus 1999), has drawn increasing attention in consumer research. This body of research often argues that consumers primarily experience negative emotions in the face of stressful consumption situations. Hence, negative emotions are particularly emphasised in the extant consumer literature. Consistent with previous research, worry and disappointment are central in the

discussion of long-term and ongoing food safety issues, as consumers worry about the situation (Li, 2008; Zipser et al., 2016) and are disappointed with government efforts (Ortega et al., 2011). In addition, based on the extension of the transactional theory of stress and coping, some researchers have considered positive psychological states during stressful situations (Folkman and Moskowitz, 2000). This means that positive and negative emotions may arise simultaneously in a stressful consumption situation. Yet, literature on consumer and food safety is still in its infancy in evidencing and identifying the specific emotions experienced by consumers (e.g., King and Meiselman, 2010). Identifying specific emotions is important for two reasons: 1) the study of emotion and coping is inextricably linked (Lazarus, 1991). Different emotions involve distinct appraisals of the situation, which may lead to various forms of coping. This will extend our knowledge of emotion and coping by linking the specific emotions to coping behaviours; 2) the behavioural tendencies of the specific emotions in chronic stressful situation will be articulated, which will enrich extant understanding of consumers' coping processes and decision making.

Furthermore, despite the richness of extant research on coping, only a few studies have shed light on the consumer, although research suggests that marketing researchers have much to gain from understanding consumer coping behaviours (Viswanathan et al., 2005). Some attempts to explore consumer coping behaviours have been made (e.g., Lin et al., 2003; Duhachek and Iacobucci, 2005; Han et al., 2007). However, an important feature neglected in consumer research is the situation of consumers being influenced by long-term external demand over time, such as the long-term and ongoing food safety issues in the context of the present research. Thus, there is a need to explore and conceptualise how consumers cope in relation to long-term and ongoing food safety issues.

Lastly, the relationship between stress/emotion and coping is still debatable. Some previous studies have identified links between stress episodes and coping (e.g., Luce et al., 2001), while some have argued that both emotion and cognition predict coping in an interactive way (Duhachek, 2005). Not enough is known to unpack the relationships between psychological states and coping. Examination of this relationship is crucial to understanding factors that may give rise to distinct consumer long-term coping strategies in this dynamic process. Thus, this research argues that emotional appraisal presages coping as the main effect, moderated by cognitive appraisal and personality traits. The present research posits that emotions, cognitive appraisal and personality traits conjunctively affect consumers' coping in various ways.

1.4 Research Methodology

In order to enhance the robustness of the research design and the validity and reliability of the research findings, this research involved both qualitative and quantitative research methods.

Specifically, the qualitative research method (consumer interview) was aimed at achieving the following research objectives: to identify specific consumer psychological states when faced with long-term and ongoing food safety issues; to capture coping actions in dealing with food safety issues; to conceptualise and validate consumer long-term coping qualitatively; and to challenge the theory of the transactional view of stress and coping. This was important, as it identified, modified and validated the proposed working research hypotheses and the conceptual framework. Furthermore, it also generated items for the survey instrument, providing a solid foundation for the quantitative study.

The quantitative research method (survey) was aimed at achieving the following research objectives: to conceptualise and examine consumer long-term coping quantitatively; to develop a scale for measuring the multidimensional structure of consumers' long-term coping; and to test the research hypotheses and the conceptual framework. Driven by the research aim and objectives, the researcher conducted an intensive literature review and proposed research hypotheses based on the extant literature. The research instrument used in the present research was both adapted from previous measures and developed by the researcher. Three steps were taken before contacting survey respondents: 1) conducted consumer interview; 2) asked a panel of academic experts' opinions to ensure the face and content validity of the newly developed measure; 3) tested the research instrument in a pre-test and two pilot studies. These efforts were to guarantee that the questionnaire was valid, accurate and practical. The research hypotheses were tested by the collection of first-hand data through an online survey. The survey was designed in English and translated into Chinese by a bilingual researcher. The Chinese version survey was released on Chinese social media platforms. A total number of 848 survey responses were collected. The collected data was analysed using SPSS and AMOS. Specifically, the researcher used SPSS to prepare the data for analysis and test the categorical variables. AMOS was used to operate the structural equation modelling in order to develop the scale and test the hypotheses and conceptual framework.

1.5 Research Aim and Objectives

This thesis integrates research problems identified in a broad range from two bodies of

literature: food safety and related studies in Chapter 2; and stress, emotions and coping in Chapter 3. The research aim is **to conceptualise and empirically explore consumer long-term coping strategies and to achieve an in-depth understanding of factors that may influence the relationships between consumers' various psychological states and their long-term coping responses in the context of a long-term and ongoing food safety situation.**

Achieving the overall research aim required the following objectives to be accomplished:

- To conceptualise the multi-dimensional structure of consumers' long-term coping strategies in relation to food safety issues.
- To develop a scale for measuring the multidimensional structure of consumers' long-term coping strategies in relation to food safety issues.
- To identify specific emotions that consumers experience when faced with long-term and ongoing food safety issues.
- To assess and challenge the theory of the transactional view of stress and coping in a situation of consumers facing long-term and ongoing food safety issues.
- To identify and examine the influential intervening factors between the emotional states and consumers' long-term coping strategies in relation to food safety issues.

1.6 Research Scope

Research scope is discussed in detail in Section 3.7. Key points are listed here:

- Consumers' long-term coping strategies were the main focus of the present research, in the context of Chinese food consumers.
- This research only investigated the moderating effect of cognitive appraisal, personality traits and demographic factors on the relationships between psychological states and long-term coping strategies in order to have a thorough understanding of the crucial factors within the conceptualisation.
- This research only examined consumer behaviour in the context of long-term and ongoing food safety issues in China.
- The long-term and ongoing strain was defined specifically in the research from three perspectives: 1) they are not individual stressful events (i.e., food scandals); 2) they are continuous and ongoing strains; 3) they have been experienced by consumers for a substantial period of three years and beyond. Individual food scandals normally would be handled by government entities within one year. "Three years and beyond" is defined here to address the general long-term

situation.

- The food category of this research was vegetables, which are consumed by most consumers. Food safety issues identified from vegetables include food hygiene, unsafe food and poisonous food issues as identified from the literature (see Section 2.3 for further discussion). The researcher does not deny that other food categories, such as meat, oil and honey, may also cause safety issues.

1.7 Contributions of the Research

The following subsections outline the theoretical, methodological, empirical and practical contributions of this thesis. A detailed discussion of these contributions can be found in Section 9.3 in Chapter 9.

First, this thesis makes **theoretical contributions** to both consumer psychology and consumer behaviour theory regarding food safety in several ways:

- Conceptualisation of consumers' long-term coping strategies

The extant literature includes attempts to conceptualise coping strategies (e.g., Duhachek, 2005; Skinner et al., 2003; Yi and Baumgartner, 2004). However, conceptualising from both the perspective of the long-term and ongoing problematic consumption situation and the perspective of the consumer is overlooked. Thus, this study contributes by conceptualising the concept of consumers' long-term coping strategies. Specifically, by building on prior efforts to conceptualise coping, this study contributes by conceptualising and identifying a multi-dimensional consumer long-term coping framework, which consists of three dimensions of consumers' long-term coping strategies: coping instances, lower-level coping strategies and higher-level coping strategies. Drawn from the research findings, the performance of this multi-dimensional structure has been assessed and recognised as superior for examining consumers' long-term coping when compared to a unidimensional structure.

- The transactional view of stress and coping

This research challenges the transactional view of stress and coping, which establishes a strong correlation between the individual's experience of stress and the emergence of coping behaviours (e.g., Lazarus and Folkman, 1984). Previous research did not pay attention to the regulation of stress and corresponding coping behaviours. This research argues that consumers may continue to cope with the problematic situation in long-term and ongoing settings, even after the stress has diminished or faded away. This argument is

supported by findings from the current research. The research findings show that consumers have demonstrated various coping actions and behaviours in dealing with problematic situations, even when no stress has been expressed. The research results also suggest that consumer research into chronic strains should consider the condition of diminished or eliminated stress. This corrective, thereby, optimise the explanatory power of this theory.

Second, this thesis makes **methodological contribution** to coping measurement literature:

- Measurement of consumers' long-term coping

This study contributes to the existing literature on consumer coping measurement and to the operationalization of consumers' long-term coping by developing a new scale. This new scale measures the concept of consumers' long-term coping strategies. This newly developed scale underwent a robust scale development procedure (following Churchill's (1979) procedure), including: extensive literature search; semi-structured consumer interviews; and a panel of academic experts and questionnaire survey, which applied the Likert scale for measuring each item. The reliability and validity of the scale were established using two samples in order to ensure applicability and practicability.

Third, this thesis makes **empirical contributions** to both consumer psychology and behaviour literature regarding food safety:

- Identifying specific emotions

This study contributes to and enriches research on consumers' psychological states by empirically identifying the specific emotions of worry, disappointment, anger, fear and hope when faced with long-term and ongoing food safety issues. This is the first study to identify and validate both negative and positive emotions simultaneously in a long-term and ongoing food safety situation. This study is also the first to document and identify the positive emotion of hope in the chronic food safety situation, thus advancing our understanding of consumers' possible positive emotional appraisal when facing chronic stressors.

- Identifying influential intervening factors

Extant research on the relationships between specific emotions and coping is still vague and debateable in four ways:

I. Consensus has not yet been reached regarding the relationships between emotions and

coping (e.g., Luce et al., 2001; So et al., 2015). The current research contributes to the extant literature by examining the cognitive appraisal of locus of control in addition to self-efficacy, enriching our understanding of the interactive emotion-cognitive patterns in consumers' distinct coping responses.

II. The extant literature on coping suggests that individuals' efforts in coping are directed by individuals' personality traits and the situational elements of the stressful situation (Duhachek and Kelting, 2009). These interactive relationships between emotions and traits in coping are under researched. The current research contributes to the extant psychological literature on coping by theorizing and incorporating dispositional personality traits into the examination of the relationships between specific emotions and consumers' long-term coping. This contribution underscores the importance of inquiry into the complex and nuanced coping process.

III. Previous research has shed light on the direct impact of demographic variables on emotions (e.g., Brummer et al., 2013) and on coping behaviours (e.g., Shormilisy et al., 2015; Wilson and Luong, 2016). However, the mechanisms behind the associations between emotions and long-term coping through particular interactive emotion-demographic patterns are overlooked. The current research contributes to coping research by confirming that there are no significant impacts of education level and family structure on the relationship between a specific psychological state and consumers' long-term coping, with one exceptional condition of hopeful consumers without caring responsibilities. This finding establishes a link between hope and non-caring responsibility and avoidance coping in relation to long-term and ongoing food safety issues.

IV. In addition to the extant literature and empirical contribution, this study also contributes to the psychological literature by examining the interactive relationships with additional emotions beyond anger and threat. Consumers' coping behaviours were articulated in various emotion-cognition/personality patterns.

Lastly, this thesis has **practical implications** in terms of understanding Chinese consumers and the specific food safety issues in the context of vegetables. Detailed discussion can be found in Section 11.3.4.

- Understanding Chinese Consumers
- Media/Social Media Communication
- Corporate Social Responsibilities

- Law and Regulation Enhancement

1.8 Structure of the Thesis

The current research is structured in nine chapters:

Chapter One provides the background of the present research and research problems. Theoretical research problems are identified in two groups of literature: the study of food safety issues and the study of stress, emotion and coping. Research aims and objectives are outlined, together with the defined research scope and selected research methodology. This chapter also discusses the significance of the research and provides the structure of the thesis.

Chapter two and Chapter three together offer an extensive literature review of related studies and provide the theoretical foundation for the present research. **Chapter Two** provides the context of the current research, presents an extensive literature review on food safety and related studies and identifies research gaps in the literature. This chapter starts by looking at the worldwide food safety situation and highlights that developing countries suffer more from these issues. Attention then is shifted to the context of China by illustrating the overall situation and discussing three main concerns about food safety. This chapter also offers a description of government efforts and concludes that it is not clear whether the latest efforts will make China's food safer due to deficiencies in relevant policies and insufficient resourcing, the large scale of the industry and the large consumer base. Furthermore, this chapter reviews previous studies on food safety and related issues, identifying three research gaps. **Chapter Three** provides the theoretical foundation for the current research and an extensive literature review of extant research on stress, emotion and coping. In general, stress and emotion are two aspects of psychological states. This chapter first discusses the extant research on stress and addresses it through various concepts, theories and the chronic state. Next, this chapter reviews the literature on emotion and highlights the role that emotions play in the consumer domain. Third, the chapter critiques coping from various perspectives and concludes by proposing a general conceptual model of consumers' long-term coping based on identified research problems in two bodies of literature. Consequently, the chapter clearly defines the research aims, objectives and scope.

Chapter Four provides justification for the proposed variables of consumer psychological states, personality traits, cognitive appraisals and demographic factors and conceptualises the multi-dimensional model of consumers' long-term coping with a review of the

literature. Furthermore, this chapter also proposes research hypotheses from the literature and highlights the general research conceptual model that articulates the relationships between proposed variables.

Chapter Five describes the overall research design for the current study.

Chapter Six discusses the methodology of the qualitative study. This chapter articulates the rationale for the use of consumer interview, sample size, interview sampling technique, interview process, interview length, characteristics of interviewees, transcribing method and qualitative data analysis. **Chapter Seven** discusses and presents the findings of the qualitative study. Based on the findings from consumer interviews, the researcher identified consumers' psychological states and coping actions in dealing with long-term and ongoing food safety issues. The results also helped to inform and modify the research hypotheses and research framework.

Chapter Eight describes the methodology for the quantitative study. This section outlines the sample design, questionnaire design, justification of measurements and method of data collection. **Chapter Nine** presents the descriptive statistics for demographic factors including age, gender, education level and family structure. This chapter also examines the reliability and validity of the collected data and presents a factor analysis of the variables. A new multi-dimensional coping construct was conceptualised and a scale for measuring the construct was developed by using exploratory factor analysis and confirmatory factor analysis in Structural Equation Modelling in AMOS. **Chapter Ten** discusses the results of the data analysis and presents tests of the theoretical research hypotheses. Structural Equation Modelling was adopted to examine the model and test the hypotheses. In addition, SPSS was used to estimate regression equations with dummy variables.

Chapter Eleven summarises the results of both the qualitative and quantitative studies. It contains three main sections: major findings from both studies; contributions to knowledge; and limitations and recommendations for further research.

1.9 Summary

This introductory chapter provided an overall description and brief explanation of the content and sequence of the present research. It outlined the theoretical research problems in the extant literature, offered the rationale and research aims and objectives and presented the research scope, methodology and main contributions.

Chapter 2 Food Safety and Related Studies

2.1 Introduction

Consumers who live in developed countries such as the UK may not think much about whether the food products that they buy are safe or not, but instead consider food brands, healthy ingredients, nutrition and ethical issues such as environment and animal welfare, among other issues. However, in developing countries, consumers are still suffering from the devastating consequences caused by consuming unsafe food (O'Brien, 2015). An estimation made by the World Health Organisation (2015) shows that 420,000 people die each year in the world after consuming contaminated food. Food safety issues in countries with a large population such as China are even more urgent. As Li Keqiang, Chinese Premier once stated at the state council meeting, "Food is essential and safety should be a top priority. Food safety is closely related to people's lives and health and economic development and social harmony" (IBP, 2016). Chinese consumers, who are directly influenced by food safety issues over the long-term, are therefore important stakeholders to be involved in dealing with this situation.

This chapter presents a comprehensive assessment of the extant literature on food safety from the perspective of the consumer and demonstrates the rationale and importance for the current study. The structure of Chapter 2 is as follows: Section 2.2 outlines the global food safety situation, addressing the need to investigate on food safety issues. Section 2.3 shifts the attention from worldwide to a specific populous Asian country: China, which has been influenced by the problematic food safety situation for decades. Three food safety concerns namely food hygiene, unsafe food and poisoned food are reviewed subsequently. Section 2.4 outlines the efforts made by Chinese government in dealing with food safety issues in recent years, suggesting that due to the nature of much fragmented food market of China, government efforts to a certain extent will be deficient and insufficient (Zhang et al., 2015). Section 2.5 articulates how Chinese consumers are living with food safety issues and what actions they have taken to tackle the problems. Section 2.6 is divided into two sub-sections: sub-section 2.6.1 reviews the previous relevant studies on the topic of food safety; while sub-section 2.6.2 assesses literature on food safety and the consumer, addressing that food safety issues from the perspective of the consumer is overlooked and more research is needed. Section 2.7 identifies research problems in consumer and food safety with the research scope of consumption specific in vegetables. Section 2.8 concludes with a short summary.

2.2 The Food Safety Situation across the Globe

Food is of the utmost importance to human beings. Globally, the food economy has gone through a remarkable technological and commercial expansion since World War II (Lang and Heasman, 2015). On the one hand, mass industrialisation has produced a broad range of food products to feed billions of people. At the same time, the diversity of food products has increased and the scale of the food industry has significantly expanded (Lang and Heasman, 2015). Factors such as increased travel distances between growers to consumers (Aung and Chang, 2014) and a series of food scandals and scares being exposed all around the world have challenged the credibility of the food industry (Yan, 2012). On the other hand, consumers are now concerned about the safety of food products. Various stakeholders have paid attention to these issues, for example, the European Food Safety Agency was established to handle and monitor the situation (Grunert, 2005).

Table 2-1 provides a list of examples of food scandals which were exposed across the entire world, while there are definitely more food scandals across a broader range of food categories exposed all around the world. It is clear from Table 2-1 that the problems of food safety are certainly not a new phenomenon. Throughout sixty years, food scandals has been reported not only in industrialised western countries such as UK, USA, Canada, Germany, Spain, Italy, Japan, Belgium, Portugal, New Zealand and Australia, but also in developing countries such as China, the Philippines, Hungary, Morocco and Kenya. Hundreds of thousands of people were influenced by unsafe food, ranging from milk powder, cooking oil, animal feed, wine, meat and honey among others.

Table 2-1 Worldwide Food Scandals

Product	Year	Country	Problem	Source
Milk powder	1955	Japan	The well-known “Moringa dried milk poisoning” scandal was exposed in 2002 and there were over 100 deaths reported and 13,400 poisoning cases were found.	Dakeishi, Miwako; Murata, Katsuyuki; Grandjean, Philippe (2006)
Cooking oil	1959	Moroccan	Deliberate contamination of tricresyl phosphate (Jet engine lubricating oil) in cooking oil caused several thousand people suffering from flaccid paralysis in the city of Meknes.	Hunter (1968)
Animal Feed	1973	USA	Animal feed contaminating with flame retardant caused widespread poisoning of people in Michigan.	Dunckel, AE (1975) Fries and Kimbrough (1985)
Oil	1981	Spain	Thousands of people were found to be permanently damaged due to contaminated olive	Bob Woffinden (2001)

			oil as a result of refining condemned oil.	
Wine	1986	Italy	Adulteration of Italian wines with ethylene glycol killed more than 18 people.	Schanche, Don A. (1986).
Milk	1989	Belgium	Milk contamination with dioxin in Belgium was reported.	Bernard et al., (2002)
Paprika	1994	Hungary	Ground paprika in Hungary was found to be adulterated with lead oxide, causing deaths of several people, while sickening dozens of others.	Lead.org.au (2012)
Meat and Milk	1998	Germany and the Netherlands	Meat and milk were found with elevated dioxin concentrations in these two countries.	Malisch, Rainer (2000)
Chicken	2003	Portugal	Nitrofurans, the banned veterinary antibiotic, were found in chicken from Portugal. Poultry from 43 farms was destroyed.	Food Law News (2003)
Honey	2004	Canada	The Canadian Food Inspection Agency (CFIA) detected chloramphenicol in honey labelled as product of Canada.	Health Canada (2013)
Soy Milk	2004	New Zealand	Five cases of thyrotoxicosus were reported in consumption of soy milk which contained toxic levels of iodine.	O'Connell et al., (2005)
Maize	2004	Kenya	Aflatoxin-contaminated maize in Kenya resulted in 317 cases of hepatic failure and 125 deaths.	Azziz-Baumgartner et al., (2005)
Worcester Sauce	2005	UK	Worcester sauce in the UK was found to contain the banned food colouring, Sudan I dye, that was traced to imported adulterated chilli powder. 576 food products were recalled.	Food Standard Agency (2005)
Baby Milk	2008	China	Melamine contaminated baby milk powder affected over 300,000 babies; among them 51,900 were hospitalised and 6 infants were dead.	Gossner et al., (2009)
Soymilk	2009	Australia	Bonsoy-brand Soymilk in Australia which enriched with 'Kombu' seaweed resulted in high levels of iodine and 48 cases of thyroid problems.	Crawford et al., (2010)
Beef Burgers	2013	UK and Ireland	It was disclosed that horse meat contaminated beef burgers had been on sale in Britain and Ireland.	Premanandh (2013)
Milk Tea	2015	The Philippines	Contaminated milk tea resulted in the deaths of two individuals and affected another in Sampaloc, Manila. The cause of which was determined to have oxalic acid being deliberately	Business News Asia (2015)

			laced at more than the lethal oral dose.	
Pork Sausage	2017	The UK	Thousands of consumers in the UK may have been infected with Hepatitis E from sausage in a supermarket.	Independent News (2017)

It is important to note that food safety issues arising in developed countries differ from those in developing countries in terms of characteristics and patterns of occurrence. Specifically, developed countries have established a relatively higher food safety standard and safety control systems, such as the Hazard Analysis by Critical Control Point (HACCP). HACCP exists to identify, assess and control food safety hazards in a systematic way (Trafialek and Kolanowski, 2017). Countries such as USA, UK, Canada, Australia and New Zealand adopted HACCP in 1980s and 1990s. Therefore, food safety issues exposed in developed countries tend to be isolated and individual hazards. Comparatively, developing countries pay less attention to food safety issues as a large proportion of the population may still be in poverty and suffer from not having enough food. In addition, inefficient use and inadequate management of pesticide and fertilizer application lead to food risks and safety issues (Lu et al., 2015). Food safety issues exposed in developing countries include both individual hazards, systemic and systematic food risks. Food safety issues have emerged frequently in developing countries such as China, India, Pakistan, Nigeria and Myanmar. These countries share common characteristics, including large populations to be fed, long-term poverty and exposure to systematic food safety issues. While recognizing that food safety concerns exist elsewhere, the current research focuses on China specifically. China is experiencing a significant transformation socially and economically. As previously noted, China's GDP per capita has increased 26 times in the last 20 years (World Bank, 2015). With access to rising incomes, Chinese consumers have gradually changed their lifestyles and dietary habits (Ortega et al., 2011), shifted their attention to food safety and demanded safer food products (Lam et al., 2013). In addition, the complexity of food safety problems mean the problems are difficult to resolve; the deficiencies in government policies (Zhang et al., 2015) mean that some actions cannot be taken due to under-developed regulations and policies; and 1.3 billion Chinese consumers consume a large amount of food products every year and, thus, the potential for food safety issues is large. Together, this leads to a significant problem in relation to food safety over a sustained period of time. Arguably, other populous developing countries that experience rapid economic growth may also be suitable for the research, as consumers in these countries may encounter similar food safety issues in a long-term. Thus, it can be expected

that in the future studies, other contexts can be considered. The generalizability of the findings from the current research can also be examined in other contexts.

Food safety involves actions to ensure that all food is safe (WHO, 2015). This means that infection and contamination need to be prevented in the process of producing, handling, storing and preparing food and wholesomeness of food needs to be maintained and ensured in order to promote health (WHO, 2015). Thus, the whole food chain is vulnerable to safety violations. For example, it is acknowledged that some food producers chase after profits and compete on price (Grunert, 2005) while ignoring food risks; information that is not sufficiently communicated between food producers and consumers can cause problems as well (Zecca and Rastorgueva, 2016); or other improper food producing processes such as illegal chemical additives, toxic flavour enhancer and unhygienic processing may cause food poisoning and bring foodborne diseases that harm consumer health (e.g., Taverne, 2007; Pei et al., 2011; Ortega et al., 2011; Yang et al., 2013; Premanandh, 2013). Industrialised countries have developed and adopted a number of food certificates and control standards to ensure the safety of food products (Handsouch et al., 2013). For example, the GlobalGAP standard (developed in 1997) among European Union countries (Herzfeld et al., 2011) and the US Food and Drug Administration guideline (1998) in the United States are two important rigorous food safety standards, which cover the whole process of food production. Comparatively, countries in Latin America, Africa and Asia have only started to pay more attention recently to food safety standards due to the expansion of modern supermarket chains (Handsouch et al., 2013). A lack of strict standards of food safety leads to certain disadvantages to these developing countries. For example, China's role in the world export market has suffered a lot because countries such as Japan and EU countries have rejected a significant portion of China's food exports due to their failing to meet rigorous food safety standards (Ortega et al., 2011).

In contrast to food safety mentioned above, food quality can be defined as "the totality of features and characteristics of a product that bear on its ability to satisfy stated or implied needs" (Van Reeuwijk, 1998). It can also be viewed from objective and subjective perspectives (Grunert, 2005). Specifically, objective food quality is the physical characteristics embedded in the food products, whereas subjective food quality is consumers' perception on the quality of the foods. Arguably, food quality is a very general concept as the expectation that food products meet individuals' needs may vary from consumer to consumer (Bijman and Bitzer, 2016). The current research is in line with many experts, arguing that food safety is the most important attribute of food quality (e.g.,

Aung and Chang, 2014). Among other quality attributes, safety is difficult to observe. For example, a food product may appear to be of high quality, such as having a good appearance, but it may be contaminated and be unsafe to consume. This research focuses on food safety in particular, without further investigation into other quality attributes. Thus, food quality and safety should be treated as two distinct terms.

Table 2-1 shows that food scandals happen at all stages of food producing and processing and might be caused by various contaminations. Figure 2-1 shows the possible sources of contamination within the food supply chain (Lam et al., 2013), starting from agricultural production, transportation and storage, processing, import/export and retailing, to human consumption as the end point. In general, China has three main food concerns: namely the problems of food hygiene, unsafe food and poisonous food (Yan, 2012; Wu and Chen, 2013; Lam *et al.*, 2013; Klein, 2013). These will be further elaborated upon in the next section. By matching the concerns with possible sources of contamination in Figure 2-1, it is clear that each stage within the food supply chain reflects certain concerns. For example, at the stage of agricultural production, there are several factors influencing production, including widely used fertilisers, pesticides and insecticides, which may cause unsafe food issues. Similarly, in the stage of transportation and storage, microbial contaminations can be seen as food hygiene problem while toxic contaminations may cause poisonous food issues. Therefore, the entire food chain from production to consumption may involve food safety issues.

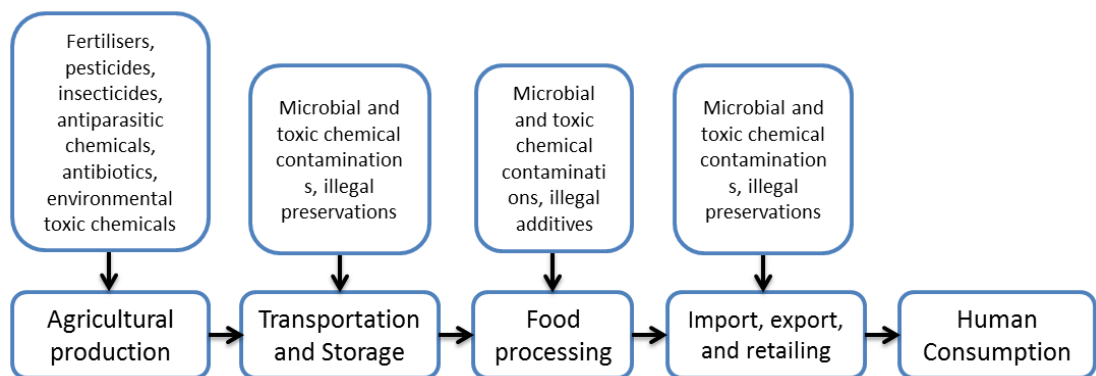


Figure 2-1 Possible Sources of Contamination in the Food Supply Chain (Source: Lam et al., 2013)

As noted, developed countries have relatively higher food safety standards and safety control systems to guarantee the quality of food products. However, it is still an unavoidable and serious issue in developing countries and even more so for populous Asian countries such as China and India. China is experiencing a significant transformation socially and economically. As previously noted, China's GDP per capita has increased 26

times in the recent 20 years (World Bank, 2015). Having more money at hand due to the rising income, Chinese consumers gradually have changed their lifestyles and diet habits (Ortega et al., 2011), shifted their attentions to food safety and demanded safer food products (Lam et al., 2013). In addition, the complexity of food safety problems, the deficiencies in government policies (Zhang et al., 2015) and 1.3 billion Chinese consumers together generate the significant situation of food safety over a long period of time. Therefore, the Chinese context is chosen as the focus of this research. These three aspects, namely chronic food safety situation in China (Section 2.3), deficient government efforts (Section 2.4) and Chinese consumers' perspective (Section 2.5), will be illustrated in the following three sub-sections in sequence.

2.3 Food Safety in China

In order to get a deep understanding of consumers when faced with the problematic food situation, firstly it is important to discuss the general food situation in China and the specific food safety issues they are facing.

On the one hand, the situation in China is problematic as Chinese consumers have experienced severe food scandals (e.g., Halliday et al., 1991; Chan et al., 2008; Liu et al., 2013). It has been a long period of time since food safety emerged as an issue in China (Wang et al., 2008). The catastrophic incident happened thirty years ago in Shanghai when an outbreak was caused by the raw consumption of clams contaminated with the hepatitis A virus, affecting 292,301 people (Halliday et al., 1991). Another scandal that has drawn much attention and discussion among Chinese consumers, media and policy maker is that melamine-contaminated milk and powdered infant formula products caused urinary tract stone in more than 290,000 children in 2008 in many provinces of mainland China (Chan et al., 2008; Wu et al., 2009). These food safety hazards have significantly affected consumer health and daily life and there is no sign of a decline of incidents and scandals (Zou, 2011; Yan, 2012). For example, according to Xu and Meng (2012), around 20,000 major food poisoning incidents a year were officially reported for the past ten years. As with reporting of most food safety issues globally, under-reporting is common and the number of incidents is surely much higher (Mao et al., 2011; Wu and Chen, 2013). Thus, it is possible that the situation of food safety in China could be even worse than the official reports and published statistics.

Yan (2012) has reviewed the major food scandal cases from 1950 to 2002 (Table 2-2) and seven major causes of scandals are identified. He divided the five decades into two periods,

comparing conditions before and after the 1982 Food Hygiene Law (provisional), a law that indicates official recognition of the prevalence of food-borne diseases. After 2002, there was an explosion of reports on food scandals in the Chinese media, social surveys, social media and government documents. The number of cases would be inaccurate to capture. As the Table 2-2 shows, the major cause in the first period (1950-1982) is the “food with toxic additives in restaurant or markets”, followed by “problematic canteens”, “spoiled foods” and “meat of diseased animals”. At the same time, new food challenges emerged as well, such as food adulteration, food additives, pesticides used as food preservatives and fake foods (Yan, 2012). In the second period (1983-2002), the “food with toxic additives in restaurant or markets” still ranks the top as the major causes of scandal cases, illustrating that there was no effective supervision on this issue in five decades. “Improper food preparation” becomes a serious problem ranked the second, with a rapid increase from 6 cases to 87 cases.

Table 2-2 Chinese Food-Poisoning Cases in Two Periods (Source: Yan, 2012)

Type	Major Causes	Number of Cases, 1950-1982	Number of Cases, 1983-2002
A	Meat of diseased animals	26	18
B	Spoiled foods	27	18
C	Pesticides or other chemicals	23	15
D	Problematic Canteens	49	55
E	Toxic plants	4	1
F	Improper food preparation	6	87
G	Unsafe food in restaurants or markets	4	23
H	Food with toxic additives in restaurants or markets	139	217

*Food –poisoning cases that involved one hundred or more victims

In recent years, scandals exposed vary and cover a wide range within the whole process of the food chain, for example, food poisoning, dangerous dyes and illegal chemical additives, fraudulent food products, as well as food with expiry date (Wang et al., 2008; Yan, 2012). Table 2-3 outlines the major food scandal cases exposed in the Chinese food market with relatively huge influences on people’s daily lives, spreading widely online and showing various food scandal patterns. It can be drawn from the Table 2-3 that food scandals have emerged across the whole country and food categories.

Table 2-3 Major Food Scandals and Incidents of China in 6 years (Source: the author)

Scandal	Content	Year	Location
Gutter Oil	News reporter exposed a private workshop of producing gutter oil with abandoned low quality meat.	2016	Hubei Province
Fake Milk Powder	More than 17 000 bottles of fake milk powder were found and sealed by police.	2016	Shanghai
Frozen	Smuggled frozen meat including beef, duck and chicken claw with	2015	Hunan

Expired meet	production date back to 1970s.		Province
Pesticide	Strawberries from supermarket contain carcinogenic pesticides.	2015	Beijing
Meat with disease	Up to 2000 tons of pork with disease were processed and sold.	2015	Fujian Province
Fake Lamb	Hotpot lamb rolls was produced by mixing with chicken, duck and even fox meat.	2014	N/A
Parasite	An eleven-year old boy was found a 7 cm parasite in his brain because he likes to eat not fully cooked BBQ and seafood.	2014	Anhui Province
BSE	Jiangsu province found bovine spongiform encephalopathy (BSE) beef imported from Brazil has been sold in many cities.	2014	Jiangsu Province
Expired meat product	Shanghai Fuxi co. is a meat product provider of many famous chain restaurants, such as McDonald, KFC, Pizzahut etc. in China. Fuxi was found providing expired meat products to these restaurants.	2014	Shanghai
Toxic Ginger	Famers in Weifang, Shangdong province was found to plant ginger with toxic pesticide.	2013	Shandong Province
Polluted Water made steamed bread	A workshop in Shenzhen was found using polluted water and overdose chemical additives to produce steamed bread. Consumers are complained about diarrhea and vomit after ate it.	2011	Guangdong Province
Toxic Ginger	Two workshops that producing toxic ginger in Yi Chang, Hubei province was found and investigated, up to 1000kg toxic ginger was sealed.	2011	Hubei Province
Coloured Steamed bread	Expired steamed bread was collected and minced as raw material to re-produce the steamed bread with great amount of chemical additive to make it look better.	2011	Shanghai
Toxic bean sprouts	Several bean sprouts workshops were found in both provinces that produce bean sprouts with toxic chemical additive in a very dirty damp and dark environment.	2011	Liaoning & Jiangsu Province
Clenbuterol incident	Shuanghui company is a famous food producer in China. In 2011, Shuanghui was found that its pork products were added clenbuterol which is a chemical additive to make lean pork. Up to 3768 tons of pork products were sealed and under investigation.	2011	Henan and Jiangsu Province
Coloured and toxic peach product	In a processing factory in Shandong, NaOH was added to white peach to turn it into yellow peach. Then the fake yellow peach will be put into glass jar by hand to make canned fruit.	2010	Shandong Province
Hippocampus with mud	Hippocampus is suggested as a good food for kidney in traditional Chinese medicine. However, consumers found the well-shaped hippocampus is easily to be vanished and turn into mud when cook soup in Guangzhou because producers added mud, starch and other additives.	2010	Guangdong Province
Coloured Bean	Soybeans were coloured with chemical additive to be transferred into green beans to make more money.	2010	Hunan Province

illegally recycled cooking oil	As estimated by scholars, more than 3 million tons of illegally recycled waste cooking oil were produced and sold in the market every year which is a threat to consumers' health.	2010	National
Swelling Strawberry	Due to consumers' preference of bigger strawberry, merchants were using swelling agent to strawberry to make it bigger. However, it is harmful to consumer health, especially the kidneys.	2010	Henan Province

While on the other hand, the severe circumstance of China is that the general food condition in China is problematic for a long time. China's food industry has developed rapidly with the significant economic and population growth over the past thirty years (Zhang et al., 2015). However, according to UNESCO (2012), China's per capital arable land is below fifty percent of the world average; additionally, China's per capital arable water is about one fourth of the world average. As a result, in order to provide enough food products for hundreds of millions of people with limited resources, fertilizers and farm chemicals were adopted to boost the production (Ashton et al., 1984; Chen, 2007). Attention has only been paid to quantitative food outputs rather than quality. That arguably may be the key reason that food safety in China has been poor for decades.

It is noted that food safety issues have affected the majority of people in China where the situation is more complex and challenging (Lu et al., 2015). A situation combined with different concerns, including food-hygiene, unsafe food and poisonous food has formulated. These three concerns will be discussing in the following paragraphs.

Food Hygiene Concern

Food hygiene concern, or the most well-known foodborne disease problem caused by micro-organisms (Wu and Chen, 2013), is found frequently in home kitchen or at restaurant for Chinese consumers. Moreover, many urban employees and migrant workers prefer to have convenience food called "lunch boxes", offered by street vendors or available at small food stalls. Typical lunch boxes contain rice or noodles as the staple food, along with a main meat dish and two kinds of vegetables. Urban employees and migrant workers care more about the convenience and low price of these lunch boxes (Yan, 2012) and pay little attention to the origins, ingredients and the level of quality of the food they eat (Smith, 2007). For example, several kinds of pre-prepared food and processed food contain aluminium at a high level in Northern China (Deng et al., 2011). Therefore, general food products associated with a sense of alienation and disconnection have been attributed as the major cause of food scandals and public fears (Smith, 2007).

Food hygiene problems are quite often found in the section of food processing. According to a review of 2,378 individual incidents of acute foodborne illness, microorganisms have been responsible for 57.8% of incidents and 68.1% of illnesses (Xue and Zhang, 2013), which are directly resulted from unhygienic food processing. Due to the fact that 70% market share of food processing industry in China is dominated by small-scale family workshops (Yan, 2012), it is a great challenge for government and regulatory agencies to control. Furthermore, since the food processing sector is highly fragmented and mainly household-based, high potential threats to public health, quality control and transportation emerge (Li, 2008). Many of the family workshops operate under poor sanitary conditions. For example, it was reported in Hunan province that 80 per cent of the food processing workshops lacked production permits or business licenses (Dong, 2016).

Unsafe Food Concern

Unsafe food is another main concern over food products. Primarily, unsafe foods result from the heavy use of chemical fertilizers, pesticides, hormones, steroids, preservatives, flavour enhancers, colorants and pollution and environmental degradation (Yan, 2012). Antibiotics and anti-parasitic agents in animal agriculture might also lead to the presence of unsafe compounds in food products (Lam et al., 2013). Meanwhile, non-seasonal growing and intensive factory farming also contribute to the production of unsafe food (Klein, 2013).

The most serious circumstance is that food producers, processors or traders intentionally add toxic chemicals to food products or animal feeds in order to boost production or beautify products which have aroused deep concerns among consumers. Problems of unsafe food beyond the household and workshop level cause serious damage to public health and the social ethos, easily creating national panics, such as the 2008 case of the tainted baby formula by Sanlu Group, a leading joint-venture giant in the Chinese dairy business (Yoo, 2010).

Among other chemicals, pesticides stand out as the number one cause of food safety problems in China (Yan, 2012). For example, famers in Shanghai who applied four times more than the recommended amounts of pesticides in order to boost yields are believed to be profit-driven (Moore, 2010). It has been noted that in 2005 only around 6 per cent of Chinese agricultural production was pollution free and only 1 percent was certificated as “green food” product (Calvin et al., 2006), which is produced to meet the requirements of environmental protection and sustainable development in the production process (Liu et

al., 2013).

Other types of food risks are also problematic. For example, Li (2008) found that around 40 percent of Chinese factory farms have sold dead animals such as chicken and pigs to retailer or employees who resell these dead animals to street vendors, food dealers and small restaurants. The act of intentionally selling dead or sick animals to retailers reveals serious loopholes in market regulation, as well as ethical issues.

In general, food producers have three direct purposes to produce unsafe food (Bai et al., 2007). First, they tend to reduce production costs by using inferior materials, for example, fake milk powder in Fuyang City and poisonous wine in Guangzhou City. Second, efforts are made to beautify product's surface and make it attractive, coloured steam bread in Shanghai and coloured and toxic peach product in Shandong are typical examples (Table 2-3). Third, they try to change products' characters such as extending shelf life by using food additives or adopting improper manufacturing and packaging processes. Fortunately, the positive side is that the general public has become increasingly critical of food production and processing at all levels (Grunert, 2005). For example, topics on food safety issues are heavily discussed on Chinese social media platforms.

Food Poisoning Concern

The third concern is the food poisoning. According to the National Health and Family Planning Commission of PR China, the main causes of food poisoning are microbiological, chemical, natural toxins and poisonous mushrooms, as well as unknown or unidentified causes (Cheng et al., 2015). Table 2-4 is the cases of food poisoning from 2000 to 2013 (Cheng et al., 2015), articulating the number of victims and death toll in both "natural toxins and poisonous mushrooms" and "unknown and unidentified cases". In the section of "natural toxins and poisonous mushrooms", the number of victims who were sent to hospitals keeps at a high level (above 1,000) but experienced a drop since 2011. The average death tolls of this section have been less than 100 people in 14 years. Meanwhile, in the section of "unknown and unidentified cases", the number of victims shows fluctuations; while the number of death tolls remains at a low level with an average number of 13. It can be concluded from Table 2-4 that the cases of poisoning in China remain high in victims who were hospitalised and dead throughout 13 years.

In addition, among 2,378 acute foodborne incidents reviewed by Xue and Zhang (2013), 11% of incidents found are caused by natural toxins such as animal and plant toxin, also accounted for 9.2% of illness and 8.9% of deaths. It is true that poisonous food does not

enter the food chain on a daily basis and it is not produced on a regular or national scale. Therefore, the actual number of people sickened or dying from consuming poisonous food is less than the number of those suffering from food hygiene problems or unsafe food (Yan, 2012).

Table 2-4 Cases of Poisoning: 2000-2013 (Sources: The Report of National Food Poisoning in China from 2001 to 2014)

Time	Natural toxins and poisonous mushrooms		Unknown or unidentified causes	
	Victims	Death toll	Victims	Death toll
2000	281	51	940	7
2001	1127	35	854	10
2002	482	28	619	10
2003	2185	94	1907	18
2004	1367	69	2310	14
2005	1426	76	1992	43
2006	3158	85	2181	15
2007	2789	167	1173	12
2008	2823	80	1403	12
2009	1269	93	753	2
2010	1151	112	965	8
2011	1543	51	918	15
2012	990	99	1551	12
2013	718	79	1220	3

2.4 Government Efforts

As discussed above, the food safety condition in China has become a long-term problematic situation. As a result of frequent food scandals and incidents, as well as general situation of problematic food in the long term, consumers are calling for rigorous food control systems for producing high quality food with integrity, transparency and guaranteed safety (Trienekens and Zuurbier, 2008). However, the food safety condition has not been improved significantly with efforts made by the Chinese government. For example, it has been posited that the poor condition of food safety in China may be caused by a lack of regulations (Asian Development Bank, 2007). But some researchers argue that China actually puts more effort into food safety supervision than any other country (Wu and Chen, 2013). Over fifty years, China has enforced legislation with over 3,000 different types of laws, regulations and standards implemented (Song, 2005). Table 2-5 is a list of major regulations and laws regarding food since 1965, providing a sound legal foundation for food safety assurance, improvement and control. A number of laws regarding food and food safety has been updated to improve and enhance the legal system for the food industry, for instance, a new food safety law (2015) has been put into practice since October, 2015. Thus, the legal foundation for food safety in China is well established. Moreover, Chinese government agencies also intervene in the food chain by establishing

national food control systems (Neeliah and Goburdhun, 2007). The importance of the systems has just been recognized recently (Yang et al., 2012). In terms of food safety management systems Chinese government agencies now have an array of national standards, certification systems and requirements (Calvin et al., 2006).

Table 2-5 Food Legislation (Source: the author)

Law	Date
Food Hygiene Regulation on Administration (provisional)	1965
Food Hygiene Law (provisional)	1982
Law of Standardization	1989
Food Hygiene Law	1995
Product Quality Law	2000
Law on the Inspection of Import and Export Commodities	2002
Agriculture Law	2003
Agri-food Quality and Safety Law	2006
Food Safety Law	2009
Food Safety Law	2015

As discussed in the above section, the majority market share of food processing and producing industry in China is dominated by small-scale family workshops, reflecting the fragmented nature of the food market (Yan, 2012). The deficiencies in relevant government policies, insufficient resourcing, the large scale of the industry and over 1.3 billion consumers contribute to the complexity of food safety problems in China (Zhang et al., 2015). Hence, it is still unclear whether or not the latest efforts will make China's food safer (Ortega et al., 2011). This uncertainty will further raise concerns among consumers.

2.5 Chinese Consumers

The following consumer vignettes are vivid examples of Chinese consumers who are experiencing and suffering from long-term and ongoing food safety issues. These vignettes illustrate three food safety concerns identified from the previous literature, namely food hygiene, unsafe food and poisoning food (Yan, 2012). The first vignette demonstrates the food hygiene concern that consumers are facing severe food safety issues of gutter oil for over a decade and the business is still ongoing. The second vignette illustrates the unsafe food concern that consumers are suffering from low quality milk products for more than 10 years and yet there is no sign of recovery in terms of trust and confidence in domestic dairy products. The third vignette shows the food poisoning concern of wild mushrooms, microbial and poisonous plants.

Vignette one: the hygiene issue of gutter oil

In 2000, a vendor was caught by the food inspection authorities in China for selling gutter oil. Gutter oil is known as recycled cooking oil. This gutter oil is extracted from restaurant food waste, slaughterhouse waste, rotting meat, animal skins, fat and internal organs (Lu and Wu, 2014). The gutter oil is simply processed and sold back to restaurants and street vendors. It has been regarded as a serious food safety issue in China as it does not conform to food hygiene standards. Gutter oil may also cause harmful effects to humans such as triggering cancer (Li et al., 2016). In 2003, a newspaper 'People's Daily' reported that over 2.3 tons of gutter oil produced by two manufactures were seized by government authorities. Many people believe that gutter oil is produced by small and localised workshops (Li et al., 2016). However, the industrial chain of gutter oil established in China is driven by high profits (Lu and Wu, 2014). In July 2011, a decade since the first incident of gutter oil appeared, government authorities tore down a huge industrial chain across 14 provinces in China with 6 factories, 2 production lines and over 100 tons of gutter oil (Lu and Wu, 2014). Unfortunately, gutter oil business is still ongoing, despite the death penalty being implemented in several severe criminal cases of gutter oil (Li et al., 2016).

Vignette two: the unsafe food of milk powder

From May 2003 to April 2004, hospitals in Fuyang City have been constantly receiving children with symptoms of abnormally sized heads, small mouths, edema and low fever. The number of victims was 171 and 13 fatalities. This was all due to consuming low quality milk powder without sufficient nutrition (Renmin News, 2004). Years later in 2008, infants were diagnosed with kidney stones after consuming Sanlu milk and formula. Six infants died and around 54,000 infants were hospitalised. It was estimated that the total number of 300,000 infants were affected (Branigan, 2008). Initially, consumers thought that this incident was an inimitable case of giant corporations within the dairy industry. However, investigations conducted by government agencies found that other milk and infant formula corporations were also adding melamine to formula products, including the famous brands such as Yili, Mengniu, Guangming, Synutra and Yashili (China Central Television, 2008). Consumers were shocked and have lost confidence in domestic milk products ever since. China Central Television (2011) reported that more than 70 percent of Chinese consumers are afraid of purchasing domestic milk products in 2011. Consumers do not trust the quality of domestic milk products and choose to buy milk products from Australia, New Zealand or European countries (Zhang, 2013).

Vignette three: the poisonous mushroom

On 2nd October 2016, Shengqiang Li and four other family members, residents of Luzhou City, had water-boiled wild mushroom. The next day, the whole family experienced the symptoms of vomiting and sense of suppression in the chest. They were sent to the hospital immediately. Unfortunately, three days later, his wife and two children passed away. According to the county hospital, there were 72 victims hospitalised in LuZhou City during the half year period of 2016 due to consumption of wild mushrooms. As noted by Zhou et al. (2016), during the year 2004 and 2014, there were 576 poisonous mushroom incidents reported in China with 3701 victims, among them 786 were fatal. Beyond the poisonous mushrooms, other hazards such as microbes and poisonous plants have caused problematic food safety issues. The overall mortality rate of food poisoning is still high (Luo et al., 2014). For instance, there were 121 fatal incidents out of 5926 food poisoning victims reported in 2015 alone (Chinanews, 2016).

The vignettes described here reflect long-term and ongoing food safety issues that consumers are experiencing. The fact is that Chinese consumers are suffering from not only various food scandals that happening across all food categories every year (Table 2-3), but also the generally poor safety conditions for food products for decades. Gradually, food safety issues have become a pattern that is significantly influencing consumers. That is to say Chinese consumers have to live with food safety issues in their daily lives on an ongoing basis. Even worse, some China's food safety regulations are overlapped in terms of several government entities and responsibilities (Calvin et al., 2006). Consumers, as the final link of the whole food product chain, are important stakeholders to be involved in dealing with food safety (Knight et al., 2007). Food safety issues are at an all-time high within Chinese consumers (Ortega et al., 2011) and many consumers have actively engaged in handling the issues.

On 15th March 2016, Consumer Associations in forty cities of China published a joint survey – the National Food Safety Investigation Report (NFSIR). This survey was carried out over four months and 133,225 consumers participated. When consumers were asked whether or not they have encountered any food safety issues before, a total of 79 percent of consumers expressed that they had indeed encountered some food safety issues, but not too many. However, 15 percent of consumers said that they frequently encounter food safety issues. The remaining 6 percent of consumers claimed that they have not encountered any food safety issues (NFSIR, 2016). This shows that food safety problems are common in consumers' daily life, as 94 percent of Chinese consumers have experienced food safety

issues. The survey also highlights the fact that consumers have diversified experiences when faced with food safety issues, which may result in different coping behaviours.

According to the Global Attitudes survey conducted by Pew Research Centre, 21 percent of Chinese consumers regard food safety as one of the top concerns in 2015, which has tripled since 2008 (Wike and Parker, 2015). However, Chinese consumers hold mixed attitudes towards the future food condition. Forty-seven percent of consumers believe food safety problems will stay the same or get worse over the next five years, while 42 percent think that the situation will get better (Wike and Parker, 2015).

Living with poor condition of food safety, Chinese consumers have been through many problems. Zhou et al. (2004) point out that consumers are mostly concerned about a lack of 'date of production' being stated on products. Furthermore, Chinese consumers also have to put up with pesticides, chemical residues and pathogenic microorganisms. These chemical and biological concerns exist due to exceeded amount of chemicals adopted to boost the production over years (Ashton et al., 1984; Chen, 2007). Moreover, food additives, food adulteration and expired food products also emerge as key problems that consumers have to live with. Food producers intentionally put food additives, or produce adulterated food products, or sell expired food products in order to maximise their profits (Bai et al., 2007). Lastly, consumers may also suffer from misleading and unreal labelling or advertisements, false labelling of transgenic food, as well as poor hygiene condition of the food producing environment (Zhou et al., 2004).

These existing problems in the Chinese food market not only disrupt market order, but also have a negative effect on consumers physically and psychologically. Physically, food safety problems cause sickness or even death, for example, a number of victims who are poisoned by consuming food are sent to hospitals every year (see Table 2-4). It has been argued that when consumers choose foods, they are more influenced by the psychological interpretation of food products properties, rather than by the products' physical properties (Yeung and Morris, 2001). Yeung and Morris (2001) highlight that this is also true regarding the food choice and food safety risks. Therefore, psychological interpretation of food safety issues plays a vital role in purchasing food products. In line with the Global Attitudes survey (2015), regarding consumer attitudes towards overall situation of food safety in China, a total of 51.25 percent of consumers thought that there are too many problems and that they are very worried (NFSIR, 2016). This result is consistent with the consumer survey conducted by McKinsey & Company, showing that 72 percent of Chinese consumers worry about foods they eat (Zipser et al., 2016). These two surveys reveal that

consumers are in a very stressful consumption situation as they have to constantly think about whether food products they purchase and consume are safe or not. Moreover, perception of too many food safety problems would lead to more psychological distress (Mathur et al., 2006), while consumers have also expressed negative emotions in this situation. Notably, only the emotion of worry has been stated in these two surveys, while other emotions such as disappointment, anger and fear that consumers may experience have not been documented and examined in the extant literature, which need to be explored.

Indeed, Chinese consumers have taken actions to deal with the long-term problematic food safety problems. According to the NSFI report (2016), for those who have already bought problematic food products, the majority of consumers (56.7%) would choose to ask for a change or compensation from the retailer; a relatively large portion (19.91%) of consumers will not do anything but remain silent and regard it as a bad luck. Others (17.81%) will report to government entities or consumer associations, only 4.29 percent of them will contact the producer directly. The rest (1.26%) will report to media and expose the issue (NFSIR, 2016). This shows that most of consumers would make some efforts when encountering food safety issues. Zhou and Zhuo (2010) have proposed a list of possible actions that Chinese consumers may take to handle the issues. Top three actions are searching for information via websites, newspaper and TV; choosing trusted brands; and asking for help from the retailer for more information when selecting food products. It is clear that when facing problems of food safety, Chinese consumers may try to find some solutions to handle the situation. However, there is no research so far that provides a solid theoretical foundation for investigating consumer psychological states and actions when facing long-term and ongoing food safety problems. It is important to examine the issues because this may advance our knowledge on consumer regarding their psychological states and corresponding behaviours which contribute to the literature of consumer psychology and behaviour.

Drawn upon the literature and surveys discussed above, Chinese consumers are living constantly with food safety problems. When facing these problems, they may try to tackle the difficulties and handle the situation, as the problematic situation causes harm to their health psychologically and physically. However, very few studies have examined consumers' psychological states and the actions they have taken, which will be discussed in the next section.

2.6 Previous Research on Food Safety

This section discusses the literature on food safety. Sub-section 2.6.1 provides an overview of previous research on food safety in order to clarify what has been done in the field; while sub-section 2.6.2 focuses on food safety from the perspective of the consumer, highlighting the need for further research.

2.6.1 Overview of Previous Research

Based on the aforementioned discussion in this chapter, food safety issues have emerged as one of the most serious problems for decades. It has also drawn much attention from researchers since the 1990s (Yan, 2012). The research that has been done on food safety can be divided into several broad categories: control systems, law and regulation, food scandals, social risk, biotechnology, as well as consumer perceptions and demands.

Study on food control systems has examined the application of traceability (e.g., Zhou and Geng, 2002; Xu and Wu, 2010), food safety assessments (e.g., Li and Yan, 2011; Jia and Jukes, 2013), supply chains (e.g., Roth et al., 2008), pre-warning systems (Tang and Gou, 2005) and quality standards (e.g., Chen et al., 2008; Jin and Zhou, 2011). Food law and regulation studies have examined law enforcement and development (Ni and Zeng, 2009; Broughton and Walker, 2010; Ortega et al., 2011), institution and performance (Li, 2005; Liu, 2010) and assurance systems (Bai et al., 2007). Food scandal studies have examined the problem of individual food scandals (e.g., Pei et al., 2011; Qiao et al., 2012), food pollution and poisoning in general (e.g., Khan et al., 2008; Zhuang et al., 2009; Li et al., 2014), as well as on specific food products such as rice (Zhang et al., 2005), beef (Brown et al., 2002), milk (Wang et al., 2008), fishery products (Wang et al., 2009), oil (Lu and Wu, 2014), fruit (Huang et al., 2008) and vegetables (e.g., Zhou and Jin, 2009; Zhou et al., 2011). Social risk studies consist of researchers such as Yan (2012), Zhang et al. (2015) and Lu et al. (2015) who have highlighted risks brought by food safety issues from social and health perspectives. Studies on biotechnology have investigated the issues such as transgenic plants (e.g., Shelton et al., 2002), genetically modified food products (e.g., Kuiper et al., 2001) and their implications (e.g., Ho et al., 2006).

The studies outlined above take on a broader perspective; therefore, a detailed discussion will not be provided here as these studies are not examining food safety issues from the perspective of the consumer.

China's food supply chain is highly fragmented (Yan, 2012), consisting of millions of farmers, producers, processors, traders and retailers. A large proportion of them operate

without legal licences, hygiene certificates or proper supervision and cause huge problems and challenges to the implementation of food control and monitoring systems (Ortega et al., 2011). Although China has attempted to tackle this complex problem in the past few decades and research has broadened our understanding of food safety issues, the studies on food safety issues from consumers' perspective are only limited in few aspects and in its infant stage (Brown et al., 2002; Wang et al., 2008). In the next section, the extant research on food safety issues from consumers' perspective will be discussed.

2.6.2 Consumer and Food Safety

Table 2-6 aims to provide a list of key works published in the past two decades that focus on the consumer, in order to articulate issues that have been covered in the context of food safety. It can be argued that this list of past studies in Table 2-6 is comprehensive enough to draw a full picture of what has been examined in relation to consumer and food safety. The adopted research methods and research findings are provided as well.

Table 2-6 Consumer and Food Safety Studies (Summarised by the author)

Authors	Year	Title	Method	Sample	Finding	Journal
<u>Consumer Perception</u>						
Rimal, Fletcher, McWatters, Misra, and Deodhar	2001	Perception of food safety and changes in food consumption habits: a consumer analysis	Survey	236 consumers	Concerns over food will be reduced by educating of preventive methods and food consumption habits might change subsequently	International Journal of Consumer Studies
Yeung and Morris	2001	Food safety risk Consumer perception and purchase behaviour	Conceptual paper	n/a	Factors that influence consumer perception over food safety risk are identified and reviewed by a proposed conceptual framework, indicating a potential influence on purchasing behaviour	British Food Journal
Redmond and Griffith	2004	Consumer perceptions of food safety risk, control and responsibility	Telephone interview	100 consumers	Consumers expressed their judgements of 'optimistic bias', 'illusion of control' and perceived invulnerability to food poisoning in terms of self-prepared food	Appetite
Röhr,	2005	Food quality and	Survey	449	Perceived quality of food is	Food control

Lüddecke, Drusch, Müller and Alvensleben		safety—consumer perception and public health concern		consumers	improved; decreased feeling of uncertainty is acknowledged; the level of credibility of food manufacturers is still low from 1997 to 2002	
Grunert	2005	Food quality and safety: consumer perception and demand	Conceptual paper	n/a	In the context of consumer risk perception, the relationship between food quality and safety is discussed	European Review of Agricultural Economics
Knight, Worosz, Todd	2007	Serving food safety: consumer perceptions of food safety at restaurants	Telephone interview	1014 consumers	Most consumers believe that restaurants are doing good regarding food safety, while comparing to other actors such as farmer, food processor, food manufacturer, grocery store and supermarket, restaurant performs less well	International Journal of Contemporary Hospitality Management
Radam, Abu and Yacub	2011	Consumers' Perceptions and Attitudes Towards Safety Beef Consumption	Survey	243 consumers	The demand and consumption of beef is still high in Malaysia, despite the food scandals in the country recently	IUP Journal of Marketing Management
Chen, Lobo and Rajendran	2014	Drivers of organic food purchase intentions in mainland China – evaluating potential customers' attitudes, demographics and segmentation	Survey Focus Group	935 consumers	Demographic characteristics such as gender, age and educational level had no significant relationship in influencing the purchase intentions. However, income, attitudes and pre-purchase intentions are weak to moderate significant correlations with purchase intentions of organic food. Meanwhile, gender moderated the relationship between attitudes and purchase intentions	International Journal of Consumer Studies
Franklyn and Badrie	2015	Vendor Hygienic Practices and Consumer Perception	Observation /Survey	50 vendors /150	74 out of 150 consumers indicated that they had been affected by foodborne illness, of which more than half	International Journal of Consumer

		of Food Safety during the Carnival festival on the island of Tobago, West Indies		consumers	sought medical help (56.8%) and only 17.6% consumers lodged reports on foodborne illness with the local health authority	Studies
<u>Consumer Attitudes and Knowledge</u>						
Bruhn and Schutz	1999	Consumer food safety knowledge and practices	Survey	605 consumers	Consumers were aware of appropriate methods in selecting and cooking specific food, however, while handling leftovers and in temperature control, mistakes were noticed	Journal of Food Safety
Wilcock, Pun, Khanona and Aung	2004	Consumer attitudes, knowledge and behaviour: a review of food safety issue	Literature Review	n/a	Behaviours may not be led by different attitudes towards the safety of consumed food	Trends in Food Science & Technology
Patil, Cates and Morales	2005	Consumer Food Safety Knowledge, Practices and Demographic Differences: Findings from a Meta-Analysis	Meta-Analysis	20 studies	The percentage of consumers who engaged in risk behaviour has been estimated according to their demographic categories, such as raw food consumption, poor hygiene condition and cross-contamination	Journal of Food Protection
Chen	2011	Consumer's trust-in-food-safety typology in Taiwan: Food-related lifestyle matters	Survey	592 consumers	As a food trust typology, consumers' lifestyles regarding food consumption are the same, including consumer attitude toward advertising, consumption situation and environment, shopping experience and interest of cooking	Health, Risk & Society
<u>Consumer Confidence and Practice</u>						
Baker	1999	Consumer Preferences for Food Safety Attributes in Fresh Apples: Market Segments, Consumer	Survey	510 consumers	Consumers prefer reduced pesticide usage of food products. Consumers are different in terms of their demographic and psychographic characteristics in four identified market	Journal of Agricultural and Resource Economics

		Characteristics and Marketing Opportunities			segments	
Redmond and Griffith	2003	Consumer Food Handling in the Home: A Review of Food Safety Studies	Literature Review	n/a	Improved food handling methods may reduce the risk of foodborne disease	Journal of Food Protection
de Jonge, Frewer, van Trijp, Renes, de Wit and Timmers	2004	Monitoring consumer confidence in food safety: an exploratory study	Survey	500 consumers	A monitor is development to enable changes in confidence of consumer regarding food safety, while food selection behaviour was assessed with changes in individual food scandals and institutional activities	British Food Journal
de Jonge, van Trijp, Renes and Frewer	2007	Understanding Consumer Confidence in the Safety of Food: Its Two-Dimensional Structure and Determinants	Survey	657 consumers	Consumer confidence in the safety of food can be enhanced by improving both consumer trust in societal actors and perceived safety of specific product categories	Risk analysis
Kornelis, de Jonge, Frewer and Dagevos	2007	Consumer Selection of Food-Safety Information Sources	Survey	2104 consumers	Multiple information-acquisition patterns exist among the general public.	Risk analysis
Kinsey, Harrison, Degeneffe, Ferreira and Shiratori	2009	Index of consumer confidence in the safety of the United States food system	Survey	175 consumers	It is noted that food safety scandals and media coverage have significant impact and negative association with consumer confidence	American Journal of Agricultural Economics
Ortega, Wang, Wu and Olynk	2011	Modelling Heterogeneity in Consumer Preferences for Select Food Safety Attributes in China	Choice experiment/ Survey	6720 consumers	In sequence, Chinese consumers are willing to pay extra money to government certification, traceability system, third party certification and product information label	Food Policy
Wertheim-Heck, Vellema,	2014	Constrained consumer practices and food safety	Survey /Interviews	1404 consumers /21	Vegetable shopping activity is enjoyed by some as social interaction with local	International Journal of Consumer

and Spaargaren		concerns in Hanoi		consumers	community, while others think it is time consuming that overlaps with other activities in daily life	Studies
<u>Consumer Reactions and Responses</u>						
Loureiro and Umberger	2007	A choice experiment model for beef: What US consumer responses tell us about relative preferences for food safety, country-of-origin labelling and traceability	Choice experiment/ Survey	632 consumers	Evident is provided if the source of origin is linked to high quality and safety of foods, indication of origin may become a sign of reinforced quality	Food policy
Wang, Mao and Gale	2008	Chinese consumer demand for food safety attributes in milk products	Survey	569 consumers	Demand for food safety is emerging as an attribute demanded by Chinese consumers.	Food policy
Dillaway, Messer, Bernard, and Kaiser	2011	Do Consumer Responses to Media Food Safety Information Last?	Experimental	110 consumers	Consumers are willing to pay for both positive and negative food safety information on safer chicken, comparing to less-safe leading brand chicken that is reported	Applied Economic Perspectives and Policy
Niewczas	2014	Consumers' reactions to food scares	Survey	712 consumers	The main sources of information consumers prefer are television (85.4%) and the Internet (61.4). Further, consumers' first reaction when food hazard happens is to check whether they have bought the product, 30% of them declare that they will not buy this specific product again	International Journal of Consumer Studies
De Vocht, Cauberghe, Uyttendaele and Sas	2015	Affective and cognitive reactions towards emerging food safety risks in Europe	Survey	864 consumers	Both affective and cognitive reactions, as well as their predictive impact, differ significantly amongst the countries	Journal of Risk Research

The majority of consumer food safety studies in the 1990s have been conducted in the United Kingdom (48%) and in the United States (42%) (Redmond and Griffith, 2003). These studies tend to be specific in how consumers handle their foods. For example, Bruhn and Schutz (1999) have described how consumers are well informed about the right ways to select and handle food, but mistakes are reported in controlling the temperature and handling leftovers. Similarly, Baker (1999) has found that consumers prefer food products with fewer pesticides and four types of consumers are identified according to their food safety characteristics. These studies have clearly acquired some insights of consumers in dealing with foods, but do not identify factors that influence and drive their decisions and behaviours.

Drawn from Table 2-6 it is clear that research has intensively investigated consumer perceptions of food safety issues across countries, as represented by one third of studies in the table. Rimal et al. (2001) identify and compare seven food safety concerns with changes in food consumption habits in the United States, suggesting that consumers will have reduced food safety concerns if educated with preventive methods. In line with that, Redmond and Griffith (2004) examine consumer perception of food safety risk, control and responsibility, addressing its potential impact on consumer education initiatives. Differently, Knight et al. (2007) highlight their findings in the context of eating at restaurants, arguing that consumers generally are satisfied with safety conditions in restaurants, while more efforts should be made if the safety condition is compared with other stakeholders such as farmers, food processors, manufacturers, grocery stores, as well as supermarkets. Most recently, research has focused on consumer perception of food safety during festivals with a substantial number of street vendors, highlighting that consumers are aware of the poor hygiene situation and under-educated street vendors handle food without good personal hygiene practice (Franklyn and Badrie, 2015). Based on these studies, consumer perception from various aspects is examined. However, there is no attempt to dig deeper in respect to consumer psychological states. In other words, we have knowledge that consumers are aware of food safety issues and several factors influencing consumer perception are identified, but we know nothing about how consumers actually feel, especially when they are experiencing the long term problematic situation of food.

Another main group of consumer studies in food safety is about consumer attitude and knowledge. Researchers have been trying to analyse consumer attitude and knowledge in various situations. However, these studies are exclusively focusing on individual food scandals such as melamine in milk powder (Xiu and Klein, 2010) and red dye Sudan I in

chicken products (Qiao et al., 2012). Taking the red dye scandal as an example, in 2005 in China, two chicken products in KFC were found to contain an industrial used colourant – Sudan I. The colourant were used in New Orleans chicken wings and chicken hamburgers to beautify the products. Sudan I is permitted for textile products but not as a food additive in China (Qiao et al., 2012) which could cause carcinogenic and genotoxic effects on the human body (An et al., 2007). This scandal has aroused widespread distress and anxiety among Chinese consumers as KFC is one of the most well-known fast food chains (Qiao et al., 2012). Consumer attitudes toward this food scandal are clear and reflect in their choice to avoid those two chicken products, while some consumers even chose to not have any food in KFC all together (Wang, 2011).

In the past twenty years exposed scandals have seriously influenced consumers in terms of perceptions, attitudes and knowledge. Scandals have become a pattern and embedded in consumers' daily life (Wu and Chen, 2013). Long-term food safety issues as a serious social issue and health threat, or an external demand, may have a significant impact on consumers in terms of their psychological states and behaviours. Therefore, it is important to explore the long-term effect of food safety issues from consumers' perspective.

Furthermore, researchers also show great interests in the studies of consumer confidence and practice. First, the study of consumer confidence has been done in many countries (e.g., de Jonge et al., 2004). Consumer confidence in food safety mainly focuses on monitoring changes in confidence (de Jonge et al., 2004), ways to enhance confidence (de Jonge et al., 2007) and factors that influence consumer confidence (Kinsey et al., 2009). These studies provide a good understanding of consumer confidence, however, they fail to further articulate whether consumer confidence would have any impact on consumer behaviour. Specifically, Chinese consumers who are directly influenced by scandals and poor food safety condition, currently have very low confidence in food safety (Zhang, 2005). Over 77 percent of respondents ranked food safety as the top concern among others in an opinion poll (China Daily, 2015), which is consistent with another poll investigated in 2008 (Wang et al., 2008). According to a China Consumer Report by Mckinsey & Company (Zipser et al., 2016), a total of 72 percent of consumers worry that the food they eat may be harmful to their health. Food safety issues have been a regular issue in consumers' daily life for decades (Wu and Chen, 2013), rather than influenced by occasional scandals (Liu et al., 2013). Long-term usage of pesticides, fertilizers and other farm chemicals to boost the production has worsened the situation.

Second, regarding the studies of food practice, researchers have focused on two

perspectives: improving and proposing proper methods to handle food (e.g., Redmond and Griffith, 2003; Franklyn and Badrie, 2015) and selecting information sources (Kornelis et al., 2007). It can be concluded from these studies that food safety risks especially foodborne diseases will be reduced with proper food handling methods. These studies provide insights of consumer food handling and related behaviours, but are only limited to hygienic problems.

Lastly, the studies on consumer reaction and response to food safety have documented the actions that are taken by consumers to deal with food safety issues. For example, Niewczas (2014) found that when consumers are informed about food scandals their first reaction is to check whether or not they have bought the product and secondly refuse to purchase the same product again. This study is one of the very rare direct investigations on consumer real reaction and response to food scandals. In line with this research, De Vocht et al. (2015) further elaborate consumers' affective and cognitive reactions towards risk messages. It is found that cognitive reactions such as alerting loved ones, trying to avert the risk and seeking information have a higher predictive impact on consumer behavioural intentions. Their study identified more consumer reactions and responses to food safety scandals and risk messages and reported that consumers from different countries react differently (De Vocht et al., 2015). However, studies conducted so far only tend to describe what consumers actually do in their country to reduce the risk of food hazard. They are not examining consumer reactions with a solid theoretical foundation. Specifically, as health threats and social problems, food safety issues may be a potential cause of distress and emotions. The ways in which consumers manage, regulate and act on the issues and on the elicited stress and emotions have been included within the construct of coping (Compas et al., 2001). Investigation of food safety issues, psychological states and coping has been overlooked, which may advance our understanding of consumers, since the food industry has become more consumer-oriented (Aung and Chang, 2014). Hence, theories of coping might be applied to the context to explain consumer behaviours.

This section has reviewed literature regarding food safety issues from the perspective of the consumer. It has shown that the extant literature has shed light on food safety and consumers, but not from the specific angle that this study aims to explore. The context of China has highlighted the specific aspects of long-term and ongoing food safety issues which may not be readily picked up in other country contexts. Research problems identified from the extant literature will be discussed in the next section.

2.7 Identified Research Problem in Consumer and Food Safety

Overall, the extant literature on consumers in relation to food safety issues primarily focuses on the examination of consumer perception, attitude, knowledge, attributes, practice, confidence and reactions. Nevertheless, some important factors regarding food safety are overlooked.

First, as noted in the previous sections, the existing research has shed light on food safety incidents and hazards from a consumer perspective (e.g., Halliday et al., 1991; Wu et al., 2009). Specifically, food safety in China is a complex situation, consisting of a series of food scandals and the long-term condition of unsafe food, which has significantly influenced consumers for decades (e.g., Liu et al., 2013). However, the extant literature has paid inadequate attention to consumers in dealing with long-term and ongoing food safety issues, as well as their persistent responses to these issues. Food safety issues in China are chronic and therefore, stronger in causing the psychological distress compared to individual life events (e.g., Norris and Uhl, 1993; Mathur et al., 2006). In other words, the well-being of consumers might be influenced in a more serious psychological and physical way over time. The long-term nature of food safety issues calls for proper attention and research. Hence, investigation from a long-term and ongoing perspective of food safety and the consumer is necessary.

Second, consumers frequently experience negative emotions in consumption episodes (Yi and Baumgartner, 2004). However, no existing research has examined specific emotions in such contexts. Drawing upon the opinion polls, Chinese consumers are extremely worried about food safety issues and its impact on their well-being (Li, 2008; Yan, 2012; Zipser et al., 2016). The existing works have looked at some psychological aspects of consumers, such as consumer attitude, perception and confidence. However, no work exploring and examining consumer psychological states to food safety exists. Questions such as “How do consumers feel facing an unsafe food situation in the long-term?” and “Do long-term food safety issues arouse any stress-related feelings?” remain unanswered. It is essential to uncover consumers’ psychological states in experiencing and dealing with food safety issues in a long period of time in order to get a deeper understanding of how corresponding behaviours result from the psychological states when faced with an ongoing problematic consumption situation. By understanding how consumers feel and what they care about in their daily food consumption, food companies may achieve a better understanding of consumers’ particular purchase and post-purchase behaviours.

Third, consumers develop corresponding behaviours in response to long-term and ongoing food safety issues. The reason consumers make efforts (examples see Section 2.5) in their daily life to deal with the issues is that food safety issues might have a great impact on their health (Röhr et al., 2005). However, extant studies have not shed light on the specific angle of the long-term and ongoing nature of food safety issues as related to the consumer perspective. As stated, consumers' efforts and actions in managing food safety issues, as well as to regulate emotions elicited, are within the construct of coping (Compas et al., 2001). Therefore, coping theories might be applied to explain consumer behaviours and to explore and examine consumer reactions in dealing with chronic food safety issues in China. A detailed discussion regarding this will be provided in Chapter 3.

As noted in the previous sections, most studies that have been done in consumer food safety research focus consumers in Western countries, such as the UK and US (e.g., Redmond and Griffith, 2003). However, these countries have established higher food safety standards and control systems to guarantee the quality of food products. In contrast, China is changing dramatically both socially and economically. Consumers' lifestyles and diet habits have been changed as well with increasing income (Ortega et al., 2011). Thus, they shifted their attention from having enough food to having safe and good-quality food (Lam et al., 2013). For decades, China has incorporated farm chemicals and fertilisers to boost production in order to produce enough food (Yan, 2012). In addition, various types of food hazards and scandals are exposed every year across the country. The complexity of food safety problems, the deficiencies in government policies (Zhang et al., 2015) and 1.3 billion Chinese consumers together generate the exasperated situation of food safety over the long period of time. In light of these points, China is chosen as the research context for the current study. The Chinese food situation enables this research to capture consumers' psychological states and behaviours to more deeply understand consumer behaviours in relation to food safety issues. Therefore, this research involved efforts to extend our knowledge and address the consumer's perspective.

Lastly, there is a variety of categories of food products that have been exposed with safety problems. For example, cooking oil (e.g., Hunter, 1968; Woffinden, 2001), fresh milk and processed milk products (e.g., Gossner et al., 2009; Crowford et al., 2010), wine (e.g., Schanche, 1986), honey (Health Canada, 2013) and meat such as beef (Jagadeesan and Premanandh, 2013). Due to the diversity of food consumption habits such as vegetarian food, halal food, Hindu food, Kosher food, Gluten-free food, consumers might have different reactions toward different food safety problems. In order to provide a clear

behavioural focus for the current research, the food category of vegetable is chosen. There are two reasons: 1) Vegetables are consumed by most consumers; 2) based on three food safety concerns identified in the Chinese food market in Section 2.3, problems occurring with vegetables should be representative of all food safety concerns, namely food hygiene, unsafe food and food poisoning. For example, unhygienic handling of vegetables may cause food hygiene problems (e.g., Zhou et al., 2011); using farm fertilizers and chemicals heavily over a long period of time may cause unsafe food problems; and vegetables such as mushroom may cause food poisoning problems.

2.8 Summary

This chapter has outlined an overall situation of food safety both globally and specifically in China. Generally, food safety has now become a global problem and continues to shape not only the economic development, social stability, government and national images (Ortega et al., 2011), but also the people's lives and wellbeing (Röhr et al., 2005). In the context of China, consumers have shifted their attentions from food security to food safety in recent years (Lam et al., 2013) with rapid economic growth and more money at hand (Zhang et al., 2015). It is evidenced that consumers are suffering from a series of food scandals every year, as well as the long-term situation of unsafe food per se. Therefore, it has become a concern to all consumers. Even though efforts have been made to change the situation by national and local governments, the deficiencies in relevant government policies and insufficient resourcing have been denounced (Zhang et al., 2015). This further contributes to the complexity of food safety problems in China, together with the large market scale and over 1.3 billion consumers.

Previous research of food safety can be summarised into several categories: control systems, laws and regulations, individual food scandals, social risk, biotechnology and consumer perception and demand. Study from the perspective of the consumer has received increasing attention over recent years, both in developed and developing countries. Generally, previous studies of food safety from consumers' perspective have examined consumer perception, attitude, confidence and reaction, but have not shed light on examining these issues from the specific angle. The overlooked aspects of food safety and consumer research are threefold. First, previous research has neglected the fact that Chinese consumers are experiencing food safety issues in the long-term rather than isolated scandals. It has been argued that long-term life strain is stronger in causing the psychological distress and has negative impacts on individual health (Mathur et al., 2006). Thus, it is important to examine this issue from the long-term and ongoing point of view.

Second, there is no attempt in previous research to uncover how consumers actually feel about the problematic situation in such a long period of time. Investigations on consumer psychological states help us understand Chinese consumers better. Third, little has been done to examine the consumer reactions to long-term and ongoing food safety issues. Although some attempts have been made from the perspective of the consumer (e.g., Niewczas, 2014; De Voche et al., 2015), there is still untapped potential for identifying and assessing consumer reactions to long-term and ongoing food safety issues.

Following the research problems identified in the study of food safety from the perspective of the consumer, the next chapter will review the literature in relation to consumer psychological states and coping, which is consistent with Lazarus (1999), claimed that “we should view stress, emotion and coping as existing in a part-whole relationship”. At the end of the next chapter, a clarification of the research aim and objectives will be provided, based on the research problems identified in two bodies of literature, namely food safety studies and stress/emotion and coping studies.

Chapter 3 Stress, Emotions and Coping

3.1 Introduction

In the last chapter the overall context of this research has been outlined. Moreover, the research problem in the literature on food safety from consumers' perspective has also been identified through a comprehensive literature review on food safety issues. It is clear that consumers are greatly influenced by long-term and ongoing food safety issues physically and psychologically.

Considering that long-term and ongoing food safety issues may be the source of and have an impact on consumer stress and emotions, this research involves conducting a literature review on stress and emotions, specifically from the perspective of the consumer. Efforts to act on the stressors (i.e., long-term and ongoing food safety issues) include strategies for managing and altering the stressful relationship between the individual and the environment; comparatively, efforts to act on the induced emotional states (i.e., stress and emotions) include strategies for emotional regulation, which may avoid and reframe the stressors (Compas, 1987). Theory holds that 'stressors motivate efforts to cope with behavioural demands and with the emotional reactions that are evoked by them' (Lazarus and Folkman, 1984). Therefore, theories of consumer psychology and behaviour in relation to dealing with long-term and ongoing food safety issues provide a meaningful lens for achieving a deeper understanding of the consumer. Moreover, managing the stressors and regulating the elicited emotional states are part of the coping conceptualisation (Compas et al., 2001). Thus, stress, emotion and coping should be viewed as a part-whole relationship. A literature review on coping will be conducted to understand consumers' responses to the chronic stressors and emotional states. These three elements: stress, emotions and coping are discussed in the sections below.

The structure and main content of Chapter 3 are as follows: Section 3.2 provides an extensive overview of stress and outlines the concept, theories, definitions of stress and the chronic stressor. Section 3.3 discusses emotions in the literature and highlights studies on cognitive appraisal. Section 3.4 reviews the coping literature from the perspective of coping in general, critique of coping and coping structures. Based on the reviewed literature, theoretical research problems in stress, emotions and coping are identified in Section 3.5. Section 3.6 highlights the aim of the current research that is to conceptualise consumer long-term and ongoing coping strategies, as well as to achieve an in-depth

understanding of factors that predict and influence coping behaviours. Section 3.7 presents the scope of this study. Last, Section 3.8 concludes the key points with a short summary.

3.2 Stress

This section discusses the research on stress and its linkage to present research problems. In the context of the current research, consumers are going through a very stressful consumption situation – long-term and ongoing food safety issues, playing on their minds whether foods they buy are safe or not. Consumers are significantly influenced by this problematic situation for a long period of time. As discussed in the last chapter, it has been argued that chronic stressors are stronger in predicting psychological distress and have a negative influence on individual wellbeing (Mathur et al., 2006). However, when faced with the ongoing stressor in a substantial period of time, consumers may no longer experience stress due to the adaptive coping efforts they make. The existence of stressors, thereby, does not necessarily entail stress or, at least, the perceived stress. Both possible conditions of stress will be discussed in this section. Overall, this section provides a comprehensive review on the literature on stress in order to understand the role of stress in consumer research and in the current research context.

3.2.1 Previous Research on Stress

This section is divided into four sub-sections, illustrating the concept, theories, definitions and research in marketing and consumer behaviour that is specific to stress.

3.2.1.1 Concept of Stress

Stress can be seen as “a stimulus, a response, or a combination of both” (Moschis, 2007). From the stimulus point of view, external situations such as an accident or loss of job unwillingly are stressful. This view assumes that changes in life-event experiences elicit the stress and changes are presumably harmful which require readjustment in individual’s life (Pearlin, 1989). The relationships between changes and disorder in life have been investigated in more than a thousand studies based on the researchers’ evaluation of whether the stimulus is stressful or not (Monroe and Peterman 1988). In contrast, the definitions from the ‘response’ view focus on emotional states, describing the people under stress, interacting with stress, or reacting to the stress (Lazarus and Folkman, 1984). Stress is therefore viewed as a subjective state (George, 1989), which has drawn much attention among scholars due to its comprehensiveness to understand how individuals adapt their behavioural patterns to life changing events (Thoits, 1995; Elder et al., 1996).

Two main themes of stress are also distinguished by researchers from sociology and

psychology: acute and chronic stress. Acute stress is known as “discrete, observable events which are thought to be threatening by representing change” (Wheaton 1990). It refers to people’s experience of the stressful events during the recent past (Tausig 1982; Moschis, 2007). For example, consumers may experience acute stress when the price of certain goods, food for instance, increases dramatically in a short time. Chronic stress, however, is defined as “a continuous and persistent condition in the social environment resulting in a problematic level of demand on the individual’s capacity to perform adequately in social roles” (Wheaton, 1990). Typical examples would be job loss or financial duress. However, the definition given by Wheaton (1990) limits the chronic stress to social roles while neglecting other possibilities that may trigger chronic stress. Specifically, in the context of the current research, consumers are facing long-term and ongoing food safety issues. Food safety issues per se as an external situation stimulates psychological distress (Mathur et al., 2006) and requires individuals to respond to the stress. Thus, stress in the present research is seen as a combination of a stimulus and a response, indicating an interaction process and can be defined as *“a relationship with the environment that the person appraises as significant for his or her wellbeing and in which the demands tax or exceed available coping resources”* (Lazarus and Folkman, 1986; p.63). The working definition of stress in the current research will be elaborated in the Section 3.2.1.3.

3.2.1.2 Theories of Stress

a. *Historical View of Stress*

Early work on stress has focused on the physiological reactions to stressful episodes, for example, the “fight or flight” reaction to stress, first described by Cannon (1932). Later, Selye (1956) extended Cannon’s work by proposing a three-stage General Adaptation Syndrome, which includes an alarm action, resistance and exhaustion. In his work, change is regarded as the underlying mechanism of stress. This idea is further developed to establish scales to measure the degree of life-event changes by later researchers such as Thoits. Thus, Selye is recognised as the father of modern stress research. His work evokes both behavioural and psychological responses (Glanz and Schwartz, 2008).

Another main stream of stress research starts from looking at the potential stressors or stressful life events in an individual’s life (Holmes and Rahe, 1967; Pearlin, 1989). The potential stressor is a situation or an experience that individuals encounter, which is perceived as threatening, harmful, or burdensome (Pearlin, 1989). A substantial body of work has been simulated in identifying and quantifying potential stressors (Dohrenwend and Dohrenwend, 1981), inspired by the “Social Readjustment Rating Scale” (SRRS)

which is one of the earliest scales for identifying major stressful life events, developed by Holmes and Rahe (1967).

During the 1960s and 1970s, the focus has been shifted to the meaning of the stimulus to perceivers (Lazarus, 1966) while stress is regarded as a transactional phenomenon (Antonovsky, 1979). Different people would have different perceptions of a given situation or event, which is considered as the main determinant of effects on behaviours and leading to studies on moderating factors, possible buffering, as well as the role of social support (Cohen and Wills, 1985). For example, in the field of occupational stress, stress is elicited from the interactions between the external work environment and the internal individual characteristics of workers. This is often referred to as the person-environment fit (House, 1974).

b. Transactional View of Stress

The work of Lazarus and Folkman (1984) has been recognised as the most contemporary view of stress (Carver and Vargas, 2011). The transactional model of stress and coping developed by them is to evaluate the process of coping with stressful events/situations (Figure 3-1). Stressful experiences, or stressors, are viewed as person-environment transactions (Lazarus and Cohen, 1977). In turn, these transactions are influenced by the external stressors. Specifically in the present study, the transactions can be seen as the interactions between consumers and long-term and ongoing food safety issues.

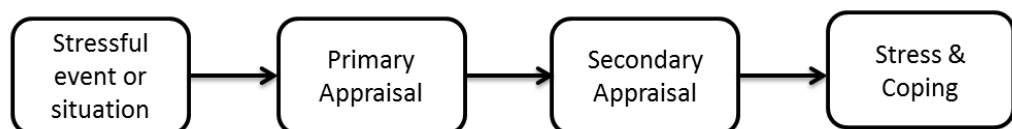


Figure 3-1 The Transactional Model of Stress and Coping (Lazarus and Folkman, 1984)

The model assumes that stress exists when the situation has gone above the ability of individuals to manage after primary and secondary appraisals of the situation (Carver and Vargas, 2011). Specifically, when faced with the stressor, an individual evaluates the potential harm, threat, or challenge of the situation, which is known as the primary appraisal. Primary appraisal is an individual's judgement of whether or not an event or a situation is stressful, positive, controllable, challenging or irrelevant (Cohen, 1984). When the perceived harm or threat is ambiguous, primary appraisal also acts to minimize the importance (Ditto and Croyle, 1995). For example, breast cancer patients who believe in invulnerability were associated with reduced distress, better perceived control of conditions (Taylor et al., 1992). Other primary appraisal includes the motivational

relevance and causal focus. Individuals are likely to generate situation-specific distress when the stressor is perceived as having a major influence on individual's concerns (Smith and Lazarus, 1993), while individuals' perceived responsibility for the stressor would be more likely to cause depression or guilt (Smith et al., 1993). In the context of the present study, consumers who faced with food safety issues evaluate the potential harm or threat of the situation.

When faced with the stressor, an individual will also assess his/her resources and options for handling the stressor, which is known as the secondary appraisal (Cohen, 1984). The secondary appraisal addresses "what can be done" to alter the stressor from three perspectives: perceived control over outcomes, perceived control over emotions, as well as self-efficacy (Glanz and Schwartz, 2008). For example, if an individual has perceived control over illness, he/she may take suggested health behaviours (Taylor et al., 1992). However, in the extreme case that the situation cannot be altered, perceived control at a high level may raise the risk of distress and dysfunction (Affleck et al., 1987). Considering food safety issues, consumers would assess their resources and their perceived control over the issues. When they have perceived the long-term food safety issues as having gone above their abilities and resources to handle, the stress is generated and coping actions may be activated.

In most cases, the transaction model is presented as a linear (see Figure 3-1). Although linear presentations of the transactional model are common, arguably the interactions between the individuals (consumers) and stressors (food safety issues) do not follow a linear pattern. Instead, the process of appraisal and coping should be seen as a dynamic and continuous evaluation of stressors and own resources to respond (Lazarus and Folkman, 1987). Especially in the secondary appraisal, individuals may evaluate their chances of handling the situation before they actually take actions (Carver and Vargas, 2011). Functionally, two appraisals mutually influence each other as Lazarus and Folkman (1984) indicate that both processes are continuous and interdependent. This means that the appraisal process is not just a one-shot process but continues to interact with the environment and the individuals.

However, during the evaluation of the situation, the level of stress also needs to be seen as dynamic (Pearlin et al., 1981), as the level of stress would be changed accordingly. That is to say, when individuals have employed effective coping actions to deal with the stress, the level of stress should decrease (Lazarus, 2000; Moschis, 2007) and the appraisals of the situation change simultaneously. After the new appraisals, consumers may still have a

relatively high level of stress, or they may not have stress anymore. The investigation on the changes of stress and appraisal are somehow neglected in the current stress research. For example, the level of stress aroused by working overtime may decrease as time flows if the individual has mentally prepared before he or she join the company, or if he or she has gradually adapted to the situation and regards it as normal. In the current context, long-term and ongoing food safety issues interact with the consumers, who may feel stressful after they appraise the problematic situation and their controllability and resources. They may then respond to it with coping actions, which in turn change food safety issues or regulate the induced-stress and have an impact on how food safety issues interact with the consumers again.

It is notable that in the extension of the transactional theory, positive emotions have been taken into consideration (Folkman and Moskowitz, 2000), which means that the stressful situation may give rise to both positive and negative appraisals simultaneously. This is important as previous attention has only been paid to the negative appraisals such as induced stress and negative emotions. The positive appraisal of the stressors may provide a new angle for discussing emotional states. Especially in the context of long-term and ongoing food safety issues, the original idea is that the chronic stressors may predict stronger psychological distress due to the unresolved, complex and continuing difficulties (Mathur et al., 2006). The possible positive appraisal of the enduring problematic situation challenges the argument by addressing that stronger psychological distress is not always the case. Positive emotions may be elicited when faced with chronic stressors. Emotions will be discussed in detail in the Section 3.3.

Overall, drawing upon the transactional model in Figure 3-1, it can be revealed that long-term and ongoing food safety issues are regarded as the chronic stressors. Faced with the stressors, consumers appraise the level of harm or threat of the stressors and their controllability and resources to handle the stressors. If the stressors have been perceived as having gone beyond the abilities of the consumers, stress and emotions are, therefore, elicited. Subsequently, appraised stress and emotions would lead to coping actions. More importantly, the levels of stress in the long-term and ongoing situation are changeable as the whole process is dynamic (Pearlin et al., 1981). Adaptive coping efforts may decrease the level of stress (Lazarus, 2000; Moschis, 2007). Thus, the existence of chronic stressors does not necessarily entail stress. The discussion on changes of stress levels has not been adequately articulated in the extant research.

3.2.1.3 Working Definition of Stress

There is no consensus among researchers on how to conceptualise and study the concept of stress (Moschis, 2007).

A frequently cited definition of stress is that ‘stress is the nonspecific response of the body to any demand’ (Selye, 1956). In his definition, Selye views stress from the response perspective. A popular criticism of his definition is that it is too biological (Fink, 2010). This means that Selye believes stress not only occurs in human and animals, but also in plants and bacteria that have no nervous system. This view apparently overlooks the cognitive and psychological factors, as cognition and psychological states are functions of the brain (Fink, 2010). In addition, this definition is also too general. On the one hand, nonspecific response is difficult to identify specific components of stress and to predict specific outcomes (Murray et al., 1996). Furthermore, applying this definition to other fields of research may become inappropriate. For example, in contemporary psychology, stress is not only a nonspecific response, but could also be a stimulus (Pearlin, 1989), loss of spouse, for example.

From the stimulus perspective, stress is defined as the sense generated when any environmental or social demand requires individuals to readjust their usual behavioural patterns (Holmes and Rahe, 1967). This definition focuses on the environmental or external conditions, which may give rise to stress as they may change. The underlying assumption of this definition is that all changes are potentially harmful (Pearlin, 1989), causing physiological and psychological strains that lead to health problems. The limitation of this definition is that its focus is restricted to environmental or external demands and overlooks the influence of internal demands such as the personality of pessimistic. This definition also overlooks psychological re-adjustment as it addresses the behavioural patterns only.

As discussed above, there are two groups of conceptual definition of stress: as a cause and result (Jones, 2001). This separation is in line with the previous discussion that stress can be seen as “a stimulus, a response, or a combination of both” (Moschis, 2007). When stress is a cause, it is viewed from the stimulus perspective; when stress is a result, it is regarded as a response.

Given these differences, to study long-term food safety issues, it is necessary to have an inclusive working definition of the concept of stress, reflecting the association of stress with consumers in such a context. Consequently, from all the definitions discussed above,

the definition given by Lazarus and Folkman (1986) is favoured due to its inclusiveness and consistency with the transactional view. They define stress as an emotional state that the demands in an individual's environment have gone beyond one's ability to cope with (Lazarus and Folkman, 1986). This definition captures the subjective state of stress, reflecting that individuals are under stress and reacting with stress. Another key character of this definition is that they view stress as an interaction process, which provides a new approach (other than a stimulus and a response) to understand the phenomenon.

The current research is in line with the view taken by Lazarus and Folkman (1986), where stress is a transactional process between the persons (consumer) and environments (food safety issues). Therefore, a working definition of stress based on the Lazarus and Folkman's (1986, p.63) definition is proposed for this research:

“Psychological stress refers to a relationship with the environment that the person appraises as significant for his or her wellbeing and in which the demands tax or exceed available coping resources”

This definition is in line with the transactional view of stress (Lazarus and Folkman, 1984), addressing the dynamic transactional relationship between the consumers and long-term and ongoing food safety issues. This definition also reflects that stress should be considered as a subset of a larger topic, the emotions, because stress is an emotional state. When faced with food safety issues, knowing that consumers experience emotions such as worry and disappointment tells us more than only knowing that they are stressed (Lazarus, 1993), because they may have different ways of adaptation to the environment and different corresponding behaviours to the stressors. Therefore, emotions are valid and important in discussing consumers' psychological states when faced with the chronic stressors in the current research (see Section 3.3 for the review on emotions).

3.2.1.4 Stress in Marketing and Consumer Behaviour

Research on stress in the field of marketing and consumer behaviour has not been sufficiently examined (Hutton, 2015). However, increased attention has been paid in the field of social and behavioural sciences (Moschis, 2007). Table 3-1 summarises a limited number of stress studies in the field of marketing and consumer behaviour. Researchers have examined the effects of stress on consumer decision making. For example andreasen (1984) has found that the level of satisfaction on brand choices will be decreased with experienced stress. Similarly, research conducted by Mathur et al. (2006) and Lee et al. (2007) have addressed correlations between consumption activities and stress, as well as

consumption coping behaviour and stress. Their study advances our understanding by examining stress and the consumer through a newly developed conceptual model, suggesting that the concept of stress is a viable construct in consumer studies. They also assess a specific context that people change their consumption behaviours to cope with stress aroused by unexpected life changes (Lee et al., 2001). It is argued that stress may be aroused at any stage of purchase decision-making (Mick and Fournier 1998). In addition, the extant research has also shed light on topics such as materialism and compulsive consumption (Rindfleisch et al., 1997), addressing the role of stress as a contributor to the increasing consumption on undesirable products and services. In a retail setting, authors such as Hibbert and Piacentini (2003) have explored how disadvantaged consumers cope with the strains they have encountered by paying more attention to problem and emotion focused coping; Sujan et al. (1999) have found that stress, consumer choice and in-store ambience are key determinants of consumer decision making efficacy. Although these studies have broadened our understanding of stress and consumers to some extent, Hutton (2015) has argued that no systematic work has yet been done in the field of marketing or consumer behaviour. There is still much inconsistency in studying stress from a consumer's perspective. For example, Moschis (2007) proposes that conceptually consumption-induced stress and other event-induced stress should be separated as they lead to different decision making. However, to the best of the researcher's knowledge, there is no research exploring the differences between these distinct sources of stress. As discussed in Chapter 2, surveys show that Chinese consumers are living with a very stressful consumption situation as they have to think about whether foods they have are safe or not (NFSIR, 2016; Zipser et al., 2016). Thus, this under-researched field justifies further examination in terms of consumer stress and how to cope with it (Viswanathan et al., 2005; Duhachek, 2005).

Table 3-1 Stress Studies in Marketing and Consumer Behaviour (Summarised by the author)

Authors	Year	Title	Method	Sample	Finding
Hutton	2015	Consuming stress: exploring hidden dimensions of consumption-related strain at the intersection of gender and poverty	Focus Group/ In-depth Interview	13 women/17 women	It provides a new way to look at unequal social relations and linked consumption strains with the disadvantaged position of a group of women in poverty.

Maier and Wilken	2014	The impact of stress on consumer willingness to pay	Survey	162 plus 46 plus 56 respondents	Consumer evaluation of products will be degenerated by stress.
Moschis	2007	Stress and consumer behaviour	Conceptual paper	n/a	It advances the stress research by proposing a framework from consumer perspective
Lee, Moschis and Mathur	2007	Stress, coping and consumer preferences: a two-way transitional event history analysis	Survey	1442 plus 785 respondents	This research found that when a consumer experiences high levels of stress, he or she is likely to engage in subsequent consumption-coping behaviours which include changes in brand preferences.
Mathur, Moschis and Lee	2006	Consumer stress-handling strategies: Theory and research findings	Survey	1442 plus 785 respondents	It advances the concept of stress in consumer studies as a viable construct.
Duhachek	2005	Coping: A multidimensional, hierarchical framework of responses to stressful consumption episodes	Survey	176 plus 276 respondents	It establishes a causal link between emotions and specific coping strategies during stressful consumption.
Hibbert and Piacentini	2003	Grocery shopping on a low income: How do people cope?	Conceptual paper	n/a	It elaborates the concept of consumer coping in retail settings of how disadvantaged consumers navigate the strains
Sujan, Sujan, Bettman, Verhallen	1999	Sources of consumers' stress and their coping strategies	Survey	58 respondents	It uncovers the stress intertwined with consumer choice and in-store ambience as key determinants of consumer decision-making efficacy within a retail setting.
Mick and	1998	Paradoxes of	Survey/	89	It outlines how

Fournier		Technology: Consumer Cognizance, Emotions and Coping Strategies	Interview	respondents/29 households	consumption-related stress is experienced both before and after consumption of a range of technological products.
Rindfleish, Burroughs and Denton	1997	Family Structure, Materialism and Compulsive Consumption	Survey	135 respondents	It found out that young adults reared in disrupted families are more materialistic and exhibit higher levels of compulsive consumption than in intact families.
Andreassen	1984	Life Status Changes and Changes in Consumer Preferences and Satisfaction	Survey	286 respondents	It outlines how stress effects leave consumers with a decreased level of satisfaction with their brand choices.

3.2.2 Chronic Stressor

In the last sub-section, it was suggested that stress from a consumer perspective is under-researched. Considering long-term and ongoing food safety issues as chronic stressors in the consumption situation, therefore, it is pertinent to know how the chronic stressors influence consumers and how consumers respond to the chronic stressors.

Pearlin et al. (1981) have argued that stress can be aroused from either the occurrence of discrete events or relatively continuous problems. The discrete events refer to unexpected events or life status changes, such as unexpected food scandals; whereas relatively continuous problems refer to highly scheduled or anticipated life-cycle changes and in normative roles such as parent and occupation (Pearlin, 1989). In the current research, the relatively continuing problem is long-term and ongoing food safety issues. In definition, eventful stressors/acute strains are “extreme and unusual external stimuli that are perceived as threatening” (Anshel, 2000), whereas chronic strains are of a “continuing problematic nature and extended duration” (Gottlieb, 1997). Chronic strains contain the relatively enduring conflicts, problems, or threats that individuals face in his or her daily life (Pearlin, 1989), with a high possibility of recurrence (Barling, 1990). In other words, they are “long-term stressors that people experience on a daily basis” (Carayon, 1995; Day and Livingstone, 2001). Considering the link between chronic strain and food safety in particular, it is posited that food safety issues in China as chronic strains provoke more

distress to consumers due to the unresolved, complex and continuing difficulties (Avison and Turner, 1988; Norris and Uhl, 1993; Mathur et al., 2006).

Notably, there is no research on chronic stressors in consumer contexts, but similar research has been carried out in other fields such as human health or well-being sector, for example, leukemia, cancer and physical illness (e.g., Mattson, 1972; Halstead and Fernsler, 1994; Deimling et al., 2006), within the perspective of sociology, researchers have focused on chronic strains raised by social roles. Pearlin (1989) argues that institutional social roles and relationship between activities and interpersonal are enduring. For instance, difficulties of social roles in marriage (Menaghan and Lieberman 1986), job (Kessler et al., 1987), disability (Wallander and Varni, 1992) or parenthood (Lu, 2006) are often discussed. Illness as a chronic strain is seen as an internal demand, whereas problems in social roles are regarded as external demands. In addition, individuals have to face problems from environmental or external demand beyond social roles. Climate change (Cooper et al., 2008) and food safety issues are typical examples. However, there is no research so far that examines chronic stress aroused by long-term and ongoing food safety issues. Specifically, as noted in Chapter 2, on the one hand, food safety issues have been investigated from various perspectives such as policy and regulation but limited from a consumer perspective; on the other hand, food safety issues have been examined as individual food scandals, rather than as a continuing problematic situation that influences consumers for a substantial period of time. Thus, inadequate and inconsistent research on chronic stressors and the consumers calls for further investigation.

Comparatively, effects brought by eventful stressors dissipate rapidly over time (Brown and Harris, 1978; Andrews, 1981) while chronic strains significantly contribute to the level of depressive symptoms of individuals (Pearlin and Schooler, 1978; Kanner et al., 1981; Avison and Turner, 1988). For example, it is well noted that experiencing 6 to 12 months of major life events foresees subsequent mental distress and physical disorder (e.g., Kessler et al., 1985; Coyne and Downey, 1991). However, conclusions cannot be drawn that chronic strains must lead to long-term effects of depression (Avison and Turner, 1988) because chronic strain per se is not static but dynamic over time. As discussed, the level of stress derived from long-term food safety issues changes with consumer ongoing appraisals of the situation. Adaptive coping efforts may decrease the level of stress (Lazarus, 2000; Moschis, 2007). Therefore, it is still debatable how long-term and ongoing food safety issues would have an impact on consumers. In other words, it can be posited that some consumers may generate stress and emotions due to the chronic stressors; while

others may have developed adaptive coping strategies or have got used to the stressors and stress no longer exists. The present research aims to get a deeper understanding of consumers by exploring the level of stress that consumers experience when faced with chronic stress.

In order to avoid ambiguity of the research boundary, this study provides criterions of what constitutes the notion of “long-term and ongoing food safety issues”. They are specified in the following three perspectives: 1) food safety issues stated in the present research are a general situation in a long-term, rather than individual food scandals that are exposed; 2) long-term food safety issues should be continuous and ongoing (Wheaton, 1990; Elder et al., 1996) in influencing consumers; 3) they have been experienced by consumers for a substantial period of three years and beyond, in order to make sure that consumers have experienced the particular situation for a relatively long period of time. Individual food scandals normally would be handled by government entities within one year. For example, the SanLu melamine infant milk powder scandal was exposed on May 2008 and people who were responsible for this incident were put into prison on January 2009. Therefore, “three years and beyond” defined here is to address the general situation in the long-term.

3.3 Emotion

Lazarus (1993, p.353) posits that “psychological stress should be considered part of a larger topic, the emotions”. The concept of stress is more limited in scope and depth than that of the emotions (Lazarus, 1993). Specifically, stress informs us relatively little about people’s struggle to adapt while emotions include more varieties which greatly enrich our understanding (Lazarus, 1993). Stress, therefore, is regarded as a subset of emotions in the current research. This section focuses on the emotions that are induced by the stressful consumption situation. Drawing upon the discussion in Chapter 2, it is evidenced that Chinese consumers worry about food safety issues and their impact on the foods they eat (Zipser et al., 2016; NFSIR, 2016). However, the emotion of worry is the only one documented in the extant food safety literature. Research has been extensively undertaken regarding emotions, both positive and negative, in the field of psychology. Thus, research on consumers has adopted theories and concepts from psychology literature (e.g., Zajonc, 1980; Holbrook and Batra, 1987) to explain and examine emotions that consumers experience. In Section 3.3.1, theories of emotion are articulated in an overview, the working definition of emotion is proposed, focuses of emotion in consumer research is illustrated and key emotion research approaches are reviewed, with an emphasis on cognitive appraisal to provide a more comprehensive explanation on the nature of emotion

(Bigné et al., 2008). In the Section 3.2.2, emotions are specifically reviewed in consumer behaviour domain, which is consistent with the context of this research.

3.3.1 Theories of Emotion in Consumer Behaviour

3.3.1.1 Overview

Fehr and Russell (1984, p.464) stated that “everyone knows what an emotion is, until asked to give a definition”. This statement shows the difficulties of defining emotion in a comprehensive, precise and exhaustive format. The lack of a universal definition of emotion further leads to uncertainty in terms of the nature and role of emotion (Bagozzi et al., 1999; Cabanac, 2002). Moreover, emotion may often be interchanged with other terms, for example, affect and mood (Ruth, 2001), which may cause confusion due to the inconsistency throughout the literature (Richins, 1997), although they are conceptually synonymous to some extent (Burke and Edell, 1989). Therefore, it is crucial to define emotion with the consideration of consumer behaviour context (Richins, 1997) and to highlight the differences among affect, mood and emotion.

Affect, considered as an umbrella term, is an inclusive and broad term for mood and emotion (Bagozzi et al., 1999). Comparatively, mood is of low intensity but with longer duration, showing no or little cognitive content (Gohm and Clore, 2000; Desmet, 2008). Typically, mood is regarded as nonintentional (Frijda, 1993) and disassociated with actions or action tendencies (Bagozzi et al., 1999). In contrast, emotion is intentional, with a clear reference object (Chamberlain and Broderick, 2007) indicating cause and cognitive element (Forgas, 1992; Cohen et al., 2008). For example, emotions those consumers generate in facing long-term and ongoing food safety issues have a clear reference object: the general food problematic situation. In addition, emotion normally lasts for a period of time, representing relatively stable reactions (Lazarus, 1994). It is for these reasons this study use the term ‘emotion’. The terms of affect, mood and emotion now have a clear boundary conceptually. As no agreement has been reached regarding a clear definition of emotion, next sub-section aims to define the emotion in the current research with the consideration of the specific research context.

3.3.1.2 Working Definition of Emotion

Various definitions of emotion exist, focusing on different fields of study in connection with emotion. This sub-section discusses the definitions ranging from a general perspective to marketing and consumer behaviour perspective, while considering the differences and developments across fields.

Ortony et al. (1988) have emphasised that an emotion is an individual's affective reaction to subjective perceptions of particular situations. A caveat to their definition is that they address the emotion as a behavioural response and fail to incorporate the feature that emotion is a state of "disturbance or disorganisation of the individual" (Kleinginna and Kleinginna, 1981, p.347). Another limitation is that this definition only focuses on the causality relationship while other perspectives have been neglected, physiological process for example. Nevertheless, they have attempted to illustrate what triggers the emotion.

Scherer (2001,p.93) defines emotion in the framework of the component process model as:

"an episode of interrelated, synchronized changes in the states of all or most of the five organismic subsystems in response to the evaluation of an external or internal stimulus event as relevant to major concerns of the organism".

Five components he outlined are appraisal, action tendencies, facial and vocal expressions, subjective feelings and bodily symptoms (Scherer, 2001). In his definition, Klaus Scherer has stressed that emotion is an episode of an individual's life as it is regarded as a short-lived phenomenon. However, research argues that emotions should not be limited as a short-term phenomenon. For example, the study of Scherer and Wallbott (1994) reveals that individuals may suffer from a particular emotion for several months, especially sadness. This long-term view of the emotion can be explained by the component of the emotion. Specifically, the component of the subjective feelings of an individual often links to an object. Individuals continually perceive a certain emotion whenever the object and the associated feeling come to mind (Mulligan and Scherer, 2012). For example, when the subjective feeling of food safety issues is worry, consumers will experience the worry emotion whenever he/she encounters the issues. The Scherer's definition is, therefore, not consistent with the long-term view. This definition does not apply to the current research with the continuing problematic nature of the context, although it provides a list of components of the emotion.

Moving from the definitions of emotion in the field of psychology, the emotions in consumer research focus on various emotional responses elicited from the consumption experience (Batra and Holbrook, 1990). With the different focus, the definition of emotion in consumer research demonstrates its own characteristics.

A recent definition given by the consumer researchers is that *"emotions are complex multi-dimensional judgments that reflect a great deal of information about one's relationship to social and physical surroundings as well as one's own internal thoughts regarding these*

relationships” (So et al., 2015, p.360). This definition has stressed the internal and external relationships between the consumers and the surroundings. The underlying meaning is that emotions are elicited through a complex process which may involve a set of appraisals (Smith and Ellsworth, 1985). This definition is in line with the appraisal theory, but limits the concept to judgements. It has been argued that physiological reaction is one important component of the characteristics of emotions (Martin et al., 2008). Considering the current research context, it is expected that consumers have some behavioural, psychological or expressive reactions when experiencing the emotions when faced with food safety issues. Therefore, limited to consumers’ complex judgements fail to include the reaction feature of emotions in the current research context.

The lack of consensus for the definition of emotion leads to difficulties in conceptualising the construct and development of valid measures in specific contexts. Given the differences and developments of the definitions discussed above, it is necessary to have a specific working definition of the concept, reflecting the characteristics of the emotions in the context of the consumer and long-term and ongoing food safety issues. Consequently, the definition of emotion favoured in this research is given by Bagozzi et al. (1999, p184) due to its inclusiveness:

“by emotion, we mean a mental state of readiness that arises from appraisals of stressor; has a phenomenological tone; is accompanied by physiological process; is often expressed physically; and may result in specific actions affirm or cope with the emotion depending on its nature and meaning for the individuals having it”.

In the context of long-term and ongoing food safety issues, emotions arise from consumers’ appraisal of the problematic situation, accompanied by psychological and physical reactions to cope with the emotions generated. This definition reflects the whole dynamic process of emotion, including potential reaction consequences, which is consistent with previous studies (Lazarus, 1991; Oatley, 1992). This definition is also consistent with the transactional view of stress and coping (Lazarus and Folkman, 1984). Specifically, on the one hand, emotions arise from the interactions between the consumers (persons) and the stressors (environment). This is in line with the transactional view. On the other hand, the emotional appraisal processes of the chronic stressors align with that of stress, by incorporating the primary and secondary appraisals. In the current study, consumers appraise the level of harm of food safety issues and their resources and abilities to manage and control the stressors.

3.3.1.3 Emotion Research Approaches

Consumer behaviour and marketing research have adopted theories of emotion from psychology literature (e.g., Zajonc, 1980; Holbrook and Batra, 1987; Keltner and Gross, 1999; Han et al., 2007; Barrett et al., 2007) and developed scales to measure emotions in consumer and marketing settings (e.g., Aaker et al., 1988; Richins, 1997). There are several key theories of emotion research (Table 3-2). The development of emotion theories enriches our understanding of the concept and nature. Among these theories, three emotion research approaches are broadly accepted as the basis of numbers of studies, namely: categorical, dimensional and cognitive appraisal approaches (Watson and Spence, 2007). The following paragraphs critique these approaches.

Table 3-2 Overview of Emotion Theories

Theory	Overview
Categorical Approach	Emotion is considered as discrete entities, arising from discrete reasons and presenting from birth (Izard, 1977). A number of emotions are categorised according to their similarities (Plutchik and Kellerman, 1974; Izard, 1977).
Dimensional Approach	Emotion is identified as overall feeling positioned in three dimensions, namely pleasure-displeasure, arousal-non arousal and dominance-submissiveness (Mehrabian and Russell, 1974)
Cognitive Appraisal Approach	Emotion is elicited from specific patterns of appraisals, indicating a functionalist approach (Arnold, 1960; Scherer, 1984; Lazarus, 1991)

The categorical approach groups emotions into categories based on their similarities (Plutchik and Kellerman, 1974; Izard, 1977). In other words, emotion arises from unique discrete reasons and leads to different consequences in terms of consumption settings (Izard, 1977). For example, Batra and Holbrook (1990) have applied this approach in marketing research to demonstrate the relationship between emotional responses and consumer attitudes toward advertisements. This outcome has emerged from grouping similar emotions into categories without attempting to identify the causes. It is, therefore, difficult to explain why a unique emotion is felt. Moreover, researchers (e.g., Izard, 1977; Plutchik, 1980) have also applied theories in the view of biological and neurochemistry to consumer behaviour literature, identifying ten primary emotions which are present from birth. These discrete and distinct emotions are disgust, distress/sadness, anger, guilt, shame/shyness, fear, contempt (7 negative emotions), joy, surprise (2 positive emotions)

and interest (1 neutral emotion). They believe that these primary emotions serve to enhance survival of individuals. Furthermore, Plutchick (1980) has proposed an evolutionary point of view, identifying eight main emotions (anger, fear, disgust, sadness, surprise, joy, acceptance and expectancy) and argues that when faced with contingencies, these main emotions in conjunction with other mixed emotions increase the chance of survival.

The reason that this categorical approach is not fit into the current research is twofold. First, this approach fails to explain the causes of emotions. The current study is in line with the transactional view, articulating how emotions arise from the interaction between the person and environment. This approach, however, does not attempt to determine the causes of the emotions. The cause is crucial as it articulates how a particular emotion can be felt, while grouping emotions together according to similarities does not address the importance (Ruth, 2001). Second, this approach fails to consider the reasons why emotions have different behavioural effects (Watson and Spence, 2007). The current study tries to conceptualise what consumers do to deal with stress and emotion. Failing to articulate the behavioural effects of the emotions, the approach calls into question the understanding of the construct. Both psychological and behavioural effects need to be taken into consideration. Therefore, the categorical approach does not fall into the boundary of the current research, which postulates the dynamic relationship between emotions and behaviours.

Another approach of examining emotions is the dimensional approach. The dimensional approach distinguishes emotions and their effects on consumer behaviours by using levels of arousal and valence (Athiyaman, 1997; Watson and Spence, 2007). There is no consensus on the dimensionality. Researchers such as Russel (1991) and Barrett et al. (2007) suggest a two-dimensional approach, reflecting a bi-polar relationship such as positive vs. negative, pleasant vs. unpleasant, as well as high arousal vs. low arousal (Watson and Tellegen, 1985; Watson and Clark, 1992; Barrett and Russell, 2009). This reveals an exclusive experience of emotions, which however, overlooks the influence of mixed emotions (Russell and Carroll, 1999). For example, when an individual feels happy he/she is not sad (Andrade and Cohen, 2007). This typical bi-polar example fails to consider other emotions or mixed emotions in between the two extremes. In contrast, Mehrabian and Russell (1974) propose a three-dimensional approach, namely pleasure vs. displeasure, arousal vs. non-arousal and dominance vs. submissiveness. This approach states that emotion is identified as an overall feeling construct positioned in three distinct dimensions (Athiyaman, 1997; Shapiro and MacInnis, 2002; Chamberlain and Broderick,

2007). When people generate similar emotions such as happy and joy, this approach is unable to distinguish these emotions as they have similar level of arousal and dimension (Watson and Spence, 2007).

This dimensional approach is not appropriate for the current research for two reasons. First, the current study aims to examine various emotions that consumers may generate when faced with long-term and ongoing food safety issues. The anticipated emotions may have similar valence. That is to say, emotions, such as strong negative emotions anger and fear which have similar high arousals, may not be distinguishable. The dimensional approach lacks the ability to account for the differences among the emotions with similar arousal levels or valance. Second, the dimensional approach considers the emotions on bipolar extremes, which implies a simply linear relationship. However, as noted in the previous discussion in Section 3.3.1.2, the view of the current research is that the process of stress, emotions and coping efforts reflect a dynamic process, including potential reaction consequences (Lazarus, 1991; Oatley, 1992). Apparently, the linear relationship of the dimensional approach does not fit into the dynamic process of emotion in the current research. Therefore, this approach would not be adopted for the current research due to its inadequacy and vagueness.

Lastly, it has been argued that cognitive appraisal is a promising way for studying emotions in the consumer behaviour context (Bagozzi et al., 1999; Johnson and Stewart, 2005). Therefore, cognitive appraisal theory has gradually become dominant in literature, explaining consumer behaviours by using underlying motivational and evaluative roots (Watson and Spence, 2007). In order to study emotions aroused by long-term and ongoing food safety issues, cognitive appraisal theory is adopted. A critical discussion of cognitive appraisal theory will be provided against the particular research context in the next subsection 3.3.1.4.

3.3.1.4 Cognitive Appraisal

Dating back a few decades, Arnold (1960) developed the cognitive appraisal theory, emphasising that each emotion is associated with a set of appraisals on the surroundings. This theory provides a more comprehensive approach compared to the other two approaches discussed previously, as it articulates how an emotion is elicited in a given situation and how the induced-emotion influences an individual's behaviour. Based on her theory, appraisal is recognised as the procedure through which an individual would evaluate the importance of the situation (Arnold, 1960). Furthermore, Lazarus and colleagues (Lazarus, 1966; Lazarus and Folkman, 1984; Lazarus and Moskowitz, 2004)

popularised the theory of cognitive appraisal which has drawn much attention and become dominant approach in emotion research (Scherer, 2001). They ascertain two aspects of emotion: the nature of the cognitions with underlying emotional reactions and antecedents of these cognitions (Lazarus et al., 1970), which are crucial for identifying reactions elicited from initial emotions. Moreover, Lazarus and Folkman (1984) propose a transactional model of stress and coping, synthesising the primary and secondary appraisal process with stimulus and coping responses (reviewed in Section 3.2.1.2).

Cognitive appraisal approach provides an inclusive explanation on the nature of emotion, indicating that individuals evaluate the situation, person, or even object and the evaluation results to an emotional response (Bigné et al., 2008) when appraisal process is carried out (Smith and Kirby, 2009a). Emotion in this theory is defined by “its immediate causal relationship” (Barrett et al., 2007). Emotions change along with meaning in situations due to individuals’ various backgrounds (Reisenzein, 2006). In this case, appraisal reflects the response-based view of emotion (Baumeister et al., 2006), serving as an antecedent (Lazarus, 1991; Moors, 2009). In the consumer behaviour and marketing research, the cognitive appraisal theory can be seen as “an especially relevant approach for understanding the emotional responses of consumers in the marketplace” (Johnson and Stewart, 2005). Researchers such as Bagozzi et al. (1999) and Johnson and Stewart (2005) have argued that cognitive appraisal is a promising avenue to be applied to consumer behaviour contexts. Three issues are addressed (Watson and Spence, 2007): 1) the underlying characteristics that are appraised; 2) emotion (if any) experienced throughout appraisal process; 3) behavioural responses to emotions. The focal purpose of these issues is how emotions are elicited from appraisal process and in turn affect behaviours (Smith and Ellsworth, 1985; Ruth et al., 2002), particularly coping behaviours in the present research. Research shows that even two strong negative emotions lead to different results in risk preferences, for instance, individuals who experience fear tend to make pessimistic judgement whereas angry people tend to be more optimistic (Lerner and Keltner, 2000). Reason is attributed to different appraised levels of uncertainty (Tiedens and Linton, 2001). Consequently, researchers assume that each emotion is caused by “a unique appraisal pattern” (Moors, 2009). However, Roseman and Smith (2001) argue that the same emotion can be elicited by different stimuli. Moreover, the same stimuli can result to different emotions. Therefore, it is difficult to predict the emotional outcomes in cognitive appraisals.

The advantage of cognitive appraisal approach is fourfold. First, it is well supported

empirically by correlation studies (e.g., Smith and Ellsworth, 1985; Scherer, 1997) and experimental studies (e.g., Smith and Lazarus, 1993; Neumann, 2000) in combination of considering the cross culture influence (Mauro et al., 1992; Roseman et al., 1995). Second, in terms of scope and function, cognitive appraisal theory is more advanced (Watson and Spence, 2007) as it articulates the role that consumers involved in meaning construction (Elliott, 1997). Third, application of appraisal theory to marketing contexts is empirically supported by experiments, addressing the causal relationship between appraisals and consumption emotions (Ruth et al., 2002) and the treatment of goals (Bagozzi et al., 1999). Fourth, cognitive appraisal can account for the majority of emotions (Bagozzi et al., 1999) beyond bi-polar relationships.

In addition, the disadvantages of cognitive appraisal approach are threefold. First, methods adopted have been criticised as the recall of emotion can be biased (Frijda, 1993), inaccurate and underestimated (Aaker et al., 2008). Some researchers (e.g., Smith et al., 1993; Parkinson, 1997) argue that the way of using vignettes for consumers to recall emotion is not reliable. Comparatively, in the current study, the investigation is not based on the recall of emotion by consumers as food safety issues are ongoing. Therefore, the biased point of view can be avoided. Second, the major flaw of cognitive appraisal theory is failing to account for individual differences in responding to the same stimuli (Smith and Kirby, 2009b). Research suggests that factors such as personal meaning and feelings can also generate emotions (Higgins and Pittman, 2008). Third, the approach of cognition to emotion has been criticised as it may not always be the case. For example, Zajonc (1980; 1984) has argued that emotions can be elicited by affect without going through a prior cognitive process. Izard (1993) also suggests that cognition may not be necessary in forming emotions. As for a further argument, Duhachek (2005) claims that both emotion and cognition presage coping.

In considering the ongoing debate regarding the approach, the present research argues that emotion triggers coping efforts, while being moderated by cognitive appraisal, personality trait and important demographic factors (see Chapter 4 for a detailed discussion). This argument attempts to open up the black box between the emotional states and coping behaviour, in line with the notion that coping is complex and dynamic which is generated and influenced by various factors. The main effect of emotion-coping is also consistent with the definition of emotion adopted by the present research, indicating that by appraising the problematic situation, stress and emotions arise and may result in specific actions to cope. In the current study, cognitive appraisal is seen as the moderator of

emotional appraisal and coping in consistent with the view of Duhachek (2005).

3.3.2 Emotions in Consumer Behaviour

The discussion on emotion categories has drawn much attention and two distinct categories appear: basic emotion and discrete emotion. Basic emotions are those with universal recognition elicited from biological basis and can create complex emotional state by combing with other emotions (Ekman, 1992, 1999). Efforts have been made to produce a basic emotion set (Table 3-3). However, in line with the cognitive theory, consensus has not yet reached on a clear definition of basicness. Thus, Ortony and Turner (1990) have argued that researchers are not able to find basic emotions. Despite all this, it is still noticeable from the Table 3-3 and acknowledged by Baumeister et al. (2001) that negative emotions account for two third of all identified basic emotions. Positive effect and negative effect of emotion are conceptualised as the general emotional dimensions (Mattila and Ro, 2008).

On the other hand, discrete emotions also stem from the biological basis and are recognised universally (Izard, 1972; Plutchik, 1980) with inborn natural responses to specific situations. Nonetheless, they are discrete from each other with various kinds of facial and body expressions, for example, smiling when happy (Plutchik, 2003). But it is difficult to clearly identify and describe the differences among similar discrete emotional states, which further cause vagueness and uncertainty in theoretical classifications of emotions (Plutchik, 2001, 2003).

Table 3-3 Basic Emotion Set (Source: Ortony and Turner, 1990)

Theorist	Basic Emotions
James (1884)	Fear, Grief, Love, Rage
McDougall (1926)	Anger, Disgust, Elation, Fear, Subjection, Tender-emotion, Wonder
Watson (1930)	Fear, Love, Rage
Arnold (1960)	Anger, Aversion, Courage, Dejection, Desire, Despair, Fear, Hate, Hope, Love, Sadness
Mowrer (1960)	Pain, Pleasure
Plutchik (1962)	Acceptance, Anger, Anticipation, Disgust, Joy, Fear, Sadness, Surprise
Ekman et al. (1972)	Anger, Disgust, Fear, Joy, Sadness, Surprise
Izard (1977)	Anger, Contempt, Disgust, Distress, Fear, Guilt, Interest, Joy, Shame, Surprise
Panksepp (1982)	Expectancy, Fear, Rage, Panic

Tomkins (1984)	Anger, Interest, Contempt, Disgust, Distress, Fear, Joy, Shame, Surprise
Weiner and Graham (1984)	Happiness, Sadness
Gray (1985)	Rage, Terror, Anxiety, Joy
Frijda (1986)	Desire, Happiness, Interest, Surprise, Wonder, Sorrow
Oatley and Johnson-Laird (1987)	Anger, Disgust, Anxiety, Happiness, Sadness

In line with the previous discussion, the combination of basic emotions can create more complex emotions (Ekman, 1992, 1999). For example, as Figure 3-2 shows, basic emotions such as joy and acceptance together represent a more complex emotional state: love. In the consumption settings, Richins (1997) addresses the need for a set of context specific view of emotions, as traditional psychological approaches fail to consider various consumption situations. For example, consumers frequently experience negative emotions at any stage of product or service consumption, such as anger, regret, fear, worry and disappointment, mixed with basic and complex emotions. In comparison with traditional approach, Richins (1997) develops a Consumption Emotion Set (Table 3-4) based on differences in intensity, character and quality of consumption emotions. This set of consumption emotions takes account of individual's subjective views on the consumption experience (Addis and Holbrook, 2001; Goldie, 2009). The importance of consumption episodes as the source of emotions has been emphasised by Campbell (2003). However, it is not exhaustive as some important consumption emotions have been overlooked such as disappointment.

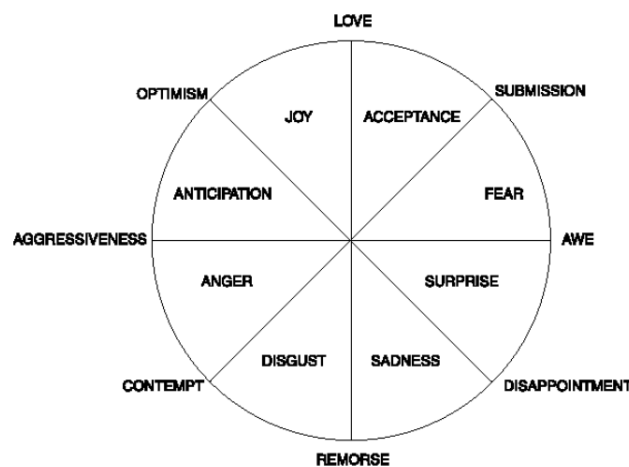


Figure 3-2 Emotional Wheel (Source: Plutchik, 1980)

Table 3-4 Consumption Emotion Set (Source: Richins, 1997)

Anger (frustrated, angry, irritated)
Fear (scared, afraid, panicky)
Worry (nervous, worried, tense)
Shame (embarrassed, ashamed, humiliated)
Loneliness (lonely, homesick)
Love (loving, sentimental, warm hearted)
Optimism (optimistic, encouraged, hopeful)
Excitement (excited, thrilled, enthusiastic)
Envy (envious, jealous)
Discontent (unfulfilled, discontented)
Sadness (depressed, sad, miserable)
Contentment (contented, fulfilled)
Romantic love (sexy, romantic, passionate)
Peacefulness (calm, peaceful)
Joy (happy, pleased, joyful)
Surprise (surprised, amazed, astonished)
Other items: guilty, proud, eager, relieved

Other than basic and discrete emotions, another way to distinguish emotions is positive and negative emotions. It is argued that consumers are frequently experiencing negative emotions in consumption situations (Yi and Baumgartner, 2004). For example, facing food safety issues, Chinese consumers are expressing the emotion of worry – a negative emotion (Wang et al., 2008; Zipser et al., 2016). Lazarus (1999) has stated that stress is an important aspect of emotions. Specifically, there are three types of psychological stress identified by Lazarus (2006), namely harm/loss, threat and challenge and each type is coped with and appraised differently in terms of psychological and physical responses. Moreover, the concept of stress is simpler than emotions as stress is a unidimensional concept while emotions functions in multiple dimensions (Lazarus, 2006). Hence, emotions generated by experiencing stressful consumption situation can be regarded as stress-induced emotions. These emotions seem to have the same valence; however, their appraisal dimensions and respective action tendencies are different (Frijda et al., 1989; Roseman et al., 1996; Scherer, 1999). Furthermore, the awareness of positive emotions

such as pride, empathy, attachment, joy, contentment, interest and love (Bagozzi, 2006) in the stress process has drawn increased attention (Bonanno and Keltner, 1997; Folkman and Moskowitz, 2000).

According to the key consumer research on the topic of emotions in Table 3-5, both positive and negative emotions have been examined in the consumer domain. These studies have investigated in various fields of consumer research. Yu and Dean (2001) have examined the contribution of both positive and negative emotional satisfaction to consumer loyalty, while Chaudhuri (2002) investigates both positive and negative emotions and reason within the products and services domain. Some studies tend to examine a list of consumer emotions in order to find out the role played by emotions in retail and service settings (Barsky and Nash, 2002; Burns and Neisner, 2006), while others try to find appropriate methods for emotion research in consumer behaviour (Laros and Steenkamp, 2004). Research also has examined the influence of negative emotions (anger, disappointment, regret and worry) which are associated with service failure (Menon and Dubé, 2004) in purchase-related situations (Yi and Baumgartner, 2004). It can be drawn from the above studies that research on consumer emotions are mostly done in the field of service and retail setting. Concerned with food sector, Jiang et al. (2014) have highlighted several negative emotions elicited by food, such as disgust, bored, worried, angry, disappointment and guilt. King and Meiselman (2010) propose a method to measure consumer emotions associated with food. But the questionnaire developed in their study is limited as it is specific to commercial testing (new product development) and measuring consumer emotions.

Table 3-5 Emotions in Consumer Research (Source: the author)

Emotions in Consumer Research	Authors
Happy, Hopeful, Positively surprised, Angry, Depressed, Guilty, Humiliated	Yu and Dean (2001)
Joy, Pleasure, Delight, Worry, Irritation, Disappointment	Chaudhuri (2002)
Comfortable, Content, Elegant, Entertained, Excited, Extravagant, Hip, Important, Inspired, Pampered, Practical, Relaxed, Respected, Secure, Sophisticated, Welcome	Barsky and Nash (2002)
Sadness and Anger	Rucker and Petty (2004)
Anger, Disappointment, Regret, Worry	Yi and Baumgartner (2004)
Anger, Fear, Sadness, Shame, Contentment, Happiness, Love, Pride	Laros and Steenkamp (2004)
Happy, Hopeful, Positively surprised, Angry, Depressed, Guilty, Disappointed, Regretful, Humiliated	White and Yu (2005)
Delighted, Scared, Happy, Disgusted, Joyful, Contemptuous, Scornful, Attentive, Mad, Fearful, Alert, Bashful, Surprised, Shy, Amazed, Guilty, Astonished, Blameworthy, Downhearted, Sad, Enraged, Discouraged, Angry, Afraid	Burns and Neisner (2006)
Active, Glad, Pleased, Adventurous, Good, Polite, Affectionate, Good-	King and Meiselman (2010)

natured, Quiet, Aggressive, Guilty, Satisfied, Bored, Happy, Secure, Calm, Interested, Steady, Daring, Joyful, Tame, Disgusted, Loving, Tender, Eager, Merry, Understanding, Energetic, Mild, Warm, Enthusiastic, Nostalgic, Whole, Free, Peaceful, Wild, Friendly, Pleasant, Worried	
Disgust, Bored, Worried, Angry, Disappointment, Guilt	Jiang, King and Prinyawiwatkul (2014)
Exciting, Pleasant, Happy, Fun, Enjoyable	Dai, Luo, Liao and Cao (2015)

As discussed, efforts have been made in examining emotions from the perspective of the consumer. Different emotions have been investigated in different contexts. Desmet and Schifferstein (2008) have noted that lists of emotions can be adopted as a shopping list which appropriate emotions may be selected from lists for particular research. In the context of the present research, consumers not only worry about the food safety situation (Wang et al., 2008; Zipser et al., 2016), but may also generate other emotions, for example, disappointment, anger and fear which are commonly elicited by consumers. This research also argues that positive emotions may also be generated because during a relatively long period of time, consumers may adapt to the stressful situation. Hence, if consumers express positive emotions in experiencing long-term food safety issues, it is important to explore the reasons and its relationship with coping actions. No research so far has examined positive emotions with food safety issues. It would be notable to identify and focus on specific emotions because they have distinct behavioural tendencies and actual behaviours in dealing with the problems.

3.4 Coping

“The concept of emotion includes that of stress and both are subject to appraisal and coping theory” (Lazarus 1993, p.12). Emotions have an impact on consumer behaviour regarding judgement, evaluation and decision making (Williams, 2014). In addition, consumer efforts and actions to manage food safety issues, as well as to regulate stress and emotions elicited, are within the construct of coping (Compas et al., 2001). Lazarus (1999) argues that stress, emotions and coping are existed in a part-whole relationship; how consumers cope with stress and emotions need to be discussed. This section specifically focuses on the core theme of the present research: consumer long-term coping strategies. Starting from the coping literature in general, Section 3.4.1 reviews the theory of coping and rationale for long-term coping. Subsequently, coping literature is criticised from various perspectives in Section 3.4.2, defining coping in consumer domain and long-term settings. Third, coping structures in the previous literature are reviewed; multi-dimensional (hierarchical) structures of coping are criticised (Section 3.4.3).

3.4.1 Coping in General

Consistent with the transactional view, consumers respond to elicited stress and emotions with coping efforts in order to regulate the psychological states and to manage the chronic stressors (long-term and ongoing food safety issues). Therefore, it is essential to know the concept of coping and the long-term coping.

3.4.1.1 Concept of Coping

Coping refers to “the thoughts and behaviours people use to manage the internal and external demands of stressful events” (Lazarus, 2000). It has been researched for decades in the area of social science, behaviour science, medicine and public health (Folkman and Moskowitz, 2004). A large number of contemporary studies in coping can be traced back to Lazarus’s (1966) book, which expanded the boundaries of coping research by including a wider range of cognitive and behavioural responses. Coping is a complex process due to individual’s different responses to stress situations, interacting with cognition, attitude and behaviour (Lazarus and Folkman, 1984; Carver and Scheier, 1994a).

Coping researchers argue that coping is not only about handling the short-term functioning such as dealing with stress which is caused by adverse life events and situations, but also the long-term functioning such as the development of physical and mental health or disorder (Skinner et al., 2003). Specifically in the current research, long-term and ongoing food safety issues have long-lasting impacts on individual consumers, stimulating coping responses. Therefore, it is necessary to study coping from a long-term point of view.

3.4.1.2 Long-term Coping

In the extant literature, coping over a long period of time has been mainly examined from two perspectives: one is coping with long term physical or psychological illness (e.g. Halstead and Fernsler, 1994; Moos and Holahan, 2003); another is from the developmental view of coping at various phases of the life span (e.g. Altshuler and Ruble, 1989; Compas and Worsham, 1992; Cummings et al., 2014); or some combines these two perspectives together (e.g., Berg and Upchurch, 2007).

From the first perspective, chronic illness may lead to psychological and social consequences that require significant psychological adjustment and coping (Stanton et al., 2007). For example, research shows that the survivors of the severe illnesses somehow show psychiatric symptoms (Koch et al., 2013). Some investigators have adopted existing coping scales to measure the efforts made by patients, such as the COPE scale (Carver et al., 1989), while others use a longitudinal design to evaluate how individuals cope with

chronic illness (from either physical or mental perspective) (e.g., Gottlieb, 1997). This perspective is apparently not suitable for the current research which has a different focus on food consumption.

Secondly, from the developmental view of coping, research focuses on “psychosocial and behavioural change within individuals across the lifespan as well as the differences and similarities in the nature of changes among these individuals” (Weiss and Raedeke, 2004). Coping from a life-span perspective examines changes over the life span in coping effectiveness, which differs from the perspective of a specific age (Folkman, 2014). From a developmental perspective, coping has been described as conscious volitional efforts to regulate emotion, cognition, behaviour, physiology and the environment in response to stressful events or circumstances (Holt et al., 2005), which is usually based on the ego psychology model that views coping as an aspect of personality (e.g., Vaillant, 1977). This perspective is not suitable for the current study, because the development of coping efforts of a consumer from his/her childhood to adulthood is not the focus of this study.

Research from the above perspectives advances our understanding of coping over time in several ways: 1) increasing attentions have been drawn on conceptualisation of coping and adjustment to chronic illness with empirical support (e.g., Patrick et al., 2004); 2) progress has been made in characterising risk and factors which influence coping and individuals’ adjustments to chronic illness (Stanton et al., 2007); 3) studies of coping over time uncover that individuals’ thoughts and behaviours which are used to manage the enduring demands of their lives can be changed by therapeutic and educational interventions (Meichenbaum and Jaremko, 1983). This reveals that coping has impact on individuals’ long-range adaptation and trajectory over the life span (Folkman, 2014).

Considering the time span, the extant coping literature has examined from the perspective of both acute/eventful coping and long-term coping. As discussed in Section 3.2.2, research on chronic stressors has only been carried out in the fields other than marketing and consumer behaviour, such as human health and well-being (e.g., Deimling et al., 2006). The current study examines the chronic stressors in a food consumption situation, with a long-term and ongoing nature. Consumers face the chronic stressors on a daily basis as food is essential for everyday consumption. Therefore, this study will contribute to coping literature by conceptualising how consumers adapt to the chronic stressors and what they do. Specifically, the research on coping with the chronic stressors examines individual’s abilities to accommodate and adapt to continuities, transitions, threats and unstableness in their ongoing life (Gottlieb, 1997).

Despite the progress made from the perspective of long-term coping, the present research argues that coping over a long period of time is inadequately examined. In the context of this study, long-term and ongoing food safety issues may elicit psychological stress and emotions. Additionally, in line with the discussion in Chapter two, Chinese consumers are taking actions to deal with food safety issues. Hence, Chinese consumers may not only cope with the chronic problematic situation per se, but also the stress and emotions elicited from the stressful consumption circumstances. This research provides both theoretical and empirical foundations to the rationale for examining long-term and ongoing food safety issues.

3.4.2 Critique of Coping

3.4.2.1 Theories of Coping

Coping is defined as

“Constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus and Folkman, 1984, p.141).

This influential definition of coping has been the basis for numerous investigations on coping (Compas et al., 2001). However, this definition is considered ambiguous and inaccurate in the context of this research. There are several reasons.

Firstly, the phrase “constantly changing cognitive and behavioural efforts” in the definition means coping is viewed as an ongoing dynamic process which changes in response to the changing demands of a stressful encounter or event (Lazarus and Folkman, 1984; Compas et al., 2001). It focuses on what the person actually thinks and does in a specific stressful encounter (Folkman et al., 1986). In fact, many conceptual models of coping assume that coping processes are influenced by both situation-specific elements and stable dispositional trait influences (Duhacheck and Iacobucci, 2005). Researchers who examined the effect of personality-based traits on coping responses (McCrae and Costa, 1986a; Bolger, 1990) hold the view that individuals’ coping responses are stable over time and across widely disparate types of stress, positing that coping has a significant stable component. Specifically in the context of this research, consumers are dealing with food safety issues over a substantial period of time, for example, 3 years and longer as defined in Section 3.2.2. Here the ways of coping could change constantly over time if coping efforts are not successful while if successful, the ways of coping can be adaptive.

Secondly, “taxing or exceeding the resources of the person” in the definition describes a state that the person engages in dealing with the problematic situation by using individual resources, which are taxing or exceeding the person’s capability. However, taxing the resources of the person is not a sufficient and necessary condition. In other words, coping efforts are made whenever any given individuals’ personal resources is insufficient to handle the situation. However, coping is activated not just because the insufficient personal resources. Some individuals rely on a broad set of strategies, while others rely on a narrow set of strategies (Duhachek and Kelting, 2009); as well as the involvement of individuals varies which this definition failed to include. For example, individuals with pessimism personality would focus on emotional distress and with disengagement, while individuals with positive personality are associated with active coping efforts and with making the best of whatever is encountered (Scheier and Carver, 1987; Carver et al., 1993). Therefore, it is not always the case that the resources of the person would be taxed or exceeded, which is consistent with the arguments made by Brown and Harris (1978) that not all changes would overtax individuals’ psychological resources and increase the likelihood of emotional disorder.

Thirdly, coping efforts are made to manage specific internal and/or external demands (Lazarus and Folkman, 1984). In the extant literature, coping with internal demands has been extensively researched, while coping with external demands draws a growing attention (See Figure 3-3), and only few publication exists in the consumer literature. However, research has not shed light on stress and related emotions aroused by long-term and ongoing external demands in the consumer domain. In other words, we have no knowledge about how consumers cope with external demands over a long run. Therefore, efforts should be made here to fill the gap by investigating the long-term consumer coping.

Internal demands(example): <ul style="list-style-type: none"> - Motivation (Maheswaran and Agrawal, 2004) - Decision making (Cavanaugh, Bettman, Luce, and Payne, 2007) - Self-positivity (Lin, Lin, and Raghurir, 2003) - Personality (Duhachek and Iacobucci, 2005) - Psychological symptoms of development in children (Sandler, Tein and West, 1994) 	External demand (example): <ul style="list-style-type: none"> - Paradoxes of technology (Mick and Fournier, 1998) - Involuntary job loss, divorce, loss of spouse (Pearlin, 1989) - Natural disasters (Norris and Uhl, 1993) - Implimenting an innovation (Bingen, Sage and Sirieix, 2011) Long-term External demand in consumer research: <ul style="list-style-type: none"> - No extant literature
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Figure 3-3 Research on Coping with Internal and External Demands

In contrast, this definition also reveals several important properties of coping. First of all, coping is conceptualised as purposeful responses that are directed toward resolving on stressful relationship between the self and the environment (problem-focused coping) or toward palliating negative emotions that arise as a result of stress (emotion-focused coping) (Compas et al., 2001).

Two functions of coping are distinguished within the definition: problem-focused coping and emotion-focused coping. The two functions of coping are frequently treated as opposites, however, Lazarus (1996) argues that they are complementary and that it makes little sense to contrast one with the other. Nevertheless, it is often difficult to determine whether particular thoughts and actions are problem-focused or emotion-focused (Yi and Baumgartner, 2004) and recent coping research has shown that people frequently rely on both coping strategies within a single stress episode (Mick and Fournier, 1998; Sujan et al., 1999; Luce et al., 2001). Meanwhile, the distinction between these two functions has proven to be too abstract to serve as a conceptual framework for developing measures of coping (Laux and Weber, 1991).

Folkman (2010) later introduces a third kind of coping, “meaning-focused coping”, and posits that positive emotions occur alongside negative emotions throughout an intensely stressful period, for example, in cancer patients during the months preceding to their deaths (Zinnbauer et al., 1997). Meaning-focused coping strategies are qualitatively different from emotion-focused coping strategies and draw upon deeply held values and beliefs in the form of strategies such as goal revision. They focus on strengths gained from life experience and reordering priorities (Folkman, 2010).

However, “problem-focused coping”, “emotion-focused coping” and “meaning-focused coping” are not a suitable structure of coping for this research, because research has shown that people may rely on single or multiple coping strategies within a single stress episode (Mick and Fournier, 1998; Luce, 1998; Sujan et al., 1999; Luce et al., 2001). These can be vague and unclear only described as “problem-, emotion- and meaning-focused” and oversimplify the coping phenomena (Scheier et al., 1986; Duhachek, 2005). For example, patients who are treated badly in the hospital would calm themselves and then make a complaint. In addition, classified coping by function is not mutually exclusive in various definitions (Lazarus, 1996). For example, “making a plan” is not only to solve the problem but to calm emotion.

The second property revealed is that coping is a goal-directed process in which the

individual orients thoughts and behaviours toward the goals of resolving the source of stress (which may be a situation) and managing emotional reactions (which are responses) to stress (Lazarus, 1993). This means that coping is a person's efforts to manage demands no matter whether or not the efforts are successful and cannot be distinguished from good to bad (Folkman et al., 1986). Managing specific demands may include attempts to master the environment or to minimise, avoid, tolerate, or accept stressful conditions (Edwards and O'Neill, 1998). The protective functions and results of this goal-directed process could be exercised in three ways: by eliminating or modifying conditions; by neutralising the problematic characters; and by keeping the emotion consequences within manageable bounds (Pearlin and Schooler, 1978). Considering consumer coping in the current research, this property is important and applicable as well, in dealing with food safety issues by consumers. In order to minimise the influence by unsafe food, consumers may actively take actions to resolve the problem. For example, some consumers choose to increase their family spending on certificated food products (Liu et al., 2013). This kind of coping is a goal-directed process that aims to handle the situation.

3.4.2.2 Consumer Coping

The study of coping has progressed from its origins within psychoanalysis, to its present integral position across multiple disciplines, encompassing a variety of diverse theoretical and applied approaches (Duhachek and Oakley, 2007). How consumers cope is an important issue for marketers because coping may influence post-purchase behaviours, which may further help researchers understand a wide variety of consumer behaviours (Moschis, 2007), such as word-of-mouth communication and repurchase behaviour (Yi and Baumgartner, 2004) leading to various behavioural and emotional outcomes. That is why consumer researchers have begun to extending coping theory to include: the context of motivation (Maheswaran and Agrawal, 2004), decision making (Cavanaugh et al., 2007; Han et al., 2007), emotions (Yi and Baumgartner, 2004), consumer health (Lin et al., 2003) and personality (Duhachek and Iacobucci, 2005).

Among them, Duhachek (2005, p.42) defines consumer coping as:

“the set of cognitive and behavioural processes initiated by consumers in response to emotionally arousing, stress inducing interactions with the environment aimed at bringing forth more desirable emotional states and reduced levels of stress”.

Duhachek (2005) developed this definition based on the common essence of previous research; which is firstly, consistent with Lazarus and Folkman (1984) definition of coping.

This underlines the characteristic of dynamic process, spanning cognitive, behavioural and emotional domains of consumer response. Duhachek's (2005) research on coping explores various ways that consumers cope with stress and negative emotions. Thus, the second core component in his definition is that the dynamic processes are initiated by consumers. This addresses the emotion-coping process in the consumption episodes from the perspective of the consumer. The third key property Duhachek (2005) posits is that coping emerges as a consequence of emotion, which is not entirely true as coping could also be resulted from other possible causes. For example, Mick and Fournier (1998) draw attention on adaptive consumer behaviour in response to technological innovation. In this specific context, an individual's coping is the result of technology and paradoxes of technological products. However, this is a situation rather than an emotion.

On the one hand, Duhachek (2005) enriches the coping definition by proposing multiple dimensions; while on the other hand, this definition fails to address the feature of long-term and ongoing situation in line with the context of this study. This further justifies the need for a definition for consumer long-term coping. A detailed discussion in this regard is presented in the following section.

3.4.2.3 Working Definition of Consumer Long-term Coping

Researchers have reached no agreement about the precise definition of coping itself (Skinner and Wellborn, 1997). Thus, there is a need to develop a practical definition of consumer long-term coping for this study. Based on the two definitions outlined above and other six widely accepted definitions of coping (see Table 3-6), the common features of these definitions are synthesized in this research and a consumer coping definition in the specific context is developed.

Table 3-6 Definitions of Coping

Pearlin and Schooler (1978, p.2)
“a behaviour that protects people from being psychologically harmed by problematic social experience, a behaviour that importantly mediates the impact that societies have on their members”
Lazarus and Folkman (1984, p.141)
“constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person”
Skinner and Wellborn (1997, p.112)
“how people regulate their behaviour, emotion and orientation under conditions of psychological stress”

Eisenberg, Fabes and Guthrie (1997, p.42) “a subset of the broader category of self-regulation”. Three aspects of self-regulations: “attempts to directly regulate emotion, attempts to regulate the situation and attempts to regulate emotionally driven behaviour”
Compas, Connor-Smith, Saltzman, Thomsen, Wadsworth (2001, p.89) “Conscious volitional efforts to regulate emotion, cognition, behaviour, physiology and the environment in response to stressful events or circumstances”.
Duhachek (2005, p.42) “the set of cognitive and behavioural processes initiated by consumers in response to emotionally arousing, stress inducing interactions with the environment aimed at bringing forth more desirable emotional states and reduced levels of stress”
Carver and Connor-Smith (2010, p.685) “efforts to prevent or diminish threat, harm and loss, or to reduce associated distress”
Folkman (2010, p.120) “the thoughts and behaviours people use to manage the internal and external demands of stressful events”

First, coping is a dynamic process (Lazarus and Folkman, 1984; Eisenberg et al., 1997; Duhachek, 2005) that people respond to the stressors on an ongoing basis. In the context of this research, consumers are coping with long-term and ongoing food safety issues by different actions (examples are in Section 2.5). These actions are further classified into conceptually clear and mutually exclusive coping strategies (Lazarus, 1996; Skinner et al., 2003). Unsuccessful coping strategies are changing over time while successful strategies may be stabilised to deal with certain stress. Also it is necessary to see the dynamic process (Lazarus and Folkman, 1984; Eisenberg et al., 1997) as people respond to the stressors in different domains, for instance, cognitive, behavioural and emotional domain.

Second, people are engaged and involved to make efforts to manage or regulate the stressors (Pearlin and Schooler, 1978; Lazarus and Folkman, 1984; Skinner and Wellborn, 1997; Eisenberg et al., 1997; Compas et al., 2001; Duhachek, 2005; Carver and Connor-Smith, 2010). Some researchers prefer to limit the concept of coping to voluntary response (Compas et al., 2001), while others include automatic and involuntary responses within the coping construct (Eisenberg et al., 1997; Skinner and Zimmer-Gembeck, 2007). It is argued that involuntary responses are based on temperamentally and conditioned reactions (Connor-Smith et al., 2000). Hence, considering the chronic strains of the context, this study limits coping to conscious, volitional attempts (Compas et al., 2001) to manage and

regulate chronic stressors in the long-term and ongoing situation.

Third, no matter what kind of problems are involved (daily life problems, problematic social experience, psychological stress, stress inducing interactions with environment, threat, harm or loss), all conditions should be managed, regulated or diminished (Pearlin and Schooler, 1978; Lazarus and Folkman, 1984) to a reduced (Duhachek, 2005) or acceptable level. Coping is not a specific behaviour that can be unequivocally observed or a particular belief that can be reliably reported (Skinner et al., 2003), but individuals do have their own expectations on the result of coping efforts (Folkman and Moskowitz, 2004). In the context of this study, some consumers would do whatever they could to manage the situation, while others do something or even nothing to diminish the influence brought by food safety issues. They are making coping efforts based on their own appraisals of the situation.

Lastly, coping is an individual effort that requires personal resources (Lazarus and Folkman, 1984; Compas et al., 2001), as well as time and corresponding abilities. These points were neglected in previous definitions. The individual differences in resources availability, time investment and level of abilities lead to different coping results since the factors of individual difference determine behaviour (Carver and Connor-Smith, 2010). For example, consumers in big cities of China with higher incomes may prefer to purchase imported food products which claim to be safe and free from chemical additives. On the other hand, consumers with lower incomes may seldom choose to purchase imported food products. This could lead to different results in terms of a disparity of health outcomes and different possibilities of contamination from foodborne diseases. Therefore, consumer coping in the context of long-term and ongoing food safety issues is then defined and applied in this study as:

‘a process whereby consumers make cognitive, attitudinal and behavioural efforts over time to manage the long-term and ongoing external demands and to regulate stress-induced emotions, to an acceptable level according to individual’s capabilities and appraisals’.

This definition differs from the extant coping definitions in four ways: 1) it specifies the coping efforts in terms of cognitive, attitudinal and behaviour aspects; 2) it considers the long-term and ongoing settings of the particular situation; 3) it includes managing and regulating the external demand per se, as well as the psychological distress induced by demand; 4) and it addresses the individual differences in coping efforts. These distinct

characteristics of the working definition make a unique contribution to understanding consumer coping from a broader perspective. Therefore, considering the distinctiveness and high explanatory power drawn from the above features, this working definition of consumer long-term coping is suitable for the current research. Moreover, this definition is in line with the transactional view of stress, emotions and coping that regards coping as a transactional process between the consumers and long-term and ongoing food safety issues. Lastly, this definition fits well into the consumer domain which is consistent with the context and scope of this research.

3.4.3 Coping Structures

Coping structures reflect the nature of complexity of the coping process which cognitive, attitudinal and behavioural efforts are embedded in (Carver and Scheier, 1994b). Pearlin and Schooler (1978) have stressed that coping functions at a number of levels; while others think coping is a unidimensional behaviour (e.g., Moos and Moos, 1994). A lack of consensus on coping structures slows the progress of coping research, formulates barriers of accumulating knowledge for intervention and explanatory efforts (Sandler et al., 1997) and brings new challenges in terms of methodological process (Skinner et al., 2003). Therefore, it is important to understand how coping functions and develop a coping structure in light of the current research. Specifically, a hierarchical structure of consumer long-term coping for the current research is developed based on reviewing and criticising the previous efforts in literature.

3.4.3.1 Previous Research on Coping Structures

As noted, there is no consensus on definition and structure of the coping strategies because of the large number and varieties across situations (Moschis, 2007). In order to get a deep understanding of coping in the current research, the definition and the meaning of coping structures have to be clarified before moving to discussion on coping structures.

Specifically, the working definition of consumer long-term coping has been proposed in the last section (Section 3.4.2.3). In the current research, coping strategies refer to specific cognitive, attitudinal and behavioural responses to the chronic stressors (long-term and ongoing food safety issues) and induced psychological states. In contrast, coping structures contain different dimensions or categories of coping strategies to reflect the multidimensional nature of coping efforts (Pearlin and Schooler, 1978). In the current research, there are three dimensions of coping, formulating a multi-dimensional coping structure. The three dimensions include: coping instances, lower-order coping strategies

and higher-order coping strategies. The critiques on multi-dimensional coping structure will be provided in Section 3.4.3.2. A multi-dimensional coping structure for the current research will be proposed in Section 4.3. Here, various types of coping structure in the previous research are discussed.

First, the most influential coping structure is the unidimensional dichotomous structure, namely problem-focused coping and emotion-focused coping (Lazarus and Folkman, 1984). Problem-focused coping emphasises individual's direct actions to manage or improve the situation, whereas emotion-focused coping tends to be indirect actions towards handling the situation which is sometimes seen as inefficient (Bingen et al., 2011). However, it has been proved that dichotomy is an oversimplified and vague way to explain complex coping efforts (Carver et al., 1989). For example, faced with food safety issues, consumers may complain to both their family members (emotional venting) and authorities (problem-focused), indicating that consumers may rely on both problem- and emotion-focused coping strategies within a single stressful episode (Luce et al., 2001). The classification, therefore, is too simple to explain the complex behaviours in the current research. Research attempting to look for the proper or universal coping structure has never stopped. However, there has previously been little consensus regarding the dimensions or constitutions that best described the nature of coping (Compas et al., 2001; Skinner et al., 2003).

Furthermore, when consumers experience emotions, they may try to cope. However, little consumer behaviour research has shed light on the experiences of emotions and how consumers cope with them. Luce et al. (2001) investigate this topic in consumer behaviour area, but fail to deal with specific emotions and multiple manifestations. Mick and Fournier (1998) focus on consumer coping with technology paradoxes, but do not attempt to link specific emotions to various coping strategies. Although these two studies have attempted to examine coping beyond the dichotomous structure, they fail to propose a conceptually clear structure for examining consumers' responses to the specific psychological states. Therefore, they are not suitable for the current research as this study attempts to articulate the relationships among different specific emotions and consumer long-term coping.

Yi and Baumgartner (2004) develop another coping structure in regard to purchase-related situations where consumers experienced negative emotions and provided general conclusions in using coping strategies in various emotional situations. This structure is based on prior research and consisting of eight coping strategies in consumer behaviour

settings. Particularly, four negative emotions are proposed in the consumer context: anger, disappointment, regret and worry. They applied eight coping strategies to deal with these four negative emotions and found out systematic relations between specific negative emotion and particular coping strategies (Yi and Baumgartner, 2004). However, several limitations exist in this study. First, data collected from consumers were based on their recalls of the circumstances which may be inaccurate to reflect the actual situation (Ross, 1989). A typical example would be that consumers may be able to remember the negative emotion they had at the particular situation, but not recall what actually caused the negative emotion. Second, recalling at one point in time and describing the specific situation would lead consumers to come up with certain coping strategy (Laux and Weber, 1991; Yi and Baumgartner, 2004). For example, confrontive coping will be reported by asking consumer to recall a situation that someone else was to blame for the problem (Yi and Baumgartner, 2004). Third, this coping structure is mainly concentrated on relations between emotions and coping strategies, while failing to articulate a theoretical model. Specifically, they examined relationships among emotions and coping strategies, while overlooking the fact that other factors such as dispositional personalities and situational cognitive appraisals may affect the relationship. Due to these limitations, this structure is not suitable for the current research as it fails to consider the influential factors.

Duhachek (2005) develops a multidimensional coping structure in the consumer context based on the premise that some consumers rely on a broad range of strategies, while others choose only a narrow set of strategies, examining the individual differences in the overall pattern of coping responses (Duhachek and Kelting, 2009). This coping structure is derived from an exhaustive search of extant coping literature, establishing both convergent and discriminant validities. The coping structure is embedded in a multidimensional model of consumer coping, which can be divided into three stages over time, namely antecedents, coping and coping consequence. Within the coping structure (Figure 3-4), two dimensions are identified. Specifically, eight coping strategies are regarded as lower order factors, whilst three factors are derived and defined as higher order factors.

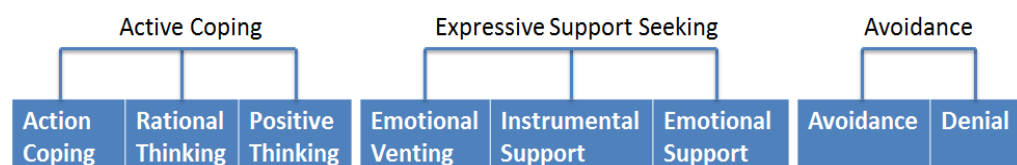


Figure 3-4 Two Dimensions of Coping Strategies (Source: Duhachek, 2005)

This multidimensional model contributes in two aspects. First, the model empirically examines multiple dimensions of coping which previous research has not addressed (e.g., Ryan-Wenger, 1992; Skinner and Wellborn, 1997). Previous research may propose a multidimensional model such as Skinner et al. (2003); however, efforts have not been made to empirically identify and prove the multi-dimensionality with the conceptualisation of coping. Duhachek (2005) assesses the performance of unidimensional and multi-dimensional coping structures and confirmed the superiority of the hierarchical structure. Second, evidence is found to support the three-factor hierarchical coping model and proves to be well functioned in explaining the structure of consumer coping (Duhachek, 2005). Duhachek (2005) examines eight different types of uni- and multi-dimensional coping structures that support previous arguments, such as problem-focused vs. emotion-focused (Lazarus and Folkman, 1984), avoidance vs. approach (Krohne, 1993), or behavioural vs. cognitive vs. avoidance (Holohan and Moos, 1987) poorly fit to the data. The results support that active vs. support seeking vs. avoidance is the best fitting hierarchical coping model for consumer studies.

Limitations of Duhachek's study are obvious as well. First, his study emphasises self-efficacy as a situational determinant of coping but neglects the situational control (locus of control). This is important in the current study as the consumers' controllability of the situation leads to different coping choices in various emotional situations. In addition, his study overlooks consumers' enduring coping predilections with the influence of dispositional personalities. Hence, considering the advancements and limitations of his study, the present research will be consistent in adopting three-factor higher-order coping strategies. This includes active coping, support seeking and avoidance. Lower-order categories in the current research reflect consumers' coping strategies with the long-term and ongoing nature. It is different from the previous research. The multi-dimensional structure will be further discussed in the next section.

3.4.3.2 Critique of Multidimensional Structure of Coping

Last sub-section 3.4.3.1 has illustrated different views on coping structures. Consequently, from both theoretical and empirical perspectives, unidimensional structure of coping is not the best approach to study coping strategies. Instead, Pearlin and Schooler (1978) have emphasised that coping functions at multiple levels rather than as a unidimensional behaviour. This means coping is not a specific behaviour that can be unequivocally observed and reliably reported (Skinner et al., 2003). It is a gathered construct that embeds numerous actions that consumers use to deal with stressful experience. Coping

needs to be conceptualised as a multi-level concept, comprising of behaviours, cognitions and perceptions towards chronic stressors in the current research.

In a long period of time, coping research has been plagued to be not able to detect systematic relations between emotions and coping (Folkman and Moskowitz, 2004). The reason for this is that extant research has mis-specified the critical coping construct (Duhachek and Oakley, 2007) as they are based on a unidimensional dichotomous structure, i.e., problem-focused and emotion-focused coping. This unidimensional structure is deemed to be difficult to identify relations (Folkman and Moskowitz, 2004). Thus a more promising theoretical perspective is required in terms of coping research: coping functions as a multi-dimensional structure (Pearlin and Schooler, 1978). In the current research, the multi-dimensional structure of consumer long-term coping consists of three dimensions, namely coping instances, lower-order coping strategies and higher-order coping strategies (details can be found in Section 4.3).

Agreement has been reached among scholars (e.g., Folkman and Moskowitz, 2004) that multiple levels of analysis are essential to distinguish between episodic coping and broader adaptive frameworks based on reviewing vast literature in the field. However, little research has shed light on measuring coping hierarchically (Tobin et al., 1989; Ayers et al., 1996; Walker et al., 1997; Connor-Smith et al., 2000). The main reason may be that there has been little consensus regarding the dimensions and core categories in the field, which has slowed the progress of coping research (Skinner et al., 2003; Todd et al., 2004). Lack of consistency among various subtypes across different coping studies make it practically impossible to aggregate and compare findings and develop a clear picture of the structure of coping (Compas et al., 2001). Hence, the current study will attempt to measure the consumer coping in a hierarchically way and demonstrate whether the multidimensional model is the best approach theoretically and empirically.

The comprehensive review conducted by Skinner et al. (2003) articulates the multidimensional structure of coping by analysing 100 assessments of coping, showing several key distinctions among these scales. This includes measurement in general settings versus in domain-specific settings, adults versus children and adolescents, considering coping hierarchies versus single plane scales. They conclude by suggesting that more research is needed in assessing the nature of coping's hierarchical structure. Skinner et al. (2003) distinguish that the hierarchical conceptualized structure of coping includes coping instances, ways of coping (lower-order factors), families of coping (higher-order factors) and adaptive processes. This four-level multidimensional structure of coping will be

illustrated from bottom to top in the following paragraphs.

The lowest level is named as “coping instances”, which are real-time responses to stressful situations. In the most ideal, instances, observations, behaviours and items should be selected to cover the full domain of structure (Ayers et al., 1996). The full domain here means the generation of instances should be as exhaustive as possible across the whole stressful situation, identifying from existing scales, consumer interviews, observations, websites, among other channels. It is difficult to predict actions as individuals would do numerous kinds of different things to deal with problematic situations (e.g., Niewczas, 2014; De Vocht et al., 2015). For example, people with knowledge of protecting and avoiding natural disasters will act out a sequence of actions to protect themselves, while others may just run aimlessly for help when something bad happens like an earthquake. The method for selecting items varies. Some researchers (e.g., Wertlieb et al., 1987) based on literature, while others (e.g., Roseman, 1991) attempted to conduct careful content analyses of coping responses. Still others (e.g., Wills, 1995) chose to select items from previous inventories and add new items for supplementation, which is a less theoretical approach. Each of these methods has certain limitations. For example, content analysis does not highlight the important outcomes while empirical item selection procedure lacks conceptual clarity (Ayers et al., 1996).

The second level proposed by Skinner et al. (2003) is the “ways of coping”, or lower order category. They argue that lower order category is to classify coping instances into conceptually clear, mutually exclusive and exhaustive action types (Lazarus, 1996). A comprehensive list of lower order categories is proposed with 400 ways of coping. Ways of coping are designed to capture how people deal with real life problems and shaped by resources and contexts (Skinner and Zimmer-Gembeck, 2007). For example, they can be used to deal with internal emotions (Lazarus and Folkman, 1984) or solve external problems; to change or accommodate the environment (Brandtstadter and Renner, 1990; Rudolph et al., 1995) and engage or disengage from stressful situations (Connor-Smith et al., 2000). However, the list is ordered in an arbitrary fashion (Skinner et al., 2003), revealing nothing about the relationships among the labels and reflecting no practical usage. Meanwhile, it is clear that not every way of coping in this list would be an option during every stressful situation or available at both age of young and adolescence (e.g., Compas et al., 2001) and adult. In other words, this list of lower order categories is just a classification, rather than adoptable strategies of coping. Thus, this list of lower order categories is not suitable for the current research. This study will propose its own lower-

order coping strategies based on the existing coping literature and identified coping instances (details can be found in Section 4.3.2).

At the same time, a 12-factor (i.e., problem-solving, information seeking, helplessness, escape, self-reliance, support seeking, delegation, isolation, accommodation, negotiation, submission and opposition) higher order category is classified from lower order categories, based on the number of times items appeared across the coping inventories and the linkage to overall theoretical system of action types. They discussed three distinct ways of organising lower order categories, concluding that none of these distinctions alone purported to be sufficient for a coping taxonomy. Theoretically, Skinner et al. (2003) claim that higher order categories should be classified, but higher order categories are not derived from the comprehensive list of lower order categories. They combined and compared 4 empirical higher order categories of hierarchical system in the literature (only 4 available) and 2 rational systems, identified 12 potential families of coping. They also addressed that each of the 12 categories has been tested separately in confirmatory analyses and found to be unidimensional and relatively homogeneous. Conversely, they used 12 potential families of coping to examine the list of over 400 lower order categories and found that many lower order categories were covered.

The last and highest level is the adaptive processes in the structure. Coping researchers normally focused on bottom-up approaches from coping instances to higher order categories, while rarely considering their larger adaptive functions (Lazarus, 1991). Skinner et al. (2003) posit that adaptive processes intervene between stress and its psychological, social and physiological outcomes, by looking at the adaptive function that higher order categories serve. These three adaptive processes are coordinating actions and contingencies in the environment, coordinating reliance and social resource available and coordinating preferences and available options (Skinner et al., 2003). For example, information seeking is not just a useful coping option but serves an adaptive function by allowing for the discovery of additional contingencies. However, are all coping efforts supposed to be successful and adaptive? The fact is that coping does not need to be a completely successful act (Schwarzer and Schwarzer, 1996). Successful coping should lead to adaptive processes while unsuccessful coping become mal-adaptiveness, and require a re-cope from the very beginning (Lazarus, 1993).

The method of classifying the higher order category is a top-down approach and is a good starting point for further work on the structure of coping.

However, first, there are some confusions existing among these levels. For example, some higher order category labels such as “approach” and “avoidance” are also used as lower order category labels. Another typical example is the way researchers understand the hierarchical level. Duhachek and Oakley (2007) review nine higher order categories in various models. However, the higher order category in Skinner et al.’s (2003) structure is regarded as lower order category in their review; while the three adaptive processes were treated as three-dimensional higher order categories. Apparently researchers in these two studies have different understanding towards levels of coping structure. This may change the result of their research because comparisons are made between different subjects. Hence, Duhachek and Oakley (2007) concluded by suggesting that the two-dimensional approach-avoidance higher order category is the best hierarchical presentation. However, Skinner et al. (2003) claim that the approach-avoidance has no clear definition and as a set, is not exhaustive. These two arguments are contradictory. Thus the argument exists that the best fit higher order category for the specific domain remains debatable.

Second, it is believed that construction of an action typology is critical in identifying a higher order structure for coping (Lazarus, 1996). The reason is that key role actions can bridge the conceptual spaces between coping instances and adaptive processes. Hence, to simplify the problem and avoid confusions, lower order and higher order categories would be defined specifically in the present research. Lower-order category refers to coping strategies that formed by using both top-down approach and bottom-up approach. In other words, lower-order coping strategies are proposed based on the extant literature and modified by identified coping instances from consumer interviews. In contrast, higher order category refers to coping strategies classified from lower-order category based on their adaptive functions.

3.5 Identified Research Problem in Stress, Emotions and Coping

Overall, the review of the literature shows that research on stress, emotions and coping has been examined from various perspectives. Knowledge in the psychology field on the life-span developmental issue, intervention and health has been explored to a great extent (e.g., Compas et al., 1988; Sandler et al., 1997; Aldwin and Yancura, 2004). Nevertheless, some important aspects of stress, emotions and coping research have been neglected, especially in the consumer domain.

First, from the perspective of the consumer chronic strains as stressors have been virtually ignored in the extant literature. However, the chronic strain defined as a situation of

“continuing problematic nature and extended duration” (Gottlieb, 1997), has been proved stronger for predicting psychological distress (e.g., Mathur et al., 2006). This is especially true in the context of the present study that consumers are living with long-term and ongoing food safety issues. It is posited that food safety issues in China as a chronic strain provokes more distress to consumers due to the unresolved, complex and continuing difficulties (Avison and Turner, 1988; Norris and Uhl, 1993; Mathur et al., 2006). The extant studies on chronic strains have focused on human health and well-being (e.g., Deimling et al., 2006), developmental issue (e.g., Cummings et al., 2014), or social roles (e.g., Menaghan and Lieberman 1986). The present research does not fit into any of above fields of study. There is no research so far that has examined chronic stress aroused by food safety issues. It is, therefore, important to investigate the gap that chronic strains as stressors in consumer domain.

Second, in the theory of transactional view of stress and coping proposed by Lazarus and Folkman (1984), the process of appraisals (primary and secondary appraisal) and coping are regarded as a continuous and dynamic evaluation of the stressor by individuals. Consequently, stress changes with the appraisal and evaluation over time. However, the dynamic nature of stress (Pearlin et al., 1981) is somehow neglected in their research, especially in conditions that feeling of stress has eliminated. Therefore, there is a need to reconsider and explore stress and coping in the consumer domain.

Third, as an important aspect of stress research (Lazarus 1999), the study of emotions has been drawn an increasing attention in the consumer research. This body of research often argues that consumers frequently generate negative emotions in consumption situations (Yi and Baumgartner, 2004), such as worry in food safety issues (Wang et al., 2008; Zipser et al., 2016). Meanwhile, this research also argues that positive emotions may be elicited from the long-term food safety issues as consumers may have got used to the situation, or they may enjoy their ways to tackle the problems such as growing own foods. This will be explored in the empirical stage of this research. Hence, this research attempts to advance extant literature to emotions (both positive and negative) by examining frequently experienced emotions in consumer domain. The reason to identify and focus on specific emotions is that consumers may have distinct behavioural tendencies and actual behaviours in dealing with the problems.

Fourth, despite the richness of extant research on coping, little research has paid adequate attention to examine it from the perspective of the consumer although recent research suggests that marketing researchers have much to gain by understanding the reasons

consumers experience stress, emotions and how they attempt to cope with it (Viswanathan et al., 2005). A limited number of coping research has examined from a consumer perspective (e.g., Lin et al., 2003; Duhachek and Iacobucci, 2005; Han et al., 2007). An important feature neglected in consumer research is the situation of consumers being influenced by long-term and ongoing food safety issues. In sum, there is a need to conceptualise how consumers cope in the long-term and ongoing setting and this is also the main focus of the present study.

Last, the relationships between psychological states and coping are still vague and debateable, especially a lack of the discussion on the moderating effect. Some have argued that both emotion and cognition presage coping and examined the emotion of anger and threat and cognition of self-efficacy (Duhachek, 2005); others have identified the direct effect between emotion and coping (e.g., Luce et al., 2001). Consensus has not yet reached on the relationships. Hence, the discussion on these concepts and relationships will be provided in the Chapter 4, along with the conceptual framework construction.

3.6 Research Aim and Objectives

This thesis integrates research problems identified in a broad range from two bodies of literature: food safety and related studies in Chapter 2; and stress, emotions and coping in Chapter 3. The research aim is to **conceptualise and empirically explore consumer long-term coping strategies and to achieve an in-depth understanding of factors that may influence the relationships between consumers' various psychological states and their long-term coping responses in the context of a long-term and ongoing food safety situation.**

Achieving the overall research aim requires the following objectives to be accomplished:

- To conceptualise the multi-dimensional structure of consumers' long-term coping strategies in relation to food safety issues.
- To develop a scale for measuring the multidimensional structure of consumers' long-term coping strategies in relation to food safety issues.
- To identify specific emotions that consumers experience when faced with long-term and ongoing food safety issues.
- To assess and challenge the theory of the transactional view of stress and coping in a situation of consumers facing long-term and ongoing food safety issues.
- To identify and examine the influential intervening factors between the emotional states and consumers' long-term coping strategies in relation to food safety issues.

3.7 Research Scope

Consumer long-term and ongoing coping strategies are the focus of the study.

First, the subject of this research is food consumers and more specifically the Chinese food consumers. Food consumption behaviour might vary from food purchasing, selection, handling and consumption (e.g., Yeung and Morris, 2001; Redmond and Griffith, 2003). This study will focus on the purchase and consumption of vegetables. The reasoning is consistent with the research context that food safety issues are a general condition which has significant influence on consumer daily food consumption and vegetables are mostly suitable for all consumers in China. Meanwhile, based on three food safety concerns identified in the Chinese food market in Section 2.3, problems occurring in vegetables can represent all food safety concerns, namely food hygiene, unsafe food and food poisoning.

Second, the concept of “long-term” has been defined in Section 3.2.2 with three factors: 1) chronic external demands are not individual stressful events; 2) they are continuous and ongoing strains; 3) they have been experienced by individuals for a substantial period of three years and beyond. Individual food scandals normally would be handled by government entities within one year. “Three years and beyond” defined here is to highlight the general situation in a long-term.

Third, this research examines relationships among consumer stress, emotions and consumer long-term coping; moderating effect of cognitive appraisal (self-efficacy and locus of control); personality trait (optimism and pessimism) and demographic factors (education level and family structure). This study does not deny that there may have other factors influencing the coping efforts, but moderators identified in this research best fit with the research problems and context. Hence, in order to have a thorough understanding of crucial factors within the research conceptualisation, attention will be only given to the chosen scope (details see Section 4.4).

3.8 Summary

This chapter offers the solid theoretical foundation for the present research. In general, it provides a review of relevant literature in the study of stress, emotions and coping in consumer domain. Each concept has been discussed in detail and their relationship has also been assessed. Based on the extensive literature review, stress, emotion and coping are conceptualised into a general model, with a multi-dimensional coping structure embedded.

In particular, studies on stress in the field of marketing and consumer behaviour are

claimed to be inconsistent and virtually ignored (Hutton, 2015; Moschis, 2007). This inadequate researched field calls for further investigations, as currently there is no knowledge on consumer's stress states in dealing with long-term and ongoing food safety issues. In the transactional model proposed by Lazarus and Folkman (1984), the process of appraisals is seen as a dynamic and continuous evaluation of the stressful event (Carver and Vargas, 2011). However, research on the dynamic nature of stress in the chronic situation is neglected. In the context of this research, where consumers are facing chronic food safety issues, the level of stress might be high upon the evaluation of the situation. In the long-term and ongoing settings, the level of stress may maintain if there is no efficient way to deal with them, but it also may drop if the coping efforts are adaptive. In one extreme condition, stress may even disappear. If so, question such as 'would consumers stop taking actions to cope with the situation as stress disappears' needs to be resolved. This may advance our knowledge of consumer stress in a long-term and ongoing situation.

The particular situation of the present research is determined as long-term and ongoing settings. There is no research so far that has covered such situation in consumer domain. Therefore, it is important to define what the long-term and ongoing strains mean in the research context. Based on the literature of chronic strains, this research defines the long-term and ongoing strains from three perspectives: 1) it is not individual stressful events, such as individual food scandals; 2) they are continuous and ongoing strains; 3) consumers have experienced this strain for a period of three years and beyond, which indicates a relatively long period of time.

Another important part of consumer psychological states is emotion. Emotion is an interdependent concept with stress in a more complex format (Lazarus, 1999). In the context of the present research, emotions experienced by consumers in long-term and ongoing food safety issues might mix with positive and negative emotions. In order to advance extant literature on emotions in consumer research, stress-induced emotions are discussed. Moreover, the emotion research approach of cognitive appraisal is highlighted since it is regarded as a promising way of investigating emotion in the context of consumer behaviour (Johnson and Stewart, 2005). Despite the fact that cognitive appraisal theory offers a more extensive explanation on the nature of emotion (Bigné et al., 2008), arguably, emotion is not necessarily generated by cognitions (Izard, 1993; Zajonc 1984). Based on the ongoing debate regarding emotion and cognition approach, this research argues that the problem per se and emotion both can trigger coping efforts.

Coping is the central concept of the present research and has been discussed and criticised

in detail within this chapter. A number of definitions have been used by previous researchers to explain coping (e.g., Lazarus and Folkman, 1984; Compas et al., 2001). Given the fact that coping in the context of the present research reflects a unique situation, where consumers coping in a long-term and ongoing situation, a working definition of consumer long-term coping is developed in the context as *‘a process whereby consumers make cognitive, attitudinal and behavioural efforts over time to manage the long-term and ongoing external demands and to regulate stress-induced emotions, to an acceptable level according to individual’s capabilities and appraisals’*. As consensus has not yet emerged on the dimensions of coping, it is important to develop a coping structure that fits into both the multi-dimensional nature and the long-term and ongoing setting. It has been argued that a lack of consensus of coping structure slows progress and formulates barriers of accumulating knowledge (Sandler et al., 1997).

Based on the literature review, the theoretical problems in the study of stress, emotions and coping are identified. In addition, the overall theoretical research aim is established by integrating the research problems from two bodies of literature. The research aim is twofold. This research aims to conceptualise consumer long-term coping strategies, as well as to achieve an in-depth understanding of the factors that may influence the relationships among consumer psychological states and long-term coping behaviours in the context of long-term and ongoing food safety situation. In order to achieve the overall theoretical research aim, five specific research objectives are proposed as follows: 1) to conceptualise the multi-dimensional structure of consumer long-term coping strategies; 2) to develop a scale for measuring the multidimensional structure of consumer long-term coping strategies; 3) to identify specific emotions that consumers experience when faced with long-term and ongoing food safety issues; 4) to assess the theory of transactional view of stress and coping; 5) to identify and examine the influential intervening factors between the emotional states and consumer long-term coping strategies. Moreover, the research scope and boundary is specified in order to have a thorough understanding of crucial factors within the research investigation and conceptualisation.

Drawing on the comprehensive literature review, theoretical research problems have been formulated, research aim and objectives have been proposed and a clear research scope and boundary have been outlined. Based on this, next chapter will concentrate on proposing a set of research hypotheses and constructing the general conceptual framework for empirical research.

Chapter 4 Research Framework and Hypotheses

4.1 Introduction

Chapters 2 and 3 have reviewed literature on the study of food safety issues and the study of stress, emotions and coping. Research problems have been identified from the two bodies of literature from the perspective of the consumer. The literature review has suggested that consumer long-term coping has been overlooked; meanwhile, stress and emotions have not been well examined in the existing consumer literature; factors that influence the relationships between stress, emotions and consumer long-term coping appear to be neglected.

The literature review in previous chapters on consumer psychology and behaviour has identified main constructs which trigger consumer long-term coping, namely consumer perceived stress and emotions. Moreover, the extant research has suggested that situational factors (Pearlin and Schooler, 1978) such as perceived controllability of the situation (e.g., Schaubroeck and Merritt, 1997), perceived self-efficacy (e.g., Sujan et al., 1999) and dispositional factors which are relatively stable individual personality traits may also influence coping behaviours. Furthermore, considering the individual differences in consumers, some demographic factors may be important in affecting consumer coping as well. Integrating the research problems identified in Chapters 2 and 3, this chapter will conceptualise consumer long-term coping and articulate variables that may predict and influence consumer long-term coping efforts.

This chapter provides a solid theoretical foundation for the variables that trigger and influence consumer long-term coping, proposes research hypotheses and conceptualises these constructs into a general conceptual framework. Section 4.2 to Section 4.4 demonstrate all main constructs for conceptualising the general framework, with a focus of proposing the multi-dimensional structure of consumer long-term coping. Section 4.5 highlights the conceptual framework. Section 4.6 concludes with a short summary.

4.2 Stress and Emotions

Based on the previous discussions, it is clear that consumers would generate stress and emotions when faced with long-term and ongoing food safety issues. In this stressful consumption situation, consumers have to think about whether the foods they buy are safe or not. This section explains why stress and emotions are main constructs for consumer long-term coping and what emotions could possibly be generated from the situation.

4.2.1 Justification for Stress and Emotions as Main Constructs

The following two sub-sections concentrate on justifying the role of stress and emotions as main constructs in the present research. Specifically, sub-section 4.2.1.1 discusses stress as an antecedent to coping, while Sub-section 4.2.1.2 addresses the main construct of emotions to coping. Together these aspects illustrate the importance of examining specific emotions and coping behaviours.

4.2.1.1 Stress as a Main Construct

Stress has been examined in various fields of study since 1930s, with increasing attentions paid to social and behavioural sciences (Moschis, 2007). In consumer research, studies have also investigated the relationship between purchasing, consumption and stress (e.g., Mathur et al., 2006). However, there is much inconsistency within the examining of stress from the perspective of the consumer.

Based on the transactional theory of stress (Lazarus and Folkman, 1984), stress will be elicited by appraising the situation when individuals encounter some stressful events or situations. After the appraisals of the chronic stressors and individuals' capability of handling the situation are evaluated, coping actions will be made (Carver and Vargas, 2011). The appraisal process and coping is dynamic, illustrating individuals' continuous efforts to evaluate the situation and resources to respond to the stressor (Pearlin et al, 1981). In the context of the present study, food safety is a very stressful consumption situation, which consumers have experienced for decades. This not only includes individual food scandals, but also the general poor safety condition of food products. This enduring and continuous problematic consumption situation (Gottlieb, 1997) may be influential in consumers' psychological states and behaviours. On the one hand, some consumers may have a high level of stress due to the unresolved and continuing nature of the problems (Day and Livingstone, 2001). According to the transactional theory (Lazarus and Folkman, 1984), these consumers would take actions to handle the problematic situation and perceived stress. Stress is, therefore, triggering consumer long-term coping behaviours. On the other hand, others may not experience the same level of stress as coping efforts they made are adaptive which decrease the level of perceived stress when faced with the same situation.

Specifically, Moschis' (2007) research highlights the relationship between the stress and consumer involvement and compares it with non-stress experienced situation. He states that higher stress experienced by consumer addresses the importance of higher consumer

involvement in stressful consumption situations at all stages of decision making process over the non-stressed ones (Moschis, 2007). From the chronic perspective, non-stress situation may be resulted from the decreased level of stress as time goes by. Therefore, it is notable that coping with decreased level of stress to the largest extent (non-stress) has been somehow neglected in the extant research. In previous studies, researchers assume the function of coping is to deal with stress and negative emotions (e.g., Lazarus and Folkman, 1984; Luce et al., 2001). The causal relationship (Lazarus and Folkman, 1984; Skinner and Wellborn, 1997; Eisenberg et al., 1997) reflects that where stress is diminished, there is no need for coping. However, the present study argues that consumers might continue to cope with the diminished stress aroused by the external chronic demands. Possible reasons are twofold. First, consumers' continuous coping behaviours under a chronic strain has become psychological and behavioural inertia (e.g., Huff and Clark, 1978; Koval and Kuppens, 2012) without noticing that stress has diminished or faded away. Second, although consumers no longer feel any stress to the chronic problematic situation, they might also tend to cope with the problem per se. In other words, consumers do not deal with the stress (faded away) brought by the external demand, but to cope with the problematic chronic external demand itself. In addition, in the long-term setting when coping behaviour has become the routine of consumers, there is no need to seek support from others as it requires change, which will arouse new stress (Pearlin, 1989).

Hence, consumer perceived stress is important in relation to consumer long-term coping responses, which needs to be further explored in the present research. Next sub-section discusses the importance of emotions as the main construct of the research.

4.2.1.2 Emotions as a Main Construct

Stress is limited in scope and depth in comparison to emotion, because stress explains less about how individuals' struggle to adapt to the stressor. On the other hand, emotions provide a much deeper and richer source of information regarding how people get along with encounters, compared to the unidimensional concept of stress (Lazarus, 1993). It is, therefore, important to discuss the role of emotions in consumer behaviour.

It is argued by Williams (2014) that emotions are influential in affecting consumer behaviour in terms of their judgement, evaluation and decision making. The construct of coping includes not only consumers' efforts and actions to manage the stressor per se, but also to regulate perceived stress and elicited emotions (Compas et al., 2001). This is consistent with the historical view that coping is invoked as a response to reduce distressing emotion states (e.g., Vaillant, 1977). Hence, in the context of the present study,

consumers may generate various emotions and corresponding coping efforts will emerge to regulate these elicited emotions. Emotion is identified as one of the main constructs to presage consumer long-term coping behaviour. It is also in line with the argument which regards emotion as an antecedent to behaviour (e.g., Lee and Sternthal, 1999; Williams and Aaker, 2002). The present research argues that emotions have direct influence on consumer coping behaviours, which can be seen as the antecedent to behaviour, rather than as a consequent (e.g., Mehrabian and Wixen, 1986) or as a mediator of marketing relationships (e.g., Mano and Oliver, 1993). A detailed discussion can be found in Section 3.1.1.1.

In the study of food safety issues, worry is the only emotion that has been documented. However, consumers may experience more emotions beyond worry in facing long-term and ongoing food safety issues. The next section is to discuss emotions that could possibly be generated in the context of the current research.

4.2.2 Consumer Emotions

The research of emotions in the field of consumer behaviour has examined both positive and negative emotions that consumers may experience. Richins (1997) proposes a Consumption Emotion Set (see Chapter 3, Table 3-4) which illustrates emotions elicited in consumption episodes and considers consumers' subjective views on the consumption experience (Goldie, 2009). However, this set of emotions is not exhaustive, because other important emotions such as disappointment are overlooked. In order to gain thorough understanding of consumers, Desmet and Schifferstein (2008) suggests that this set can be adopted as a shopping list where appropriate emotions may be selected to fit in the particular research context. Specifically, facing the long-term and stressful situation of food safety, consumers may elicit various kinds of emotions, such as worry, disappointment, anger and fear. Considering problematic food safety situation in a long-term, some of emotions are still high in influencing consumers, while others may not have their capacities. In this section, four possible emotions elicited by consumers in the long-term and ongoing food safety problems will be discussed.

First, consumers worry about the situation of food safety in China (Zipser et al., 2016; Wang et al., 2008). It has also been documented in various consumer surveys in China (Global Attitude Survey, 2015; NFSIR, 2016). Therefore, worry is central in the discussion of food safety as a long-term and ongoing problem. Generally, the emotion of worry could be generated under various circumstances in individuals' daily life. The core theme of worry is the appraisal of undesirable event, danger, or threat, combined with uncertainty

regarding what will happen and what to do (Laux and Weber, 1991; Yi and Baumgartner, 2004). In the present research, consumers are experiencing poor food safety condition in their daily lives for a long period of time. It is easy for some consumers to appraise the situation as a threat with uncertainty to their health in general. Worry, therefore, is generated. Attributions such as nervous, tense (Richins, 1997), lack of control (Menon and Dubé, 2004) and self-blame (Maute and Dubé, 1999) are common causes for worry. Some researchers argue that faced with negative thoughts, unpleasant effect, as well as loss of mental control, worriers continue to worry even though the experience is negative associated (Mathews, 1990). Some others argue that worry is an efficient way to distract from undesirable events and to reduce the likelihood of negative events occurring (Borkovec and Lyonfields, 1993; Brown et al., 1993). It is also found that worriers are slower in making decisions to resolve real-life problems when the situation is ambiguous and uncertain (Metzger et al., 1990; Tallis et al., 1991). Krohne (1993) posits a dual role of worry. First, intolerance of uncertainty components may be dealt by worry if an individual believes that worrying increases the level of control over uncertain events. Second, intolerance of arousal components may be dealt when shifting to a verbal-linguistic mode from images that decrease physiological activation. Research postulates that the natural actions associated with worry tend to be avoidance, escapism and protection (Frijda et al., 1989; Roseman et al., 1996). However, worried consumers may also engage in active coping or turning to seek support from others (Laux and Weber, 1991).

Yet, the emotion of worry is the only emotion that has been outlined in consumer and food safety literature. However, consumers may also have other emotions when facing food safety problems. For instance, Ortega et al. (2011) imply that consumers are not satisfied with government monopolies on food safety assurance. Dissatisfaction, disappointment and unfulfillment are three aspects that represent the concept of disappointment (Yi and Baumgartner, 2004). The feeling of dissatisfaction may lead to the emotion of disappointment. Therefore, it is highly possible that the emotion of disappointment will be generated by consumers when faced with long-term and ongoing food safety issues.

When an outcome is worse than expected, the emotion of disappointment is generated (Ortony et al., 1988). Zeelenberg et al. (2000) posit that disappointment might end up with goal abandonment. However, not every emotion of disappointment involves a goal and an action to achieve the goal. In general, an individual who suffers the emotion of disappointment may feel powerless and tend to flee away from the current situation (Zeelenberg et al., 1998). There are two types of disappointment identified by Van Dijk and

Zeelenberg (2002): person-related disappointment and outcome-related disappointment. The difference between these two types is based around feelings and intentions involved. For instance, person-related disappointment is other- and relationship- focused, whereas the outcome-related disappointment tends to be more self-focused (Lelieveld et al., 2011). In consumer research, consumers might experience disappointment caused by impersonal situation (Yi and Baumgartner, 2004), for example, terrible weather conditions which cannot be changed by individuals. This can be referred as the ‘outcome-related disappointment’ (Van Dijk and Zeelenberg, 2002). In relation to food safety issues in general, consumers may not have the ability to change it substantially, at least in the short term. Therefore, outcome-related disappointment might be generated because of either the powerless feeling they have, or dissatisfaction with government efforts.

Third, another important emotion that consumers may elicit from the stressful situation is anger. Anger is defined as a sense of “being slighted or demeaned”, based on the appraisal theory (Lazarus, 1991, p.826). This means that this negative emotion arises from appraising the situation (Roseman et al., 1994; Lerner and Keltner, 2000) and the person would ease the harm and low pleasantness caused by others (Yin et al., 2014). Regarding the causes of consumer anger, researchers hold different views. Some address single broad causes, for example: by violating the moral code of conduct (Diaz et al., 2002); by transgressing the social norm (Weiner, 2000); or by failing to achieve desired goals (Nyer, 1997). On the other hand, others suggest multiple causes of anger, for example: Funches (2011) has identified three causes of consumer anger in the context of service failure, namely broken promises, unfair treatment and expressed hostility. In the context of the present research, the negative emotion of anger may be caused by appraising the poor safety condition of foods, which is different from the causes discussed above. Consumers may be angry about the situation that has not been improving over a long time, or potentially could be getting worse in the future.

In the previous research, consumer behaviour and the emotion of anger are empirically associated, mainly in the field of service failure (e.g., Smith and Bolton, 2002; Heyes and Kapur, 2012). Within service failure literature, anger is linked to aggressive action based tendencies, for example, complaining behaviour (Harmeling et al., 2015), thoughts of violence (Bougie et al., 2003) and boycotts (Friedman, 1999). This other-blame type of emotion predicts confrontive and active coping tendency, which is to manage the problem and reduce the source of stress (Smith and Ellsworth, 1985). Therefore, in the present research, if consumers elicit the emotion of anger, they may also tend to manage food

safety problems by actively getting involved and seeking information rather than choosing to avoid.

Fourth, consumers may also generate the emotion of fear, which refers to the negative emotion evoked when low certainty of situation and low situational control are appraised (Smith and Ellsworth, 1985). Unlike anger people tend to make optimistic risk assessments, fearful people tend to make pessimistic judgements over the situation (Lerner and Keltner, 2001). In other words, fearful people tend to perceive the situation to be uncertain and loss of control with higher risk (Han et al., 2007). Fear appeals can often be found in terror management (Shehryar and Hunt, 2005) rather than consumption situations. For example, a field experiment reveals that victims of the 9/11 terror attack in the US have since lived their lives with high emotion of fear and try to plan precautionary actions for all potential situation (Han et al., 2007). Research also highlights that fearful people prefer risk-averse options (Tversky and Kahneman, 1981), influenced by the appraisal tendency of fear (Fessler et al., 2004). This is especially true in the present context where Chinese consumer may elicit the emotion of fear because they have deep concerns about long-term food safety issues that may have huge potential negative impact on their health. However, it is unknown whether the emotion of fear can still be strong enough to influence consumers with the long-term nature of the problems.

This section discusses four emotions that consumers possibly may elicit when they are dealing with food safety issues over time. However, based on the extension of the transactional theory of stress and coping, positive psychological states have been taken into consideration in stressful situation (Folkman and Moskowitz, 2000). This means that positive and negative emotions may arise simultaneously in the long-term consumption situation. Yet, quite limited consumer and food safety literature has evidenced that consumers are experiencing specific emotions, not to mention the positive emotions. Therefore, except the negative emotions discussed above, positive emotions that may be generated will be explored and discussed in the qualitative study. The present research aims to identify the emotions (both negative and positive ones) that consumers may experience when faced with the problems in order to understand consumer psychological states and to predict consumer coping behaviours.

4.3 Proposed Multi-dimensional Structure of Coping

Consumer coping with long-term and ongoing food safety issues, functions on a number of levels (Duchachek, 2005) and encompasses a plethora of perceptions, cognitions, actions

and behaviours (Pearlin and Schooler, 1978; Carver and Scheier, 1994). Therefore, it is essential to conceptualise consumer long-term coping as a multi-dimensional structure. As discussed in the beginning of section 3.4.3.1, “coping structure” is adopted as the label in the present research and short for the multi-dimensional structure of consumer long-term coping (Figure 4-1). Three distinct levels of consumer coping are identified, namely higher-order category (Level three), lower-order category (Level two) and coping instances (Level one).

Coping strategies in the lower-order category are classified from coping actions (instances) in the extant literature and consumer interviews, which are mutually exclusive and conceptually clear. Moreover, the higher order categories of coping are developed from the lower order categories according to their adaptive functions. The present research will be consistent with Duhachek’s (2005) three-factor higher-order category, suggesting that it is the best empirical fit and the combination of active coping, expressive support seeking and avoidance is better suited to the consumer behaviour domain. However, “active coping” as a label in higher-order category needs to be changed, as it is easy to be confused with “action coping” in the lower-order category. Therefore, in the current research “active coping” is replaced by “initiative coping” for better understanding. Here initiative coping refers to the higher order coping category which consumers take their initiatives to actively cope, to cope in advance and to accommodate to the situation. The following is the discussion on three dimensions in detail.

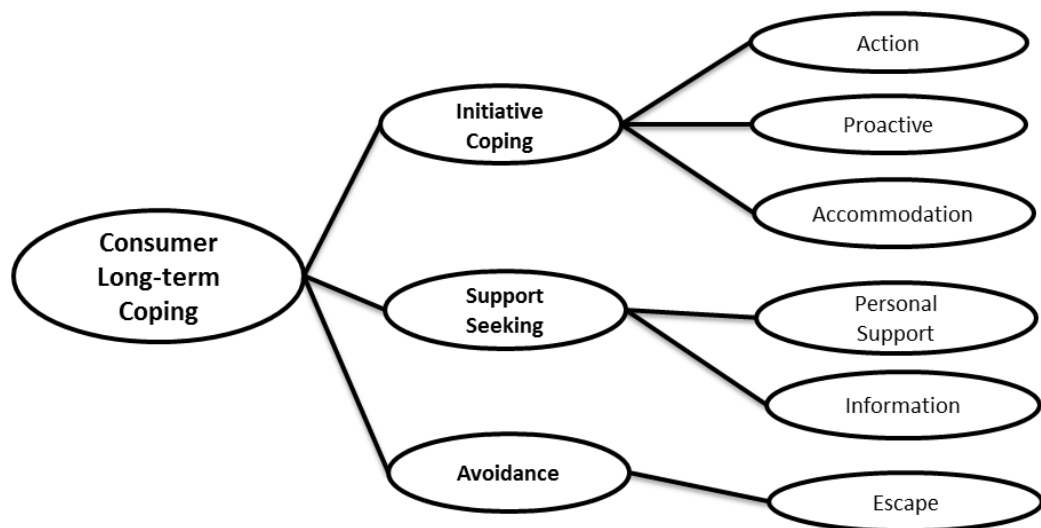


Figure 4-1 Multi-Dimensional Consumer Long-term Coping Structure (Proposed)

4.3.1 Coping Instances-Level One

The fundamental level of coping structure is “instances” of coping. They are changing real-time consumer coping behaviours and they are large in number (Skinner et al., 2003). Table 4-1 provides a short list of coping instances captured from websites, newspapers, magazines, as well as from the literature. The list of coping instances here is definitely not complete as consumers may have a body of different responses to long-term and ongoing food safety issues. More coping instances will be identified through consumer interviews and further exploration of existing sources such as reports, news and internet webpages. They are important to help classify the lower-order category of consumer coping (Table 4-1).

However, coping instances are not included in the coping structure for two reasons: 1) theoretically, coping instances form a pool of items that individual consumers adopted to cope with the situation; they differ due to individual differences and they are grouped to reflect similar and common underlying dimensions (Duhachek, 2005); 2) methodologically, the large number of coping instances contain redundancy to a great extent which make them difficult to be examined in a systematic way until they are classified into lower-order categories. For example, coping instances in Table 4-1 “actively acquire knowledge on food safety, food labels and certificates” and “gain knowledge of food safety issues on a daily basis”. These can be classified into lower order category of “information seeking” where consumers cope with this problematic situation by looking for additional information. These two are merely examples of coping instances. Consumers have many more different “information seeking” coping actions which may cause redundancy if they are supposed to be examined. Hence, they have to be classified into lower order categories which are conceptually clear and testable. Drawing on these two reasons, coping instances are not included in the coping structure, but explored and identified during the process of the study.

Table 4-1 Examples of Coping Instances to Food Safety Issues (Source: the author)

Overseas online shopping
turn to buy trusted products or similar products without quality problem
purchase food product direct from famers, for example, eggs
look for alternative products, including organic food
look for safe food supply by close friends or connections
sign contract with farmland which will send fresh vegetables and fruits directly to customers

try to buy food products from "big brands" or famous brands
do not want to spend time and money on making complaints
actively learn some knowledge of food safety, food labels and certificates
try to buy food in the supermarket or chain stores
keep the purchase receipt in case any food safety issues aroused
try to make fruit juice, cakes and yogurt by self to replace relevant products
grow certain food at home
try to express their feelings via radical words
just pay attention to food product with food safety issues
would pay attention to food safety knowledge on a daily basis
elder citizens are careful about their eating habits, having sufficient time to prepare
young mothers would look at the ingredients before purchase food for children
reduce the time of eating out/dining out
enhance the knowledge of food safety
choose foreign brand product
report to the relevant institute
reducing consumption of fluid milk in the year
zero consumption at the time of scandal

4.3.2 Lower Order Category of Coping-Level Two

Six lower-order coping strategies are identified through the review of extant literature and other sources and will be modified using consumer interview within the qualitative stage (Table 4-2). Coping instances are here to help classify the lower-order category of consumer coping. Both deductive (from the literature) and inductive (from interviews, newspapers, social media, etc.) approaches are adopted to form the lower order categories of consumer coping. The inductive part will be discussed in the next Chapter outlining the qualitative study method. From the deductive approach, lower-order coping strategies include ‘Action’ coping, ‘Proactive’ coping, ‘Accommodation’ coping, ‘Personal Support’ coping, ‘Information seeking’ coping and ‘Escape’ coping. Examples of how coping instances be classified into lower-order category will be provided in the following discussion.

Table 4-2 Lower-Order Categories of Coping

Action (Yi and Baumgartner, 2004; Duhachek, 2005; Moschis, 2007)
Proactive (Aspinwall and Taylor, 1997)
Accommodation (Mick and Fournier, 1998)
Personal Support (Yi and Baumgartner, 2004; Duhachek, 2005)
Information Seeking (Skinner, Edge, Altman and Sherwood, 2003)
Escape (Moschis, 2007; Yi and Baumgartner, 2004; Duhachek, 2005; Skinner et al., 2003)

Action: this strategy represents direct cognitive and/or behavioural efforts to manage and resolve the problem (Ayers et al., 1996). It appears in almost every scale within coping research (Skinner et al., 2003). The title of this strategy varies across studies, such as problem solving, planful problem solving and confrontative coping. In the present research, ‘action’ is the label for this strategy as it articulates that consumers take direct actions to deal with the given stressful situation (Yi & Baumgartner, 2004; Duhachek, 2005; Moschis, 2007). For example, consumers make complaints when dining at restaurant with poor food safety condition.

Proactive: is a strategy neglected by most of the coping structures. Proactive coping refers to ways people cope in advance to prevent or mute the impact of events that are potential stressors (Aspinwall and Taylor, 1997). Managing threats to health can take many forms (Aspinwall, 2011). There is a lot literature on psychological determinants of preventive health and screening behaviours (e.g., Miller et al., 2009). However, these preventive health and screening behaviour focus on illness and diseases and very little of the literature has used proactive coping to examine the specific resources, appraisals and coping efforts that may underlie such actions (Aspinwall, 2011). Food safety issues may have huge potentials to threat health. Thus, consumers are expected to prevent or mute the impact of food safety issues by taking proactive coping strategies. Typical example is the special supply. It is a coping method in regard to food safety issues for certain groups of people in China, such as high-ranking government officials and selected intellectual elites (Yan, 2012). Food products are produced in organic and absolutely safe ways before directly supply to these final customers. Although special supply is exclusive to certain groups, it is the way that they cope in advance to prevent food safety problems. In contrast, for people who have no access to the special supply, they may have their own proactive strategies to

cope with the situation, for instance, picking up vegetables from suburb farms themselves.

Accommodation: this strategy functions as flexibly adjust preferences to options (Mick and Fournier, 1998). Specifically, consumers adopt this strategy to accommodate themselves to the problematic situation (Skinner et al., 2003). It could be cognitive, emotional or behavioural accommodation. Consumers who adopt this strategy may try to get distracted, restructure cognition, minimize the influence and accept the current situation (Skinner et al., 2003). For example, consumers would accommodate themselves and look for alternative food products, such as organic food, which prohibits all artificial fertilizers, pesticides, chemical additives and genetically engineered technology in the process of food production (Liu et al., 2013).

Personal Support: labelled as social support by Yi and Baumgartner (2004), refers to use available social resources to resolve problems, for example, turning to family and friends for advice, or support; and it reflects how individuals adapt to stressful episodes (Glanz and Schwartz, 2008). It is helpful to promote psychological adjustment (Taylor, 2007) as well as to contribute to physical health (Taylor and Stanton, 2006). Duhachek (2005) distinguishes the differences from emotional support and instrumental support, but the underlying meaning for both is the same. Thus, personal support is inclusive. Example of personal support is that consumers try to look for safe food supply through their friends or family connections (Table 4-1).

Information Seeking: this strategy functions as finding additional contingencies by reading, observation and asking others (Skinner et al., 2003). The reason to find additional contingencies is uncertainty, which hinders coping responses (Lazarus and Folkman, 1984). However, research has shown that information seeking could lead to increased distress because the risk is perceived to be heightened (Miller et al., 1999). However, benefits gained from the information are significant as well (e.g., Ong et al., 1998; Koo et al., 2006). For example, information which is useful and trustworthy is sought by consumers and may help reduce the distress by enabling certain actions (van Zuuren et al., 2006). An example of this strategy may be trusted brands. This strategy can be applied to the current research because some consumers would like to know more about external demands and look for additional information to guide their actions. For example, consumers would pay attention to food safety knowledge and information on a daily basis (Table 4-1).

Escape: is the strategy to disengage or keep away from stressful situations. It can be found

in many coping structures as well (Skinner et al., 2003; Yi and Baumgartner, 2004; Duhachek, 2005; Moschis, 2007). It is argued that the strategy of escape reflects ‘giving up’ action, having no faith in the situation, or relinquishment of control (Peterson et al., 1993; Dweck, 1999). In the context of the present research, although the general poor food safety condition cannot be avoided, consumers still can adopt this strategy in three ways: 1) they give up on trying coping with the situation due to limited resources; 2) the situation has gone far beyond their own control, thus they choose to relinquish the control; 3) they have got used to the situation and mentally disengaged in making coping efforts.

These mutually exclusive and conceptually clear lower-order coping strategies are proposed based on the extensive review of the literature. In order to ensure that they are adaptive and applicable to the consumer domain over the long-term and ongoing settings, coping instances will be identified through consumer interview in the qualitative study as supporting evidence. Meanwhile, it is possible that more lower-order coping strategies may be proposed if unique coping instances from the specific context are identified which fall out of the scope of the strategies discussed above.

4.3.3 Higher Order Category of Coping-Level Three

In accordance with theoretical perspective of adaptive functions of coping, initiative coping coordinates with an individual’s actions and preference with the options available in the environment (Walker et al., 1997); while support seeking coping coordinates with an individual’s reliance on others and information available in the environment (Tobin et al., 1989); whereas the avoidance coping coordinates with an individual’s disengagement with the environment (Brandtstädter and Renner, 1990). Hence, the higher order categories of coping classified are: initiative coping, support seeking coping and avoidance coping.

Specifically, lower-order coping strategies are classified into higher order coping strategies according to three principles: 1) actively engaging in dealing with the problematic external demands; 2) looking for social support and additional information; 3) escaping from the current situation or relinquishing the control of the situation. Based on these principles, action coping, proactive coping and accommodation coping can be classified into initiative coping; personal support and information seeking can be classified into support seeking coping; while escape coping can be classified into avoidance coping.

In summary, the main effect of the present research so far has been to articulate that consumers generate perceived stress (both low and high) and emotions (both negative and positive) due to experiencing long-term and ongoing food safety issues. Coping efforts are

developed here to deal with not only food safety issues, but also the elicited stress and emotions. Therefore, the main effect can be hypothesised as follows:

H1: Consumers' psychological state is positively associated with consumer long-term coping.

4.4 Moderating Effect

In the previous discussion, the main effect of the present research is identified: stress and emotions presage coping behaviours. However, several factors that may influence the main effect in between have been overlooked. This Section 4.4 reviews the possible important moderating factors in the literature and concludes with a set of working hypotheses. Sub-section 4.4.1 illustrates why it is important to look at the relationship between stress/emotion and coping by offering a sound rationale and it provides justifications of a number of moderating factors that may influence coping, highlighting the factors of cognitive appraisal and personality traits. Subsequently, Sub-sections 4.4.2 and 4.4.3 review the cognitive appraisal of self-efficacy, locus of control and personality trait of optimism, pessimism and neuroticism, respectively. Section 4.4.4 demonstrates consumer demographic variables in detail with hypotheses proposed. Section 4.4.5 highlights the proposed working hypotheses.

4.4.1 Significance of Moderating Effects

4.4.1.1 Rationale for Examining the Relationships

As noted in the previous sections, the relationships between consumer perceived stress, emotions and consumer long-term coping strategies are the main constructs of the present research. It is consistent with Folkman and Lazarus (1980) who claim that coping is not only the response to stress and emotion, but also seen as a dynamic and reciprocal relationship.

The extant literature has been focusing on exploring the determinants of coping responses, including the personality characteristics and situational specificity (e.g., DeLongis and Holtzman, 2005). However, these efforts are made to examine the role of determinants in coping per se. For example, Sujan et al. (1999) have identified the relationship between consumer efficacies and coping only, rather than articulate the role of the determinants in the relationships of stress, emotion and coping. Little research is known to unpack the relationships and coping process. It is important to investigate in the relationships of stress, emotion and coping because the different behaviour tendencies and behaviour actions can

be found out in relation to different levels of stress and to specific emotions. In addition, both perceived stress and specific emotions in chronic stressful consumption situation have not been explored. Hence, examination of the relationship is crucial for contributing to the theory of stress, emotion and consumer coping. Particularly, extant theorising of coping will be enriched by postulating that stress, emotional appraisal, cognitive appraisal, personality trait, demographic factors as antecedents may give rise to long-term coping strategies. Moreover, both the level of stress and different emotions and their inherent interrelationships to coping will be articulated, linking stress and set of emotions to specific consumer coping strategies.

Nevertheless, factors that may impact on the relationship will be discussed and justified in the next sub-section 4.4.1.2.

4.4.1.2 Justification of Moderating Factors

Based on the transactional theory of coping (Lazarus and Folkman, 1984), individual coping decisions are driven by primary appraisal and secondary appraisal of the situation. Primary appraisal means that a person primarily evaluates the potential harm, threat, or challenge of the situation when facing the stressor or demand; Secondary appraisal refers to individual's evaluation of his or her social, cultural, psychological resources and ability to manage the situation (Lazarus and Cohen, 1977; Cohen, 1984). Thus, the appraisal process is central which links the emotions and coping behaviours (Duhachek and Kelting, 2009). The coping literature suggests that individual efforts for coping are directed by factors such as how they would appraise the stressful situation and how they would evaluate their abilities to manage it (Han et al., 2015). In other words, coping processes are influenced by individuals' personality traits and situational elements of stressful situations (Duhachek and Kelting, 2009), which is consistent with the claim made by Mischel (1973) that both trait and state have an impact on coping behaviours. Furthermore, coping researchers also assert that coping processes are best modelled by considering the interaction with situational cognitive appraisal factors and personality traits (Duhachek and Iacobucci, 2005).

Previous research has identified situational factors that influence coping (Pearlin and Schooler, 1978), such as perceived controllability of the situation (Schaubroeck and Merritt, 1997) and perceived self-efficacy (Sujan et al., 1999). These two factors also compose the construct of perceived behaviour in the theory of planned behaviour (Ajzen, 2002). Perceived controllability refers to the extent to which individuals believe that they can control the situation. Studies on the role of controllability have demonstrated that

situational control on stressors affect consumer coping tendencies and behaviours (e.g., Cheng and Cheung, 2005). Moreover, perceived self-efficacy refers to the extent to which individuals believe in their abilities to manage the situation. Sujan et al. (1999) have examined the role of efficacy and found that efficacy is a critical factor in guiding coping behaviours. Therefore, the moderating effects of self-efficacy and locus of control will be examined, in terms of the relationship between stress, emotions and consumer long-term coping.

Previous personality traits based coping research can be classified into three main groups, namely anxiety-related personality, depression-related personality and positive personality (Duhachek and Kelting, 2009). Specifically, anxiety-related personality tends to increase threat-related primary appraisal (Raffety et al., 1997), which in turn leads to more negative emotional responses and more reliance on support seeking or avoidance behaviours (Gunthert et al., 1999). In line with the anxiety trait, the depression-related personality threats rely more on primary appraisal, which leads to a perceived lower ability for coping and increased reliance on emotional venting and avoidance behaviour (Keller et al., 2003). These two personalities relate to negative adaptation in the long-term (Duhachek and Kelting, 2009) can be regarded as pessimism and neuroticism personalities respectively. Neuroticism refers to “a tendency to experience frequent and intense negative emotions in response to various sources of stress” (Barlow et al., 2014). Previous research has also found that neuroticism is associated with increased distress, which highlights its impact on stress-induced emotions and coping (Bolger and Zuckerman, 1995). Neuroticism has been shown to engage in distancing and avoidance coping behaviours (Vollrath et al., 1995; Gunthert et al., 1999). Comparatively, the personality type that has positive impacts on emotions and coping is the personality trait of optimism. This personality type is associated with generating challenging primary appraisals with a tendency to actively cope with the problems (Scheier et al., 2001).

To conclude, though research has examined the direct link between personality traits and coping (Duhachek and Iacobucci, 2005), the moderating effect on the relationship between stress/emotions and coping responses has been overlooked. Therefore, optimism, pessimism and neuroticism are chosen as the moderator for the main effect of the model. A detailed discussion regarding the characteristics of cognitive appraisal (self-efficacy and locus of control) and personality traits (optimism, pessimism and neuroticism) are presented in the following sections.

4.4.2 Cognitive Appraisal

Although Lazarus (1991) claims that cognition is the precursor to stress and emotions, the ongoing debate regarding the relationship among emotion, cognition and behaviour is acknowledged (Zajonc, 1980; Nyer, 1997). Duhachek (2005) posits that both emotion and cognition presage coping. Cognitive appraisal can be seen as the secondary appraisal in Lazarus and Folkman's (1984) model and includes perceived control over emotion and perceived control over outcome and self-efficacy (Glanz and Schwartz, 2008). Self-efficacy and the locus of control therefore, are the key points of the cognitive appraisal process (Bandura, 1977; Duachek, 2005), in line with the notion of self-evaluation (Judge et al., 1998). The moderating role of cognitive appraisal to the main effect of stress, emotions and coping will be discussed in this section.

4.4.2.1 Self-Efficacy

Self-efficacy is defined as "people's judgement of their capabilities to organise and execute required courses of action attaining designated types of performances" (Bandura, 1977). In other words, self-efficacy may be seen as a belief about an individual's ability to achieve a certain goal or performance by coordinating skills under certain circumstances (Jensen et al., 1991; Tsarenko and Strizhakova, 2013). The role of self-efficacy as a moderator in stressful episodes is important as it can be reflected through a sense of control over environment, behaviour, feelings and thoughts (Tsarenko and Strizhakova, 2013). That is to say, in a given stressful situation, people who have higher self-efficacy are more likely to formulate constructive and successful coping strategies to manage the demand (Bandura, 1997). Compared to others, an individual who has higher self-efficacy and treats the demand as a challenge rather than as a harm, exert stronger controls consequently (Mikolajczak and Luminet, 2008). Decisions on the amount of effort and time made, as well as corresponding behaviours undertaken, depend on the evaluation of self-efficacy (Barling and Beattie, 1983).

Research in managerial (Kirsch, 1995) and clinical (Marlatt et al., 1995) fields have empirically discussed the relationship between the self-efficacy and behaviours. For example, people who have a low self-efficacy may adopt inactive behaviours such as denial, or avoidance; on the contrary, high-efficacy may lead to active behaviours such as engaging in problem solving (Bandura et al., 2003). In the consumer domain, Luce (1998) has assessed and found a positive relationship between self-efficacy and adaptive coping; while Sujana et al. (1999) argue that choices of different responses including coping are likely to be different among consumers with a distinct level of efficacious. For example,

high efficacious consumers might tend to choose to solve the problem (O’Leary and Brown 1995) while consumers with low self-efficacy might not encourage themselves to do so (Bolger and Eckenrode 1991). Research of Duhachek and Kelting (2009) also shows that self-efficacy is positively related to the higher levels of coping engagement. Therefore, the working hypotheses may be proposed as:

Hefficacy a: When experiencing a psychological state, consumers who have high level of self-efficacy are more likely to adopt initiative coping and support seeking strategy.

Hefficacy b: When experiencing a psychological state, consumers who have low level of self-efficacy are more likely to adopt avoidance coping strategy.

The self-efficacy as individual’s belief about their ability to control a specific situation (Bandura, 1977) and locus of control as a generalised expectancy (Rotter, 1966) are conceptually different. For example, individuals may feel in control of foods they eat, while they may not feel efficacious in performing a specific action to food safety issues. Lazarus (1966) has suggested that both self-efficacy and locus of control play a role in stress and coping, however, further research is needed to explore and examine the ways in which they can influence the relationship.

4.4.2.2 Locus of Control

The locus of control is defined as “the extent to which individuals believe they can control events that affect them” (Rotter, 1966, p.112). Initially, the locus is conceptualised as either internal in which individuals believe that they can control their life, or where individuals believe that their life is under control of environment that they cannot change (Rotter, 1966, 1990). However, research further suggests that locus of control should be defined as a multi-dimensional concept (Levenson, 1974). Three dimensions are identified, they are internal, powerful others and chance (Levenson, 1981). In the context of the present research, internal locus of control is the extent to which consumers believe that they control food safety issues; while other powerful locus of control is the extent to which consumers believe that other stakeholders control food safety issues such as government, or companies. Finally, the chance locus of control is the extent to which consumers believe that fate, luck, or chance controls food safety issues.

The study of Horner (1996) reveals that locus of control is associated with high level of actual and perceived stress. However, the specific role of the locus of control is overlooked. Compas et al. (1991) argue that both perceived control and coping processes are key factors in understanding how individuals adapt themselves to chronic stressful

conditions. Furthermore, they propose the interactive relationships between perceived control and coping efforts (Compas et al., 1991). Hence, the present research argues that the locus of control moderates the relationship between emotional appraisals and coping.

Research also reveals that the effect of coping is determined by both the type of coping adopted and the fitness of particular coping strategy to the problematic situation regarding its controllability (Park et al., 2012). In general, higher control over a specific situation is likely to increase the chance of adopting positive behaviours, while lower control tends to be increasing the likelihood of negative behaviours (Spector and Fox, 2002). In other words, under conditions of high locus of control, individuals tend to engage in actively coping with the problematic situation (Terry and Hynes, 1998), while low locus of control tend to avoid engaging in resolving the problem, which is in consistent with the notion of “the goodness-of-fit” (Lazarus and Folkman, 1984; Zeidner and Saklofske, 1996). Hence, working hypotheses are proposed as:

H_{control a}: When experiencing a psychological state, consumers who have high level of locus of control are more likely to adopt initiative coping and support seeking strategy.

H_{control b}: When experiencing a psychological state, consumers who have low level of locus of control are more likely to adopt avoidance coping strategy.

As previously reviewed, literature in psychology and consumer behaviour has discussed that both emotional appraisal and cognitive appraisal are antecedents of individual responses, coping in particular (Duhachek, 2005). Some studies articulate links between emotion and coping efforts (Luce et al., 2001), links between consumer efficacy and coping (Sujan et al., 1999) and links between locus of control and coping (e.g., Clements et al., 2004). However, very little research has integrated these links together into a comprehensive and coherent stress and emotional-cognitive framework. Hence, arguably, cognitive appraisal moderates the main effect of stress and emotional appraisal and coping behaviours. This notion will be tested among consumers in the context of long-term and ongoing food safety issues in order to examine the way in which cognitive appraisals of self-efficacy and locus of control can influence consumer coping. This is important for understanding the consumer coping per se, the relationship among stress, emotions and coping, as well as moderating factors that affect the relationship.

4.4.3 Personality Trait

Personality trait is characterised as “relatively enduring styles of thinking, feeling and

acting” (Dixon, 1977). There are different ways to define its dimensions. For example, the five-factor model is one of the most common models in explaining and measuring both temperament and personality, including the traits of neuroticism, extraversion, agreeableness, conscientiousness and openness to experience (McCrae et al., 2000; John and Srivastava, 2008). These personality traits are believed to be stable across different cultures and age groups (Hendriks et al., 2003). However, this study adopts the three factor personality trait proposed by Carver et al. (1994) based on substantial literature: they are optimism, pessimism and neuroticism. The reason to choose these personality traits is that individual differences in optimism vs. pessimism vs. neuroticism are in relation to distinct physical or emotional coping actions in stressful situations (Smith et al., 1989). This argument is in line with the current study which aims to uncover the consumers’ choice of distinct coping actions when they have different personality traits. The choice of these three traits is also consistent and supported by De Jonge et al. (2007) in the context of food safety.

4.4.3.1 Optimism and Pessimism

In general, optimists expect a positive experience in the future, while pessimists are people who expect bad experiences (Scheier et al., 2001). It is argued that only if individuals have sufficient confidence will they move into actions and engage in making effort (Carver and Scheier, 2001). Therefore, optimists take a goal-engaged approach to coping, whereas pessimists tend to show sign of coping in ways implying disengagement (e.g., Scheier et al., 1989; Carver et al., 1993). For example, Aspinwall and Taylor (1992) find out from a sample of college students that optimists are more likely to report active ways of coping, while pessimists tend to report avoidant ways of coping. Hence, optimism and pessimism are also regarded as two dimensions for consumer confidence in the context of food safety (de Jonge et al., 2007). It is argued that consumer confidence in food safety issues can be accompanied by general affect or emotions, for example, consumer perceptions of new food technologies quite often rely on emotions such as worry, fear, or concern (Barnett and Breakwell, 2001; Laros and Steenkamp, 2004; Setbon et al., 2005).

When people encounter difficulty or adversity in their daily life, they might experience all kinds of emotions. The balance among those feelings is related to people’s degree of optimism and pessimism (Scheier et al., 2001). Notably, optimism and pessimism are not two extreme points of the same dimension. Benyamini (2005) has outlined that optimism and pessimism are distinct, which is consistent with a body of previous research (e.g., Carver and Scheier, 1981; Mahler and Kulik, 2000).

Consequently, research suggests that optimists are better at handling various sorts of stress in comparison to pessimists (Scheier and Carver, 1985; 1992). For example, it has been found that optimistic women are more resistant to develop postpartum dysphoria than pessimistic women (Carver and Gaines, 1987). On the other hand, optimistic men are better at adjusting themselves psychologically than pessimistic men to coronary surgery (Scheier et al., 1989). Based on these findings and other previous studies (e.g., Tennen et al., 1992; Friedman et al., 1992), the same prediction can be made for consumers in the present research: optimistic consumers are expected to fare better than pessimistic consumer in dealing with food safety issues. Optimistic consumers might be more engaged in seeking active coping strategies, rather than engaged in avoidance (Scheier et al., 1986). Thus, the following hypotheses are proposed:

Hoptimism a: When experiencing a psychological state, consumers who have the trait of optimism are more likely to adopt initiative coping and support seeking strategy.

Hpessimism b: When experiencing a psychological state, consumers who have the trait of pessimism are more likely to adopt avoidance coping strategy.

4.4.3.2 Neuroticism

Comparatively, neuroticism refers to personality trait of individuals who are generally vulnerable to physical and psychological distress (Carver and Connor-Smith, 2010). Psychologists argue that neuroticism is very important in negative emotion research (Saklofske et al., 2012), since experiencing negative emotion is strongly associated with the personality trait of neuroticism (Matthews et al., 2009). Furthermore, neurotic individuals who experience stressful situation may consider it as threats rather than challenges and therefore, tend to engage in maladaptive coping strategies (Pedersen et al., 2016). Specifically, neuroticism has been shown to engage in distancing and avoidance coping behaviours (Vollrath et al., 1995; Gunthert et al., 1999). For example, neurotic people may try to avoid thinking about the stressful situation and may hope that the situation will get better itself (Vollrath et al., 1995).

Studies have also been undertaken to examine the relationship between personality trait and coping. For example, some research argues that personality may facilitate or constrain coping directly (Conner-Smith and Flashsbart, 2007); on the other hand, others posit that personality traits may also have an indirect impact on coping, by affecting the severity and nature of stressors experienced (Bolger and Zuckerman, 1995). Different personality traits may also influence the effectiveness of coping in beneficial or harmful ways (De Longis

and Holtzman, 2005). Based on the previous studies and the context of the present research, arguably, personality traits moderate the relationship between appraised stress and emotions from the stressor and consumer long-term coping. Thus, working hypothesis proposed here includes:

Hneuroticism c: When experiencing a psychological state, consumers who have the trait of neuroticism are more likely to adopt avoidance coping strategy.

In sum, these working hypotheses articulate the relationships among food safety issues, stress, emotions and specific consumer corresponding coping behaviours, moderating by optimism, pessimism or neuroticism of personality trait.

4.4.4 Consumer Demographic Variables

The changes in demographic factors may affect consumer stress and emotions and further influence consumer coping behaviours. In order to examine and understand individual difference of consumers beyond the variables discussed above, this research also has identified two important demographic variables, namely education level and family structure. There are three main reasons for choosing these two demographic variables for this study. First, demographic variables are deemed to have significant impacts on consumer emotions (e.g., Brummer et al., 2013) and coping (e.g., Shormilisy et al., 2015; Wilson and Luong, 2016). Second, these demographic variables are fit for the overall research context. Details will be provided in the following discussion. Third, the measurements for these demographic variables can be tested as categorical variables (dummy coding techniques), which are suitable for the research analysis. The discussion on how these demographic variables affect consumer emotion and coping will be provided in the following sub-sections.

4.4.4.1 Education Level

Prior studies have not examined much about how education affects stress and emotion and coping behaviours. In the study of female breast cancer patients, women with more formal education benefit more in reducing distress and coping (Lerman et al., 1996). In a clinical investigation, researchers have found that a brief educational program help the spouses of patients improve their coping skills in caregiving (Chiverton and Caine, 1989). Furthermore, the moderating effect of education for coping and pain relationship is examined and confirmed by Cano et al. (2006). Authors such as Wills et al. (1995) suggest that young adults from lower education families tend to be more vulnerable to risks but they are also more likely to develop protective coping strategies. Derived from this

discussion, the present study argues that consumers' education level interacting with the stress/emotion may predict consumer coping strategies. Specifically, when consumers experience certain emotion, worry for instance, consumers with higher education level may be more likely to engage in coping actively. On the other hand, consumers who are less educated may tend to adopt avoidance coping behaviour. Hence, the following hypotheses are proposed:

Hedu a: When experiencing a psychological state, consumers with higher level of education are more likely to adopt initiative and support seeking coping strategies

Hedu b: When experiencing a psychological state, consumers with lower level of education are more likely to adopt avoidance coping strategies

4.4.4.2 Family Structure

A body of past research on family and coping concentrates on coping with work-family conflict. Yet, it is of limited efforts in explaining and focusing on the influence of family structure and type on coping behaviours. For example, some researchers have explored how the family assists children to cope with physical disabilities and found out that family adjustment is associated with less frequent use of passive appraisal (e.g., Lustig, 2002). Others have examined how changes of family structure and support may affect individual's adaptation to psychological stress and challenges (Navia and Ossa, 2003; McCubbin and Figley, 2014), which reveals the influence of family structure on coping behaviour (Hetherington and Blechman, 2014).

Hall and Graff (2011) investigate that family support network and resources help children with autism to cope and adapt. Findings suggest that parents search for different coping strategies that deal with challenges. In line with this study, the present research argues that when consumers facing long-term and ongoing food safety issues, families with caring responsibility may engage actively as individuals search for strategies to handle the problems and regulate stress and emotions. Hence, the following hypotheses are proposed:

Hfamily a: When experiencing a psychological state, consumers who have caring responsibility are more likely to choose initiative coping and support seeking strategies.

Hfamily b: When experiencing a psychological state, consumers who do not have caring responsibility are more likely to choose avoidance coping strategies.

4.4.5 Proposed Working Hypotheses

For the purpose of recapping, Table 4-3 below gathers and presents all the hypotheses

proposed in the previous sections. However, these hypotheses are working hypotheses as they may be further modified during the qualitative study. For example, the specific emotion has not been confirmed as whether or not consumers experience it when facing the problems needs to be explored.

Table 4-3 Working Hypotheses

Construct	Code	Hypothesis
Main	H1	<i>Consumers' psychological state is positively associated with consumer long-term coping.</i>
Self-Efficacy	Hefficacy a	<i>When experiencing a psychological state, consumers who have high level of self-efficacy are more likely to adopt initiative coping and support seeking strategy.</i>
	Hefficacy b	<i>When experiencing a psychological state, consumers who have high level of self-efficacy are less likely to adopt avoidance coping strategy.</i>
Locus of Control	Hcontrol a	<i>When experiencing a psychological state, consumers who have high level of locus of control are more likely to adopt initiative coping and support seeking strategy.</i>
	Hcontrol b	<i>When experiencing a psychological state, consumers who have high level of locus of control are less likely to adopt avoidance coping strategy.</i>
Personality Trait	Hoptimism a	<i>When experiencing a psychological state, consumers who have the trait of optimism are more likely to adopt initiative coping and support seeking strategy.</i>
	Hpessimism b	<i>When experiencing a psychological state, consumers who have the trait of pessimism are more likely to adopt avoidance coping strategy.</i>
	Hneuroticism c	<i>When experiencing a psychological state, consumers who have the trait of neuroticism are more likely to adopt avoidance coping strategy.</i>
Education	Hedu a	<i>Hedula: When experiencing a psychological state, consumers with higher level of education are more likely to adopt initiative and support seeking coping strategies</i>
	Hedu b	<i>Hedulb: When experiencing a psychological state, consumers with lower level of education are more likely to adopt avoidance coping strategies</i>
Family Structure	Hfamily a	<i>Hfamily1a: When experiencing a psychological state, consumers who have caring responsibility are more likely to choose initiative coping and support seeking strategies.</i>
	Hfamily b	<i>Hfamily1b: When experiencing a psychological state, consumers who do not have caring responsibility are more likely to choose avoidance coping strategies.</i>

4.5 Conceptual Framework

Drawing on the extant literature and research problems identified in the preceding literature, understanding of relationships pertaining to the long-term food safety issues, stress, emotions, cognitive appraisal, personality trait, demographic variables and

consumer long-term coping strategies are conceptualised (Figure 4-2). Furthermore, a multi-dimensional consumer long-term coping structure (Figure 4-1, Section 4.3) is embedded in the conceptual framework. The general conceptual model demonstrates the focus and standpoints of the present research, defining the main research problems and specific research (coping) structure.

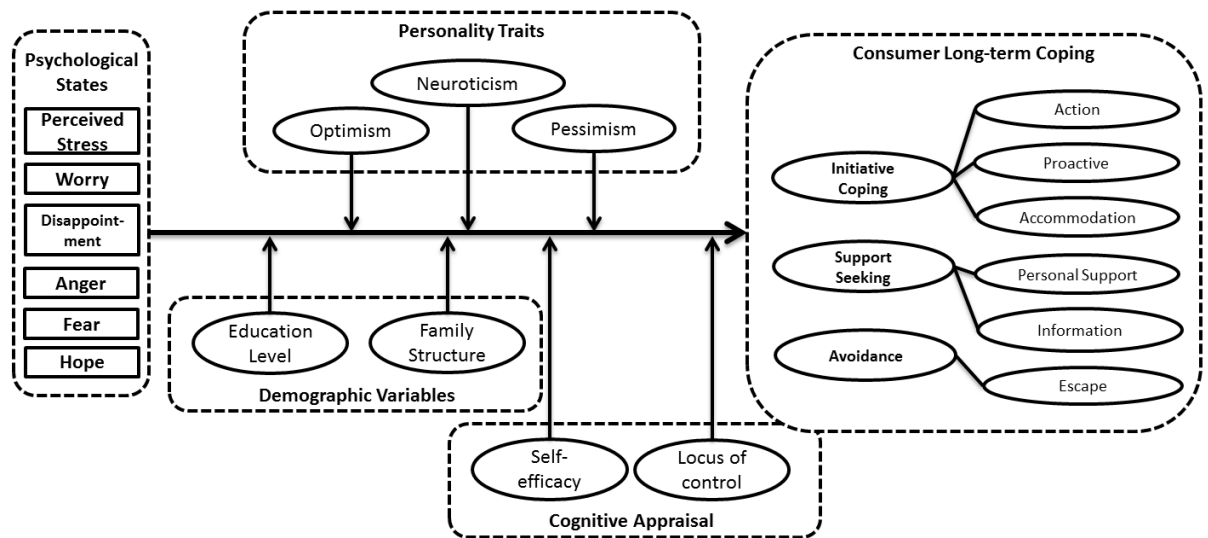


Figure 4-2 Proposed the General Conceptual model of Consumer Long-term Coping (Source: the author)

4.6 Summary

Based on the extant literature and discussion in the previous chapters, this chapter has conceptualised a model of consumer long-term coping. In addition, the model is further embedded in a comprehensive framework which has identified main constructs that determine the consumer long-term coping. This framework explains that a combination of variables drawn from the study of consumer psychology and behaviour is an antecedent to consumer long-term and ongoing coping behaviour. These identified variables are consumer stress, emotions, personality traits (optimism, pessimism and neuroticism), cognitive appraisal (self-efficacy and locus of control) and demographic variables (education and family structure).

In line with the discussion of the transactional theory of stress (Lazarus and Folkman, 1984), this research argues that the level of stress is dynamic with consumers' continuous evaluation and appraisals of the stressful situation. In this specific context, Chinese consumers have experienced food safety issues over a long period of time and they may continue to cope even if the stress no longer exists due to psychological and behavioural inertia (e.g., Koval and Kuppens, 2012), or just because they are coping with the problem

per se. This is somehow neglected in the previous literature. Hence, this research is to examine and discuss the relationship between perceived stress and consumer long-term coping. Furthermore, as a more in-depth and larger concept compared to stress, emotion is important in affecting consumer behaviour in various aspects (Williams, 2014). Consumer research so far has not exhaustively examined the relationship among specific emotions and particular coping behaviour, which articulates the behaviour tendencies and actual behaviour of different emotions.

This chapter has identified four emotions that could possibly be generated by consumers when facing long-term and ongoing food safety issues, namely worry, disappointment, anger and fear. These emotions are identified from the discussion within the extant literature and will be further explored through consumer interviews in the qualitative study. The intent here is to address whether or not consumers would experience these emotions in such situation.

The focus of the present study is the consumer long-term coping strategies. Based on the previous research, this research is consistent with the argument that coping functions at various dimensions (Compas et al., 2001; Skinner et al., 2003). Hence, the present research proposes a multi-dimensional structure for consumer long-term coping. The multi-dimensional consumer long-term coping structure proposed is based on the extensive literature review and criticising and is further embedded in a general model of consumer coping. This model articulates the relationships among stress, emotions and coping, moderating by cognitive appraisal, personality trait and consumer demographic variables. Cognitive appraisals which consist of self-efficacy and locus of control, are situational factors; while personality traits show a relatively stable nature, including optimism, pessimism and neuroticism. Two important demographic variables are also identified namely education level and family structure. The choice of these two factors is determined by their impacts on consumer psychology and coping behaviour, as well as the suitability of the research context. All moderators are discussed in detail, showing the overlooked effects that influence the relationship. There is also an attempt to further contribute to the ongoing debate of the emotion and cognition approach.

In addition, working hypotheses have also been proposed right after the discussion of each individual construct. Table 4-3 presents all proposed working hypotheses. The establishment of these hypotheses are well supported by findings from the previous research. Drawing on the proposed working hypotheses, Figure 4-2 presents the conceptual model for the present research.

The present chapter focuses on analysing main constructs that contribute as antecedents to consumer long-term coping. Next chapter will focus on the overall research design and methodology.

Chapter 5 Analytical Approach

5.1 Introduction

In previous Chapters, the literature in the area of food safety, consumer psychology and behaviour has been reviewed. The key research problems specific to this study have been identified and a research framework has been proposed. This chapter will focus on the approaches used to achieve the research aim and objectives and methods adopted to explore consumer psychological states and behaviours.

Specifically, Section 5.2 justifies the adoption of the chosen approach and presents the overall research design. Section 5.1 concludes with a short summary.

5.2 Overall Research Design

The research design process is utilised as a framework or a plan for the study, in order to guide the implementation and conduct the research project (Churchill, 1999; Aaker et al., 2010). It has been argued that a well-designed procedure is a prerequisite to successful research (Churchill, 1999). Thus, this section discusses and justifies the overall research philosophy and approaches used in the present study. In addition, the overall research design procedure for the present study is also illustrated.

5.2.1 Research Philosophy

Research philosophy contains assumptions about how researchers view the world (Saunders et al., 2012). It has been argued that the researcher's assumption about knowledge and the nature of the reality shape the understanding of research questions, research methods and interpretation of the research findings (Crotty, 1998). Indeed, for research in the field of business and management, being aware of philosophical commitments underpins the choice of research approaches and strategies (Johnson and Clark, 2006). Different philosophical stances in terms of ontology, epistemology and methodology result in different research paradigms, relating closely to the research aim and objectives (Denzin and Lincoln, 2011).

Ontology is concerned with the nature of reality and existence, while epistemology is about the ways of enquiring about the nature of the world (Easterby-Smith et al., 2012). However, consensus has not been reached regarding the categorisations of paradigms within the ontological and epistemological continuum (Esterby-Smith et al., 2012). For example, Bryman and Bell (2011) argue that ontological positions are frequently referred

to as objectivism and constructionism. Saunders et al. (2012), however, argue that a continuum's polar between objectivism and subjectivism has their devotees in business and management researchers, such as Holden and Lynch (2004). Nevertheless, the underlying meaning of these categorisations is the same, reflecting either objective social entities or human perceptions (Lundberg and Young, 2005). Objectivism asserts that 'social entities exist in reality external to and independent of social actors', while subjectivism presents the position that 'social phenomena are created from the perceptions and consequent actions of social actors' (Saunders et al., 2012, p.111). Subjectivism is associated with constructionism, implying that social phenomena are generated through social interaction and in a continuing state of revision (Bryman and Bell, 2011).

As noted, epistemology is about 'what constitutes acceptable knowledge in a field of study' and the ways of inquiring into the nature of the world, forming respective merits of positions on how the research should be conducted: positivism, realism and interpretivism (Saunders et al., 2012, p.112). Positivism asserts that 'the social world exists externally and that its properties should be measured through objective methods' (Esterby-Smith et al., 2012, p.22). Natural scientists often adopt this philosophical stance. Realism is that "there is a reality quite independent of the mind" (Saunders et al., 2012, p.114). Realism is in line with positivism in two aspects: a belief that both natural and social sciences can adopt the same approaches to the data collection and explanation and a view that an external reality exists, independent from our description of it (Bryman and Bell, 2011). Interpretivism, contrasts to positivism and asserts that it is necessary to understand the differences between people as social actors and to grasp the subjective meaning of social action.

The present research adopts realism as its philosophical stance. Specifically, this study adopts an objective ontology and a realism epistemology. In line with the objective ontology, this study holds the belief that "social entities exist in reality external to and independent of social actors" (Saunders et al., 2012, p.111) and this study aims to achieve an accurate representation of the reality. However, due to the acknowledged dynamic nature of social structures and the active role of individuals' apprehension (Johnson and Duberley, 2000), this study adopts a realism epistemology in the sense that the observable phenomenon remains objective. Furthermore, the aims here are to reflect the reality as closely as possible (Easton, 2010).

Ontologically, realism is objective but also interpreted through social conditioning. Epistemologically, realism focuses on explaining the observable phenomena within a context with credible data and facts. There are two types of realism: direct realism and

critical realism. Direct realism argues that what you see is what you get; while critical realism argues that what we see and experience is ‘the image of the things in the world’, rather than the things directly (Saunders et al., 2012, p.115). The structures of the observable pattern of events can only be identified through the practical and theoretical work of the social sciences (Bhaskar, 1989).

This research works with an observable objective and independent phenomenon of food safety issues, interprets through social conditioning and focuses on explaining the consumer psychological states and their coping behaviours in the given context. In addition, it qualitatively explores the phenomenon and informs the proposed hypotheses. This explains the ontology and epistemology of the realism in the present study. Further, the present study is undertaken in a value-laden way which means that the researcher has the view influenced by world views, cultural experiences and upbringing, which axiologically is in line with the argument of the realism.

This reason for adopting realism is also in line with the nature of the research aim and objectives. The research aim and objectives seek to explore and uncover the phenomenon with qualitative enquiries and concern with the identification of the objective quantitative causal relationships among psychological states, moderating drivers and consumer long-term coping. The research aim and objectives are therefore, guided by a realism agenda.

5.2.2 Justification for the Research Approach

The choice of research approach is important as it enables the researcher to make informed decisions on research design and helps to select the most appropriate strategic fit of the research. Furthermore, it helps adapt the design to impose the constraints (Easterby-Smith *et al.*, 2012).

Deductive, inductive and abductive are three reasoning approaches that can be adopted in research. Deductive reasoning refers to an approach that ‘the conclusion is derived logically from a set of premises, while inductive reasoning refers that the conclusion being ‘judged’ is supported by the observation made’ (Saunders et al., 2012). This research adopts the abductive approach as the reasoning approach. An abductive approach moves back and forth between theory and data, combining the deductive and inductive approaches (Suddaby, 2006). The abductive approach is adopted for the following reasons: first, logically this research begins with an observation of a fact, based on which a set of premises are determined and examined to generate testable conclusions. Second, this research tries to generalise from the interactions between the specific and the general by

engaging with specific interview participants and general survey with food consumers. Third, regarding the use of data this study tends to collect qualitative data by conducting consumer interviews to explore the phenomenon, identifying themes and patterns by using existing theory and generating a new framework and modifying existing theory by collecting survey data. Fourth, this study focuses on theory generation or modification.

Another way of distinguishing the research approaches is between qualitative and quantitative research. Qualitative research is to explore, describe, explain and understand a phenomenon while quantitative research is to confirm or reject proposed hypotheses in a given research model (Coviello, 2005). It has been argued that these two methodologies are not mutually exclusively; thus, they can be integrated into one piece of research to achieve the overall research goals (Van Maanen, 1979; Coviello, 2005).

The present research adopts a mixed-method approach for exploring and investigating consumers in the given context. The reasons for choosing the mixed-method are fourfold:

Firstly, researchers (e.g., Easterby-Smith *et al.*, 2012) argue that using mixed-methods increases the validity and generalizability of findings and theoretical contribution and mitigates the limitations of individual methods (Tuner *et al.*, 2017).

Secondly, the choice of the mixed-method follows the realism paradigm, combining the qualitative enquires and quantitative causal relationship examination. Thus, these two methods are dependent on each other.

Thirdly, in the present study, mixed-methods serve to achieve the main purpose of the present research. The qualitative stage is to understand the phenomenon, explore consumers' psychological states and identify their long-term coping actions, while on the other hand, the quantitative stage is to conceptualise the multi-dimensional structure of consumer long-term coping and to examine the causal relationship among various antecedents to consumer long-term coping. For example, in order to get a deeper understanding of what actions consumers have taken to deal with daily food safety issues over the long-term, it is better to invite consumers to talk through their experiences in person as the interviewer could dig deeper in terms of their specific actions based on the interviewee's description. Furthermore, there are numerous actions that consumers may take. Conceptualising these actions into patterns help us better understand consumers' coping behaviours. The methodological combination of consumer interview and survey, therefore, has enabled this research to achieve the main purpose of the present research.

Fourthly, the data collected from the qualitative and quantitative studies vary in terms of nature, perspective, quality and purpose. Specifically, the qualitative study involves gathering data that is subjective and non-numerical. The researcher tries to draw a full picture based on interviewees' description when the situation is unclear and under-explored. For example, the knowledge is limited in understanding the long-term Chinese food safety situation and Chinese consumers. The research context determines that the food safety situation in China is complex. Importantly, the qualitative study is needed to explore and understand the situation, so that hypotheses can be developed based on a better understanding the context and consumer behaviour. The chosen method here is determined by the research context.

Comparatively, the data collected from the quantitative study is objective and numerical. The quantitative study comes later once there is a clear idea of what the critical issues for consumers are. The context again has an influence on the measures as all items need to be adapted to be context-specific; furthermore, the context also helps conceptualise and develop new measures for measuring the constructs.

This research argues that qualitative research and quantitative research are not competing and opposing each other. Together they can offer a better understanding of consumers in a specific context (Bryman, 2006). Thus, the research approach adopted for the present study is a mixed-method approach in which qualitative and quantitative studies are dependent on each other.

5.2.3 Research Design Procedure

As noted above, this study employs a mixed-method approach. These two methods serve different research purposes. The qualitative study aims to achieve three research objectives: namely identifying consumers' stress status and emotions, identifying their coping actions and assessing the theory on transactional view of stress and coping. The quantitative study aims to achieve other research objectives: namely conceptualisation of consumer long-term coping, developing a scale for measuring the multidimensional structure of consumer long-term coping and examining factors that may have impact on the relationship between psychological states and consumer long-term coping. The flow for the research design can be found in Figure 5-1. Figure 5-1 shows that the research framework has been proposed in Section 4.5 of Chapter 4. This Chapter 5 focuses on the research design and methodology of both the qualitative and quantitative study. Chapter 6 discusses the results from the qualitative study and revisits the research hypotheses. Finally, Chapters

7 and 8 discuss the results from the quantitative study.

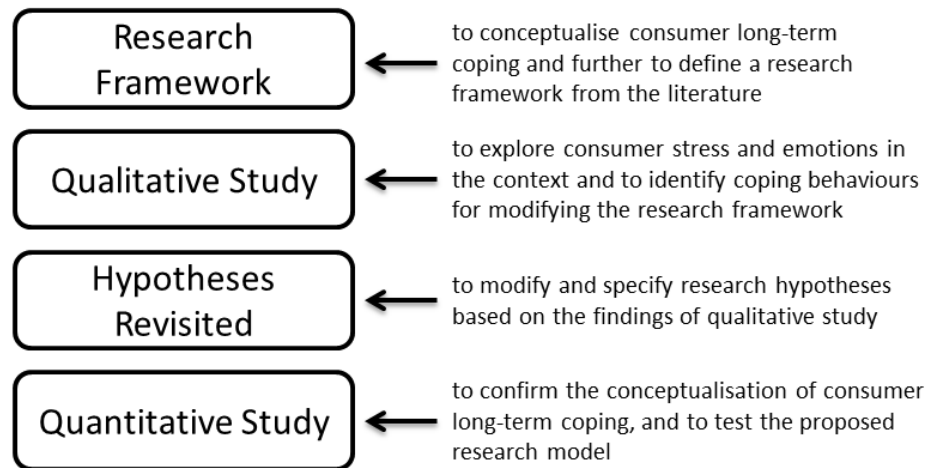


Figure 5-1 Flow of the Research Design

5.3 Summary

This chapter justifies the general research design that guides this project from beginning to the end. It has been justified in this section that this study adopts realism as its philosophical stances. Combined qualitative and quantitative (mixed-method) have been chosen as the approach to collect and analyse the data. This method is chosen due to the influence of philosophical stance, as well as the research context. Each study has its own purpose and it will be further discussed in Chapters 6 and 8.

Chapter 6 Research Design and Methodology: Study 1

6.1 Introduction

The first phase of this research follows a qualitative study. Specifically, consumer interview has been selected as the most appropriate method to serve the objectives of this part of study. This section discusses the issues in relation to the consumer interview, including the rationale for using the interview technique, number of interviewees, sampling technique, ethical approval and qualitative data analysis.

6.2 Rationale for the Use of Consumer Interviews

Qualitative research is to explore what are in consumers' mind (Aaker et al., 2010). Consumer thoughts, feelings, intentions and behaviours which cannot be measured directly are collected through the qualitative research. Typically, there are six different qualitative research designs, namely ethnography, grounded theory, case study, action research, interview study and language analysis (Rose et al., 2014).

The present research adopts the method of semi-structured individual consumer face-to-face interviews for three reasons: firstly, interviews are considered to be an appropriate way to explore consumers' subjective view and lived experience (Marshall and Rossman, 2006); secondly, semi-structured interviews allow potentially in-depth understanding of consumers in given context; thirdly, interviews have been chosen over focus groups because the influence and pressure from other group members can be avoided (Bradley, 2007). Chinese consumers may not be comfortable to express their opinions in front of others. In addition, individual interviews help the researcher get a deeper understanding of individual households. Consumers are encouraged to answer questions in their own way and the researcher can also adapt questions to help clarify ambiguity and ensure interviewees fully understand the questions (Sekaran and Bougie, 2013).

6.3 Sample Size

The qualitative study seeks to gain an in-depth and rich understanding of the situation (Rose et al., 2014). The primary idea of qualitative sampling is that new insights should be emerging until the data brings nothing new. In other words, the sample should reach theoretical saturation. Bradley (2007, p.176) argues that "qualitative sample sizes should not be fixed firmly at the start of the project".

Considering prior doctoral studies, the number of interviewees is also reviewed in order to

outline a rough scope for the present research. Mason (2010) concludes from 560 UK and Irish PhDs that an average of 31 interviewees is expected in a qualitative study. Comparatively, Baker and Edwards (2012) suggest that the number may vary from 12 to 60. Guest et al. (2006) find that information saturation is reached after 12 interviews. Interviews in the present study aim to explore how consumers think and what they do. The number of interviewees is not fixed before the interview as it follows the principle of information saturation. The final number of interviewees for the current study is 20, in keeping with previous research.

6.4 Interview Sampling Technique and Ethical Approval

The convenience sampling technique has been adopted. Interviewees were recruited at the entrance/exit of supermarkets, department stores, restaurants and cafes, where consumers purchase foods. They were approached and asked whether or not they have time to participate in this academic research project. In addition, diversity of interviewees was also considered when approaching potential interviewees in order to gain more insights from various perspectives. Specifically, potential interviewees were asked questions regarding their age, gender, occupation, education and family type and selection was operated based on their backgrounds. If they were selected and agreed to take part in, the interview was conducted in a relatively quiet place such as cafe or tearoom somewhere near. Public settings and places were chosen to guarantee the safety of both interviewer and interviewees (Miles and Huberman, 1994). No incentives were given to interviewees, but they were offered tea, coffee and snacks.

The interview method was especially useful for exploring consumer emotion, attitude and personal experience. Meanwhile, it avoided the influence brought by others such as in focus groups or in a panel interview (Calder, 1994). New ideas and information provided by interviewees were also captured throughout the interviews (Casley and Kumar, 1992).

Ethical approval for the interview was obtained from the ethical committee at the University of Glasgow (see Appendix I).

6.5 Interview Process

Prior to each interview, the researcher first introduced himself and explained to the interviewees that they were invited to take part in an academic research. The theme of the study was then introduced and the Consent Form (see Appendix II) and Participant Information Sheet (Plain Language Form, see Appendix III) were delivered to interviewees, allowing him or her to understand the aim of the research. The permission of

audio recording the whole process of the interview was acquired from the interviewees. They were assured that the information will be kept confidential. Furthermore, participation in the interview was completely voluntary and withdrawal at any stage of the interview was allowed. They were notified of this beforehand.

Time was given to read the Participant Information Sheet and complete and sign the Consent Form. Interviewees were encouraged to introduce themselves, in order to create a relaxed interview atmosphere. Thereafter, interviews formally started.

The interview started with a grand tour question (Seidman, 2013). It was:

- Could you describe your experience as a food shopper in China?

The grand tour question allowed interviewees to talk through their experiences and allowed the researcher to identify key points in their descriptions and ask further questions to dig deeper. By talking through this question, interviewees were expected to be relaxed with reduced uncertainty and be more familiar with the research topic.

The following questions were intended to explore more about consumer psychological states and coping behaviours. Due to the nature of the semi-structured interview, no structured question was followed (Miles and Huberman, 1994). A small set of questions was prepared driven by what the researcher seeks to explore in the follow up probing. The probing areas were within consumers' feeling and reactions to long-term and ongoing food safety issues. The related example questions were as follows:

- What issues are important to you as a food consumer?
- How do you feel when you shopping food or dining out?
- What actions have you taken in dealing with the issues?

Interviewees were expected to cover different aspects regarding the long-term food safety issues, demonstrating their thoughts, emotions, attitudes, as well as coping behaviours. Specific questions were adapted to each individual consumer according to their language usage. At the end of each interview, appreciation for participation was made explicitly to all interviewees.

6.6 Interview Length

No strict rule was applied for the length of interviews. Loosveldt and Beullens (2013) highlight that cognitive capacity and motivations influence the length and quality of the interview. For example, older people may need more time to answer, while people with

higher education may be more familiar with answering questions and require less time (Olson and Peytchev, 2007). Therefore, the length of the interview depends on individual interviewees. In the present study, the interview was ended when consumers have fully expressed their ideas and described their lives with food safety issues.

In the context of this study, each exploratory interview lasted from 40 minutes to 60 minutes based on consumers' own food shopping experience and their abilities to express ideas. The time for reading Participant Information Sheet and the completion of Consent Form was excluded from the total time. All interviews have been audio-recorded.

6.7 Demographic Characteristics of Interviewees

In total, 20 interviewees participated in the consumer interview. Interviews were conducted in January and February 2016 in Shanghai and Urumqi. More female consumers (16, 80%) participated in the interviews. Research argues that women are still considered as the primary purchasing agent for households (e.g., Helgesen and Nessel, 2010). In fact, the researcher also observed that in the food section of supermarket or stores, female shoppers were in the majority.

The sample size reached 20 before saturation was achieved. This means that nothing new was emerging. The demographic characteristics of interviewees can be found in Table 6-1. Interviews were carried out both in the daytime on weekdays and during the off-work time (after 6 p.m.) or weekends, in order to ensure the diversified background of interviewees. A pseudonym was given to each interviewee to ensure their anonymity.

Table 6-1 Interviewee Profile

No.	Name	Age	Gender	Occupation	Education	Family Type
1	Zhao	25	Female	Corporate Finance	Bachelor	Single, living with parents & a sister
2	Lou	57	Female	Magzine Editor	Bachelor	Married, living with husband
3	Ann	60	Female	Dentist (retired)	Bachelor	Married, living with husband
4	Wang	27	Male	Gov. Officer	Master	Single, living with parents
5	Zhu	23	Male	Sales	High School	Single, living alone
6	Chen	47	Female	Social worker	High School	Married, living with family
7	Zhou	60	Female	Newspaper Editor	Bachelor	Married, living with husband
8	Li	59	Female	Retied Gov. Officer/part time sales	Bachelor	Married, living with husband and mother
9	Xue	50	Female	High School Teacher	Bachelor	Married, living with husband

10	Hee	54	Female	Gov. Officer(Food & Drug Admin)	Bachelor	Married, living with husband
11	Don	58	Female	Worker	High School	Widow, living with a child
12	Ping	57	Female	Junior School Teacher	Bachelor	Married, living with husband
13	Zheng	39	Female	Accountant	Bachelor	Married, living with family
14	Zhang	59	Male	Jade Businessman	High School	Single, living with a child
15	Rong	55	Female	Retired worker	Bachelor	Married, living with family
16	Nie	39	Female	Engineer	Bachelor	Married, living with family
17	Wu	35	Female	Gov. Officer	Bachelor	Married, living with family
18	Hui	47	Female	Businesswoman	Bachelor	Married, living with husband
19	Tie	28	Male	Uni. Administrator	Master	Single, living alone
20	Shen	31	Female	Uni. Teacher	Master	Single, living alone

6.8 Transcribing the Interview Data

In order to guarantee that information was collected and traceable (Boyatzis, 1998) in the data analysis, all interviews were audio-recorded with the permission of interviewees. Interviews were conducted entirely in Chinese as the primary language of target consumers is Chinese. Therefore, the original full transcriptions of the interviews were in Chinese and transcribed by the researcher who is the Chinese native speaker. Core themes and specific quotes were translated by the researcher and other three bi-lingual postgraduate students in the discussion section of the qualitative findings. The quality of the translated transcriptions was double checked by the researcher with the original audio recording and Chinese transcriptions.

6.9 Qualitative Data Analysis

The purpose of the data analysis is to find out and provide insights of latent consumer thoughts, emotions and behaviours. In order to analyse the interview data, the approach of thematic analysis was chosen, which is ‘a method for identifying, analysing and reporting patterns or themes within the data’ (Braun and Clarke, 2006, p.79). This method for qualitative data analysis has been widely accepted within realism paradigm (Braun and Clarke, 2006), due to its flexibility, simplicity and ability to identify meaningful themes in the data.

Data processing and analysing follow Spiggle’s (1994) recommendation, which is further elaborated by Braun and Clarke (2006). The whole analysing process is an iterative process, requiring the researcher to engage with the theory and data back and forth. It is

also in line with the philosophical stance of realism for the current research. Specifically, the deductive codes from the theoretical framework were applied to the coding process, serving as a guide to explore the application of existing theoretical constructs; while inductive codes were emerged and generated through the analysis, illuminating the nature of consumers' understanding of the themes within the research context (Chatzidakis et al. 2007). The literature and the data were analysed back and forth in order to ensure that the whole process of analysis is solid and thorough (Braun and Clarke, 2006). By applying this approach, the framing of codes which have outlined earlier was supported and reflected in the theoretical constructs of psychological states and coping strategies. Hence, the coding themes deductively related to existing theories but were inductive in their deliberations of these themes.

First, data familiarisation requires the researcher to get familiar with the data by transcribing and reading it. Subsequently, key research points were organised by ordering, structuring and interpreting the collected data and grouping them into categories based on the emergent coherent relationships (Marshall and Rossman, 2006). These categories were subjected to change and modification based on the analysis, but followed the application of the proposed theoretical constructs. The data coding was done manually for two reasons: 1) manual coding builds theoretical sensitivity (Corbin and Strauss, 2008); 2) it brings the researcher closer to the data (Wood and Kroger, 2000). Third, these codes were further converted into themes. Then, thematic codes were generated and refined based on the data and the theory. Last, findings of the data analysis were reported and explained by using extracts and direct quotes. They were discussed against the literature as well, in order to achieve the research objectives.

The whole data analysis process can be broken down into the following steps:

- Familiarisation – All interviews were transcribed, read and re-read after the transcription.
- Organising – All transcriptions of interviews were analysed. In the preliminary screening stage, key words, relevant phrases, interesting points and different ideas, were all noted and highlighted thoroughly twice.
- Categorising and abstracting (Initial Coding) – Categorising is the process of classifying or labelling units of data; while abstracting builds on the categorisation and encompasses more concrete instances with common features (Spiggle, 1994). Key points highlighted in the previous step were grouped into categories according

to themes. The categories were further incorporated into eleven categories (Miles and Huberman, 1994). A code was then given to each category. The eleven categories identified were: venues for food purchase, reasons for choosing venues, concerns of food, dining out, food products, channel of information, emerging food issues, actions taken, emotions elicited and hoping for the future.

- Coding – according to the proposed theoretical framework in Section 4.5 Chapter 4, two categories were further coded: actions taken and emotions elicited. The category of action incorporated the coping behaviours that consumers adopt to deal with problematic situations; while the category of emotion demonstrated how consumers feel when they face the situation. Thematic tables of these two categories were produced, linking the codes to the raw data from consumer interviews.
- Formulating and Modifying Thematic Codes – seven thematic codes were allocated to coping actions; six thematic codes were allocated to stress and emotions.
- Reporting Findings – based on the generated themes and results, the discussion on qualitative research findings will be presented in Chapter 6 (Qualitative study results and discussion).

6.10 Summary

This chapter has specified the design and method for the qualitative study. In particular, consumer face-to-face interviews are utilised to explore consumer psychological states and their corresponding coping actions, when facing long-term and ongoing food safety issues. Sample size, sampling technique, interview process, demographic characteristics, transcribing method and data analysis method are provided.

The next chapter will discuss the findings of the qualitative study. The role of the qualitative stage is fourfold: 1) to explore consumers' thought about long-term food safety issues and their psychological states including level of stress and experienced emotions; 2) to identify their corresponding behaviours and actions to cope with the issues; 3) to help develop and adapt measurements for quantitative stage; and 4) to modify the working hypotheses and the research framework.

Chapter 7 Results and Discussion: Study 1

7.1 Introduction

While Chapter 6 outlined the qualitative study design, this chapter presents and discusses its results. The qualitative study stage aims to identify consumer psychological states and coping actions, as well as inform the working hypotheses and the proposed model for consumer long-term coping (see Section 4.5 Chapter 4). Potential additional consumer long-term coping strategies that have not been identified from the literature will be discussed. Moreover, the qualitative stage contributes to the measure adaptation and development of the survey (McDaniel and Gates, 1993).

The structure of Chapter 7 is as follows: Section 7.2 reports and discusses the results of the qualitative study. Section 7.3 revisits the proposed working hypotheses and modifies some of them according to the results of qualitative study. Section 7.4 concludes with a short summary.

7.2 Results and Discussion

The research findings are discussed and organised around three themes: namely consumer coping behaviour, consumer psychological states and potential intervening factors. All names presented in the findings are pseudonyms. Detailed demographic characteristics of the interviewees can be found in Section 6.7 in Chapter 6.

7.2.1 Consumer Coping Behaviour

One of the qualitative study objectives is to examine how consumers cope with long-term and ongoing food safety issues in their daily life. Their coping behaviours and strategies may be different in comparison for coping with individual food scandals or other acute stressful situations (e.g., Pei et al., 2011; Lam et al., 2013), as the nature of unresolved, long-term and ongoing issues may provoke more psychological distress to consumers (Avison and Turner, 1988; Norris and Uhl, 1993; Mathur et al., 2006). This in turn can trigger different specific long-term coping actions. Data analysis is organised according to the proposed theoretical constructs of consumer long-term coping (see Figure 4-1, Chapter 4). Specifically, action coping, proactive coping, accommodation coping, personal support coping, information seeking coping and escape coping, frame the codes which reflect the consumer long-term coping construct. These are supported through data analysis. Furthermore, through the examples, stories and descriptions elaborated by interviewees, insights of consumers' behaviours, experiences and feelings in relation to food safety

issues can be further explored. As such, an additional long-term coping strategy that has not been identified from the literature is formed. Here, organisational support coping is identified from the results as a new coping strategy. Hence, the consumer long-term coping is organised in these seven subthemes.

7.2.1.1 Action Coping

Action coping is defined as “direct, objective attempts to manage a source of stress” (Duhachek, 2005, p.44). Interviewees in this study resonate with this definition, making their direct cognitive and/or behaviour efforts to manage and resolve long-term and ongoing food safety issues (Ayers et al., 1996; Yi and Baumgartner, 2004). Consumers make direct responses that are different in format and difficult to count the large number of various actions (Skinner et al., 2003). Across all the interviews, interviewees expressed that normally they have food at restaurants or at home. Food safety issues may arise in both situations. Interviewees may take distinct actions in both situations, however, the underlying meaning of various actions is within the definition of action coping. In other words, the identification of action coping includes actions taken in both situations.

Under the circumstances that consumers encounter food safety issues during their dining at restaurants, some may take direct actions to deal with the issues, such as making complaints to the restaurants. The findings of the current study support the argument that action coping strategy appears in the situation of eating out (Bingen et al., 2011). For example, Xue describes her experience of complaining to the restaurant:

“Last week I had dinner with my family. It turned out that the food they served has gone bad. So I asked to return the food and made complaints.”(Xue)

Xue’s experience shows her direct attempt to manage the issue. She further illustrates that she always complains to restaurants in relation to any food safety issues. It has become a normalised strategy for her, asking restaurants to be aware of their food safety issues. This comment reveals that consumers actively take actions to cope with food safety issues. These actions echo Lazarus and Folkman’s (1984) understanding of coping strategies, making behavioural and cognitive attempts to manage situational demands. Similar actions include asking for compensation. For example, Zhou mentioned that she and her friends were dining at a restaurant but found a worm in pork muscle. They were angry and asked for compensation from the restaurant. The restaurant finally gave compensation to Zhou and her friends for £200 each person. Making complaints and asking for compensation illustrate how consumers take actions to cope the issues happened when dining out.

Furthermore, action coping is also evident in a situation that consumers buy raw food materials, pre-cooked and cooked food and consume them at home. For consumers who have bought problematic food products from retailers, some go directly to the retailer and report safety issues. For example, Lou once bought bulk milk and found tube-shaped pieces in the milk after it was boiled. She then went to tell the store that they have added something into the milk. She said she asked for a refund and told the retailer not to do this kind of thing again. The direct action taken by Lou is in line with Xue who complains directly to food providers.

Another point is that overall problematic food safety condition requires consumers to adapt their behaviours to a long-term problem solving pattern. Several consumers have expressed that during these years in dealing with food safety issues, they have gradually developed their own methods. These include using washing liquid to remove the farm chemicals, soda to clean vegetables and fruits and using boiling water to handle meat. These actions illustrated by interviewees are different from the previous consumer coping studies, which focus on the short-term stressful consumption situation (e.g., Yi and Baumgartner, 2004). Instead, this study observes the long-term pattern of action coping:

“In all these years, the only thing I can do is processing, for example, cleaning and cooking. Sometimes I would use vegetables and fruits washing liquid. Sometimes I also use, for example, salt to soak the raw materials.” (Zhao)

Zhao has normalised these action as a long-term strategy and believes that by taking these actions food would be safer. In addition, consumers with more financial advantages may choose to buy high-end food products in order to manage and control food safety issues. For example, organic and imported food, are perceived by Chinese consumers to be healthier, more tasty and better for the environment (Thøgersen and Zhou, 2012). As outlined by Tie, he trusts imported food products, but also raises concerns over imported fresh foods as they may have travelled a long distance. His concern resonates with arguments that consumers prefer to have local food rather than imported food due to perceived taste, freshness and quality (Anderson, 2008). The action of buying perceived safer foods enriches the concept of action coping (Duhachek, 2005), as consumers actively take actions to cope and manage the issues indirectly. Hence, the definition of long-term coping adopted by this study, where direct efforts such as using soda to clean vegetables and indirect efforts such as purchasing organic food, are validated (definition see Section 3.4.2.3).

Previously, researchers such as Wang et al. (2009) and Qiao et al. (2012) have documented consumers' actions towards food scandals including reducing consumption and paying a premium for safe and traceable food products. This study provides additional evidence of consumers' actions for managing food safety issues in the long-term including using technical equipment and having healthcare food products which are considered high quality. It is evident that some consumers make efforts by utilising technical equipment to improve the quality of food. Specifically, Li mentioned that she has installed water filtering equipment at home and only drinks filtered water. Similarly, Hee has installed a lot of hi-tech equipment to filter drinking water and clean vegetables, fruits and meats. In her words,

"I've got a lot of things. Like drinking water machine, its effect is to filter the bad content. But the cost is high. The machine itself is several-hundred pound and I have to change the filter element every year, which cost around 100 pound each. Meanwhile, I have bought some high technology stuff. Meat, vegetables and fruits, all can be magnetized. You can see the froth after using the machine. These are bad contents."(Hee)

The implication here is that consumers consider technical equipment as an effective way to cope with food safety issues. All these actions taken, regardless of dining at restaurants or at home, are conceptually similar as all involve making attempts to work out a solution to the problematic situation (Duhachek, 2005). However, limited knowledge of specific consumer actions taken in dealing with long-term and ongoing food safety issues exist. This study provides evidence of consumers taking specific actions to manage long-term issues. It also enriches the concept of coping by including the indirect action of coping.

7.2.1.2 Proactive Coping

Proactive coping in the consumer domain emphasises that consumers take action in advance to reduce or mute the influence of long-term and ongoing food safety issues (Aspinwall and Taylor, 1997). Efforts of proactively coping with food safety issues include not only completely muting the influence (which is difficult due to the long-term and ongoing nature of the issues) and preventing the issues, but also reducing the possibilities of these issues from ever happening (Greenglass, 2002). Several interviewees expressed that they have tried to reduce the possibility of food safety issues happening to them by going to organic farmlands in the countryside and paying to pick up vegetables. Since they think picking vegetables from organic farm is a way to get fresh, safe and high quality vegetables and fruits, they are less likely to have problematic foods. Zhao mentioned in her interview:

“Because people living in the city now are chasing after safer foods and natural countryside life style, my family would go to farm sometimes. Farmers also welcome us when the fruits and vegetable are ripe, for example, strawberry, or probably little apple, something like that and apricot. These fruits and vegetables are grown by farmers using no farm chemicals. They are much safer than that of wet markets. Sometimes I will go to my relatives who live in the countryside, picking up and bringing them back.”(Zhao)

It can be highlighted from her words that even though the overall food safety issues is problematic, consumers can still prevent issues from arising by getting relatively safer foods. This action echoes one aspect of ‘proactive coping’ that is to build a reserve of resources (social or financial) to prevent future loss (Aspinwall and Taylor, 1997). Li similarly illustrated that now there are many organic farms around the city and she can afford the expense of picking from organic farms (“The ticket is £120 per year”). The experience for her is good and enjoyable. The quality and safety of foods picked by her are better. That is why she has continued to do this regularly for two years already. Li’s comments demonstrated how picking up vegetables become her proactive coping strategy, in order to reduce the possibility of food safety issues that may happen to her (Greenglass, 2002).

One of the reasons that ordinary consumers are getting more interested in picking up vegetables from organic farms is that they are not accessible to food ‘special supply’. Food ‘special supply’ refers to a system that foods are produced in organic and safe way and are supplied directly to high-ranking government officials, municipal canteens and selected intellectual elite (Yan, 2012). Therefore, without access to the ‘special supply’, ordinary consumers try to make their own efforts proactively to reduce the influence of the issues.

Similarly, some interviewees may also pick up vegetables and fruits from farmlands which are owned by their friends or relatives. In this case, they are invited by their friends or relatives and normally do not pay anything. For example, Ann illustrated that she goes to her friend’s farm in the countryside twice or three times every year during the harvest season and picks up vegetables such as tomato, cucumber and eggplant. Ann addressed that picking up vegetables temporarily frees her from purchasing from the market and helps her avoid the problem foods as well. However, her comments reveal an important point that there is no a universal solution for the issues. The implication of her comment is aligned to Silverman (2011) who points that proactive people take their initiative to seek to improve their life and environment in response to the problematic situations.

This argument is also supported by Zhang, who considered planting his own farmlands and deemed this an effective way of coping with the issues in advance, despite its requiring abundant financial resources and skills. Although buying a farmland is a different way to cope proactively, it supports the notion that proactive people create opportunities for growth (Schwarzer and Knoll, 2003; Silverman, 2011). In his words,

“If you are in a good (financial) condition, you can buy a piece of farmland. I bought one and planned to grow next year. It is all about considering the food safety, not making money. At least my family doesn’t have to worry about the vegetables. If you want to have vegetables in winter, you can also build up a green house. It’s also safe and healthy food.”(Zhang)

The identification of proactive coping from the interviewees also includes purchasing food products online, that allow transparency back to the source. It is a good way to prevent food safety issues in advance as consumers are able to see all relevant information of how they are produced and where they are from. Li trusts one particular online food store and purchases organic food products regularly from it. She mentioned that all pork products in this mobile application are organic, taste different and food safety information is clearly presented. They also provide other organic food products such as chicken, rice, vegetables and eggs. These products can all be traced back to their origins. For example, “you can know which hen in a given fowl-run lay the egg. It’s very expensive though (Li).”

The previous literature on proactive coping is more of preventive health and screening behaviours such as a scheduled medical procedure (Aspinwall and Taylor, 1997), which predominantly focus on illness and disease (Miller et al., 2009). In the present study, consumers make efforts proactively to manage the health threat from food safety issues (Aspinwall, 2011). It has been argued that proactive coping deserves attention as most research focuses on coping with the past or current events (Folkman and Moskowitz, 2004), rather than coping in advance to prevent or reduce the impact of events (Aspinwall and Taylor, 1997). As outlined by interviewees, their coping actions not only identify the strategy of proactive coping, but also support the notion that people create opportunities for improvements in their life (Schwarzer and Knoll, 2003).

7.2.1.3 Accommodation Coping

Mick and Fournier (1998) cite accommodation coping as flexibly adjust preferences to options. This means that consumers may adjust themselves to long-term and ongoing food safety issues. Interviewees expressed that when they have bought food products with

quality issues, they tend to stop purchasing the same product immediately. However, consumers also have concerns that if all kinds of food products in the same food category have the same safety issue, they have no choice but to reduce the amount of consumption:

"I will not buy the product for a period after the exposure. But, as I said, we don't have an official explanation, or clarification from the government. They don't provide the name of illegal components and a list of test qualified brands which we can trust and purchase. And probably products in the same food category all have the problem in certain procedure. So I can only reduce the amount rather than make a scientific judgment."(Zheng)

Zheng mentioned that her way of accommodating to food safety issues is to change her purchasing habits. She tended to stop purchasing problem foods immediately and choose alternatives. Mick and Fournier (1998, p.137) note: accommodation is 'sometimes effortless, but often not'. Zheng's illustration supports this argument as accommodation is effortless that consumers can just stop purchasing the problem foods immediately; while sometimes consumers need to make efforts or change habits to accommodate to the situation.

In addition to changing purchasing habits to accommodate, consumers are more careful when dining at restaurants in order to adjust themselves to the situation. They have mentioned that when dining at restaurants, they feel more comfortable choosing somewhere in an overall good condition. Notably, they hold the view that generally food safety conditions are worse in restaurants than that of at home. When purchasing in the supermarket or wet market for vegetables and fruits, consumers tend to spend more time comparing foods. This is purely based on their experience in a way to choose food with less safety issues. For example, Ping perceived that vegetables with leaves are more likely to contain chemical residues than items without leaves. They consider it as a good way to accommodate to the situation and avoid possible problematic food products.

Taking actions and changing the situation may not always be the option that consumers choose. Researchers also highlight 'acceptance' as a feature of accommodation coping (Skinner et al., 2003; Yi and Baumgartner, 2004). It is argued that consumers may tend to keep the status quo as their strategy to accommodate to the situation. For example:

"Sometimes I heard or learned some new stuff and I don't know what to do with that, I just accept the status quo."(Ann)

Ann described that she accepts the status quo and will not be doing anything to change. This comment is aligned to Yi and Baumgartner's (2004) conceptualisation of acceptance and Skinner et al.'s (2003) characterising of cognitive restructuring that consumers may get used to the idea that the issues have happened and that they cannot be changed.

A further point made by interviewees is that 'being alert' to food safety issues is also a strategy of consumers to deal with the problematic situation. For instance, when consumers purchase food products, they will be very careful to avoid fake products (Wu) and to be selective (Zhou). These comments enrich the conceptualisation of accommodation adding the feature of being alert. Another example illustrated by Don supports the argument:

"I am extremely cautious about food. I only go to big restaurant rather than the small one."(Don)

From Don's illustration, she is alert that she tends to choose restaurants with hygienic certificate or larger in scale which they think are in control of the safety. To summarise, consumers flexibly adjust preferences to options to adapt to different situations (Mick and Fournier, 1998). Previous research has emphasised the strategy of 'acceptance', as one perspective of 'accommodation coping', where individuals attempt to get used to the idea that something has happened and nothing can be changed (Yi and Baumgartner, 2004). The present conceptualisation also incorporates behaviour accommodation, cognitive and emotion accommodation (Skinner et al., 2003). As noted by interviewees, accommodation can be behaviour accommodation such as changing purchasing habit and also cognitive or emotion accommodation such as keeping the status quo and being alert. These efforts indicate the identification of the strategy of accommodation coping.

7.2.1.4 Personal Support Coping

Personal support coping is defined as "attempts to marshal social resources to take action towards ameliorating a stressor" (Duhachek, 2005, p.44). In most extant studies, people seek support from a wide range of channels, including family, spouses, peers, professionals and even God (Skinner et al., 2003) to resolve problems (Glanz and Schwartz, 2008). Duhachek, however, separates support seeking into emotional and instrumental support seeking and believes the two to be functionally distinct. Nevertheless, the underlying meaning of emotional and instrumental reasons is the same: turning to people for help (Yi and Baumgartner, 2004). In addition, Carver et al. (1989) have found that the items for these two factors are loading on the same factor, which supports the idea that they should be treated as a single strategy. Hence, the conceptualisation of support seeking in the

present study includes both emotional and instrumental support.

Consumers take different actions in terms of seeking support. One of the most popular ways nowadays is the ‘personal shopping’. In Chinese, it is called ‘Daigou’, a freelance retail consultant (explanation used by BBC for the first time in the report ‘Shopping in Australia, while in China’). Originally, ‘Daigou’, or personal shopping refers to people who reside abroad and purchase goods for those who live in China. Now, it also includes people who reside in other regions of China and purchase local goods for those who are far away. There are different ways of personal shopping. Some consumers may purchase foods from online stores which source food products from other places. Others may ask their friends or relatives who live far away from themselves to purchase the local food products. It becomes popular because basically consumers can buy anything from all around the world with guaranteed quality and channel. As Wang illustrated:

“I also purchase some fruits through friends. My friend’s husband wants to open up a fruit store. So he would personally go to orchards and communicate with fruit farmers and run some tests to see the safety and quality of their fruits. We often buy some fruits from her store, because it’s impossible for us to go to fruit orchards to observe the fruit. The first reason is that she’s my colleague, so I’m more assured; the second reason is the product safety and quality is reliable.”(Wang)

Wang purchased fruits by personal shopping, which supports the argument that people turn to seek support from others in dealing with food safety issues (Skinner et al., 2003). In addition to ‘Daigou’, consumers also use other social resources to resolve the problem. Wu, a government official, has a friend who works for a government department importing foods from abroad. She often purchases foods from her friend as she thinks that her friend is knowledgeable about the quality and origins of these food products. For instance, she has bought flour and sugar from Kazakhstan and Russia. Based on her illustration, instrumental support is evidenced (Duhachek, 2005). This is her strategy that using her social resources to get some high quality foods in order to cope with the problematic food safety issues.

Furthermore, consumers also tend to seek instrumental support such as social media and media platforms. Social media such as WeChat and Weibo are very popular in China. Many consumers have installed these two ‘apps’ on their smartphones. On these platforms, people are free to send messages, post their micro-blogs, share articles, videos and other forms of communication. For people who use traditional media, TV and radio programs are

also good ways to resolve food safety issues. Shen illustrated that nowadays ‘we-Media’ (i.e., personal social media account) is advanced and people can easily express feelings and ideas through various channels. Using we-Media to express feeling from her illustration actually combines the emotional and instrumental support together. This supports the argument that instrumental and emotional support should be treated as a single strategy (Carver et al., 1989).

In addition to instrumental support, the conceptualisation of personal support in the present study also includes venting emotions to friends, families, or colleagues. Rong expressed that she would talk to her family members about how angry she is at the poor food safety. In her words:

“I prefer to talk to my family when I’m angry about it. Who else can I talk to?”(Rong)

Drawn from her comment, emotional support from her family is very important to her as she does not have any other outlet to express her feelings. This is aligned to Skinner et al. (2003) claim that the goal of support seeking is to seek comfort, along with advice and contact.

Personal support seeking functions by using available social resources (Skinner et al., 2003) and incorporates: contact seeking support such as Daigou; comfort and emotional support as Rong expressed; as well as instrumental support such as using social media or traditional media platform to resolve the problem. These efforts indicate the identification of the strategy of personal support coping, which includes more functions in comparison to previous research (e.g., Carver et al., 1989; Yi and Baumgartner, 2004).

7.2.1.5 Information Seeking Coping

Information seeking is defined as consumers who find and use additional public or product information to avoid long-term and ongoing food safety issues (Ryan-Wenger, 1992; Skinner et al., 2003). It includes information provided by authorities such as hygiene certificate for restaurants, verified certificate for food products, product signs, using brands and word of mouth.

First, some consumers may rely on the hygiene grading system as additional information for them to make decisions. All restaurants in China have to be evaluated every year by government agencies. Normally they are rated in four categories: A (excellent), B (good), C (pass) and fail. If a restaurant is rated as ‘fail’, significant improvement actions need to be taken to avoid being closed down. Rating certificates have to be hanged next to the

business license at the counter or at the front door of the restaurant and consumers make decisions based on this information. For example:

“The only thing I could see is the sign of hygiene condition, which normally is hanged over the door, next to the business license. This sign of hygiene condition usually includes dining and kitchen area, the level of cleanness and whether they have insects or mice. Obviously this is the most basic requirement for food guarantee.”(Zhao)

Zhao highlights that these signs are only certifying the basic requirements for food guarantee. Another interviewee Wang also considered that these signs are only useful for making decision on whether or not to eat at small restaurants. According to Wang, when the hygiene conditions are hard to establish, decisions must rely on the grading system. As noted by Skinner et al. (2003), this strategy functions as consumers attempt to learn more about the situation in order to intervene or remediate. The hygiene grading system, therefore, not only lends support to the argument, but also enriches the functionality of the strategy as consumers use additional information to make decisions.

Furthermore, for consumers who purchase food products at the supermarket, some of them care a lot about government verified licenses or certificates as they indicate safety, high quality and product standards. They believe that all food products with government verified licenses or certificates have to go through a rigorous quality control process. It is difficult to get favourable certificates from government and compared to food produced by family workshops or small producer, verified food is of higher quality. Wang himself prefers to buy foods with more product safety and quality assurance or national certification. Consumers use the information on the food products to make the buying decision and avoid the safety issues. This illustration further validates the argument made by Skinner et al. (2003).

In addition to government verified certificates, consumers also pay attention to product signs which indicate the quality of food products. For example:

“If buying a food product, I would notice its date of production. Besides, I would see the quality of the product from its appearance. Then I will check whether or not it has the guarantee. I don't buy non-warrant product.”(Lou)

Lou addressed that every time she buys food, she checks the sell by date of products, the quality of the food product from its visual appearance and its guarantees. The date of production shows when the product has been produced and when it will expire. In most

cases, expired food products are regarded as unsafe to consume, therefore, in China clearly presenting the date of production, address of production and food hygiene authorisation code are mandatory. Consumers, therefore, use the information to learn more about the situation, which aligns with the conceptualisation of the information seeking strategy.

A further consideration is that brand is a powerful sign of product quality (Rao and Monroe, 1989). Brands also provide information that could help consumers make buying decisions. Consumers often rely on trusted brands as it is difficult for ordinary people to understand food safety issues in depth and acquire information from all aspects. Therefore, brand, as medium and trusted information, is used by consumers to make buying decisions and to cope with the problematic situation. For example:

“When I try to look up the components in the food, or the impact of these components, my knowledge is limited to support my investigation. So I can only follow brands and make decisions.”(Zhu)

Zhu further emphasised that he would prefer to go to stores that qualify as big brands since they are relatively better because they are responsible for what they sell. Based on his comments, consumers rely on information provided by brands, featuring the function of the information seeking strategy.

Moreover, interviewees think that sharing information regarding food and safety issues is important. Many of them express that among friends, relatives and colleagues food safety information are well communicated and shared. Xue mentioned that she has read some news about fast-growing duck which scare her and so she shared it with her family and friends. She believes that as long as the news is about food safety, she will spread it quickly. Drawn from her comments, the function of information seeking strategy also includes getting information shared by peers, families and colleagues.

Skinner et al. (2003) summarises that information seeking coping includes actions such as reading, observation and asking others. People attempt to learn more about the situation. The present study enriches our understanding in the following aspects: 1) it identified the functions of the strategy, incorporating actions such as relying on government grading system (hygiene system), verified certificates and brands, sharing information with others; 2) it added ‘helping consumers make decision’ to the functions (intervention and remediation) of information seeking.

7.2.1.6 Escape Coping

Escape is defined as disengaging, staying away or taking their mind off from food safety issues (Skinner et al., 2003; Yi and Baumgartner, 2004; Duhachek, 2005; Moschis, 2007) and “attempts to create psychic or physical distance between oneself and a stressor” (Duhachek, 2005, p.46). It reflects on actions of relinquishment of control, disengagement and taking minds off (Peterson et al., 1993; Dweck, 1999).

Escape coping, in one aspect, represents the relinquishment of control of the problematic situation. Specifically, consumers take no action to change or deal with the issues. However, the reasons for why consumers relinquish their control of the issues vary. For example:

“I think this matter depends on the cost. I only spend £15 to buy the cake. It would definitely cost more if I want to hold the seller to account. Besides, the seller has explained patiently the reasons that green tea became deteriorated. So I didn’t do anything to resolve the problem.”(Wang)

Wang believed that if the price of foods is low, it is not necessary to do anything such as spending time and money to sue the food provider. His point exemplifies how consumers take ‘escape’ as their strategy when they think the situation has no significant impact on their health and life. Comparatively, Hui demonstrated that insufficient information provided by officials on food safety issues prevent her from doing something. Hui stressed that she is incapable of doing anything as consumers have very little power compared to food producers. This contrasts the notion that consumers are powerful through their ability of boycotting problematic products (Denegri-Knott et al., 2006). However, the notion that a group of consumer is powerful remains, while Hui feels powerless as an individual consumer. Zhu, Lou and Rong did not care about the minor issues of foods although the overall food safety situation is problematic. They expressed that they do not want to spend time and money to deal with sellers if the issues are not too serious. All of these interviewees demonstrated a choice of relinquishing of their control over the situation. These actions are considered as the escape coping (e.g., Moschis, 2007).

In addition to relinquishing of control, some consumers think that it is useless to make complaints or protest as it is ineffective in addressing the issues. Don has stated:

“Making complaints are not really effective as well. So I don't do it anymore. Once I bought some preserved ham which are apparently coloured by chemicals. So I asked to return the ham but refused by the seller. Later I called to report the issue to government

department but there was no effect at all.”(Don)

Here comments suggest that it is useless to do anything to change the situation and that she chooses to disengage with it. This suggests that disengagement is an important feature of escape coping. This view is supported by Yi and Baumgartner (2004) and highlights that consumer choose to disengage behaviourally when they think further efforts are futile. In a similar manner, consumers may attempt to stay away from the problematic food products or restaurants. Zhao and Xue also demonstrated that they would avoid the problematic restaurants or some small restaurants with low hygiene rates.

In contrast to the ‘behavioural escape’ coping discussed above, consumers also disengage with the issues mentally. As Rong stated:

“I try not to think about the safety of the foods. If I don’t feel well after eating, I won’t buy the product again.”(Rong)

Her comment demonstrates that consumers disengage with the issues mentally. She took her mind off the problem and actively avoided the issue. This illustration is also supported by Yi and Baumgartner (2004). In addition, Folkman et al. (1986) also incorporate denial and wishful thinking as another two important features of mental disengagement. Specifically, they highlight that people can refuse to accept something and shut problems out.

To summarise, escape coping consists of mental disengagement and behaviour disengagement (Yi and Baumgartner, 2004). Additionally, denial is also considered as an important aspect of escape (Duhachek, 2005). Beyond what have been found in the previous studies, the present study also identifies that consumers may become idle when they think food safety issues have no significant impact on their health and life. For example, if the food is 1 pound, they may think it is not worthy to spend 1 hour of effort to get a refund, or spend 1000 pounds to sue the food provider. Hence, they take no action to deal with the issues and simply bin the food. All efforts indicate the identification of the strategy of escape coping.

7.2.1.7 Organisational Support Coping

Organisational support coping refers to a strategy that consumers adopted to get support or resources from official organisations or use available resources provided by organisations they (or others) work for to resolve the problem. It includes both direct and indirect support from organisations. Notably, organisational support coping is different from organisational

support theory. Organisational support theory assesses the extent to which the organisation values the employee contribution and cares about their wellbeing. This may be achieved by meeting their socioemotional needs (e.g., Eisenberger et al., 1986). However, organisational support coping functions as a strategy which consumers can adopt to deal with the problematic issues.

This strategy is newly identified from the consumers' illustration, mainly because of the Chinese collectivism culture and planned economy. Chinese consumers are often relying on getting support from organisations to resolve problems (e.g., Sun et al., 2004; Hui et al., 2014). This includes getting help from government organisations such as food inspection and quarantine department and relies on actions taken by government organisations, figuring out ways of handling the issues with the help of government organisations and receiving safe foods from the organisation they or their friends and relatives work for. In contrast to personal support coping discussed above (e.g., Duhachek, 2005), organisational support coping addresses an organisation as the target group that consumers turn to seek help, rather than individuals as the targets.

For example, consumers may choose to get in touch with official organisations. Hee works for a government food control agency and she mentions that some consumers may contact the official government organisations to report food safety issues that they have encountered. It may take time for them to process all the reports, but it is an effective way to deal with food safety issues, including fake food products, quality issues and animal welfare, among others. She further explained,

“Our organisation has a report centre. People also make phone calls, reporting some problems such as fake wine, careless slaughtering, or food quality issue.”(Hee)

Moreover, some consumers receive resources from organisations such as safe foods and gift card for buying foods. Lou's company has given staff gift cards for purchasing foods from organic farm for free. It is a good way to get fresh, safe and high quality vegetables and fruits to cope with the problematic food situation. Ping's daughter works for the company that normalises this welfare every Friday and states:

“Like my daughter's company, they distribute vegetables every Friday. These vegetables are coming from organic farmland directly. Normally it could just meet the needs of one week or just a little less.”(Ping)

Instead of giving out gift cards for vegetables, this company chooses to purchase the

organic vegetables from farmland and then allocate them to staff. Based on her comments, getting support from the organisation to deal with food safety issues provides evidence for organisational support.

Some consumers believe that getting support from organisations is the most suitable way to resolve the issues (e.g., Hui et al., 2014). In the previous studies, actions such as finding additional contingencies or using social resources (Skinner et al., 2003) are not further specified into personal support and organisational support. Drawing from consumer interviews, actions taken by consumers indicate the identification of the strategy of organisational support coping.

To summarise from what has been discussed above, when consumers are asked how they cope with long-term and ongoing food safety issues, six coping strategies emerge from consumer experiences. In addition, one new lower-order coping strategy is identified from coping actions: organisational support coping. This strategy is exclusive to the research context because Chinese consumers to some extent are collectivism relying on the organisations they work for or on authorities (Hui, Lee and Wang, 2014). To recap, coping functions at multiple levels (Pearlin and Schooler, 1978; Skinner et al., 2003). The present research argues that there are three levels of coping. The lowest level is coping instances, which are real-time coping actions made by consumers. The middle level is the ‘lower-order coping strategies’, which are grouped from the coping instances into conceptually clear categories and supported by the extant literature. The highest level is the ‘higher-order coping strategies’, which are grouped from the lower-order coping strategies according to their adaptive functions (Skinner et al., 2003). Table 7-1 provides examples of coping actions identified from consumer interviews and how they are matched into lower- and higher-order coping categories (introduced in Section 4.3, Chapter 4).

Table 7-1 Examples of Coping Actions Associated with Lower- and Higher-order Coping Categories (Source: the author)

Higher-order Coping Strategies	Lower-order Coping Strategies	Coping Instances (Examples from consumer interviews)
Initiative Coping Strategy	Action Coping	Making complaints, informing the retailer, asking for change and compensation, testing by professionals, methods to handle foods, technical equipment, healthcare product, purchasing imported food.
	Proactive Coping	Picking from the farm, getting from friends or relatives, buying a piece of farmland, mobile software.
	Accommodation Coping	Temporally stop purchasing, adjusting and paying more attention, keeping status quo, being alert, depending on own experience.
Support Seeking	Personal Support Coping	Personal shopping (Daigou), sharing, media and social media.

Coping Strategy	Organisational Support Coping	Direct and indirect support from organisations
	Information Seeking Coping	Hygiene grading system, government verified licenses, product sign, following brands.
Avoidance Coping Strategy	Escape Coping	No action taken, useless to make complain, keeping from the restaurant or product, simply avoiding,

7.2.2 Consumer Psychological States

Another objective of the qualitative study is to explore the level of perceived stress and provide empirical evidence of emotions that consumers experienced in the study context. The following subsections are the findings and discussion on perceived stress and emotions.

7.2.2.1 Perceived Stress

Drawing on transactional theory (Lazarus and Folkman, 1984), stress is expected to be elicited when consumers appraise the long-term food safety situation as a stressful consumption situation that exceeds their ability to handle. Consumers may have the feeling of stress due to the long-term and ongoing nature of the problem (Day and Livingstone, 2001), which is unresolved and continuing to threaten and influence their health and daily lives. Interviewees expressed during the interviews that due to their limited knowledge on food safety issues, it is impossible for them to distinguish between safe products and unsafe food products. Consequently, the perceived level of stress for this kind of consumers is high even in the long-term setting. This was evidenced by:

“I do care about the drainage oil because I can’t distinguish. Some said that JinLongYu (a famous cooking oil brand) is contaminated. But it’s still on the market. So I don’t really know. I haven’t bought any cooking oil in the stores for four years. I prefer to go to farmers who produce oil themselves. I’m always stressed about it.”(Ping)

Ping found herself got stressed because she could not tell between safe or unsafe food. For example, purchasing cooking oil became a very stressful consumption situation for her. This view is supported by Moschis (2007), revealing that stress can be stimulated in such consumption events. In addition, Ping’s stress status has continued for years and she has not bought any cooking oil from stores for four years. This can be seen as a ‘continuous and persistent condition’ that gives rise to chronic stress (Wheaton, 1990).

However, not all consumers experience high levels of stress. From the view of Lazarus and Folkman (1984), appraisal and coping is a dynamic process. As such, consumers may no longer have any feeling of stress in the long-term because they may have effectively coped with situations and reduced or removed stress altogether. Taking another point of view,

some consumers express that the situation is just fine and nothing is stressful. On the one hand, these consumers may think that food safety issues are insignificant to them and they do not want to be bothered; on the other hand, like Zhao, noted that due to the information asymmetry she does not have a proper channel to know the whole story. In her words:

“At the moment it’s just fine. We have limited choices and we don’t really know which one is trustworthy, which one is not. Also, I am not a mother yet. Because children, especially babies, their immune system is very weak. No one wants to take risks. I don’t need to pay attention to infant milk powder or something that has problems before. So there is not much to be stressed out.”(Zhao)

The important point made here is of information asymmetry. As noted, stress exists when the situation has gone above the ability of individuals to manage (Carver and Vargas, 2011). Due to the information asymmetry, Zhao did not perceive the situation as stressful. In addition, some consumers have got used to the situation and feel that they can adapt to the situation well. For example:

“I do not feel stressed. Anyway, because I think the food is there, whether you eat or not, you can choose to go to a relatively high-end place with more expensive price to eat the food at ease. You can also choose a place with cheap price that may have safety issues.” (Wang)

Wang works for a government agency and has access to safer food supplies. For example, he can have lunch in the municipal canteen which exclusively supplies lunch and dinner for civil servants. Wang further explained that suppliers for the municipal canteen are highly selective of the quality of food purchased and sold. That is why he is quite optimistic towards the safety of foods and was not concerned. Therefore, there is no stress expressed.

Comparatively, not all consumers have access to the special supply for the civil servants. However, despite that, they show little stress in the long-term. For example, family income of Chen is very low and she mentioned that most of time she cooks dinner for the family and take some as lunch for the next day. She thought that cooking at home is a cleaner and safer alternative due to her complete control over preparation. As a result, she does not have any feeling of stress.

Other consumers do not express feeling of stress about the situation as the stress has slowly diminished over the long-term due to effective coping (Lazarus, 2000). Under these

circumstances, they have mentally prepared and actions taken are normalised in their daily lives of dealing with food safety issues per se. Zhang demonstrated that food safety issues have emerged for over 20 years and consumers have got used to it. As self-mocked by Tie, he thought that Chinese consumers have had a strong stomach due to having unsafe food for too many years. Hui thought that in a populous country it is impossible to guarantee that all foods are safe. She has mentally prepared herself that it is quite normal when she encounters food safety issues. All of them do not express any feeling of stress as they have got used to the situation.

Previously, Section 7.2.1 showed that all consumers interviewed more or less have taken some actions to cope with long-term and ongoing food safety issues. As noted in this section, consumers express different levels of stress, including feeling a high level of stress and feeling of no stress at all. This finding is vital as it provides a new angle for discussing stress and coping. Previous research basically argues that coping is activated when stress exists (Lazarus and Folkman, 1984; Skinner and Wellborn, 1997; Eisenberg et al., 1997). However, the present findings support the argument that coping behaviours emerge where stress is not necessarily a prerequisite. In other words, stress may have been a prerequisite initially, but it diminished or eliminated in ongoing stressful situations with effective coping. However, coping behaviours continue. Although these consumers have expressed that they have no special feeling of stress in this long-term and ongoing problematic food safety situations, they still also make some efforts in dealing with the issues. The following Table 7-2 is an illustration of coping actions taken by consumers who have no feeling of stress.

Table 7-2 Examples of Consumer Coping with No Feeling of Stress (Source: the author)

With no feeling of stress	Example of Coping Actions
Zhao	Generating methods to handle foods, picking from the farmland, purchasing imported foods, depending on own experience, sharing, hygiene rating system, following brands, simply avoid
Wang	Informing the retailer, picking from the farmland, purchasing imported foods, being alert, personal shopping (Daigou), hygiene rating system, government verified licence
Chen	Stopping purchasing temporarily
Zhang	Buying and planting own farmland, adjusting and paying more attention
Hui	Relying on government verified licence
Tie	Asking for a change or compensation, purchasing imported foods

Drawn from the comments by interviewees, reasons that consumers cope with no feeling of stress may vary. First reason may be information asymmetry. As noted by Zhao, she has no reason to get stressed if she does not know about it. Second, the coping behaviour in the long-term has an effect of psychological and behaviour inertia (e.g., Koval and Kuppens, 2012). Even when stress has faded away over a long time period, consumers may not have realised that stress has gone and continue to make efforts to cope with issues. Third, consumers are actually dealing with the long-term problematic situation of food safety per se, rather than dealing with stress and emotions elicited from appraising the situation. Therefore, these behaviours and coping efforts become the routine of consumers in their daily lives without noticing any changes in psychological states. In addition, coping behaviours manage the demands of stressful events (Lazarus, 2000) and stress may diminish as it is regulated. However, consumers may continue to make coping efforts such as cleaning vegetables by using washing liquid as it has become routine for handling and cooking food. Fifth, some coping efforts that consumers made are considered fun and enjoyable, such as picking up vegetables or planting their own farmlands. Interviewees have expressed that it is a good way to relax and enjoy the countryside lifestyle. Sixth, some consumers accept that the current situation is quite normal in a populous country; while on the other hand, the issues have been talked about for decades and consumers have mentally prepared themselves. This is why they do not feel any stress, but continue to cope. These novel findings extend the boundaries of stress and coping research, suggesting a need for further refinement of coping theories by considering the conditions of coping with diminished or eliminated stress.

7.2.2.2 Emotions

Four negative emotions have emerged from the consumer interviews and include: worry, disappointment, anger and fear. In addition, this study also identifies a positive emotion of hope from the findings of consumer interviews. Following subthemes are the discussion on each emotion.

Worry

The emotion of worry is expressed by consumers. Worry is defined as the degree to which consumers evaluate the situation with the features of uncertainty, concern, anxious and panic (Yi and Baumgartner, 2004). Specifically regarding long-term and ongoing food safety issues, interviewees worry about the general situation, specific food products, health conditions of their own, as well as hygiene condition of restaurants.

Zhao expressed that she has very low level of confidence in the whole food system. This point was probed further with the question “what does the lower confidence mean?” She replied that lower confidence of the food system means that ordinary consumers worry about the domestic food safety. In her words:

“We have Hong Kong or Australia milk powder in a great demand. Consumers worry about the domestic food safety.”(Zhao)

Based on her comments, consumers in a long period of time worry about the safety of milk powder. That is why there is a ‘foreign milk powder heat’, demanding for safe products. Her illustration supports the idea that Chinese consumers worry about the situation (Wang et al., 2008; Zipser et al., 2016). Consumers also worry about the poor safety of food products may cause harm to their health. They find it difficult to distinguish between safe and unsafe food products. Consequently, they are not sure whether or not what they have eaten may influence their health in the future. Beyond this, consumers also expressed worry towards the health condition of the next generation. They believe that it is not important for this generation as they have experienced poor food safety situation for many years. However, if this situation continues, the health condition of the next generation is worrying. This is expressed especially by consumers who are mothers. For example, Zheng emphasised:

“I definitely worry about the condition as a mother” (Zheng)

Some interviewees worry about dining out in restaurants. They illustrated that in general the safety condition of foods in restaurants is worse than that of at home. Especially considering the cooking oil, consumers demonstrate their concerns and worries due to a number of cooking oil scandals that happened across the country in recent decades (e.g., Lu and Wu, 2014). In addition, they think restaurants generally have poor hygiene condition in comparison to home cooking. Therefore, they expressed their worries towards dining out in restaurants. For example, Xue illustrated that although some small restaurants have fine foods, but she worries a lot about the cooking oil they use.

Drawn from interviewees, this study identifies that consumers are experiencing the emotion of worry. It is in line with previous consumer surveys that worry is central in the discussion of long-term and ongoing food safety issues (Global Attitude Survey, 2015; NFSIR, 2016). As noted in Chapter 4, the behavioural tendency of worriers could be avoidance and escape (e.g., Roseman et al., 1996), as well as actively cope and turn to seek help from others (Laux and Weber, 1991). For example, worried interviewee Zhao chooses

action coping, proactive coping and information coping. Worried Xue adopts action coping and information seeking. Both are evident from the previous Section 6.2.1. Thus, the findings from the interviewees validate the hypotheses, suggesting that consumers may take various forms of strategies to cope with the emotion of worry.

Disappointment

Consumers demonstrate the emotion of disappointment. Disappointment is defined as the degree to which consumers appraise that the situation would be worse than expected (Ortony et al., 1988). They have no faith in the food system, as well as the overall quality of food products and situations. Wu expressed disappointment by giving the example of contaminated infant milk powder. She explained:

“Talking about the milk powder, it’s for infants! The producer added so much contaminated substance, just to improve the taste. How can I trust the food safety? So I’m very disappointed at the food safety. Thereafter, every time I buy a food product, I would have doubt and distrust.”(Wu)

She thinks that milk powder is for infants. In essence, she thinks it is impossible to ensure the food safety of general food products, if the quality of infant products cannot even be guaranteed. The situation could only be worse for other foods. Consequently, she is disappointed with the domestic food products. Her feelings provide evidence for the argument that individuals feel powerless when they experience the feeling of disappointment (Zeelenberg et al., 1998). As understood by the extant research, the disappointed individual tends to flee from situations. Based on the comments of interviewees, consumers may have different behavioural tendencies other than avoidance. For example, disappointed interviewee Wu chooses personal support and accommodate coping, which are evident from the previous Section 6.2.1. The findings validate the hypotheses, proposing that consumers may adopt different coping strategies to deal with the emotion of disappointment.

Anger

Some consumers have also expressed the emotion of anger. Anger is defined as a sense of being slighted or demeaned (Lazarus, 1991). Mad and furious are important features of anger when consumers evaluate the situation (Lerner and Keltner, 2000; Yin et al., 2014). Lou is a magazine editor who has the responsibility to take care of the whole family for food. She has a rich experience in identifying food safety as she has gained additional food

safety information as an editor. When she encountered food safety issues, she becomes very emotional:

“When I encounter food issues, I feel very angry, very very angry and worry as well.”(Lou)

Lou is angry because she knows many stories that food safety issues have serious negative impact on people. Food producers who violate the moral code of conduct may also contribute to her anger (Diaz et al., 2002). Comparatively, Rong is angry because she feels helpless. She is a retired worker with limited financial resources. She mentioned that in terms of food and food products, she only chooses cheap items. She thinks that having bad or good quality food is all about luck. If anyone from her family gets sick because of eating bad food, she would think that it is only because they are not lucky. In addition, she does not want to be bothered to seek help if any food related safety issues happen to her, as it may cost her some money. Consequently, she considers herself to be weak in terms of turning to seek help from others but does complain to her family members.

Drawn from literature on consumer behaviour, angry consumers are more likely to be linked to aggressive behavioural tendencies, such as boycotts (Friedman, 1999) and thoughts of violence (Bougie et al., 2003). For example, angry interviewee Lou chooses action coping, information seeking and escape coping. Angry Rong adopts personal support and escape coping, which are evident from the previous Section 6.2.1. The findings of this study, on the one hand, identify the emotion of anger; on the other hand, validate the research hypotheses that consumers may have different behavioural tendencies in coping.

Fear

Last, the emotion of fear has been expressed by interviewees as well. Fear is defined as a negative emotion that evoked when there are low certainty of a situation and low situational control (Smith and Ellsworth, 1985). This is demonstrated by an interviewee. Zhu is an assistant sales manager. He mentioned that he is very busy every day and has no time to care about food safety issues. Normally, he would choose to eat anything that is convenient or not expensive. He encounters food issues several times such as worm on the plate and out-of-date vinegar. He further explained:

“I fear that I may have a bad disease in the future. But all places are the same, so it’s unavoidable and I can’t do anything, nothing can help.”(Zhu)

His comments suggest that, he fears that one day he may end up with some diseases or sickness because of having bad food. This provides evidence to the argument that fearful people tend to make pessimistic judgements over the situation (Lerner and Kelter, 2000). Han et al. (2007) also agree that people in fear may perceive the situation to be uncertain and of high risk. Fearful interviewee Zhu have adopted escape coping and information seeking coping, which are evident from the previous Section 6.2.1. The identification of the emotion of fear validates the research hypotheses that consumers may be different in coping behaviours.

In the long-term stressful consumption situations, negative emotion of worry, disappointment, anger and fear have been identified. However, during the consumer interviews, some consumers also demonstrate positive psychological state when they face long-term and ongoing food safety issues.

Hope

Hope is identified through consumer interviews and is defined as the degree to which consumers believe that they may come up with ideas and methods to handle the situation and resolve the problem (Snyder et al., 1991). Consumers express hope in different ways. Some consumers have hopes for the future that the situation will get better. Shen demonstrated that currently foods are not guaranteed due to a lack of understanding of food standards, information and knowledge. However, she hopes that in the future she can find a channel to learn something about food safety. For example, if raw food materials can be traced back to their origin, it will be easier for her to make judgements on whether or not the foods are safe. She hoped in a way as follows:

“I think now less than 50 percent food I had is safe and trustworthy. It is impossible if I say 100 percent of food is safe. But I hope in future that most of foods I have are safe and trustworthy, maybe 70 to 80 percent.”(Shen)

Other consumers have positive attitude and interpretation of food safety towards in future. Drawing from Wang and Don, they have followed some news regarding the efforts that the government has made and that farmers nowadays have better control over the abusive use of farm chemicals and fertilisers. Wang thinks that the overall situation of food safety has improved significantly with many more official media platforms and government agencies taking initiatives to disclose food scandals and promote safety issues. Don has some personal connections with farmers. She highlighted that farmers have told her they have got professional tools and methods to test the soil. In order to save money, farmers are no

longer aimlessly using all kinds of farm chemicals and fertilisers. They choose specific one by using testing equipment. In different seasons and areas, different farm chemicals and fertilisers are applied. Consequently, she has hope for the future that the safety of food products will definitely improve by adopting such methods. In her words:

“I have a hope that food safety will get better. I know they (farmers) have methods to test the soil. Farmers are no longer aimlessly buying farm fertilisers and chemicals because scientists from quality assurance department would tell them what they need.”(Don)

The identification of the positive emotion of hope, provides evidence for the argument that in chronically stressful situation consumers may experience both positive and negative emotions (Folkman and Moskowitz, 2000). Hopeful consumers also adopt different coping strategies. For example, Wang chooses accommodation coping, personal support and escape coping. Don adopts accommodation and escape coping. Both are evident from the previous Section 6.2.1. The identification of the emotion of hope validates the research hypotheses that consumers may be different in coping behaviours.

In the present study, different negative emotions of worry, disappointment, anger and fear, as well as the positive emotion of hope are evidenced by different consumers. The research hypotheses were proposed in a general term ‘psychological state’ in the chapter 4. Now they can be modified into five specific emotions identified from the findings of consumer interviews.

7.2.3 Potential Intervening Factors

As noted in Chapter 4, consumers cognitively appraise the long-term food safety issues and their personality traits may influence consumer long-term coping behaviours (e.g., Mischel, 1973; Carver and Scheier, 1999; Folkman and Moskowitz, 2000; Duhachek and Kelting, 2009). Therefore, attention has also been paid to explore whether situational cognitive appraisals or their personality traits can be identified from the consumer interview.

Table 7-3 illustrated how consumer situational cognitive appraisals are reflected in the interviews. Hee mentioned that she has no capability in dealing with this issue. In other words, she does not believe that she has the ability to handle such issues. Don expressed that the poor food safety environment determines that consumers have no other choices but eat these foods. Cognitively, she denies that she can control the issues that affect her. On

the other hand, Wu knew well that by organising and taking actions, she is able to control problematic issues. In other words, what she mentioned in the interview reflects that she has a high level of self-efficacy in dealing with chronic food safety issues. Last, Shen relinquished her control over the issues as she thinks that the investment (of time and money) and payback are not equal. She believes that she cannot control the issues by taking certain actions.

It can be drawn from the Table 7-3 that both self-efficacy and locus of control are important in influencing consumers coping strategies. As proposed in the research hypotheses, the factors of cognitive appraisals will be examined together with specific emotions, to predict coping strategies.

Table 7-3 Reflected Consumer Cognitive Appraisals (Source: the author)

Respondent	Quotes
He	"As an ordinary consumer, I indeed have no capability in dealing with the issues. The only thing I can do is to pay attention to foods we eat at home."
Don	"I cannot eliminate farm chemicals, so I have to eat." "I have serious doubt in food safety, but I have to eat as I live in such environment. I don't have other options."
Wu	"It is better if I cook at home. If having enough money, I would buy some expensive foods which I think they have better quality. Or it is good to buy foods from farmers directly which they grow or raise by themselves."
Shen	"I didn't do anything because the time and money I invest may not be balanced with what I may get from it."

Similarly, it can be reflected from the consumer interviews that different personality traits influence how they think and what they do. Table 7-4 illustrates the reflected consumer personality traits. Some interviewees are clearly optimistic towards the issues. They have the expectation that in the future food safety issues will improve. For example, as a government officer, Wang has a positive attitude in terms of future food safety condition. Don and Tie believe the situation will get better as progress is made. However, not all consumers hold such optimistic view towards food safety issues. Some consumers think that by living in a poor food safety environment, it is difficult to avoid the influence and change the situation in the near future, for example, Zhu, Li, Wu and Shen. Others hold the view that capabilities of consumers are weak and there are limited things that can be done by consumers, such as Zhou. In addition, consumers may consider that they have got used to the problematic situation and problematic food is normal in their daily lives, such as

Zhang and Rong. Consumers who are generally vulnerable to physical and psychological distress (Carver and Connor-Smith, 2010) are considered to have the personality of neuroticism. McCrae and Costa (1986) also posit that coping is influenced by neuroticism as a personality disposition. However, in the present study neuroticism as a personality trait has not been observed or identified. The findings from the consumer interview, therefore, do not validate neuroticism as a moderating factor and have no rationale to retain it in the conceptual model.

Table 7-4 Reflected Consumer Personality Traits (Source: the author)

Respondent	Reflected Personality	Quotes
Wang	Optimism	“I think the food condition is getting better and better.” “I think it is better to face life with an optimistic attitude.”
Don	Optimism	“I have no feeling of safety regarding food. But it is getting better.”
Tie	Optimism	“I don’t think it is an issue. I feel I have a strong stomach to eat everything.”
Zhang	Pessimism	“I have got used to it. I have no feeling. Actually Chinese consumers all have no feelings toward the issues.”
Rong	Pessimism	“Nowadays many foods are with low quality, especially junk food, snacks. Just admit that you are unfortunate to get it.”
Wu	Pessimism	“Living in such environment, you have no way to change it.”
Shen	Pessimism	“I know it (food safety) is important. But living in such environment, you cannot simply avoid it. You can only do very limited things.”
Zhu	Pessimism	“There is no way to avoid it. You cannot do it. Everywhere is dirty.”
Zhou	Pessimism	“Chinese consumers, over 95% of them are eating such foods. We cannot get access to special supply. So just try to comfort yourself.” “Everyone is just doing their jobs for a living. I think food safety condition will not be changed significantly in a short run.” “We have no capability. We are not producer, or executor. We are just consumers who cannot solve the issues.”
Li	Pessimism	“I guess (all restaurants) are not safe and clean. Because they won’t handle food as what you do at home. They probably do not wash at all.”

7.3 Hypotheses Revisits

Drawing from the data analysis of the qualitative study, three points are highlighted:

Specifically, the study reveals that consumers may experience different levels of stress in facing long-term and ongoing food safety issues. It is evidenced that some consumers feel a high level of stress while others may no longer feel any stress (both discussed in Section 7.2.2.1). These novel findings extend the boundary of stress and coping research (Mick and

Fournier, 1998) as previous research argues that coping is activated when stress exists (Lazarus and Folkman, 1984; Skinner and Wellborn, 1997; Eisenberg et al., 1997). However, the present findings support the argument that coping behaviours exist where stress is not necessarily presented. This finding also speaks to consumer perceived stress as a main construct. In the quantitative study, the level of consumer perceived stress will be examined and the relationship between stress and consumer long-term coping will be explored further.

Meanwhile, the findings also validate the consumers' experience of the emotion of worry, disappointment, anger and fear when dealing with such issues. While coping with negative emotions in consumption episodes has been examined by previous studies (e.g., Yi and Baumgartner), the present study supports the idea and extends it to the long-term coping domain. More importantly, a positive emotion has also been identified for the first time in food safety and consumer research: hope. It empirically supports the argument that positive and negative psychological states can be generated simultaneously in stressful situations (Folkman and Moskowitz, 2000). The present research contributes to the existing consumer emotion literature by providing empirical evidence and identifying the specific negative and positive emotions in the context of long-term and ongoing food safety issues.

The findings for this part of the research provide further empirical evidence to support and reflect the proposed consumer long-term coping structure from literature. Six coping strategies embedded in the construct are: action, proactive, accommodation, personal support, information and escape. In addition, organisational support is identified as a new coping strategy. In the extant literature, the underlying meaning of seeking social support (e.g., Yi and Baumgartner, 2004), emotional support and instrumental support (Duhachek, 2005) are the same which illustrates the need for advice or emotional support from friends or relatives. However, organisational support refers to a strategy that consumers receive support from organisations or companies to deal with ongoing stressors (external demands). Examples derived from consumer interviews can be found at Section 7.2.1.5. This finding is novel as in the previous coping research, the role of an organisation which offers support to individuals has been neglected.

Furthermore, the results of qualitative research also help inform the research framework and hypotheses. Research working hypotheses are proposed in the Chapter 4. Based on the qualitative results of this chapter, working hypotheses are modified in the following aspects. Table 7-5 presents all hypotheses proposed from the current research.

- In Chapter 4, emotions as one of the main constructs have been proposed. Data analysis here in the qualitative study has supported and evidenced the framing of four negative emotions of worry, disappointment, anger and fear and one positive emotion of hope. Emotions and perceived stress are specified in the hypotheses.
- In terms of the lower-order coping strategy, a new coping strategy has emerged and is evidenced in the consumer interviews: organisational support coping. Thus, final seven lower-order coping strategies are formed. They will be examined in the quantitative stage.
- The proposed moderating factor of neuroticism is removed from the conceptual model as it has not been validated from the qualitative findings.
- The section on income in the questionnaire has been removed after the qualitative study found that Chinese consumers felt sensitive about discussing their income during the interview. It will be inaccurate to capture the income if this section is retained.
- As noted, the qualitative phase informs the questionnaire design. Thus, several items are added to the newly developed scale, derived from the consumer interview. The specific added item for each measure can be found in the left column of Table 8-5.

Table 7-5 Research Hypotheses

Hypothesis	Stress	Worry	Disappointment	Anger	Fear	Hope
Consumers' psychological state is positively associated with consumer long-term coping.	H1a	H1b	H1c	H1d	H1e	H1f
When experiencing a psychological state, consumers who have high level of self-efficacy are more likely to adopt initiative coping and support seeking strategy.	Hefficacy1a	Hefficacy2a	Hefficacy3a	Hefficacy4a	Hefficacy5a	Hefficacy6a
When experiencing a psychological state, consumers who have low level of self-efficacy are more likely to adopt avoidance coping strategy.	Hefficacy1b	Hefficacy2b	Hefficacy3b	Hefficacy4b	Hefficacy5b	Hefficacy6b
When experiencing a psychological state, consumers who have high level of locus of control are more likely to adopt initiative coping and support seeking strategy.	Hcontrol1a	Hcontrol2a	Hcontrol3a	Hcontrol4a	Hcontrol5a	Hcontrol6a
When experiencing a psychological state, consumers who have low level of locus of control are more likely to adopt avoidance coping strategy.	Hcontrol1b	Hcontrol2b	Hcontrol3b	Hcontrol4b	Hcontrol5b	Hcontrol6b
When experiencing a psychological state, consumers who have the trait of optimism are more likely to adopt initiative coping and support seeking strategy.	Hoptimism1	Hoptimism2	Hoptimism3	Hoptimism4	Hoptimism5	Hoptimism6
When experiencing a psychological state, consumers who have the trait of pessimism are more likely to adopt avoidance coping strategy.	Hpessimism1	Hpessimism2	Hpessimism3	Hpessimism4	Hpessimism5	Hpessimism6
When experiencing a psychological state, consumers with higher level of education are more likely to adopt initiative and support seeking coping strategies	Hedu1a	Hedu2a	Hedu3a	Hedu4a	Hedu5a	Hedu6a
When experiencing a psychological state, consumers with lower level of education are more likely to adopt avoidance coping strategies	Hedu1b	Hedu2b	Hedu3b	Hedu4b	Hedu5b	Hedu6b
When experiencing a psychological state, consumers who have caring responsibility are more likely to choose initiative coping and support seeking strategies.	Hfamily1a	Hfamily2a	Hfamily3a	Hfamily4a	Hfamily5a	Hfamily6a
When experiencing a psychological state, consumers who do not have caring responsibility are more likely to choose avoidance coping strategies.	Hfamily1b	Hfamily2b	Hfamily3b	Hfamily4b	Hfamily5b	Hfamily6b

(Note: Consumer psychological states are replaced by specific states such as stress, worry, disappointment, anger, fear and hope in each hypothesis)

7.4 Summary

The findings of the face-to-face interviews have revealed important insights within consumer stress/emotions and behaviours when facing long-term food safety issues.

Specifically, data analysis of the consumer interviews provides empirical evidence to support and validate the framing of the theoretical constructs of stress, emotions and coping. In addition, the way consumers appraise the situation and their personality traits are also reflected.

Importantly, discussion on the level of stress reveals the possibility of refining the theory of coping by considering the situation where stress has no presence. Identification of the emotion of hope is also the first study to explore the positive psychological states in a long-term stressful consumption situation, indicating that both positive and negative emotions can be generated simultaneously under such circumstance.

Additionally, working hypotheses proposed in the Chapter 4 are modified based on the findings of this part. All psychological states to be examined in the quantitative study are discussed: perceived stress, worry, disappointment, anger, fear and hope. The multi-dimensional coping structure is formulated as well with seven lower-order categories: action, proactive, accommodation, personal support, organisational support, information seeking and escape.

The next phase discusses the research design and findings from the quantitative study. Specifically, chapter 8 presents the design and method for quantitative study. Chapter 9 demonstrates the characteristics of the collected sample, scale development and model conceptualisation. Chapter 10 will provide results of data analysis through structural equation modelling and regressions with dummy variables.

Chapter 8 Research Design and Methodology: Study 2

8.1 Introduction

The present study consists of exploratory and causal research approaches. Study 1 has explored consumers' psychological states and their corresponding behaviours. This chapter will illustrate the design and method for the quantitative study. Section 8.2 presents the detailed design for the quantitative study; Section 8.3 justifies the Structural Equation Modelling as the method for analysing the quantitative data. Section 8.4 concludes with a summary.

8.2 Quantitative Study Design

The quantitative study aims to conceptualise the concept of consumer long-term coping, to develop the scale for measuring the multidimensional structure of consumer long-term coping and to test the research hypotheses and the conceptual framework. Questionnaire survey has been selected as the most appropriate method to serve the objectives of this part of study. This section discusses the issues in relation to the quantitative study design, including the sample design, measurement and questionnaire design, survey data collection and handling the missing data.

8.2.1 Sample Design

Sampling is the process of selecting an appropriate number of target elements from the population which reflect the research interests (Sekaran and Bougie, 2013). It also aims to set up clear criteria for inclusion and exclusion of samples by describing the key characteristics of target research respondents. It is the key process of the whole data collection stage as it determines the quality of data and feasibility of research (Rose et al., 2014). Generic and major sampling processes have been agreed upon by researchers (e.g., Churchill, 1999; Aaker et al., 2010), including:

1. Defining the population
2. Determining the sample frame
3. Selecting the sampling procedure
4. Determining the sample size
5. Implementing the sampling plan

The above steps will be discussed in sequence within the following sub-sections.

8.2.1.1 Defining the Population

Sampling begins with identifying the accurate and proper target population (Aaker et al., 2010). It is regarded as the foundation of the research. If the target population is not properly defined, the result will become fuzzy and unreliable. The target population refers to all the members of the group which the researcher is interested in and wants to draw conclusions from (Burgess, 2001). The group may be in various formats (Rose et al., 2014), such as individuals (i.e. consumers, managers, or soldiers), organisations (i.e. companies, charities, or universities), events and exhibitions, documents and archives (i.e. database, online posts) or artefacts (i.e. technology). The target population of the present research comprises of elements, geographical boundaries and time (Sekaran and Bougie, 2013). This is outlined in Table 8-1.

Table 8-1 Target Population of the Present Research

Population Criteria	Target Population of This Study
Element	Food consumers
Sampling Unit	Individual residents in mainland China
Extent	Consumers aged 18 and above
Time	January and March 2017

First, the target population is food consumers aged 18 and above and reside in mainland China. This study assumes that consumers who are aged below 18 generally have relatively less purchasing power and are not responsible for family food purchasing. Therefore, they are not involving in coping with food safety issues directly and excluded from the target population.

Second, mainland China is chosen because the research context of the present study is established in mainland China where consumers suffer from long-term and ongoing food safety issues. Due to the different food standards and administrative operation systems, Hong Kong, Macao and Taiwan are excluded from the target population.

Finally, ethical approval for the quantitative study has been approved by the Ethical Research Committee from the University of Glasgow (Appendix V).

8.2.1.2 Determining the Sampling Frame

The sampling frame is “a list of population members used to obtain a sample” (Aaker et al., 2010, p.367). It represents the elements of the target population from which the sample

is drawn (Sekaran and Bougie, 2013). In general, the questionnaire can be administrated through various means which includes in person, by telephone, by mail and by internet. The present study uses internet-based survey as the sampling method for two reasons. Practically, the researcher who based in the UK will benefit from the convenience of an online survey without spending a large amount of money and time to visit individuals' households in China, or international telephone calls and mailing. Epistemically, internet-based surveys are easy and fast to administrator, appropriate to reach a wide audience, benefit from complete anonymity, convenient to access and require less financial resources. The detailed justification for adopting an internet-based survey will be provided later in Section 8.2.3.2.3.

The sampling frame for the internet-based survey consists of using a list-based sampling frame in which contact information (usually an email address) is required and a non-list-based random sampling that selects a probability-based sample without the need for generating a sampling frame (Fricker, 2012). The present study decides to use the non-list-based random sampling as no sampling frame is available for a mass online audience.

Non-list-based random sampling comprises of various means including the intercept survey, pre-recruited survey, entertainment polls, "Harvested" email lists, unrestricted self-selected survey and volunteer panels. Among these six different ways to administrator online surveys, an unrestricted self-selected survey is chosen as the method for the present study. The unrestricted self-selected surveys are available to the general public for anyone to participate (Fricker, 2012). In other words, individuals can choose to/not to participate in the online survey regardless of survey promotion channel.

8.2.1.3 Selecting the Sampling Procedure

In general, two major sampling techniques are considered: nonprobability and probability sampling (e.g., David and Sutton, 2010; Churchill, 1999). Nonprobability sampling includes quota, purposive, snowball, self-selection and convenience sampling and does not select samples at random. However, probability sampling includes simple random, systematic random, stratified random and cluster sampling and does adopt randomization within the sample selection (Rose et al., 2014).

In most cases, a sampling frame and information on sampling units are required for probability sampling (Aaker et al., 2010). Due to the nature of the internet and the non-list based sampling technique, the present study employs both cluster sampling and simple

random sampling of probability sampling. Cluster sampling is adopted when the population is very large with geographic spread and the sampling frame is difficult to identify (Rose et al., 2014). Simple random sampling refers to the way in which each number of elements is selected with equal probability (Rose et al., 2014). Specifically, the online survey is available to all consumers who have access to the internet (a cluster of population) on their mobiles, pads, or computers. According to the Internet Live Stats (2017), the estimated number of internet users in China is around 721 million (March 2017), representing 52.2% of the total population. Therefore, it can be drawn that the online survey is able to approach various types of consumers and to demonstrate the representativeness of the food consumers in China.

8.2.1.4 Determining the Sample Size

Sample size refers to the number of elements comprised in the study (Malhotra et al., 2008). It is a vital issue to the research as it not only determines whether the survey can be properly implemented (Aaker et al., 2010), but also affects the accuracy and precision of data analysis (Kline, 2011). The determinants of sample size are research objectives, the extent of precision desired, variability in the target population and the cost, time and efforts needed (Sekaran and Bougie, 2013). It is suggested that a larger sample size leads to more reliable results and smaller sampling error (Saunders et al., 2012). Therefore, three different methods for determining the sample size are demonstrated here to highlight the most appropriate sample size for the present research.

First, structural equation modelling (SEM) is employed and regarded as the most suitable technique for data analysis for the present research. The justification for using SEM can be found in Section 8.3.1. Considering the SEM analysis framework, number of indicators, constructs and parameters determine the sample size of the proposed model (Tabachnick and Fidell, 2013). In other words, the degree of freedom (*df*) is calculated based on constructs and the estimated parameter of the proposed model. MacCallum, Browne and Sugawara (1996) suggest that if the model's *df* is 100 or above, the minimum sample size is 178. Therefore, this method suggests that the minimum sample size for the present study is 178.

Second, researchers (e.g., Hinkin et al., 1997) recommend that by considering the relationship between the number of dimensions and sample size, at least 5 items are needed to measure each dimension. Therefore, the minimum sample size for the present study is 100, based on 20 dimensions in the framework multiplied by 5 units.

Third, commonly used statistical criteria are employed to calculate the sample size including estimate of variance, confidence levels and margin of error (Burns and Bush, 2005). Based on the equation developed by Cochran (1977),

$$n = \frac{z^2(pq)}{e^2}$$

where n=the sample size, z=standard error associated with the selected level of confidence (a 95% confidence level), p=estimate of variance (a 50% variance), e=acceptable sampling error (+/-5% precision level). The estimated minimum sample size is 384.

As noted above, a large sample size generates more precise results of the survey (Lewis, 1984). Specifically, sample size required for method one, two and three are 178, 100 and 378, respectively. Therefore, the larger sample size of 384 or above is chosen for the present research.

In addition, it is necessary to consider the sample for measurement development (detailed discussion can be found later in Section 5.4.2.3.3). In the present research, consumer long-term strategies are partially adapted from the existing scales, partially developed from the consumer interviews. Fifty-eight items are regarded as scale development. Based on the suggestion provided by Hinkin (1995), 58 items multiply by 5 units result in an additional 290 samples. Hence, the total number of 674 samples is required. The total number of samples collected is 848 which meet the requirement of sample size.

8.2.1.5 Implementing the Sampling Plan

When all the previous steps have been addressed, the sampling plan can be implemented (Rose et al., 2014). Specifically, reporting the target population, sampling frame, sampling technique, calculation of the sample size and determining the sampling unit as a planning process now can be merged with the data collection activity (Malhotra et al., 2008). It is also important to monitor and maintain the execution of the sampling plan, in order to ensure the quality and size of the sample.

8.2.2 Physiological vs. Self-report Measurement for Emotions

Before moving to the specific measurement for each construct, it is notable that there are different methods for measuring consumers' psychological states, especially the emotions. Among all available methodologies, physiological experimental design and self-reported questionnaires are widely adopted. The difference between these two methods is: specific emotions are elicited by various physiological stimuli during the experiment, while

questionnaires rely on consumers' recall of their experienced emotions, which are self-reported (Compas et al., 2014).

Physiological activities include attention, orientation, social interaction and appraisal, which impinge on the nervous system and stimulate emotions (Kim and Andre, 2008). In the experimental settings, consumers are monitored in terms of their physiological responses to the stimuli. However, the disadvantage of the physiological signal-based emotion recognition system is that it can only monitor short-term physiological signals. The input signals such as electrocardiogram, skin temperature variation, facial electromyography and electrodermal activity reflect the real time reaction when facing the induction protocols, and then are processed and formed into emotion-specific characteristics (Liao et al., 2015). This method for capturing short-term emotions is not applicable as this research aims to measure how consumers feel when faced with the long-term and ongoing food safety issues.

Comparatively, the self-report questionnaire, arguably, is the most common and suitable way to measure a person's emotional experiences (e.g., Robinson and Clore, 2002). It is not limited to current emotions as consumers are free to answer any type of questions about their emotional experiences in the past, in the present, or even in the future. However, it is argued that the validity of the currently experienced emotion is higher than that of the past or the future experienced emotion (Mauss and Robinson, 2009).

In the present research, self-reported questionnaires were adopted for the following reasons: 1) this study aims to reach out to as many diverse consumers as possible in terms of their age, gender, education, family type and geographical spread. Questionnaires (self-report & online) are able to achieve this goal; 2) this study aims to capture consumers' emotions when faced with the long-term and ongoing food safety issues. Experiments can only capture the real-time emotions which fail to achieve the research objective. Questionnaires, on the other hand, are able to measure consumers' emotion in purchase-related situations (Yi and Baumgartner, 2004); 3) the researcher is based in a UK university. Thus, it costs too much to set up an experiment lab in China. Comparatively, online questionnaires have no fixed cost.

The self-reported measurement which is based on consumers' recall of emotions has its limitations, for example, it can be biased (Frijda, 1993), inaccurate and underestimated (Aaker et al., 2008). This will be further discussed in the limitations in Section 11.4.

8.2.3 Measurement and Questionnaire Design

The questionnaire is designed to collect sufficient data for the study. When the target population has been determined, sampling procedure and sample size have been identified, it is the time to design and develop the instrument to collect the research data. The questionnaire design is an important process for getting sufficient information from the target respondents (Malhotra et al., 2008). No standard principle for developing a perfect questionnaire exists (Aaker et al., 2010). However, a sequence of logical processes needs to be followed in order to obtain the information. This study follows the questionnaire design procedure proposed by Churchill (1999). It is outlined in Figure 8-1.

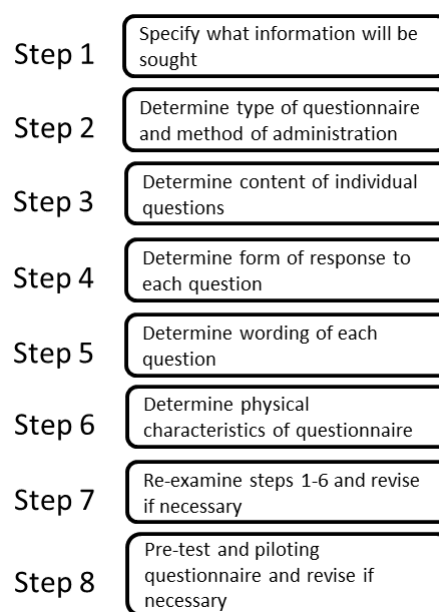


Figure 8-1 Logical Processes for Developing a Questionnaire (Adopted from Churchill, 1999, pp.329)

8.2.3.1 Information Needed

The information needed for the questionnaire is determined by the research objectives and proposed research framework. Identifying the information and concepts that need to be measured in the questionnaire is the first crucial step of the questionnaire design (Aaker et al., 2010; Rose et al., 2014). Table 8-2 provides the required information for the questionnaire to meet the research objectives, in order to achieve the overall research aim.

Table 8-2 Research Objectives and Information Required (Source: the author)

Research Objectives	Information Required
To conceptualise the multidimensional consumer long-term coping strategies	Consumer long-term coping strategies
To develop a scale for measuring the multidimensional	Consumer long-term coping strategies

structure	
To identify and test moderating factors that may have important impact on stress, emotion and consumer coping	Moderating factors including cognitive appraisals, personality traits and demographic factors

The conceptual definitions for required information and concepts need to be established once they are identified (Rose et al., 2014). These conceptual definitions serve as the guide to the specific questions because measures adapted or adopted should be consistent with the conceptual definition and research context. Table 8-3 presents the conceptual definition of all concepts required in this research. Detailed discussions of measures can be found later in Section 8.2.3.3.

Table 8-3 Conceptual Definition of Required Concepts (Source: the author)

Concepts Required	Conceptual Definition
Perceived Stress	Perceived stress is the degree to which individuals consider food safety issues in their lives that have gone above their ability to manage (Cohen, 1984; Carver and Vargas, 2011).
Worry	Worry is the degree to which consumers consider the situation of food safety with uncertainty, concern, anxious and panic (Yi and Baumgartner, 2004).
Disappointment	Disappointment is the degree to which consumers consider that the situation of food safety would be worse than expected (Ortony et al., 1988), manifesting as disappointment, dissatisfactory and unfulfillment (Yi and Baumgartner, 2004).
Anger	Anger is the degree to which consumers are mad, angry and furious about the food safety situation (Lerner and Keltner, 2000; Yin, Bond and Zhang, 2014).
Fear	Fear is the degree to which consumers are scared, nervous, upset, depressed, uneasy and jittery about the food safety situation with low certainty and low situational control (Smith and Ellsworth, 1985).
Hope	Hope is the degree to which consumers believe that they may come up with ideas and methods to handle the situation and solve the problems (Snyder et al., 1991) when facing food safety issues.
Action Coping	Consumers make direct cognitive and/or behaviour efforts to manage and resolve (Yi and Baumgartner, 2004; Ayers, Sandler, West and Roosa, 1996) the long-term and ongoing food safety issue.
Proactive Coping	Consumers cope in advance in different ways to prevent or mute the impact (Aspinwall and Taylor, 1997; Greenglass et al., 1999) of long-term and ongoing food safety issues.
Accommodation Coping	Consumers keep in positive manner (Moneta et al., 2007; Zuckerman and Gagne, 2003) and flexibly adjust themselves (Mick and Fournier, 1998) to the problematic food safety situation.
Personal Support Coping	Consumers use available social resources to resolve the problem and to express their feelings to others for adapting to the stressful food safety situation (Glanz and Schwartz, 2008).
Organisational	Consumers get help or resources from government organisations or use available

Support Coping	resources provided by organisations they (and others) work for to resolve the problem.
Information Seeking Coping	Consumers obtain information about food safety issues (Ryan-Wenger, 1992) and find additional information by browsing, observation and asking others (Skinner et al., 2003).
Escape	Consumers try to disengage or keep away from stressful food safety situations, reflecting on action of giving up, having no faith in the situation, or relinquishment of control (Dweck, 1999; Peterson, Maier and Seligman, 1993).
Self-Efficacy	People's judgement of their individual capabilities to organise and execute courses of designated types of actions (Bandura, 1977), referring individual's belief regarding their abilities to take actions to control the problematic food safety situations.
Locus of Control	Locus of control is a generalised expectancy, referring the extent to which individuals believe they can control food safety issues that affect them (Rotter, 1966).
Optimism	Optimism is a personality trait that one expects positive experience in the future (Scheier, Carver and Bridges, 2001). Specifically, optimistic consumers do expect the food safety situation will get better in the future.
Pessimism	Pessimism is a personality trait that one expects bad experience in the future (Scheier, Carver and Bridges, 2001). Specifically, pessimistic consumers do not expect the food safety situation will get better in the future.
Neuroticism	Neuroticism is a personality trait of consumers who are generally vulnerable to physical and psychological distress (Carver and Connor-Smith, 2000).

8.2.3.2 Type of Questionnaire and Method of Administration

8.2.3.2.1 Type of questions

In general, 'type of question' refers to whether the question is open-ended or closed-ended and is determined by the structured or unstructured nature of the questionnaire (Malhotra et al., 2008; Sekaran and Bougie, 2013). Specifically, open-ended questions allow respondents to generate a wide range of answers with rich information that are not restricted to pre-specified categories. Open-ended questions are especially useful in the following five circumstances: 1) as an introduction to a topic; 2) to measure the salience of an issue to a respondent; 3) when too many responses are listed; 4) when verbatim responses are desired; and 5) when the behaviour to be measured is sensitive (Aaker et al., 2010). It is clear that the present study does not fall into any of these circumstances described above. Comparatively, closed-ended questions allow respondents to make choices from a list of alternatives provided by the researcher (Sekaran and Bougie, 2013). Two basic formats of closed-ended question are: 1) choosing from a list of responses; 2) rating on a scale which represents the range of responses (Aaker et al., 2010). The advantages of the closed-ended question are easier and quicker to answer, require less effort from the interviewer and require no extended writing, easier to compare the data and

conduct the analysis and finally require less time and expense (Oppenheim, 2009; Aaker et al., 2010). For the present research, the closed-ended questions are chosen for the following two reasons: 1) it is suitable for a large survey (Churchill, 1999); 2) the measurements both adapted and adopted in this study are closed-ended questions in their original research, ensuring the consistency and validity of the measurements.

8.2.3.2.2 Quality of the questions

During the process of designing the questionnaire, the following types of questions should be avoided in order to guarantee the quality (Sekaran and Bougie, 2013). First, it is necessary to avoid double-barrelled questions, which refer to questions that may result in different possible responses. Such questions can confuse respondents and result in ambiguous information. Second, ambiguous questions need to be eliminated. Questions need to be specified in terms of their exact meanings. Third, double negative questions are sometimes confusing and so should be avoided. Fourth, leading questions which are designed in a way to lead respondents to particular answers that the researcher is in favour of need to be avoided. Fifth, loaded questions which are designed in an emotionally charged manner need to be avoided. Sixth, long questions should be avoided and replaced by concise questions.

8.2.3.2.3 Justification for adopting an internet-based survey

Compared to traditional approaches such as in person, by telephone, by mail (Churchill, 1999) for survey data collection, an internet-based survey is easy and fast, as it only requires emails or links (survey, blog, websites, etc.) to be sent to the target population (Sekaran and Bougie, 2013).

Internet-based surveys have several advantages over other approaches. First, they are an appropriate way to reach a wider audience who have an equal chance of answering the questionnaire regardless of their geographic boundaries (McDonald and Adam, 2003). Second, arguably, online panel members benefit from the complete anonymity and convenient access (Aaker et al., 2010) which makes it possible to obtain richer and deeper information of consumers' opinions (Sekaran and Bougie, 2013). Third, Comley and Beaumont (2011) found that incentives have little impact on the response rate of internet-based surveys, suggesting that less financial resources are required. Finally, data collected through the internet can be directly transferred into the format required by data analysis software.

Despite the advantages of internet-based surveys, several limitations also exist. First, studies have indicated that the response rate of internet-based surveys is lower than traditional approaches (Bachmann et al., 1996; Crawford et al., 2001). Second, technical difficulties such as low speed of connection may disturb respondents from answering the questionnaire.

The present research adopts the approach of an internet-based survey due to the following reasons: 1) the researcher is based in the UK and target population is Chinese food consumers. An internet-based survey makes it easier to approach the target samples with limited time, budget and geographic limitations; 2) the representativeness of the sample is ensured as the number of the internet users (721 million by March 2017) in China represents half of the population (Internet Live Stats, 2017); 3) this study benefits from the advantages of this approach, including less time and cost required, flexibility and ease of data entry and analysis.

8.2.3.3 Content of Individual Questions

The content of individual questions includes all constructs in the research framework, ranging from perceived stress, emotions, consumer long-term coping, cognitive appraisals, to personality traits. In addition, consumer demographic information is also acquired through categorical questions. The content of individual questions is determined by the required information and type of questions (Churchill, 1999). All questions in the present study are adapted from established measurements from the extant literature, except a newly developed measurement for the consumer long-term coping. A seven-point Likert scale is applied for all items whereby 1=*strongly disagree*, 4=*neutral* and 7=*strongly agree*. Justifications for adapting and developing these measures are detailed in the following sections.

8.2.3.3.1 Perceived Stress

As illustrated in Table 5-4, perceived stress is the degree to which individuals consider food safety issues in their lives have gone above their ability to manage (Cohen, 1986; Carver and Vargas, 2011). This conceptual definition demonstrates that perceived stress is appraised by individuals and considered the relations between the individual and the environment of chronic food safety issues. It is consistent with transactional theory of stress proposed by Lazarus and Folkman (1984), addressing the dynamic process of appraising the situation. Accordingly, Cohen et al. (1983) have developed an instrument to

measure perceived psychological stress, reflecting the definition of transactional theory. It has been argued that this measurement has been utilised in various contexts (Remor, 2006).

Other instruments such as the Occupational Stress Indicator (Cooper et al., 1988), Social Readjustment Rating Scale (Holmes and Rahe, 1967) and Nursing Stress Scale (Gray-Toft and Anderson, 1981) limit for the purposes of measuring perceived stress in the current study. For example, some use the life-event scale to calculate a stress score, lacking consideration of the influence brought by personal and contextual factors (Roberti et al., 2006). The specific context of food safety issues cannot be calculated directly through the life-event scale. Others argue that these scales measuring stress from specific events cannot be separated from other stressful events. This indicates that stressful events may be conceptually confused with each other (Mimura and Griffiths, 2004). For example, other personal stress may increase occupational stress as well (Lewis et al., 1994). Furthermore, cultural differences have a potential impact on stress in relation to specific events or situations. For example, perceived stress in one culture may not be perceived in the same way in another culture (Mimura and Griffiths, 2004). Therefore, these scales have been considered as inappropriate to be applied to the current study due to the limitations.

Subsequently, the present research adapted the Perceived Stress Scale proposed by Cohen et al. (1983) to measure perceived stress in a Chinese context for two reasons: 1) this scale is flexible and valid in various contexts (Remor, 2006); 2) it is developed based on transactional theory, which is consistent with the current study. Necessary verifications are implemented based on the conceptual definition and specific context. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

8.2.3.3.2 *Emotions*

Five emotions were identified from the extant literature and consumer interviews. Measurements for these emotions are introduced and justified in sequence.

Worry

Worry is the degree to which consumers consider the situation of food safety with uncertainty, concern, anxiety and panic (Yi and Baumgartner, 2004). Yi and Baumgartner (2004) assess worry in purchase-related situations. Specific items used are: worried, nervous and anxious for the emotion of worry (Yi and Baumgartner, 2004). The various items in this study are chosen from the Consumption Emotion Set (see Table 3-4, Chapter

3) (Richins, 1997) and Yi and Baumgartner (2004). However, the item of “nervous” also appears in the emotion of fear. Thus, it is excluded from this measure and kept in the measure of fear. Another two items (panicking and uncertain) are added to measure worry as they are drawn from the consumer interviews. A detailed discussion on emotions from the interviews can be found in Section 6.2.2.2. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

Disappointment

Disappointment is the degree to which consumers consider the food safety situation as worse than expected (Ortony et al., 1988), appearing as disappointed, dissatisfied and unfulfilled (Yi and Baumgartner, 2004). Previous attempts to measure emotions as discrete phenomena are Richins’ (1997) Consumption Emotion Set (see Table 3-4, Chapter 3). Further, Yi and Baumgartner (2004) apply these items in purchase-related situations. Items used are disappointed, dissatisfied and unfulfilled for the emotion of disappointment (Yi and Baumgartner, 2004). This study adopts the multi-items from Yi and Baumgartner (2004). In addition, the item of “helpless” which is drawn from the consumer interview is added to the measure. A detailed discussion on emotions from the interviews can be found in Section 6.2.2.2. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

Anger

Anger is the degree to which consumers are mad, angry and furious after appraising the food safety situation (Lerner and Keltner, 2000; Yin et al., 2014). Previous researchers have developed a number of scales to measure the emotion of anger. For instance, a specific 33-item Driving Anger Scale (Deffenbacher et al., 1994) and a General State-Trait Anger Inventory (Spielberger and Sydeman, 1999). It can be drawn that in the field of psychology, emotion of anger is used to assess epidemiological studies of trauma and intervention evaluation (Hawthorne et al., 2006). Hawthorne et al. (2006) develop a 5-item scale named Dimensions of Anger Reaction (DAR5). Two items in DAR5 are excluded from the measure, namely “When I get angry at someone, I want to hit or clobber the person” and “My anger prevents me from getting along with people as well as I’d like to”. The reason for exclusion is that these two items do not fit into the research context. In addition, one item “furious” (‘I feel furious about the issues’) from Yi and Baumgartner (2004) is adopted in the present scale as it has been examined in the consumer context. The

original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

Fear

Fear is the degree to which consumers are scared, nervous, upset, uneasy and jittery about the food safety situation with low certainty and situational control (Smith and Ellsworth, 1985). The extant measurements of fear mostly are in the medical field. For example, a 32-item scale for death fear (Lester, 1990), a 20-item dental fear scale (Kvale et al., 1997) and a 15-item panic-fear scale (Dirks et al., 1977). The present research argues that the emotion of fear has not been adequately measured in the consumption situation. Thus, an existing scale from the medical field developed by Champion et al. (2004) has been adapted to the specific context. This 8-item scale was originally designed for measuring fear of breast cancer. However, items can easily be applied to the current study. For example, the item of “When I think about breast cancer, I feel nervous” can be adapted to “When I think about food safety issues, I feel nervous”. The item ‘When I think about breast cancer, I feel anxious’ is overlapped with one item in the measure of worry. Thus, it is dropped. As a result, suitable items are adapted and a final 7-item scale is utilised to measure the emotion of fear in the stressful consumption context. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

Hope

Hope is the degree to which consumers believe that they may come up with ideas and methods to handle the situation and solve problems (Snyder et al., 1991) when facing food safety issues. Regarding the measure of hope, early scholars (e.g., Melges and Bowlby, 1969; Erickson et al., 1975) posit that hope is a unidimensional construct that reflects the perception of goals being met. Further studies such as Miller and Powers (1988) attempt to measure hope in multi-dimensions. Herth Hope Index (Herth, 1992) is one of the measures that capture the multidimensionality of hope. It is a 12-item scale, however, this scale is developed in clinical settings which are normally used to develop hope-related intervention for patients. Moreover, the conceptualisation of hope has also been extended by Snyder et al. (1991), proposing two major elements of hope: successful agency and pathways related to goals. Based on this conceptualisation of hope, they develop a Hope Scale to measure the concept. A 12-item scale is finalised with acceptable internal consistency and reliability.

The present study adapted the Hope Scale (Syder et al., 1991) to the specific research context. Not all items in the Hope Scale are fit for the present study. For example, the item of “I’ve been pretty successful in life” is considered irrelevant to the study, because it does not reflect consumers’ psychological states when facing stressful consumption situations. Applying this principle, a final 5-item scale is adapted to measure the emotion of hope. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

8.2.3.3.3 *Consumer Long-term Coping*

A. Consumer coping: the existing measurements

Consumer coping strategies in the context of this study are the ways in which people cope with long-term and ongoing food safety issues, as well as how to conceptualise or measure consumer coping behaviour. However, little consensus has been reached in the field for measuring coping, due to the many different strategies that have been developed. For example, Compas et al. (2001, p.91) states, “in spite of the clear need to distinguish among the dimensions or subtypes of coping, there has been little consensus regarding the dimensions or categories that best discriminate among different coping strategies in childhood and adolescence”, as well as in adulthood and old age (Skinner et al., 2003). Skinner and his colleagues (2003) examine more than 100 category systems with over 400 different labels and find that researchers adopt totally different set of coping strategies.

As introduced in the section of “definition of coping” (Section 3.4.2.3 in Chapter 3), the most widely accepted and notable measurement for coping in the extant literature, especially the consumer behaviour coping literature (Duhachek, 2005), is problem-focused coping and emotion-focused coping (Lazarus and Folkman, 1984). This approach has been frequently utilised in consumer research; however, the drawbacks are very obvious. For example, it has proved difficult to identify the systematic relations between negative emotions and specific coping processes (Folkman and Moskowitz, 2004) and the approach may not be empirically stable (Duhachek and Oakley, 2007). These two general types of coping are embedded in a measure developed by Folkman and Lazarus (1980) and named “Ways of Coping Checklist (WCCL)”. This is a scale that examines individual coping processes to problems encountered across a variety of stressful situations (Folkman et al., 1986). WCCL is not entirely suitable for this study for several reasons. The most obvious problems of WCCL are the method of factor analysis and sample, for example, 68 items

contained in the list are derived from only 100 middle-aged people, raising concerns of stability of the factors and generalizability of the scale (Vitaliano et al., 1985). Moreover, researchers also hold the view that some of the items in WCCL are ambiguous (e.g., Compas et al., 2001). For example, one item from the Ways of Coping: “Took a big chance or did something risky”. On the one hand, doing something risky could mean trying to take action with a high possibility to fail; while on the other hand, it might also mean doing bad things with high risk such as reckless driving or drugs taking. However, researchers still have reached some consensus (Stroebe and Schut, 1999) that WCCL is a measure of a variety of coping strategies because it has respectable reliability coefficients (Vitaliano et al., 1985).

Carver et al. (1989) raise an issue regarding the development of measurements. They argue that in the previous studies researchers mainly adopt an inductive approach to figure out the underlying dimensions of coping strategies. Developing a measure through another approach might be useful as well (Aldwin and Revenson, 1987). Carver and his colleagues (1989) decide to begin with a theory and use the theory to guide the content of the measurement, coming up with the coping inventory named “COPE (Coping Orientations to the Problems Experienced)”. Four dimensions are identified: first and second dimensions assess the problem-focused and emotion-focused coping and often loading on the same factor. This indicates that people tend to use both strategies to cope with stressful encounters (Litman, 2006). The last two dimensions focus on seeking social support which is to express emotions, seek advice and avoid coping, which is closely associated with negative personality characteristics (Abbott, 2003; Moos and Holahan, 2003). Thirteen conceptually distinct dimensions in the measurement are developed from either specific theoretical arguments, or proved to be of value in previous research.

This measurement to some extent differs from the previous scales; however, it also shows conceptual similarities with those scales. For example, COPE assesses people’s active coping efforts as do other scales; while the difference is that several distinct aspects of active coping are measured in COPE specifically. This includes planning, suppression of competing activities and restraint coping (Carver et al., 1989). Another example would be that COPE includes scales to assess different aspects of coping which are not obvious or neglected in previous research. This includes behavioural disengagement, which are important to measure by Carver and his colleagues (1989). Although COPE has been regarded as one of the best measures available which is clearly stated, sufficient in quantity

and theoretically derived (Sica et al., 1997), it is not perfect since life is full of possibilities. Thus, it is difficult to assess all aspects in one measurement. For example, COPE does not include the measurement of engaging in social comparison or wishful thinking (McCrae and Costa, 1986) and the seeking of information (Miller, 1987), which is important in the context of food safety issues as consumers may need to seek information to cope with the situation. Failing to include measures like this determines that this scale is not suitable for the present study. In addition, COPE fails to consider the time domain, while coping in the present study involves the long-term and ongoing nature (Skinner and Edge, 1998). This again highlights its non-compatibility. Specifically, a lack of clear focus in considering the chronic food safety issues, COPE is limited in assessing the consumer long-term coping strategies.

The coping strategies reviewed above are generalised measurements from both an empirical and theoretical approaches that can be applied to consumer behaviour settings. In the following paragraphs, another two measurements of coping will be reviewed as they are developed from stressful consumption related situations that consumers experienced.

During the purchase process, consumers are easily and frequently generating various positive and negative emotions. In a consumer context, limited research has shed light on experiences of negative emotion and how consumers cope with them. Yi and Baumgartner (2004) develop a coping measure in regard to purchase-related situations where consumers experience negative emotions and provide general conclusions in using coping strategies in various emotional situations. However, several limitations exist in terms of the study. First, data collected from consumers is based on their recalls from the memory of the circumstances which may not reflect the actual situations (Ross, 1989). A typical example would be that consumers may be able to remember the negative emotion they had, but not recall what actually happened to cause the negative emotion. Second, recalling and describing specific situations may lead consumers to imagine certain coping actions. For example, confrontive coping will be reported by asking consumers to recall a situation where someone else was to blame for the problem (Yi and Baumgartner, 2004). Third, the coping measure developed here is to examine specific events rather than a relatively long-term situation.

Duhachek (2005) develops a new measurement of coping in the consumer context based on the premise that some consumers rely on a broad range of strategies while others choose only a narrow set of strategies, examining the individual differences in the overall pattern

of coping responses (Duhachek and Kelting, 2009). This measurement is derived from an exhaustive search of extant coping literature, establishing both convergent and discriminant validities. However, consumer coping behaviours in the long-term may not be the same as the general coping strategies suggested.

All measurements of coping discussed here are still widely used in coping research, however, confirmatory factor analyses have shown that no one measurement alone adequately reflect the construct of coping (Connor-Smith et al., 2000; Ayers et al., 1996). This is especially true when consumers face chronic stressful consumption situations. Therefore, it is necessary to develop a scale for measuring consumer long-term coping in the context of chronic food safety issues.

B. Consumer long-term coping: developing a new measurement

This study proposes a new concept: the multidimensional structure of consumer long-term coping. Extant measures outlined above cannot be adopted directly to measure the concept. Drawing on the existing scales discussed above for coping and the conceptual definition defined within the context (Table 5-7), the present research develops a new instrument for measuring consumer long-term coping. The scale development follows Churchill (1979)'s procedure, as Figure 8-2 demonstrates.

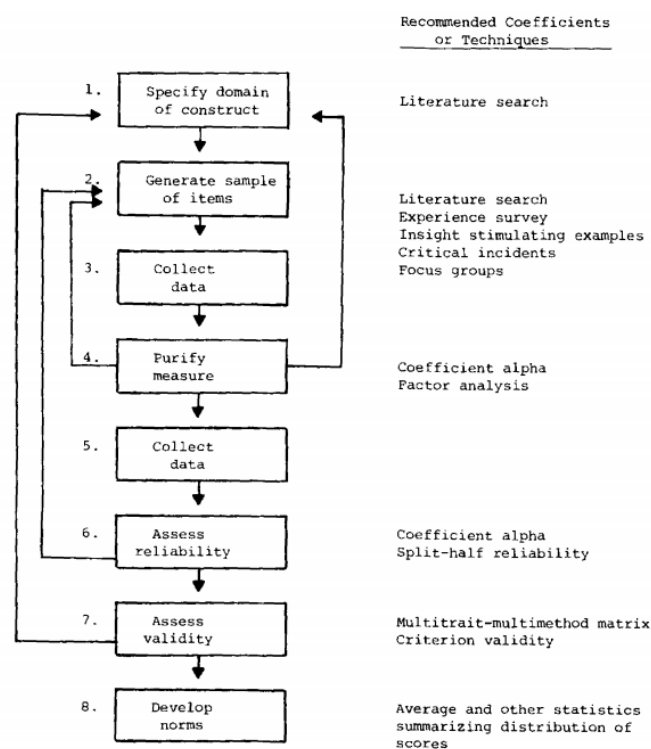


Figure 8-2 Suggested Procedure for Developing Better Measures (Adopted from Churchill, 1979).

Step 1 specifies the domain of construct by conducting rigorous literature review of coping (see Section 3.4, Chapter 3); while step 2 is to generate a pool of sample of items by using extant literature and consumer interviews. Using extant literature refers to the process when items are adapted from existing measures (it is important to note that different scales may be applied to different coping constructs); while consumer interviews refer to the process when items were generated by the consumer interviews in the qualitative study. Table 5-5 provides details regarding what constitutes the initial item pool of the measure for consumer long-term coping. Specifically, Table 5-5 shows that the initial item pool is generated from two approaches: the literature (deductive approach) and consumer interviews (inductive approach). Seven dimensions are derived from the literature and validated by consumer interviews. In addition, consumer interviews also contribute by revising, adding and dropping items in the pool. All initial generated items are listed in the Table 8-4.

A pre-test with a panel of academic experts and two stages of pilot study (Step 3) were conducted to ensure the face and content validity. Furthermore, to test the reliability of the sample items, Cronbach's alpha was adopted (see Section 5.4.2.6). Based on the results, the measurement was further purified (Step 4). Subsequently, the full data collection was undertaken (Step 5). Steps 6 and 7 examined the reliability and validity of the measurement and further purified the measure, using factor analysis (see Section 9.5 in Chapter 9). The minimum sample size for developing a new measurement was 290, articulated in Section 9.6. Based on all aforementioned steps, the measurement was then finalised.

Table 8-4 Forming the Item Pool for the Measure of Consumer Long-term Coping

Action Coping		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none"> ▪ Yi and Baumgartner (2004) ▪ Duhachek (2005) 	<ul style="list-style-type: none"> ▪ I think about how I might best handle food safety issues ▪ I try to come up with a strategy about what to do with food safety issues ▪ I think about what steps to take to resolve food safety issues ▪ I make a plan of action in resolving food safety issues and follow it ▪ I know what has to be done in resolving food safety issues and I do it ▪ I concentrate on ways food safety issues could be solved ▪ I generate potential solutions for food safety issues
Consumer Interview	<ul style="list-style-type: none"> ▪ I make direct efforts to deal with the problem. 	

		<ul style="list-style-type: none">▪ I think about the best way to handle food safety issues▪ I concentrate my efforts on doing something about food safety issues▪ I make direct efforts to deal with food safety issues.
Proactive Coping		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none">▪ Greenglass, Schwarzer, Jakubiec, Fiksenbaum and Taubert (1999)	<ul style="list-style-type: none">▪ I am a "take charge" person in relation to food safety issues▪ I try to let things work out on their own in relation to food safety issues(-)▪ I set up my goals and try to achieve them in relation to food safety issues▪ Despite numerous setbacks, I usually succeed in dealing with food safety issues▪ I always try to find a way to work food safety issues; nothing really stops me▪ I turn food safety issues into positive experiences▪ When I experience food safety issues, I take the initiative in resolving it▪ I do something ahead to prevent food safety issues
Consumer Interview	<ul style="list-style-type: none">▪ I do something ahead to prevent the issues.	
Accommodation		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none">▪ Zuckerman and Gagne (2003)	<ul style="list-style-type: none">▪ I try to be optimistic in spite of food safety issues▪ I work on feeling positive in relation to food safety issues no matter what▪ I work on staying positive even when food safety issues look bad▪ I get used to the idea that food safety issues happened (or are happening)▪ I accept the reality of the fact that food safety issues happened (or are happening)▪ I try to see food safety issues in a different light, to make them seem more positive▪ I look for something good in food safety issues that are happening▪ I try to do something to adjust myself to food safety issues▪ I am alert about food safety issues and try to keep the status quo
Consumer Interview	<ul style="list-style-type: none">▪ I try to do something to adjust myself to the situation.▪ I am alert about the situation and try to keep the status quo.	
Personal Support		
Approaches:	Previous measures:	New adapted/developed measures:
Literature	<ul style="list-style-type: none">▪ Duhachek (2005)▪ Yi and Baumgartner (2004)	<ul style="list-style-type: none">▪ I rely on others to make me feel better about food safety issues▪ I share my feelings with others I trust and respect about food safety issues▪ I have others assist me in fixing food
Consumer Interview	<ul style="list-style-type: none">▪ I ask my friends with resources and experience to help me.	

		<ul style="list-style-type: none">safety issuesI talk to others about how I am feeling about food safety issuesI try to get emotional support from others about food safety issuesI ask others I trust for help on food safety issuesI ask others with certain amount of resources and experience to help me regarding food safety issues
Organisational Support		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none">Ways of Coping (Folkman and Lazarus, 1985)	<ul style="list-style-type: none">I get professional help from government organisations on food safety issues (e.g., food inspection & quarantine department)I tend to rely on government organisations when facing problematic food safety issuesI try to figure out ways of handling food safety issues with the help of government organisationsI receive some safe foods from the organisation I work for (e.g., organic vegetables distributed)I receive some safe foods shared by my friends or family members getting from organisations they work for (e.g., organic vegetables distributed)
Consumer Interview	<ul style="list-style-type: none">I receive some help/resources from the organisation I work for.I acquire some resources shared by my friends or family members getting from organisations.I tend to look for help from organisations when facing problematic situations.I tend to ask for advices from organisations when facing problematic situations.	
Information Seeking		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none">Ways of Coping (Folkman and Lazarus, 1985)Duhachek (2005)	<ul style="list-style-type: none">I talk to others to find out more about food safety issuesI ask others with similar experiences what they did about food safety issuesI often acquire information regarding food safety issues on media platforms (e.g., newspaper, TV, magazine, social media and websites)I ask others who have more knowledge on food safety issuesI observe how others handle food safety issuesI have concerns about food safety issues when I face themI have some vigilant behaviours in relation to food safety issues (e.g., checking restaurant’s hygiene rating)
Consumer Interview	<ul style="list-style-type: none">I acquire information regarding the issue on traditional media, i.e. newspaper, TV, magazine.I look for information on social media and websites.I ask my friends or family members that have better knowledge on this issue.I question the issue when I face the situation.I have some vigilant behaviours (i.e. check the restaurant’s hygiene rating).	
Escape		
Approaches:	Previous measures:	Generated Items
Literature	<ul style="list-style-type: none">Duhachek (2005)Yi and Baumgartner (2004)	<ul style="list-style-type: none">I try to make my mind off food safety issues by doing other thingsI distract myself to avoid thinking
Consumer	<ul style="list-style-type: none">I do nothing to change the	

Interview	<p>situation.</p> <ul style="list-style-type: none"> ▪ I simply try to avoid the situation. 	<p>about food safety issues</p> <ul style="list-style-type: none"> ▪ I avoid thinking about food safety issues ▪ I try not to think about food safety issues ▪ I wish that food safety issues would go away or somehow be over with ▪ I try to forget the whole issue of food safety ▪ I want to turn the clock back to when there are no food safety issues ▪ I wish that I could escape from food safety issues ▪ I wish I didn't have to experience food safety issues ▪ I gave up in attempting to get safer foods ▪ I simply do nothing about food safety issues ▪ I simply try to avoid food safety issues
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8.2.3.3.4 *Personality Traits*

Personality traits of optimism and pessimism have been identified through the literature review and the consumer interviews. Measurements for these personality traits are introduced and justified as follows.

Optimism refers to the trait that generally an individual expects positive experiences in the future (Scheier et al., 2001). Optimistic consumers expect food safety situations to get better in the future. Comparatively, pessimism is a personality trait that one expects bad experiences to occur in the future (Scheier et al., 2001). Pessimistic consumers do not expect the food safety situation to get better in the future.

Scheier and Carver (1985) develop the Life Orientation Test to assess individuals' dispositional optimism, with proven predictive and discriminant validity (Scheier et al., 1994). However, Dember et al. (1989) have argued that optimism and pessimism may not be bipolar and developed a separate optimism and pessimism scale, known as the Optimism/Pessimism Scale (OPS). Both the internal consistency and test reliability of OPS have been examined. However, OPS is considered to measure "state" optimism and pessimism. Scheier et al. (1994) develop the Life Orientation Test-Revised (LOT-R) which is considered to be suitable for measuring "trait" optimism and pessimism. Drawing on the LOT and OPS, Chang et al. (1997) proposed a new scale called Extended Life Orientation Test (ELOT). Items in ELOT are carefully selected from LOT and OPS, finalised with 6 items for optimism and 9 items for pessimism. Reliability and Validity are also assessed. This scale is valid in examining optimism and pessimism separately and useful to approach

alternative frameworks.

The present research adopts all items in the scale of ELOT for measuring both optimism and pessimism for the following reasons: 1) this scale is in line with the ‘trait’ optimism and pessimism that this study intends to examine; 2) the reliability and validity have been assessed and satisfied; 3) they are suitable in the context of the present research and fit with the operational definitions of optimism and pessimism. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research..

8.2.3.3.5 *Cognitive Appraisals*

Previous research has suggested a number of ways to measure cognitive appraisals (e.g., Ortony et al., 1988). However, these measures consider the cognitive appraisal as a whole, rather than provide specific measures for each construct. The general cognitive appraisal measurements were not adopted for two reasons: 1) the current study examines two specific cognitive appraisals which cannot be measured in an overall scale; 2) the existing cognitive appraisal scales such as Smith and Ellsworth (1985), Ortony et al. (1988) and Watson and Spence (2007), identified different dimensions of cognitive appraisals, which are not suitable as the current study argues that self-efficacy and locus of control are the two dimensions in the context, rather than other different dimensions. Thus, self-efficacy and locus of control adopt different measures from the existing literature.

Self-efficacy

Self-efficacy refers to “people’s judgement of their capabilities to organise and execute required courses of action attaining designated types of performances” (Bandura, 1977, p.391’). As self-efficacy is generally conceptualised as a situational-specific factor, scales for measuring it vary. For example, Sherer et al. (1982) develop a Self-efficacy Scale which consists of two subscales: a General Self-efficacy subscale (17 items) and a Social Self-efficacy subscale (6 items). This scale provides a solid foundation for the further exploration of measuring self-efficacy. Schwarzer et al. (1997) develop the General Self-Efficacy Scale. This 10-item scale has been fully adopted by the present research for two reasons: 1) the internal consistency and reliability was tested (Schwarzer et al., 1997); 2) it has been applied to various contexts and translated into different languages, including German, Spanish and Chinese. Thus, the Chinese version of General Self-efficacy Scale is fully adopted to measure consumer self-efficacy. The items used for measuring self-

efficacy in the present study can be found in the Appendix IV.

Locus of control

Comparatively, locus of control refers to ‘the extent to which individuals believe they can control events those affect them’ (Rotter, 1966). Some studies have focused on measuring specific control, for example, Work Locus of Control in work settings developed by Spector (1988) and Health Locus of Control (MHLC) developed by Wallston et al. (1978). Others have attempted to develop generalised locus of control. For example, drawing on the scales developed by Rotter (1966) and Levenson (1974), Lumpkin (1985) proposed a measure for assessing locus of control. Unlike other lengthy scales, this 6-item scale provides sufficient validity and reliability (Lumpkin, 1985). Two reversed items are excluded from the measure as they may lead to low measure reliability and complex factor structures (Weijters and Baumgartner, 2012). The four other items are fully adopted by the present study. The original items and new adopted/adapted items can be found in the Appendix IV, illustrating specific items that are used in the present research.

8.2.3.4 Question Format

Question format varies according to different types of information needed. Identified types of question formats are: checklist, categorical scale, rank preference scale, numeric rating Likert-type scale, semantic differential scale, summated rating scale and open questions (Rose et al., 2014). Two formats are adopted in the present research: categorical scale and summated rating scale.

Categorical scale is a list of options from various categories. Respondents are required to choose the answer from one or multiple categories. In the present research, categorical scale is utilised in obtaining the demographic information of consumers, including gender, age, education level and their family structure.

Summated rating scale, or the multi-item scale, is often used in business and management research. This is a scale containing several items (questions/statements) to measure one variable/concept. It is sufficient to capture the complexity and to ensure the precision of the concept (Rose et al., 2014). Typically, respondents are asked to answer a number of 5- or 7-point Likert scale rating questions/statements to measure variables in the questionnaire. For the present research, the majority of the questions and statements are multi-item type, with 7-point Likert scale adopted, in order to be more precise (Aaker et al., 2010).

One issue that needs to be addressed here is the starting number of Likert scale.

Specifically, the number to measure emotions is still debatable. Some researchers argue that ‘0’ should represent no experience of emotion. However, this study starts with ‘1’ in the measure for three reasons: 1) most consumer research which adopts Likert scale starts with ‘1’. Examples can be found in Table 8-5; 2) the range from ‘0’ to ‘6’ and from ‘1’ to ‘7’ is the same, which will not influence the results of the statistical calculation; 3) the present study seeks to examine consumers’ degree of agreement, whereby 1 represents ‘*strongly disagree*’ and 7 means ‘*strongly agree*’. It is suitable to adopt a scale from 1 to 7. Therefore, the numbers used in the scale are therefore 1, 2, 3, 4, 5, 6 and 7.

Table 8-5 Examples of Measures Starting from “1”

1=I feel this emotion not at all (Laros and Steenkamp, 2004, Psychology & Marketing)
1=didn’t feel like this at all (Yi and Baumgartner, 2004, Journal of Consumer Psychology)
1=not at all (Gelbrich, 2010, Journal of the Academy Marketing Science)
1=no worry (Larsen, Brun and Øgaard, 2009, Tourism Management)

8.2.3.5 Wording of Each Question

The wording of the questionnaire is considered as the most crucial task in questionnaire development (Churchill, 1999). Careless wording of questions may lead to biased results, misunderstanding of the questions and result refusals to answer questions (Malhotra et al., 2008). McGiven (2009) provides a checklist to ensure the accuracy of the wording of the questions. The checklist can be found in Table 8-6. All questions in the present study were strictly examined by adopting the checklist.

Table 8-6 Checklist for the Wording of Questions (Adopted from McGiven (2009))

It measures what it claims to measure
It is relevant and meaningful to the respondent.
It is acceptable to the respondent.
It is understood by the respondent and the interviewer.
It is interpreted in the way in which you intended.
It is interpreted in the same way by all respondents.
It elicits an accurate and meaningful response.
The meaning of the response is clear and unambiguous.

The original version of questionnaire was designed in English. However, the target population is Chinese food consumers. It is necessary to translate the questionnaire from the original English version to the Chinese version. During the translation process, it is highly possible that the meaning of the statements may be changed unintentionally by the researcher. In order to guarantee the precision and accuracy of the translation, ensure the translation equivalence and minimise the item bias, a procedure is followed according to an existing guideline (Douglas and Craig, 2006). First, the questionnaire is translated from the initial English language to the Chinese language by the researcher who is a Chinese native speaker. Second, a small group of five postgraduate research students from the University of Glasgow were recruited to provide suggestions of the translation of the questionnaire. They are all bilingual researchers (Chinese native and English professional proficiency). They were given the original English-version Questionnaire and the translated Chinese-version Questionnaire. They were asked to go through every single item in the translated questionnaire. A number of suggestions were provided by these students, including changes in verb, adjective, omitting subject and even the meaning of the whole sentence. Table 8-7 presents examples of changing wording in the translated questionnaire. For example, the verb phrase of “get out of” is better to use “解决” rather than “跳脱”. By asking advice from other bilingual postgraduate research students from the business school, the accuracy, precision and translation equivalence of the translated questionnaire are ensured. Third, the pilot study was conducted for examining the translation (see Section 8.2.3.6.2).

Table 8-7 Translation Wording Change (Source: the author)

Original Question in English	Wording in Chinese	Revised Wording in Chinese
I can think of many ways to get out of the problem	我能想出很多方法跳脱这个问题	我能想出很多方法解决这个问题
Even when others get discouraged, I know I can find a way to solve the problem	即使当我很气馁时, 我知道我能找到解决问题的途径	即使当其他人都很气馁时, 我知道我能找到解决问题的途径
I can remain calm when facing difficulties because I can rely on my coping abilities	面对困难的时候我能够保持冷静因为我有很多应对的能力	面对困难的时候我能够保持冷静因为我有很多应对的方法
If I am in a bind, I can usually think of something to do	如果我在一个窘境, 我通常可以想出要做什么	如果在一个窘境, 我通常可以想出要做什么
My problems are my responsibility to deal with	我出现的问题是我的责任去解决它	解决我的问题是我个人的责任

8.2.3.6 Pre-test and Piloting Study

8.2.3.6.1 *Pre-test of the questionnaire*

A pre-test involves a panel of three academic professionals who are experts in either the field of study or the design of the questionnaire. Their insights and knowledge are particularly important in identifying issues in the development of the measurement and the questionnaire (Aaker et al., 2010). Academics were asked to go through the whole questionnaire, providing their opinions on individual questions, the overall survey design and data-model match. A list of suggestions has been given by the panel of experts.

- a. Consistency: words used in items and questions in the draft survey are not consistent. For example, when referring to others, words such as “someone”, “friends”, “friends and family members” are used in the draft survey. Respondents may get confused due to the inconsistency. These words are replaced by “others” throughout the survey.
- b. Being specific: some questions are too general and respondents may think about other situations rather than food safety issues. For example, long-term and ongoing food safety issues are found to be presented as “the issues”, “the problems” and “the problematic situation”. In order to be specific and avoid potential confusion, the phrase “food safety issues” is adopted throughout the survey.
- c. Likert Scale: on the one hand, the draft survey uses scales from 1 to 7, but represents different things, raising concerns in terms of the consistency. For example, for stress, 1 is ‘never’ and 7 is ‘always’; while for emotions, 1 represents ‘didn't feel like this at all’ and 7 is ‘feel like this exceptionally strong’. For other measures, 1 is ‘strongly disagree’ and 7 is ‘strongly agree’. On the one hand, some consumers may argue that 0 is better in representing the concept of ‘no stress’. Considering the cons and the issue of consistency (discussed in previous Section 5.4.2.4), questions in this study need to be reformatted and all items are measured by the same meaning, whereby 1 represents ‘strongly disagree’ while 7 is ‘strongly agree’.
- d. Logical flow: originally, the stress and emotions are the first two sections in the draft survey. The subsequent two sections in the draft are cognitive appraisals and personality traits, which reflect the general cognitive status and personality of respondents. These two sections are not context-specific contents. Therefore, in order to avoid the influence of the specific context, cognitive factors and personality are suggested to be moved to the front.

- e. Definition of terms. Food safety issues are a general term that different respondents may have various experiences of it. They may fill in the survey while thinking of different circumstances. In order to be specific, food safety issues in the survey need to be defined so that respondents would have the same understanding of the term.

8.2.3.6.2 Pilot study

Two stages of pilot test were conducted.

The first stage of the pilot test involves 10 Chinese postgraduate students in a UK university. The aim of this stage of piloting is to check the accuracy of translation of English (original designed) to Chinese and to calculate the average time for filling the survey. They were asked to fill the survey, followed by a short interview to know their feelings of filling the questionnaire. The most frequently raised point is that the survey is a bit lengthy. Some words are not commonly used in Chinese, which need to be replaced. The average time used to fill in the survey is 10.37 minutes.

The second stage of pilot test is to examine the internal reliability of the measures by testing the Cronbach's alpha of each section and estimate the average time for filling the survey. Thirty-five respondents were recruited online from the target population of Chinese food consumers. The average time used is 613.29 seconds, which is equivalent to 10.22 minutes. Details of Cronbach's alpha are listed in Table 8-8. All measurements are above .70, reflecting a good reliability.

By conducting the pre-test with a panel of academic experts (Section 5.4.2.6.1) and two stages of pilot studies, the survey justifies robustness for full data collection. This was preceded by the need to acquire an Ethical Approval from the University of Glasgow (Appendix V).

Table 8-8 Cronbach's Alpha for All Measurements (Pilot Study)

Self-efficacy	0.895	Hope	0.855
Locus of Control	0.721	Action Coping	0.944
Optimism	0.820	Accommodation	0.885
Pessimism	0.875	Proactive Coping	0.773
Stress	0.841	Personal Support	0.766
Worry	0.894	Organisational Support	0.931
Disappointment	0.838	Information Seeking	0.909
Anger	0.867	Escape	0.809
Fear	0.958		

8.2.4 Survey Data Collection

With the careful design, pre-test and pilot studies, the questionnaire was ready to be sent out for the full data collection. The final questionnaire used for data collection can be found in the Appendix VI (English version) and Appendix VII (Chinese version). As noted, the internet-based survey is designed on sojump.com which is a free online survey platform in China. Then the survey link was posted on two Chinese social media platforms: Weibo and Wechat. The advantage of these two social media platforms is that everyone can get access to the survey link and further circulate it to others for free if they are willing to do so. The data collection process took two weeks in January and one and half weeks in March 2017. In January, the survey was completed by 681 respondents. Because the number of consumers aged above 60 was under-represented, a further data collection was conducted in March with 167 more questionnaires collected. A total number of data collected was 848.

8.2.5 Missing Data

Missing data is a common problem in self-reported survey. This is caused by survey respondents who do not complete the whole questionnaire. The quality of the data and statistical results may be strongly influenced and distorted (Tabachnick and Fidell, 2013). For the present study, consumers are free to withdraw from the survey at any stage. But all questions in the survey are set as required. This means that the online survey system will only record the completed survey. In other words, the survey is either fully completed, or invalid and not recorded. The present study does not contain any missing data.

8.3 Data Analysis Using Structural Equation Modelling

The present study adopts the Structural Equation Modelling (SEM) method for analysing the data due to the type of the research problems and the nature of the data. Justification for using SEM and the procedure of using SEM will be addressed in the following subsections.

8.3.1 Justification of Using Structural Equation Modelling

It has been addressed that SEM is a powerful tool which provides comprehensive means for researchers to test, assess, modify and further develop theoretical models (Anderson and Gerbing, 1988; Steenkamp and Baumgartner, 2000).

SEM has been frequently adopted by marketing and business researchers to examine, predict and explain the possible relationships among factors (Martínez-López et al., 2013).

For example, Martínez-López et al. (2013) summarise the journal articles in top marketing journals which adopted SEM. Their study shows that many more articles have emerged within the field of marketing that use the SEM approach and includes consumer behaviour (e.g., Chen and Tung, 2014), service marketing (e.g., Schierz et al., 2010) and relationship marketing (Hallak et al., 2012), among others.

There are three types of SEM-based models (Baumgartner and Homburg, 1996): confirmatory measurement model (Type A), single-indicator structural model associated with path analysis (Type B) and integrated measurement and latent variables model (Type C). The Type C model is mostly applied (Martínez-López et al., 2013) as it not only assesses the reliability and validity of the measurement model, but also examines the relationship between exogenous and endogenous variables.

In addition, three types of modelling strategies for SEM are considered (Jöreskog and Sörbom, 1993). First is the confirmatory modelling which examines a theoretical model without any modifications to the original model. Second is the competitive modelling which assesses the alternative or “rival” model in order to select the most suitable one. Third is the model development or generating strategy which aims to achieve a better model through re-specification.

The research framework for the present study consists of two models: first is the newly developed consumer long-term coping structure; second is the model of antecedents to consumer coping. In terms of the consumer long-term coping model, SEM aims to achieve a better model by modifying the proposed one. For the relationship model, SEM aims to examine the hypothesized relationships in the theoretical model. SEM is considered the most appropriate way for this study because it integrates both measurement model and structural model to confirm the new development and assess the relationships. Therefore, SEM is chosen as the method for analysing the data.

8.3.2 Procedure of Using Structural Equation Modelling

Figure 8-3 demonstrates the procedure adopted for using SEM to conduct data analysis, as illustrated in the following sequence.

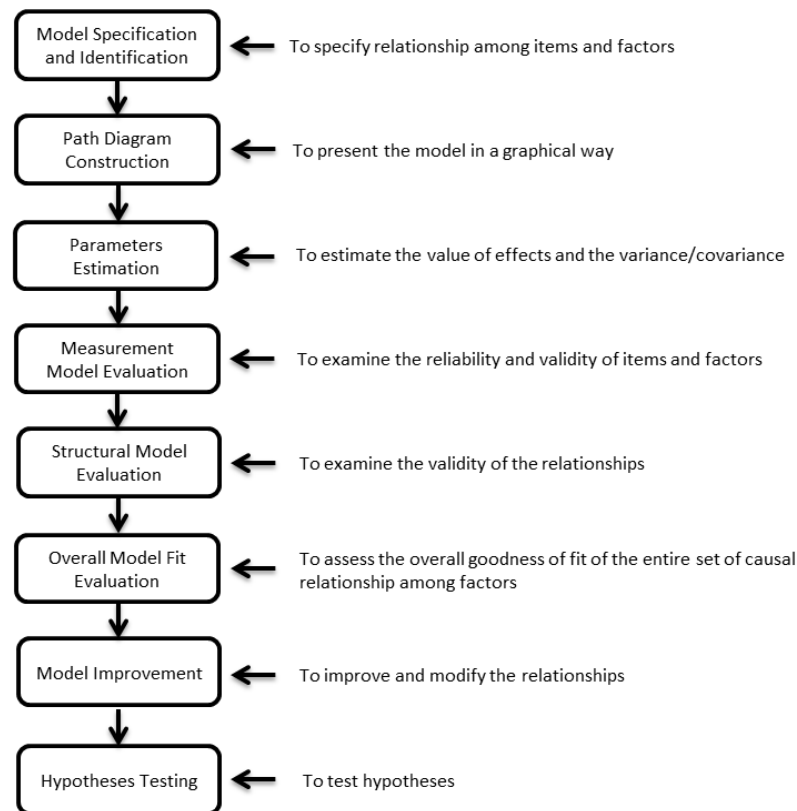


Figure 8-3 Procedure of Using SEM (adapted from Yeung, 2002)

8.3.2.1 Model Specification and Identification of SEM

Drawing from the analysed research construct and framework, a multidimensional structure of consumer coping is developed. It is further embedded into a general framework articulating the relationships among consumer psychological states, personality traits, cognitive appraisals, demographic variables and the coping structure. Relationships among these variables/factors are identified. Free and fixed parameters are formulated, indicating existing and no relationships between factors. SEM is divided into two models in analysis: measurement model and structural model (Martínez-López et al., 2013). The measurement model reflects items used to measure latent variables and indicators used to relate to each construct, in contrast, the structural model concerns the interrelationship among latent variables (Baumgartner and Homburg, 1996).

It is also important to consider whether or not the model to be examined is specified (Baumgartner and Homburg, 1996). In other words, identification of the models is to ensure that each free parameter can be captured through observed data. When the number of the free parameters does not exceed the number of distinct elements in the variance/covariance matrix of the observed variables, the condition of model identification is satisfied (Diamantopoulos and Siguaw, 2000).

8.3.2.2 Path Diagram Construction

A path diagram is a graphical presentation of the proposed model, including observable exogenous variables, observable endogenous variables, latent exogenous variables, latent endogenous variables, beta coefficients, gamma coefficients, phi correlation, the error term and regression coefficients. The path diagram will then be converted into a measurement model and structural model.

8.3.2.3 Parameter Estimation

Parameter estimation is conducted after the path diagram is constructed. An iterative method is utilised to estimate the value of the parameters from the observed data (Hoyle, 1995). The iterative method indicates attempts to improve estimation through subsequent cycles of calculation. By improvement, this means the covariance of the model becomes more similar to the observed variables.

8.3.2.4 Measurement Model Evaluation

The measurement model is assessed through construct reliability and validity.

In marketing, Cronbach's alpha is commonly used to assess the construct reliability of measures and the internal consistency of items. However, it has been argued that it is not necessary to compute the alpha as information provided in factor loadings and error variance of SEM have assessed the reliability (Bagozzi and Yi, 2012). Composite reliability (CR) and the average variance extracted (AVE) serves the purpose of assessing reliability (Hair et al., 2010). In the present study, Cronbach's alpha, CR and AVE are all presented.

Construct validity is 'the extent to which indicators of a construct measure what they are purported to measure' (Bagozzi and Yi, 2012). Except the face and content validity checked in the pre-test and pilot study, empirical observation needs to be assessed as well, including convergent validity, discriminant validity, nomological validity and average variance extracted (Bagozzi and Yi, 2012). Suggested acceptable levels for each criterion are as follows: 0.8 or higher for convergent validity, 0.5 or higher for AVE (Ping, 2004).

8.3.2.5 Structural Model Evaluation

The structural model assesses the validity of relationships among factors. The total coefficient of determination determines the validity of the structural model by assessing relationships in the model and predictive power of the model (Jöreskog and Sörbom, 1993). Specifically, the total coefficient of determination shows that the percentage of the

variation in the exogenous variables is explained by other variables in the model (Taylor, 1994). The coefficient of determination (r-square) ranges between 0 and 1 and value greater than 0.25 is considered acceptable (Taylor, 1994).

8.3.2.6 Overall Model Fit Evaluation

The overall model fit considers the statistical power in SEM (Bagozzi & Yi, 2012). It is used to assess whether causal relationships in the model are adequately represented. Further, model fit reflects the degree to which the structural equation model fits the data. Three ways of examining the overall model fit are: the absolute fit, comparative fit and parsimonious fit. Criteria for each way of assessing model fit are presented in the following Table 8-9. Specifically, the absolute fit of the model is tested by: Chi-square, goodness of fit (GFI), adjusted goodness of fit (AGFI), root mean squared error of approximation (RMSEA), normed fit index (NFI) and Non-normed fit index (NNFI). The comparative fit of model is tested by comparative fit index (CFI), incremental fit index (IFI) and relative fit index (RFI). The parsimonious fit of model is tested by parsimonious goodness of fit index (PGFI) and parsimonious normed fit index (PNFI). Value range and acceptable level for each index are listed.

In addition, it is important to understand the statistical power in model fit, as it reflects the degree to which the proposed model fits the theoretical constructs (Cohen, 1988). The statistical power is estimated by looking at the power estimates of the close fit, which is presented in the Table 8-10 in terms of the level of degrees of freedom and sample size. It has been argued that if the power estimate is greater than 0.8, this means that the analysis is sufficient as the possibility of rejecting the incorrect model will be over 80% (MacCallum et al., 1996). Researchers also use RMSEA index of overall model fit to estimate the statistical power (Hermida et al., 2015), with a .08 “goodness” threshold, or <.10 “relatively good fit” (Schumacker and Lomax, 2009).

Table 8-9 Guidelines of Overall Model Fit (Source: Schumacker and Lomax, 2009)

GOF Criterion	Value Range	Acceptable Level
Absolute Fit		
Chi-square (χ^2)	Tabled χ^2 value	Compares with tabled value for given <i>df</i>
GFI	0(not fit) to 1(perfect fit)	Value close to 0.90 reflects a good fit
AGFI	0(not fit) to 1(perfect fit)	Value > 0.90 reflects a good fit
RMSEA	< 0.10	< 0.10 reflects good fit < 0.05 reflects very good fit < 0.01 reflects outstanding fit

NFI	0(not fit) to 1(perfect fit)	Value close to 0.90 reflects a good fit
NNFI	0(not fit), no upper bound	Value close to 0.90 reflects a good fit
Comparative Fit		
CFI	0(not fit) to 1(perfect fit)	Value close to 0.90 reflects a good fit
IFI	0(not fit) to 1(perfect fit)	Value close to 0.90 reflects a good fit
RFI	0(not fit) to 1(perfect fit)	Value close to 0.90 reflects a good fit
Parsimonious Fit		
PGFI	0(not fit) to 1(perfect fit)	Compares values in alternative models
PNFI	0(not fit) to 1(perfect fit)	Compares values in alternative models

Table 8-10 Power Estimates for Selected Levels of Degrees of Freedom and Sample Size (Adapted from MacCallum, Browne and Sugawara, 1996)

	Sample Size			
Degree of Freedom (<i>df</i>)	100	200	300	400
60	0.477	0.831	0.960	0.992
70	0.525	0.877	0.978	0.997
80	0.570	0.911	0.988	0.999
90	0.612	0.937	0.994	1.000
100	0.650	0.955	0.997	1.000

8.3.2.7 Model Improvement and Hypotheses Testing

Based on the modification index and standard residual analysis, the model fit can be improved. When the model is estimated as a valid model, the test of relationship among factors in the hypotheses can be carried out. The ratio of each parameter to its standard errors should be distributed as a ‘z statistic’ with the level of significance at .05 (if its value is larger than 1.96). In other words, the chance that a relationship between two factors in the hypotheses exists is over 95% (Schumacker and Lomax, 2009).

8.4 Summary

This chapter discusses issues around the research design and adopted methodology for quantitative study. Specifically, the research population is determined as consumers aged 18 years old and above who reside in mainland China. The sampling frame is discussed in consideration of the condition of the online questionnaire survey and the probability sampling method is chosen to ensure representativeness. The sample size is determined by comparing multiple methods of computing and the suggested sample size for the present

study is 674 and above. Next, the sampling plan can be executed with careful consideration of all aforementioned points, including target population, sampling frame, sampling technique, calculation of the sample size and determining the sampling unit.

The questionnaire and instrument design are passed through four stages before the final questionnaire can be sent out for data collection. These stages include the qualitative study, 7-step design procedure, pre-test and pilot study. The qualitative study is important in informing the questionnaire design by providing rich insights of consumer thoughts, perceptions and behaviours. Then 7-step questionnaire design procedure is followed in order to ensure that the questionnaire is of high quality and able to collect the information needed. All measurements used in the study have been justified and the process of item generation has been well articulated. Wording and layout of the questionnaire has been carefully considered, in terms of the nature of online survey and commonly used words of Chinese consumers. A pre-test has been conducted, receiving a number of suggestions and advice from an academic panel of experts. A pilot study is conducted as well, collecting a small sample of respondents from the target population. The questionnaire is, therefore, revised based on the results from the pre-test and pilot studies. The link to the final version of the questionnaire is posted on two specific Chinese social media platforms: Weibo and WeChat, due to their high accessibility and flexibility.

Handling missing data is a crucial step before the formal data analysis, which has also been addressed in this chapter. Then discussion moves to how to conduct the data analysis. Structural Equation Modelling has been chosen as the method to do the analysis, with 8 detailed steps illustrated.

Chapter 9 Data Preparation, Scale Development and Model Conceptualisation

9.1 Introduction

Chapter 8 has discussed the design for the quantitative study. This Chapter 9 aims to prepare the collected data for analysis, to develop a scale for measuring consumer long-term coping and conceptualise the hierarchical model. Next Chapter 10 will be testing the hypotheses.

The structure and main contents of Chapter 9 are presented as follows: Section 9.2 describes the preparation work that have been done to prepare the data for analysis; Section 9.3 outlines the demographics of collected data in terms of age, gender, education and family structure; Section 9.4 reports the normality test regarding outliers and data distribution; Section 9.5 examines the reliability and validity of constructs and congeneric measurement model of constructs; Section 9.6 specifies the process of developing a new scale for measuring consumer long-term coping and to conceptualise the model; Last, Section 9.7 concludes with a short summary.

9.2 Data Preparation

Respondents are expected to answer all questions in the survey, but have the right to withdraw at any point they choose. A total number of 848 online surveys have been collected.

Before moving to conduct analysis on the data, data preparations have been carried out in SPSS in five steps (Saunders et al., 2012): 1) examining the type of data: all data should be numeric type; 2) examining the type of measurement: majority of them should be “scale” as Likert Scale was adopted; measure for “age” and “education” should be ordinal; the measure for “gender” and “family type” should be nominal; 3) checking the label for each item to be correct; 4) examining if each item is allocated with a value. For example, in terms of the gender, value 1 is “male” while 2 is “female”; for scale questions, value 1 is “strongly disagree”, 4 is “neutral” and 7 is “strongly agree”; 5) checking decimals of data: normally it should be 0.

A total number of 848 surveys are divided randomly into two parts in the data analysis, serving different purposes. The first 350 respondents will be used to develop the scale for the construct of consumer long-term coping (290 required, see Section 5.4.1.4); the

remaining 498 respondents will be used for the validation of the scale, model conceptualisation and hypotheses testing. The application of splitting the sample is common in marketing literature, especially for the purpose of scale development (e.g., Christodoulides et al., 2006). Demographic factors, normality test and validity and reliability test are based on all 848 respondents.

9.3 Demographics

In this section, the demographics of the sample will be outlined, namely age, gender, education and family structure. As discussed in the Section 5.4.1.1 in Chapter 5, the target population of the quantitative study is food consumers aged 18 years old and above who reside in mainland China.

9.3.1 Age

Table 9-1 demonstrates the age composition of sample. The age criteria for the population investigated is aged 18 and above in 2017. The majority of respondents (48.1%) are concentrated in the age group of 18 to 30. This is mainly due to the nature of the online survey platforms. In order to seek to achieve a representative sample with a wide spread, two popular Chinese online social media platforms Weibo and WeChat were chosen. According to Tencent Corporation which owns WeChat, a total proportion of 86.2% users are aged between 18 and 36. Comparatively, the users aged between 17 and 33 of Weibo account for 79%, according to Sina Weibo Data Centre.

The age group of 31 to 60 represents 40.9% of the total sample. The remaining sample is from respondents aged above 60, accounting for 11.1%. Because there are only three categories (age 0-14, age 15-64 and age 65 and above) in the National Bureau of Statistics of China, it is not meaningful to compare them with the age groups in the current study to show the representativeness of the population.

In addition, a one-way analysis of variances is conducted to evaluate if there is difference in coping among age groups. The assumption of normality is evaluated using histograms and found tenable for all groups. The assumption of homogeneity of variances is tested and found tenable using Levene's Test, $F(3,844)=2.463$, $p=.061$. The ANOVA statistic is $F(3,844)=5.681$, $p=.211$, indicating no significant difference among age groups.

Table 9-1 Age Composition of the Sample

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	age 18-30	408	48.1	48.1	48.1
	age 31-45	159	18.8	18.8	66.9
	age 46-60	187	22.1	22.1	88.9
	age above 60	94	11.1	11.1	100.0
	Total	848	100.0	100.0	

9.3.2 Gender

Drawn from Table 9-2, the gender distribution of the sample is 49.9 percent male and 50.1 percent female. The gender distribution of the Chinese population in 2015 is 51.22 percent male and 48.78 percent female, therefore, is no significant discrepancy between the sample and target population in terms of gender. It can be drawn that gender distribution of the sample is considered to be representative of target population.

Levene's test in T-test, $F(846)=3.74$, $p=.53$, indicates that the variances of two populations (male and female) are assumed to be approximately equal. Thus, male ($M=4.35$, $SD=.72$, $N=423$) has no difference in coping compared to that of female ($M=4.23$, $SD=.82$, $N=425$).

Table 9-2 Gender Distribution of the Survey Sample and the Chinese Population in 2015 (National Bureau of Statistics of China)

	Survey Sample		Chinese Population in 2015 (National Bureau of Statistics of China)	
	Frequency	Percent	Frequency	Percent
Male	423	49.90	10917046	51.22
Female	425	50.10	10395195	48.78
Total	848	100.00	21312241	100.00

*Data of Chinese population in 2015 was obtained from the 1% Population Sample Survey in 2015, conducted by the National Bureau of Statistics of China. The sampling fraction is 1.55%.

9.3.3 Education

In the online survey, the education level of participants is divided into four subsections: 'high school or below', 'bachelor degree', 'master degree' and 'doctorate degree'. In order to be comparable to the Chinese population, subsection 'master degree' and 'doctorate degree' are recoded together as 'postgraduate degree'. Table 9-3 demonstrates the education background of the respondents of the survey and the target population. In the survey sample the majority of respondents (73.5 percent) hold a high school certificate or below. This is consistent with the target population that 86.7 percent of the total population are educated to high school level or below. The remaining respondents hold a college or university degree, among which 20.8 percent of them have an undergraduate degree and

only 5.8 percent of respondents have a postgraduate degree. Comparatively, the majority population of China (86.7 percent) are educated to high school level or below; 12.7 percent of population have a college or university degree and only 0.6 percent of population hold a postgraduate degree. These results are in line with the education level of the internet users in China in 2016, that 79.4 percent of internet users hold a high school degree or below (Statista, 2017). This difference between target population and Web users is also identified in the United States. Couper (2000) demonstrates that 50.2 percent of the total population in the US have high school or less education, in comparison to that of 24.2 percent of Web users. Similarly, the proportion of Web users who have an advanced degree (14.8 percent) is higher than that of the total population (7.5 percent). Therefore, in the survey sample the proportion of college and university degree and postgraduate degree are higher than that of the target population. Drawn from the table, there is no significant discrepancy between the sample and target population in terms of education. It can be drawn that education distribution of the sample is considered to be representative of the target population.

Table 9-3 Education Distribution of the Survey Sample and the Chinese Population in 2015 (National Bureau of Statistics of China)

	Survey Sample		Chinese Population in 2015 (National Bureau of Statistics of China)	
	Frequency	Percent	Frequency	Percent
High school or below	623	73.5	17189981	86.7
College and University	176	20.8	2527035	12.7
Postgraduate	49	5.8	116455	0.6
total	848	100.0	19833471	100.0

*Data of Chinese population in 2015 was obtained from the 1% Population Sample Survey in 2015, conducted by the National Bureau of Statistics of China. The sampling fraction is 1.55%.

9.3.4 Family Structure

As noted in Section 4.4.4.2, family structure is designed to examine whether or not people who have caring responsibilities behave differently in dealing with long-term food safety issues, in comparison to people who do not have any caring responsibility. The moderating effect will be examined in the next Chapter. This is a multiple choice question that respondents can tick any box that applies to their own family situations. People who have caring responsibilities are specified in four categories: ‘child or children under age 12’, ‘family member(s) with physical disabilities’, ‘family member(s) with chronic physical or mental illness’ and ‘elder family member aged above 70’. Drawn from Table 9-4, the proportion of respondents who do not have any caring responsibilities accounts for 53.3

percent, compared to 46.7 percent of respondents who have caring responsibilities. There are no general population statistics available in such categorising. Available database focuses on family income or family size rather than their caring responsibilities. Thus, no comparison can be made.

Table 9-4 Family Structure of the Survey Sample

Family Structure	Not Ticked		Ticked	
	Frequency	Percent	Frequency	Percent
child/children under 12	632	74.5	216	25.5
family member(s) with physical disabilities	823	97.1	25	2.9
family member(s) with chronic physical or mental illness	825	97.3	23	2.7
elder family member above 70	604	71.2	244	28.8
none of above	396	46.7	452	53.3

9.4 Normality

This section deals with data normality and distribution. One basic statistical assumption of Structural Equation Modelling (SEM) is that data is normally distributed (Hair et al., 2010). Therefore, a standardised score will be used to identified outliers and Skewness and Kurtosis indices are calculated to assess the data distribution, with sample size N=848. Variables examined in this section exclude consumer long-term coping strategies, which will be discussed in Section 7.6 in detail.

9.4.1 Outliers

In the univariate level of normality, the outliers need to be identified by examining the z score of each item. Univariate outliers refer to extreme values of cases, with a z score higher than ± 3.29 (Tabachnick and Fidell, 2013). Standardised scores (z score) were generated through SPSS and compared with the absolute value of 3.29. All items are less than the absolute value of 3.29, thus, no item has been identified as an outlier.

9.4.2 Data Distribution

The distribution of individual items is examined through Skewness and Kurtosis index. Skewness demonstrates the items' symmetry of distribution. The formula for Skewness is $Z_{\text{skewness}} = (\text{Mean} - \text{Median}) / \text{standard deviation}$. In the normal distribution, the value of skewness should be close to 0, which means: Mean=Median=Mode. If the data is positively skewed, which $\text{Mode} < \text{Median} < \text{Mean}$, the distribution shows a long right-tail; comparatively, if the data is negatively skewed, which $\text{Mean} < \text{Median} < \text{Mode}$, the distribution will be with a long left-tail. The 'tail' is just an illustration of how the data

would be distributed in the figure. The Skewness above ± 1.00 is considered as significantly skewed. This criteria was applied to the current study to examine the skewness of the sample $N=848$. A total of 9 items out of 123 were found with moderate skewness. Both negative and positive skewness were found. The absolute values of all the rest of the variables are within ± 1.00 , considered acceptable (Tabachnick and Fidell, 2013).

However, the 9 skewed items in the construct of self-efficacy and locus of control are not subject to be manipulated for the following reasons: 1) with the consideration of histograms, items in these two constructs do not show strong violations of normality while only small deviations ($<|1.1|$) have been identified; 2) normality is not a necessary criteria for SEM and CFA during the data analysis (Tabachnik and Fidell, 2013); 3) the transformation may hurt the data if the procedure is not strictly followed (Field, 2009); 4) normality may be ignored if the sample size is above 200 (Hair et al., 2010) while the sample size for the current research is $N=848$.

Kurtosis index illustrates the ‘tailedness’ of the distribution. The Kurtosis index should be close to 0 as well, indicating a normal distribution. If the $K > 0$, it indicates that the distribution is with a sharp peak and fat tail. If the $K < 0$, it shows that the distribution is flattened and highly dispersed. Although there is no consensus on the threshold for Kurtosis, a value lower than 10 is suggested as the acceptable range (Kline, 2011). The value of Kurtosis of the survey sample was calculated by SPSS as well and all variables have a value less than 10, which is considered as acceptable.

9.5 Examining Measurement Model of Constructs

Before conducting the analysis of testing hypotheses and the structural model, the measurement model of constructs should be reliable, valid and robust. As Bacharach (1989) stated the establishment of construct reliability and validity in a research model is the core requirement of theory building and testing.

Several analyses are carried out in order to ensure the robustness of the measurements. In the following subsections, construct reliability, validity, common method variance and factor analysis are assessed in sequence. The total sample of $N=848$ will be divided into two parts: $N=350$ will be used to develop the new construct: consumer long-term coping strategies (see Section 7.6.1); $N=498$ will be used to validate the new developed construct (see Section 7.6.2) and to conduct the analysis of the structural model (see Chapter 8). No difference exists among samples as they were collected online using the same method with

the same target population. The following subsections are discussed based on the sample $N=498$ as they will be used in the final hypotheses testing.

9.5.1 Reliability

Reliability examines the consistency of a measurement. In other words, reliability refers to the extent to which results generated from an instrument are consistent. The most frequently method used to examine internal consistency is the Cronbach's Alpha. A higher value of Cronbach's Alpha indicates a higher consistency among items that are used to measure the construct. The recommended score of Cronbach's Alpha (Cronbach's coefficient) is 0.7 (Hinkin, 1995) and is applied as the benchmark for the current study.

In addition, an increasing number of studies have started looking at the Composite Reliability (CR) to examine the internal reliability of the items (Fornell and Larcker, 1981). This study is aware of the pros and cons of Cronbach's Alpha and CR and is not going to compare these two techniques. The result of CR will also be presented in this study, to ensure that items are internally consistent along with the Cronbach's Alpha.

Table 9-5 illustrates the Cronbach's Alpha in each construct. It is clear that all constructs in the current study are greater than 0.7, reflecting a good internal consistency of the measurements. Seven constructs of consumer long-term coping strategies at the end of the table will be further examined in the exploratory and confirmatory factor analysis in Section 9.6.1 as the measurements are newly developed.

Table 9-5 Cronbach's Alpha of Each Construct

Construct	Code	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Self-Efficacy	SE	.871	.872	10
Locus of Control	CL	.713	.713	4
Optimism	OPT	.768	.772	6
Pessimism	PES	.852	.849	9
Neuroticism	NEU	.841	.841	5
Stress	STR	.891	.891	7
Worry	WOR	.894	.893	4
Disappointment	DIS	.895	.896	4
Anger	ANG	.907	.908	4
Fear	FEAR	.945	.945	7

Hope	HOPE	.860	.861	5
Action Coping	ACT	.943	.942	10
Accommodation Coping	ACCOM	.864	.863	9
Proactive Coping	PRO	.845	.848	8
Personal Support Coping	PSC	.836	.835	7
Organisational Support Coping	OSC	.827	.828	5
Information Seeking Coping	INFO	.862	.861	7
Escape Coping	ESC	.833	.835	12

CR was calculated in Excel using the Standardised Regression Weight in the Estimates of the measurement model of all construct. CR was calculated based on the results of the measurement model, where some items in constructs are dropped. Therefore, the number of items in the CR test was different from the number in the Cronbach's Alpha. Table 9-6 illustrates the value of the CR of each construct except coping constructs as they will be modified by the Exploratory Factor Analysis (EFA) and the Confirmatory Factor Analysis (CFA). A detailed discussion can be found in Section 7.6.1. It can be drawn from the table that all constructs have a high composite reliability at the level of above .70, reflecting a good internal reliability. The results are consistent with the Cronbach's Alpha. CR for consumer long-term coping construct can be found in Section 9.6.1.2 as it is a newly developed construct.

Table 9-6 Composite Reliability of Each Construct

Construct	Code	Composite Reliability (CR)	N of Items
Self-Efficacy	SE	0.851	7
Locus of Control	CL	0.717	4
Optimism	OPT	0.754	6
Pessimism	PES	0.877	8
Neuroticism	NEU	0.861	4
Stress	STR	0.937	7
Worry	WOR	0.961	4
Disappointment	DIS	0.962	4
Anger	ANG	0.966	4
Fear	FEAR	0.966	6
Hope	HOPE	0.944	5

9.5.2 Validity

Validity refers to the extent to which ‘the instruments truly measure the constructs which they are intended to measure’ (Peter, 1981). There are three types of validity: content validity, criterion-related validity and construct validity.

Content validity, also named as face validity, is the degree to which items in a measurement represent a proper theoretical content of the construct (Nunally and Bernstein, 1994). In simple words, it answers the question of “Does the measurement adequately measure the concept?” In the current study, a panel of three academics have been recruited to evaluate the content validity of the measurements of the questionnaire. A detailed discussion on how the pre-test was carried out to ensure the content validity can be found in Chapter 8, Section 8.2.3.6.1.

Criterion-related validity is based on empirical evidence to check whether a measurement performs as expected (Aaker et al., 2010). The most common types of criterion-related validity are concurrent validity and predictive validity. Concurrent validity is “the extent to which one measure of a variable can be used to estimate an individual’s current score on a different measure or a closely related variable” (Tull and Hawkins, 1990, p.318). It answers the question of “Does the measurement differentiate in a manner that helps to predict a criterion variable?” Concurrent validity measures variables at the same time. Comparatively, predictive validity is “the extent to which an individual’s future level on some variable can be predicted by his performance on a current measurement” (Tull and Hawkins, 1990, p.318). It answers the question of “Does the measurement differentiate individuals in a manner as to help predict future criterion?” Predictive validity measures variables at different periods of time. Both concurrent and predictive validity are used to predict other/future outcomes which have fallen out of the scope of the current research.

Construct validity evaluates ‘how well the results obtained from the use of the measure fit the theories around which the test is designed’ (Sekaran, 2003), which is the most complex form of validity and includes: convergent, discriminant and nomological validity. Convergent validity examines the extent to which two measures of the same construct are correlated (Hair et al., 2010). Discriminant validity assesses whether a variable that is supposed to be unrelated to another variable has a low correlation (Sekaran, 2003). Nomological validity refers the extent to which a measurement correlates with other constructs in a theoretically predicted way (Bagozzi, 1980). Due to a lack of well-established measurements that can be applied to various circumstances, construct validity

is seldom attempted in the field of marketing (Aaker et al., 2010).

Convergent validity is assessed by Average Variance Extracted (AVE) (Fornell and Larcker, 1981) and should be above .50, revealed in Table 9-7; discriminant validity is assessed by comparing the squared correlations and AVE scores for each of the pairwise constructs and the discriminant validity of consumer long-term coping construct can be found in Section 9.6.1.2 as a part of construct development. Since convergent and discriminant validity in the current study are ensured, it can be assumed that nomological validity which is the overall validity of the model is established.

Table 9-7 AVE of Each Construct

Construct	Code	Average Variance Extracted (AVE)	Convergent Validity
Self-Efficacy	SE	0.612	Established
Locus of Control	CL	0.502	Established
Optimism	OPT	0.529	Established
Pessimism	PES	0.606	Established
Neuroticism	NEU	0.610	Established
Stress	STR	0.552	Established
Worry	WOR	0.688	Established
Disappointment	DIS	0.660	Established
Anger	ANG	0.701	Established
Fear	FEAR	0.704	Established
Hope	HOPE	0.544	Established

9.5.3 Characteristics and Factor Analysis of Measurements

In this section, descriptive statistics and factor analysis of the constructs will be illustrated and discussed; while the congeneric measurement model of each construct is established for later data analysis. The guidelines of model fit can be found in Section 8.3.2.6 in Chapter 8.

9.5.3.1 Self-Efficacy

Ten items are included to measure consumer self-efficacy. The measurement was fully adopted from the General Self-Efficacy Scale developed by Schwarzer et al. (1997). The justification can be found in Section 8.2.3.3.5 of Chapter 8. Table 9-8 illustrates the

descriptive statistics of the items of the self-efficacy construct. The average mean of all items is 4.75, indicating that generally consumers have a moderate degree of self-efficacy.

Table 9-8 Descriptive Statistics of the Self-Efficacy Construct

	N	Mean	Std. Deviation
SE1: I can always manage to solve difficult problems if I try hard enough	498	5.09	1.356
SE2: If someone opposes me, I can find means and ways to get what I want	498	4.71	1.319
SE3: It is easy for me to stick to my aims and accomplish my goals	498	4.42	1.422
SE4: I am confident that I could deal efficiently with unexpected events	498	4.57	1.291
SE5: Thanks to my resourcefulness, I know how to handle unforeseen situations	498	4.53	1.245
SE6: I can solve most problems if I invest the necessary effort	498	5.17	1.270
SE7: I can remain calm when facing difficulties because I can rely on my coping abilities	498	4.78	1.291
SE8: When I am confronted with a problem, I can usually find several solutions	498	4.74	1.279
SE9: If I am in a bind, I can usually think of something to do	498	4.78	1.229
SE10: No matter what comes in my way, I'm usually able to handle it	498	4.67	1.260
Valid N (average)	498	4.75	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that ten items are unidimensional (Determinant=.030, >.00001; KMO=.910, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Self-Efficacy is .871, indicating good internal reliability.

Figure 9-1 illustrates the congeneric measurement model of the construct of Self-Efficacy. The original Model A with ten indicators suggested a poor model fit. The Chi-square of this model is 153.0 (df=35), with the $p=0.000$ which is less than 0.01; RMSEA (=0.082) is above .08. However, CFI (=0.931) and TLI (=0.911) both are above .900, suggesting a good fit. The decision to drop items is made based on low factor loading (e.g., <.50) and R-squared of the measurement model (Kline, 2011). In order to improve the model fit, items with a factor loading lower than .65 are deleted. Thus, item SE1, SE2 and SE3 are removed. Modification indices are checked regarding the covariance. Model B is the revised congeneric measurement model for the construct of Self-Efficacy. The model fit of the Model B is good (Chi-square=25.6; df=12; $p=.012$; CMIN/DF=2.136; GFI=.985; CFI=.989; TLI=.980; RMSEA=.048; PCLOSE=.517). The good indices of RMSEA and PCLOSE demonstrate that the discrepancy is not statistically significant between proposed

measurement model and the sample population. Model B is, therefore, used as the measurement model for the later data analysis.

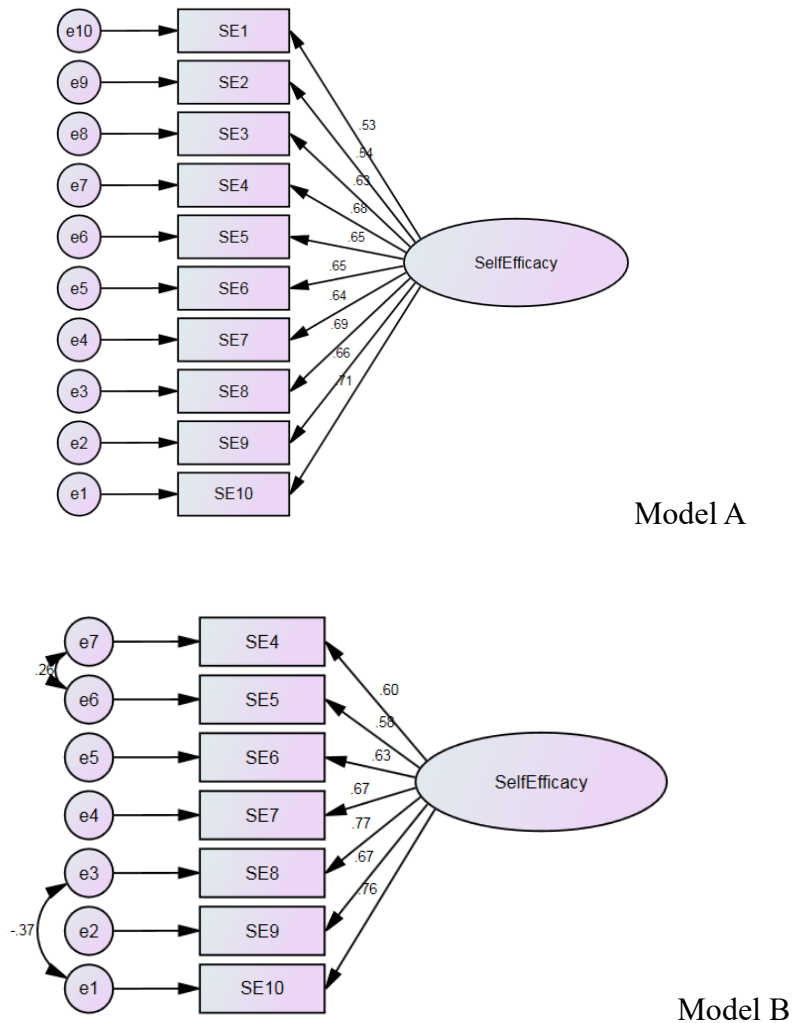


Figure 9-1 Congeneric Measurement Model of Self-Efficacy

9.5.3.2 Locus of Control

Four items are included to measure consumer Locus of Control. The measurement was adapted from a scale developed by Lumpkin (1985). Justification can be found in Section 8.2.3.3.5 of Chapter 8. Table 9-9 demonstrates the descriptive statistics of the items of the locus of control construct. The average mean of all items is 4.14, indicating that generally consumers believe that they may control food safety issues that affect them.

Table 9-9 Descriptive Statistics of the Locus of Control Construct

	N	Mean	Std. Deviation
CL1: When I make plans, I am almost certain that I can make them work	498	3.87	1.279
CL2: Getting people to do the right things depends upon ability; luck has nothing to do with it	498	4.11	1.336
CL3: What happens to me is my own doing	498	4.26	1.389
CL4: Getting things done depends mainly on being in the right way at the right time	498	4.30	1.364
Valid N (average)	498	4.14	

According to the factor analysis conducted in SPSS, only one main factor was extracted which means that four items are unidimensional (Determinant=.483, >.00001; KMO=.740, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Locus of Control is .713, indicating acceptable internal reliability.

Figure 9-2 demonstrates the congeneric measurement model for the construct of Locus of Control. Model A is the original model with four indicators. The Chi-square is 2.3 ($df=2$), p value (= .311), CMIN/DF (=1.169), TLI (= .997), GFI (= .998), CFI (.999), RMSEA (= .018) and PCLOSE (= .656) all indicate a good model fit. Although the factor loading of CL4 is lower than .50 but higher than .40, the CL4 is retained as the model fit is good with this low factor loading item. This Model is, therefore, used as the measurement model for the construct of Locus of Control.

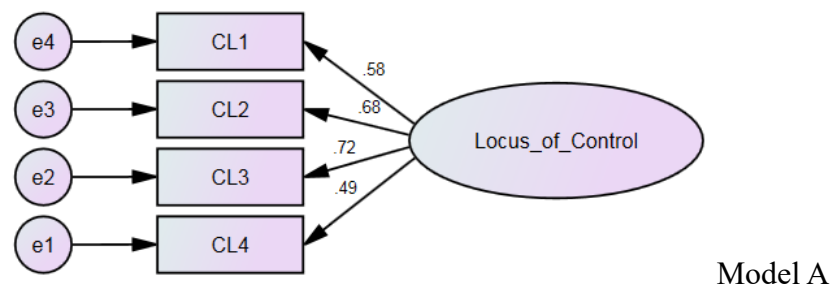


Figure 9-2 Congeneric Measurement Model of Locus of Control

9.5.3.3 Optimism

This study also aims to explore whether consumer personality traits have any effect on the relationship between emotional appraisal and coping. The personality of optimism has six items, adopted from the ELTOT developed by Chang et al. (1997). Justification of the

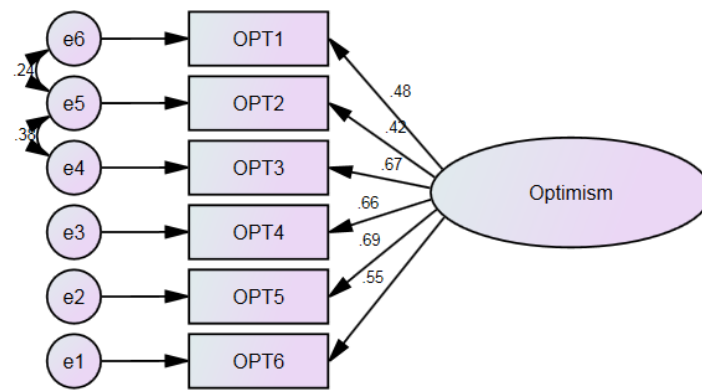
measurement can be found in Section 8.2.3.3.4 of Chapter 8. Table 9-10 summarises the descriptive statistics of the items for the optimism construct and average mean score for optimism is 5.06. It shows that generally consumers are optimistic towards long-term and ongoing food safety issues.

Table 9-10 Descriptive Statistics of the Optimism Construct

	N	Mean	Std. Deviation
OPT1: In uncertain times, I usually expect the best	498	5.00	1.524
OPT2: I always look on the bright side of things	498	4.57	1.465
OPT3: I'm always optimistic about the future	498	5.05	1.322
OPT4: When I undertake something new, I expect to succeed	498	5.51	1.219
OPT5: Where there is a will, there is a way	498	5.25	1.327
OPT6: In general, things turn out all right in the end	498	4.99	1.193
Valid N (average)	498	5.06	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that six items are unidimensional (Determinant=.237, >.00001; KMO=.785, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is no multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Optimism is .768, indicating good internal reliability.

Congeneric measurement model of optimism is demonstrated in Figure 9-3. According to the assessment of measurement model of Optimism, the indices reflect a poor model fit to the data. The Chi-square of the model A is 82.9 ($df=9$); p value is (.000) significant; CMIN/DF is 9.210 which is above 5; TLI (=0.824) and CFI (.895) are less than .900; RMSEA (=0.129) is higher than .05; and PCLOSE (=0.000) is less than .05. Then the modification indices regarding covariance are checked. Revised model A indicates a good model fit (Chi-square=15.5; $df=7$; $p=.030$; CMIN/DF=2.212; GFI=.989; TLI=.974; CFI=.988; RMSEA=.049; PCLOSE=.460). Revised model A is used as the measurement model for the construct of Optimism.



Revised Model A

Figure 9-3 Congeneric Measurement Model of Optimism

9.5.3.4 Pessimism

Personality trait of pessimism is consistent with optimism, fully adopted the ELOT scale developed by Chang et al. (1997). It includes nine items to measure pessimism, with an average mean score of 3.69 as shown in Table 9-11 that summarised the descriptive statistics of the items for the pessimism construct. A justification for the measurement can be found in Section 8.2.3.3.4 of Chapter 8. The relatively low mean score (3.58) of pessimism demonstrates that generally consumers are not pessimistic towards the issues. As indicated above, they are more optimistic towards the issues.

Table 9-11 Descriptive Statistics of the Pessimism Construct

	N	Mean	Std. Deviation
PES1: It is best not to get your hope too high since you will probably be disappointed	498	5.09	1.410
PES2: Rarely do I expect good things to happen	498	3.47	1.621
PES3: If something can go wrong for me, it will	498	3.97	1.414
PES4: I hardly expect things to go my way	498	3.47	1.508
PES5: Things never work out the way I want them to	498	3.24	1.503
PES6: If I make a decision on my own, I can pretty much count on the fact that it will turn out to be a poor one	498	2.88	1.513
PES7: I rarely count on good things happening to me	498	3.11	1.658
PES8: Better to expect defeat: then it doesn't hit so hard when it comes	498	3.79	1.679
PES9: Give me 50/50 odds and I will choose the wrong answer every time	498	3.21	1.589
Valid N (average)	498	3.58	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that nine items are unidimensional (Determinant=.035, >.00001;

KMO=.890, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is no multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Pessimism is .852, indicating strong internal reliability.

Figure 9-4 illustrates the congeneric measurement model of the construct of pessimism. The Chi-square is 151.4 ($df=27$); P value is significant (.000); CMIN/DF is 5.609 which is above 5.0; RMSEA is .096; and PCLOSE is .000. These indices indicate that the model is a poor fit to the data. In order to improve the model fit, the lowest factor loading (.187) PES1 which is far lower than .70 is removed. The reason that PES1 has the lowest factor loading may be because respondents may link it to the emotion of disappointment, while the item here measures pessimism from an aspect of the expectation that the result may be disappointed. Furthermore, the modification indices regarding covariance are checked. Chi-square of revised model B is 38.0 ($df=17$); p value is .002 which is significant with the large sample size; CMIN/DF is 2.235, which is lower than 5.00; GFI (= .981), CFI (= .987) and TLI (= .978) are all higher than .90; RMSEA is .050, which is at the rule of thumb point of .05; and PCLOSE is .472 which is higher than .05. These indices indicate a good model fit. Therefore, Model B is used as the measurement model for the later data analysis.

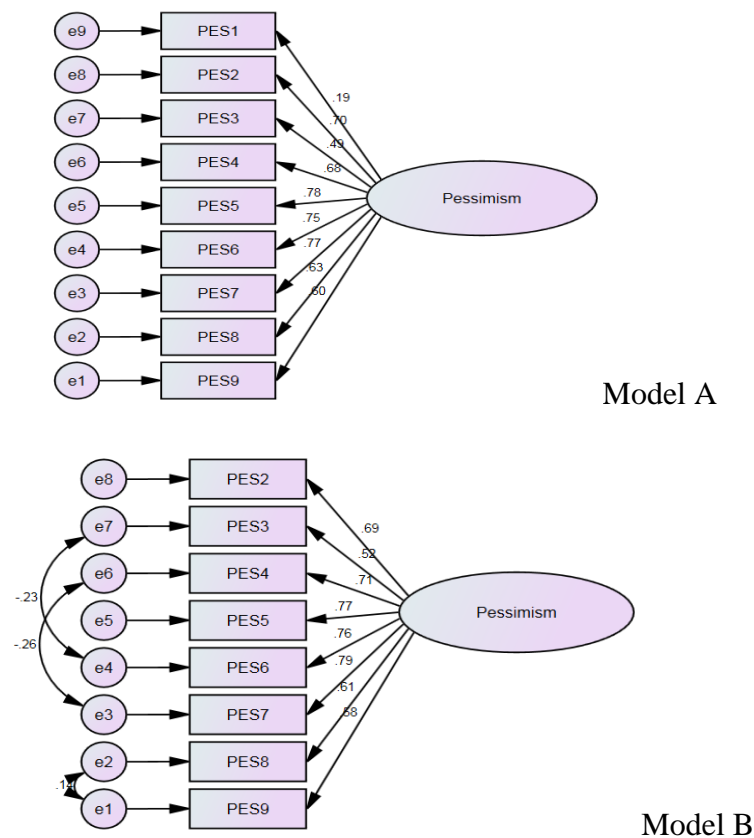


Figure 9-4 Congeneric Measurement Model of Pessimism

9.5.3.5 Perceived Stress

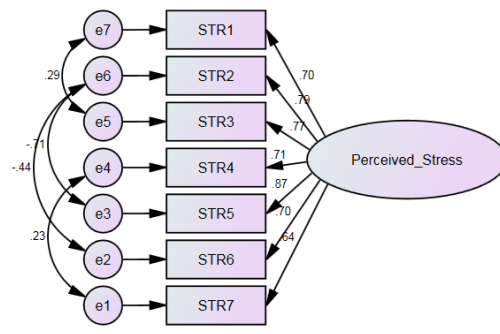
The measurement of perceived stress is adapted from the Perceived Stress Scale, developed by Cohen et al. (1983). A justification for the measurement can be found in Section 8.2.3.3.1 of Chapter 8. Seven items are finalised to measure the construct, resulting in an average mean score of 4.43. Table 9-12 summarises the descriptive statistics of the items for the perceived stress construct. The results indicate that consumers are under a moderate to high level of stress in facing food safety issues.

Table 9-12 Descriptive Statistics of the Perceived Stress Construct

	N	Mean	Std. Deviation
STR1: I felt upset because of food safety issues	498	4.42	1.682
STR2: I felt that I was unable to control food safety issues	498	4.87	1.694
STR3: I felt nervous and "stressed" due to food safety issues	498	4.37	1.644
STR4: I found that I could not cope with food safety issues	498	4.64	1.588
STR5: I felt upset because of food safety issues that happened were outside of my control	498	4.31	1.632
STR6: I found myself thinking about food safety issues that I have to deal with	498	4.01	1.577
STR7: I felt that I could not overcome food safety issues	498	4.38	1.602
Valid N (average)	498	4.43	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that seven items are unidimensional (Determinant=.027, >.00001; KMO=.889, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Perceived Stress is .891, indicating strong internal reliability.

Figure 9-5 demonstrates the congeneric measurement model of perceived stress. Chi-square is 141.2 ($df=14$); p value is significant at .000; CMIN/DF is not good at 10.083 (>5.0); TLI (=0.893) is not good (<.90); RMSEA (=0.135 >.05) and PCLOSE (=0.000 <.05) both are not good. These indices indicate a poor model fit to the data. Modification indices are checked regarding covariance. The revised Model A indicates a good model fit to the data (Chi-square=22.7; $df=10$; $p=.012$; CMIN/DF=2.270; GFI=.988; CFI=.993; TLI=.985; RMSEA=.051; PCLOSE=.444). Therefore, the revised Model A is used to conduct the later data analysis.



Revised Model A

Figure 9-5 Congeneric Measurement Model of Perceived Stress

9.5.3.6 Worry

The measurement of worry is adapted from the scale used by Yi and Baumgartner (2004). A justification for the measurement can be found in Section 8.2.3.3.2 of Chapter 8. Table 9-13 summarises the descriptive statistics of the worry construct. The average mean score of four items is 4.02. The results imply that consumers neither agree nor disagree that they worry about the issues.

Table 9-13 Descriptive Statistics of the Worry Construct

	N	Mean	Std. Deviation
WOR1: I worried about food safety issues	498	4.09	1.693
WOR2: I felt anxious about food safety issues	498	4.00	1.650
WOR3: I panicked about food safety issues	498	3.72	1.663
WOR4: I was uncertain about food safety issues	498	4.25	1.559
Valid N (average)	498	4.02	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that four items are unidimensional (Determinant=.078, >.00001; KMO=.825, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Worry is .894, indicating strong internal reliability.

Figure 9-6 illustrates the congeneric measurement model of the construct of worry. All indicators have a relatively good factor loading. Chi-square is 0.6 with $df=2$; p value is .739; CMIN/DF is .302 which is less than 5.0; GFI (=0.999), CFI (=1.000) and TLI (=1.003) are all above .90; RMSEA is .000 which is less than .50; and PCLOSE is .910 (>.50), indicating a good model fit. This model is, therefore, used to conduct the later data analysis.

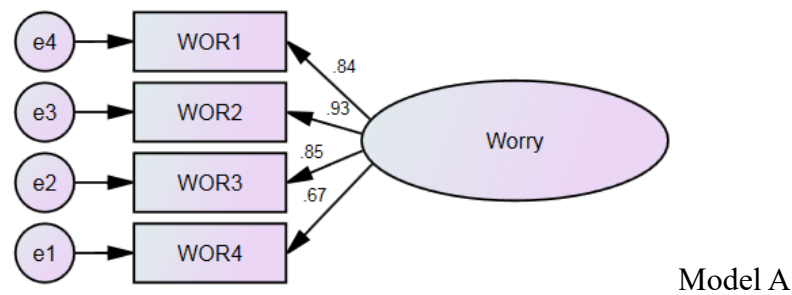


Figure 9-6 Congeneric Measurement Model of Worry

9.5.3.7 Disappointment

Four items are adapted from the scale used by Yi and Baumgartner (2004). Justification of the measurement can be found in Section 8.2.3.3.2 of Chapter 8. Table 9-14 illustrates the descriptive statistics of the disappointment construct. The result of mean score (4.46) shows that consumers generally agree that they experience a moderate level of disappointment in relation to long-term food safety issues.

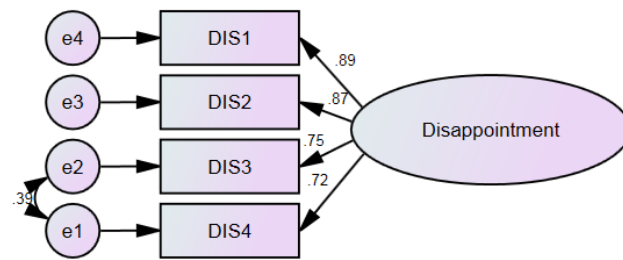
Table 9-14 Descriptive Statistics of the Disappointment Construct

	N	Mean	Std. Deviation
DIS1: I felt disappointed with food safety issues	498	4.58	1.588
DIS2: I was dissatisfied with food safety issues	498	4.77	1.624
DIS3: I felt let down with food safety issues	498	4.23	1.585
DIS4: I felt helpless about food safety issues	498	4.26	1.652
Valid N (average)	498	4.46	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that four items are unidimensional (Determinant=.085, >.00001; KMO=.807, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Disappointment is .895, indicating strong internal reliability.

The congeneric measurement model of disappointment is illustrated in Figure 9-7. Factor loadings of all indicators are good. Chi-square is 59.3 ($df=2$); p value is significant at .000; CMIN/DF is 29.655; TLI is not above .90 at .859; CFI=.940 which is above .90; RMSEA is .240 less than the rule of thumb point of .05; PCLOSE is .000 which is less than .50. These indices reflect a poor fit to the data. Modification indices are then checked in relation to covariance. The revised Model A reflects a good model fit with a significant improvement. Chi-square is 0.3 ($df=1$); p value is .585; CMIN/DF is .299; GFI (=1.000),

CFI (=1.000) and TLI (=1.003) are all good; RMSEA is .000 (<.50); and PCLOSE is .763 (>.50). Revised Model A is, therefore, used for later data analysis.



Revised Model A

Figure 9-7 Congeneric Measurement Model of Disappointment

9.5.3.8 Anger

The construct of anger consists of four items, adapted from the scale of DAR5 (Hawthorne et al., 2006) and Yi Baumgartner (2004). A justification for the measurement can be found in Section 8.2.3.3.2 of Chapter 8. Table 9-15 summarises the descriptive statistics of the anger construct. The average mean score of the construct is 3.64, indicating that consumers does not agree that the emotion of anger is strongly experienced.

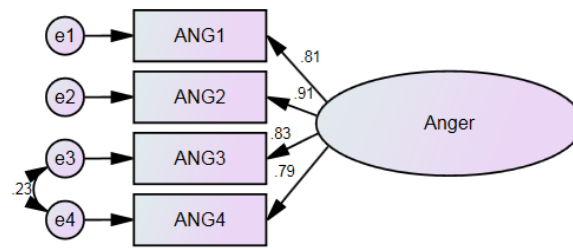
Table 9-15 Descriptive Statistics of the Anger Construct

	N	Mean	Std. Deviation
ANG1: I found myself getting angry at food safety issues	498	3.87	1.650
ANG2: I got angry at food safety issues, I got really mad	498	3.56	1.602
ANG3: I got angry at food safety issues, I stayed angry	498	3.52	1.540
ANG4: I felt furious about food safety issues	498	3.62	1.644
Valid N (average)	498	3.64	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that four items are unidimensional (Determinant=.070, >.00001; KMO=.839, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of anger is .907, indicating strong internal reliability.

Figure 9-8 illustrates the congeneric measurement model of the construct of anger. The original Model A did not reflect a good model fit (Chi-square=14.3, df=2; p=.001; CMIN/DF=7.147; RMSEA=.111; PCLOSE=.023). Therefore, the model is revised based on the modification indices. The revised Model A indicates a good model fit (Chi-

square=1.5, $df=1$; $p=.222$; $CMIN/DF=1.491$; $GFI=.999$; $CFI=1.000$; $TLI=.998$; $RMSEA=.031$; and $PCLOSE=.467$). This revised model is, therefore, used to conduct further data analysis.



Revised Model A

Figure 9-8 Congeneric Measurement Model of Anger

9.5.3.9 Fear

There are seven items measuring the construct of fear. The measurement is adapted from the Fear Scale developed by Champion et al. (2004). A justification for the measurement can be found in Section 8.2.3.3.2 of Chapter 8. The average mean score of fear construct is 3.73, shown in Table 9-16 that summarised the descriptive statistics of the fear construct. The results imply that consumers generally do not agree that the emotion of fear is strongly experienced.

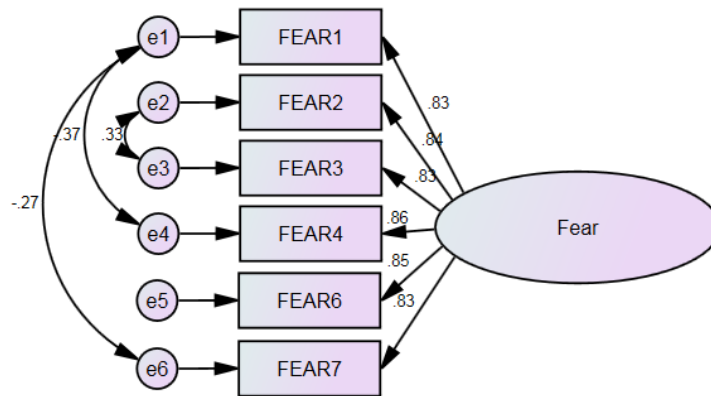
Table 9-16 Descriptive Statistics of the Fear Construct

	N	Mean	Std. Deviation
FEAR1: The thought of food safety issues scares me	498	3.85	1.618
FEAR2: I felt nervous about food safety issues	498	3.88	1.608
FEAR3: I felt upset about food safety issues	498	3.94	1.564
FEAR4: I felt depressed about food safety issues	498	3.52	1.587
FEAR5: I felt jittery about food safety issues	498	3.61	1.614
FEAR6: I felt frightened about food safety issues	498	3.63	1.656
FEAR7: I felt uneasy about food safety issues	498	3.66	1.602
Valid N (average)	498	3.73	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that seven items are unidimensional (Determinant=.002; KMO=.924, $>.50$). Item 5 is strongly correlated with item 4 (.833) and item 6 (.807). In order to avoid the multicollinearity problem, the strongly correlated Item 5 is dropped. By dropping the item 5, correlations are all below .80; Determinant=.009 and KMO=.913. VIF scores are below 3.0. There is not a multicollinearity problem. The Cronbach's Alpha of Fear after item 5

deleted is .932, still indicating strong internal reliability.

The congeneric measurement model of fear is illustrated in Figure 9-9. There are six items in the measurement model as item 5 has been dropped out during the factor analysis. Factor loadings of all indicators are good. Chi-square is 72.2 ($df=9$); p value is significant at .000; CMIN/DF is 8.020 which is above 5.0; GFI (= .951), CFI (= .973) and TLI (= .955) are all above the suggested threshold of .90; RMSEA is .119 which is above the rule of thumb point of .50; and PCLOSE is .000 which is below the threshold point of .50. These indices did not reflect a good fit to the data. The modification indices regarding covariance are checked. It can be drawn from the indices that the revised Model A is a good fit to the data (Chi-square=9.6; $df=6$; $p=.141$; CMIN/DF=1.604; GFI=.994; CFI=.998; TLI=.996; RMSEA=.035; and PCLOSE=.691). Therefore, revised Model A is used in the later data analysis.



Revised Model A

Figure 9-9 Congeneric Measurement Model of Fear

9.5.3.10 Hope

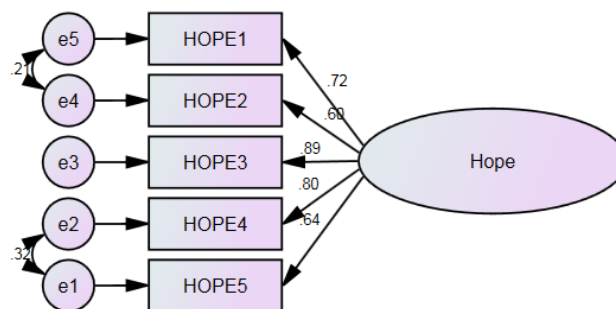
Hope is the only positive emotion that is measured by consumers. Five items for measuring the construct of hope are adapted from the Hope Scale (Snyder et al., 1991). A justification for the measurement can be found in Section 8.2.3.3.2 of Chapter 8. Table 9-17 summarises the descriptive statistics of the hope construct. The average mean score of the hope construct is 3.78 which is close to the median of the scale 4.00. It indicates that consumers generally neither agree nor disagree that they have hope in relation to the long-term food safety issues.

Table 9-17 Descriptive Statistics of the Hope Construct

	N	Mean	Std. Deviation
HOPE1: I can think of many ways to get out of food safety issues	498	3.73	1.512
HOPE2: I thought there are lots of ways around food safety issues	498	4.24	1.467
HOPE3: I knew I can find a way to solve food safety issues, even when others get discouraged,	498	3.75	1.469
HOPE4: I felt that my past experiences have prepared me well for dealing with food safety issues	498	3.74	1.452
HOPE5: I felt that I was pretty successful in handling food safety issues	498	3.45	1.574
Valid N (average)	498	3.78	

According to the factor analysis conducted in SPSS, only one main factor is extracted which means that five items are unidimensional (Determinant=.094, >.00001; KMO=.835, >.50). Correlations among items are all below 0.80 and VIF<3, indicating there is not a multicollinearity problem. As Table 9-5 shows, the Cronbach's Alpha of Disappointment is .860, indicating strong internal reliability.

Figure 9-10 illustrates the congeneric measurement model of the construct of hope. Generally, indicators have a good factor loading except 'HOPE2' which is lower than .70. Chi-square is 58.7 ($df=5$); p value is .000; CMIN/DF is 11.747; RMSEA is .147; and PCLOSE is .000. These indices reflect a poor model fit to data. However, GFI (=0.952), CFI (=0.954) and TLI (=0.908) are all above .90. Subsequently, modification indices are checked regarding covariance. The revised Model A still has relatively good factor loadings. Chi-square is 7.3 ($df=3$); p value is .062; CMIN/DF is 2.449; GFI (=0.994), CFI (=0.996) and TLI (=0.988) are all above .90; RMSEA=.054 which is around .05; and PCLOSE=.370 is above the threshold of .05. The Standardised Residual Covariance is checked as well, which are all below .40. Therefore, the revised Model A is used to conduct the further data analysis.



Revised Model A

Figure 9-10 Congeneric Measurement Model of Hope

Overall, drawn from the mean scores consumers have demonstrated relatively high cognitive appraisals (4.75 for self-efficacy and 4.14 for locus of control) and different personality traits (5.06 for optimism and 3.58 for pessimism). The means scores show that consumers believe they are capable of handling the issues and able to control the issues that affect them. In terms of personality, consumers are generally more optimistic than pessimistic in facing long-term and ongoing food safety issues. In addition, generally consumers have relatively strong feelings of stress (4.43), worry (4.02) and disappointment (4.46); while they are less strongly feeling the emotion of anger (3.64), fear (3.73) and hope (3.78). The feeling of stress and emotions will be further discussed along with the qualitative study results in the general discussion sections in Chapter 8.

In summary, this section reports the features of items/indicators in each construct, including dimensionality, descriptive statistics, internal reliability, factor analysis, factor loadings and congeneric measurement model. Modifications have been carried out based on the indices in order to improve the model fit for later data analysis. Convergent validity has been assessed through congeneric measurement model to ensure that items are measuring the construct. Next subsection will move to examine the discriminant validity by applying confirmatory factor analysis to the measurement model.

9.5.4 Measurement Model: Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is adopted to examine the discriminant validity of the constructs. In other words, it is used to assess the degree to which one construct is distinct from another, along with examining whether indicators are only measuring the construct (Hair et al., 2010). Correlations above .90 between constructs are regarded as high level of correlation, indicating that constructs are similar (Kline, 2011). As in the later structural model, perceived stress and emotions are assessed with moderating factors independently. Therefore, in the CFA test, only moderating factors of cognitive appraisal and personality trait are examined separately.

Figure 9-11 illustrates the CFA of cognitive appraisal constructs. Chi-square is 75.4 ($df=41$); p value is .001; CMIN/DF is 1.840 (<5.0); GFI is .973; CFI is .978; TLI is .971 (all $>.90$); RMSEA is .041 ($<.05$); and PCLOSE is .836 ($>.05$). In general, these indices reflect a very good model fit to the data. In addition, the correlation among constructs is .014, suggesting that self-efficacy and locus of control are two different factors.

Figure 9-12 illustrates the CFA of personality trait constructs. Chi-square is 159.3 ($df=71$);

p value is .000; CMIN/DF is 2.244; GFI is .956; CFI is .962; TLI is .952; RMSEA is .050; and PCLOSE is .482. In general, these indices reflect a good model fit to the data. In addition, the absolute value of the correlation between constructs is .32 which is less than .70, suggesting that optimism and pessimism are different factors.

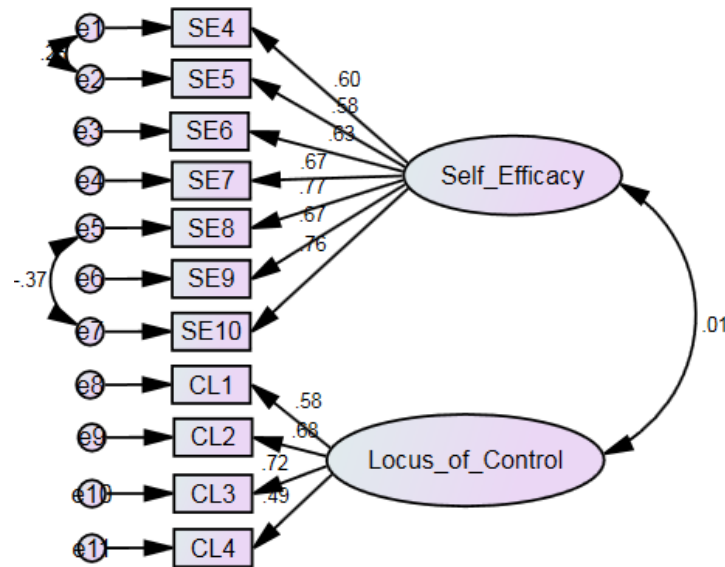


Figure 9-11 Confirmatory Factor Analysis of Cognitive Appraisal Factors

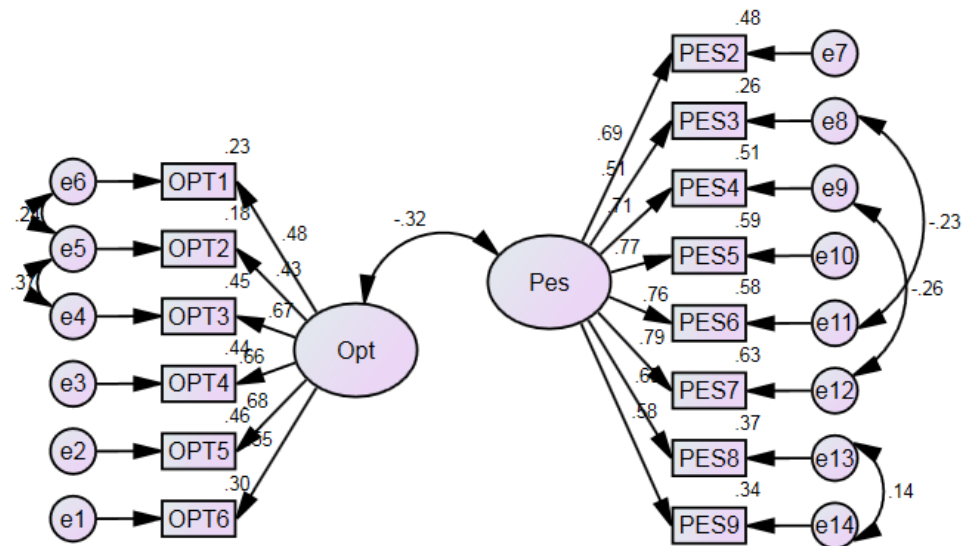


Figure 9-12 Confirmatory Factor Analysis of Personality Trait Factors

9.5.5 Common Method Variance

Common method variance refers to a variance that is “attributable to the measurement method rather than to the constructs the measures represent” (Podsakoff et al., 2003). This study uses an individual consumer to measure both independent and dependent variable in

which common method biases need to be controlled (Campbell and Fiske, 1959). The method biases may cause measurement error and further influence the validity of the constructs. Therefore, it is important to consider whether there are potential method biases or not.

First, all items in the survey are designed in a clear, precise and specified way, to avoid any potential for misunderstandings among respondents. In addition, a computer-administrated survey (online survey) is adopted to minimise social desirability biases (Podsakoff et al., 2003).

Second, in the factor analysis in SPSS, extraction choice is changed from 'based on eigenvalue' to 'fixed number of factors' of 1 and 'none rotation' is selected. Drawn from 'extraction sums of squared loadings' in the table 'Total Variance Explained' in SPSS, one factor explains 27.239 percent of variance, which is lower than 50 percent. This indicates that there is no potential problem of method biases.

Third, a latent variable (CMV) was added in the CFA confirmed measurement model to examine potential common method variance for each indicator. Figure 9-13 demonstrates the detailed results for the test. It is consistent with the comparison of factor loadings in Table 9-15. CMV can be calculated by squaring the estimate factor loadings for the test, which is 16.00%. Therefore, there are no method biases in the current model.

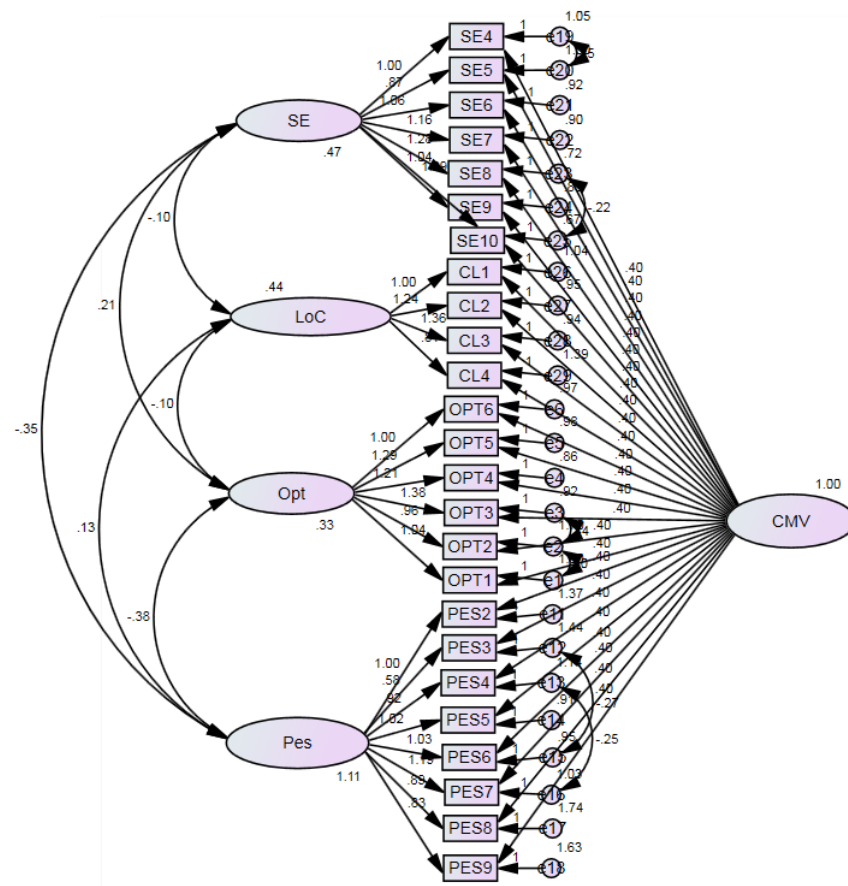


Figure 9-13 Testing Common Method Variance

9.6 New Construct: Consumer Long-term Coping Strategies

As discussed in Chapter 3 there is a need to explore and conceptualise how consumers cope in a long-term and ongoing setting. It is consistent with the core aim of this study, which is to conceptualise the consumer long-term coping strategies.

The purpose of this section is to conduct the scale development and model conceptualisation. As discussed in the Section 8.2.3.3.3 of Chapter 8, a new scale is needed as the present extant scales are not sufficient for measuring the newly developed multi-dimensional coping construct. The scale development procedure of the current study follows Churchill's (1979) suggested procedure to develop a scale for measuring the new concept: consumer long-term coping strategies. The arrangement of the following subsections is: Subsection 9.6.1 deals with scale development and model conceptualisation by conducting exploratory factor analysis and confirmatory factor analysis. Subsection 9.6.2 validates the conceptualisation with another data sample. Subsection 9.6.3 examines the dimensions of the model. Subsection 9.6.4 provides a general discussion on consumer long-term coping.

9.6.1 Scale Development and Model Conceptualisation

Based on the suggested procedure for scale development (Churchill, 1979), specifying domain of constructs (Step 1) and generating sample of items (Step 2) have been discussed in the Section 8.2.3 in Chapter 8. Pre-test with a panel of academic experts and two stages of pilot study (Step 3, see Section 8.2.3.6) are conducted and the measurement is further purified (Step 4, see previous sections in this Chapter). Collecting data (Step 5) has also been done with a sufficient dataset for both scale development (350) and validation (498). In this section, Steps 6 to 8 (purify measure, assess reliability and validity, develop norms) will be articulated.

9.6.1.1 Exploratory Factor Analysis

The aim of applying exploratory factor analysis (EFA) in SEM is to identify the potential structure derived from the data. In other words, EFA is to modify the structure of the theoretical model by using the collected data. In the proposed model for consumer long-term coping, there are 58 items in total to measure seven dimensions. Table 8-4 in Section 8.2.3.3.3 of Chapter 8 provides a detailed procedure on how the item pool is formulated based on the literature and consumer interviews. All 58 items are included in the EFA.

Prior to the factor analysis, the data suitability is tested. Bartlett's test of sphericity for checking the suitability of the sample size is examined, where a coefficient significant at $p < .05$ is suggested (Pallant, 2005). Consequently, there is a significant Chi-square = 2012.517 ($p = .000$) in this study. The drawback of the Bartlett's test is that Chi-square statistic is sensitive to sample size and the result tends to be always statistically significant (Pallant, 2005). The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is .915 which is above the suggested threshold point of .60 (Pallant, 2005).

Subsequent to the suitability test, Factor Analysis using Principal Component Analysis (PCA) is conducted to identify the number of extracted dimensions (Tabachnick and Fidell, 2013) in two steps: factor extraction and factor rotation. Factor extraction deals with the identification of the dimensions of the constructs, while orthogonal rotation technique is used to ensure that the factors extracted are relevant (Hair et al., 2010). Extraction values in communalities are all above .30, which means that there is no correlating issue with other items. Eleven factors are achieved (rather than 7 as expected) explaining 61.499% of the variance. Nonredundant residuals are at an acceptable level of 4%. However, cross loadings appear among items in the Pattern Matrix. Scale purification is needed.

In order to purify the scale, actions such as removing cross loading items, removing items that are not loading anywhere and dropping the lowest loading items are taken. After the purification, the KMO ($=.887$) is good as well; all extraction are above the cut-off point; seven factors are achieved explaining 62.654% of the variance. Chi-square ($=700.486$) is still significant; nonredundant residuals are good at a level of 3%. Convergent validity is ensured as loadings are fallen on each variable; discriminant validity is ensured as no cross loading exists. Reliability of Cronbach's Alpha is examined and listed in Table 9-18, which illustrates the pattern matrix of the factors. Findings can be drawn from the results:

- 1) 32 items are retained and subjected to the CFA in AMOS.
- 2) The factor of 'escape' split into two factors: one factor is still measuring the original concept; another factor is measuring consumers' wishful thinking of getting away from the situation. Therefore, this group of items were renamed as 'wishful thinking' for further analysis. These items include: 'I want to turn the clock back to when there is no food safety issues'; 'I wish that I could escape from the issues' and 'I wish I wouldn't have to go through the issues'. They were labelled as 'wishful thinking' for the following reasons: 1) the underlying meaning of these items is the same that consumers wishfully think that food safety issues would go away or somehow be over with; 2) these items are also adopted in Yi and Baumgartner's (2004) study where as a part of the scale (3/6 items) they are measuring 'mental disengagement', which combines 'distancing' and 'avoidance' into a single factor; 3) the results of the exploratory factor analysis support the idea that these three items should be grouped together as they are measuring the same construct.
- 3) All items in the factor of 'personal support coping' are dropped because they are either cross-loaded or with lower loading scores. This means that although personal support coping is deemed to be an effective way for consumers to deal with the long-term food safety issues theoretically, in reality coping actions that consumers adopted have embedded into other specific support seeking patterns such as information seeking and organisational support coping.

By completing the necessary modification to the constructs (measurement model), these retained items were subject to the confirmatory factor analysis in AMOS.

Table 9-18 Pattern Matrix of EFA

	Factor						
	1	2	3	4	5	6	7
Cronbach's Alpha	.925	.896	.920	.827	.835	.754	.852
ACT8	.869						
ACT7	.854						
ACT6	.851						
ACT10	.811						
ACT9	.761						
ACT4	.749						
ACT2	.662						
INFO4		.873					
INFO2		.854					
INFO1		.836					
INFO5		.827					
INFO3		.653					
ESC3			.930				
ESC4			.909				
ESC2			.873				
ESC1			.737				
ESC6			.683				
ACCOM8				.788			
ACCOM5				.713			
ACCOM6				.652			
ACCOM7				.635			
ACCOM1				.583			
ACCOM4				.580			
OSC2					.925		
OSC3					.890		
OSC1					.498		
ESC9						.792	
ESC8						.709	
ESC7						.639	
PRO7							.878
PRO6							.746
PRO8							.538

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

9.6.1.2 Confirmatory Factor Analysis

The aim of conducting a Confirmatory Factor Analysis (CFA) is to examine whether the proposed theoretical constructs are consistent with the measured constructs. In other words, how items are loaded on factors and how these factors are correlated would be specifically evaluated. In addition, CFA also examines the discriminant validity of proposed constructs. This sub-section focuses on the factors derived from the EFA.

A total of 32 items of 7 factors (constructs) were retained for the CFA. Specifically, these 7 factors are action coping (7 items), information support coping (5 items), escape coping (5 items), accommodation coping (6 items), organisational support coping (3 items), proactive coping (3 items) and wishful thinking (3 items). All factors are validated in Chapter 6 and one new factor is proposed here: wishful thinking. However, the indices do not reflect a good model fit (Chi-square=1180.9; $df=443$; $p=.000$; CMIN/DF=2.666; GFI=.820; CFI=.895; TLI=.882; RMSEA=.069).

Therefore, actions were taken to modify the constructs and improve the model fit. Based on the modification indices, covariance exists among items. By dealing with the covariance and dropping the item with low loadings (i.e., ACT2, ACCOM1, ACCOM4), the revised model reflects a good model fit and has been significantly improved compared to the original model (Chi-square=843.9; $df=352$; $p=.000$; CMIN/DF=2.397; GFI=.859; CFI=.924; TLI=.912; RMSEA=.063). This model will be further validated by using the sample N=498 in Section 7.6.2.

Further, based on the results of the confirmatory factor analysis of these modified 29 items, the average inter-correlation among dimensions of consumer long-term coping is only $r=.31$, supporting the relative independence of the 7 factors and their discriminant validity.

As discussed in Table 9-5, the Cronbach's Alpha of all coping constructs are above .70, reflecting a good internal reliability. The Composite Reliability (CR) and AVE are also calculated for the revised coping constructs, in order to ensure the internal reliability and to establish the convergent validity. Table 9-19 shows that CR for all revised coping constructs are above .75. The internal reliability of revised coping constructs was very good. AVEs are all above .50, indicating a good convergent validity.

Table 9-19 CR and AVE of Revised Coping Constructs

	CR	AVE	Convergent Validity
Action Coping	0.921	0.659	Established
Proactive Coping	0.856	0.665	Established
Information Coping	0.891	0.622	Established
Accommodation Coping	0.825	0.542	Established
Organisational Support	0.849	0.657	Established
Wishful Thinking	0.758	0.513	Established
Escape Coping	0.926	0.715	Established

9.6.2 Model Validation and Finalisation

In the last Section 9.6.1, consumer long-term coping strategies have been conceptualised and the newly developed scale for measuring this concept has been formulated. Reliability and validity of the scale have been examined. This section is to validate the new scale and coping construct using another group of sample N=498.

As a result, indices indicate that the newly conceptualised coping construct is reasonably acceptable with a relatively good model fit (Chi-square=810.9; $df=351$; $p=.000$; CMIN/DF=2.275; GFI=.900; CFI=.945; TLI=.936; RMSEA=.051; and PCLOSE=.403).

In addition, the Composite Reliability of these constructs are all above .70 (Action=0.929; Information=0.832; Escape=0.897; Proactive=0.756; Accom=0.825; Organisational Support=0.858; Wishful thinking=0.802), reflecting good internal reliability; the examination of relationship between the indicators and the constructs were performed in AMOS in order to evaluate the convergent validity of the constructs: factor loadings of all indicator-construct relationships were significantly different from zero, indicating a good convergent validity.

Therefore, based on the results of model validation, the revised model is finalised to be used in the structural model for hypotheses testing.

9.6.3 Hierarchical Structure of Consumer Long-term Coping Strategies

Hierarchical structure of coping strategies have been reviewed and discussed in Section 3.4.3 of Chapter 3. Based on previous research on coping structures, this study also proposes a multi-level hierarchical structure of consumer long-term coping strategies. However, from the empirical perspective, the dimensionality and the performance of various dimensions of structures have not been assessed. Thus, in this section the

unidimensional construct is compared with the proposed hierarchical construct in terms of the indices of model fit (N=498).

Figure 9-14 illustrates the null model of a unidimensional coping construct. The model fit of this unidimensional coping constructs is as follows: Chi-square=937.1, $df=365$, $p=.000$, CMIN/DF=2.567, GFI=.887, CFI=.930, TLI=.922, RMSEA=.056 and PCLOSE=.011.

Comparatively, Figure 9-15 illustrates the competing conceptualisation model of consumer long-term coping. The model fit of this three-higher-order hierarchical model is as follows: Chi-square=810.9; $df=351$; $p=.000$; CMIN/DF=2.275; GFI=.900; CFI=.945; TLI=.936; RMSEA=.051; and PCLOSE=.403

Apparently, the model fit of the competing hierarchical model of consumer long-term coping is better than the unidimensional coping construct. Therefore, the results show a superiority of multidimensional structure in examining the long-term coping strategies. It is also consistent with literature that suggests coping to function at a number of levels rather than as a unidimensional behaviour (Pearlin and Schooler, 1978; Skinner et al., 2003).

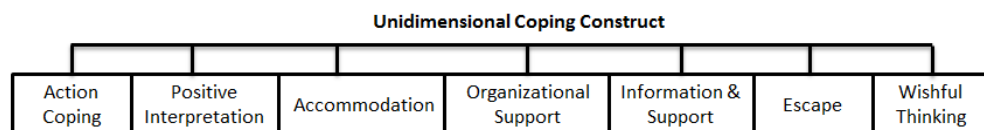


Figure 9-14 Unidimensional Coping Construct (Null Model)

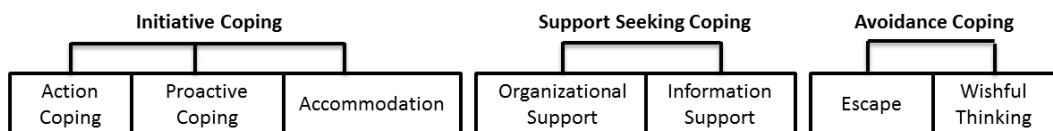


Figure 9-15 Hierarchical Coping Construct (Competing Model)

9.6.4 General Discussion: Consumer Long-term Coping

The results of this study advance the notion of consumer coping by refining and offering a comprehensive conceptualisation for a multidimensional model for consumer long-term coping and developing a scale to measure it. As such, this research contributes to consumer behaviour theory and coping measurement literature.

First, this study defines consumer long-term coping in the context of this research as ‘a process whereby consumers make cognitive, attitudinal and behavioural efforts over time to manage the long-term and ongoing external demands and to regulate stress-induced emotions, to an acceptable level according to individuals’ capabilities and appraisals’ (a

detailed discussion can be found in Section 3.4.2.3). This definition is based on a careful analysis of previous definitions of coping and consumer coping. It incorporates features that are conceptually similar with eight existing popular definitions such as Pearlin and Schooler (1978). However, this definition also reveals differences (definitions and discussion can be found in Section 3.4.2.3). Specifically, it reveals several key features of coping: coping as a dynamic process (e.g., Lazarus and Folkman, 1984); individuals are involved to manage and regulate the stressors (e.g., Carver and Connor-Smith, 2010); coping requires individuals' resources (Compas et al., 2001), in making cognitive, attitudinal and behavioural efforts (Duhachek, 2005).

Second, the results of the test in Section 9.6.3 lend support to the argument that coping functions at a multi-dimensional level (e.g., Skinner et al., 2003). Although coping scholars have proposed various theoretical structures with multiple dimensions or orders, to the best of the researcher's knowledge, however, there is only one study (Duhachek, 2005) that has empirically examined the performance of the multi-dimensional conceptualisation of coping. This study not only conceptualises a multi-dimensional structure of consumer long-term coping, but also assesses the performance of this multidimensional structure empirically in comparison to the unidimensional structure. Consequently, the multi-dimensional model proposed, in which higher-order coping categories encompass a number of lower-order coping categories are deemed the best presentation of long-term coping (Duhachek and Oakley, 2007). Furthermore, the higher-order coping category of initiative coping, support seeking coping and avoidance coping have been assessed as the best fit of the categorisation (Duhachek, 2005).

Third, the lower-order coping category is intended to capture how individuals cope with long-term and ongoing food safety issues (Skinner and Zimmer-Gembeck, 2006). The findings enrich our understanding of long-term coping by establishing a list of conceptually clear and mutually exclusive lower-order coping strategies (Lazarus, 1996). This includes dimensions not yet reported in the consumer literature (namely proactive coping and organisation support). One of the key contributions of the study is that it concerns the refinement and clarification of the meaning of the dimensions of consumer long-term coping by proposing seven sub-dimensions: action, proactive, accommodation, organisational support, information seeking, escape and wishful thinking.

Considering the sub-dimension of organisational support coping, it is conceptualised as a strategy that consumers adopt to get support or resources from official organisations to

resolve the problem. The dual support in the semi-structured interviews and in the analytical survey agrees upon the identification of this new sub-dimension. This brings depth to the understanding of support seeking and shows that it goes beyond the personal (Skinner et al., 2003) to an organisational perspective.

Fourth, this study contributes by establishing a scale to measure the multi-dimensional construct of consumer long-term coping. The scale development and validation procedure resonates with the multidimensional view of consumer coping. This scale validates the existence of initiative, support seeking and avoidance dimensions of consumer long-term coping. Specifically, the scale to measure the concept of consumer long-term coping is developed by a thorough examination of the conceptual definitions, with the help of 20 semi-structured consumer interviews and a panel of academics. The generated items closely reflect the sub-dimensions and dimensions of consumer long-term coping and are supported by, both first-order and second-order CFA goodness-of-fit indices, indicators, and reliability and validity indicators. In summary, this study enriches our understanding and underscores the importance of inquiry into the concept of consumer long-term coping and the operationalisation of the multi-dimensional constructs. Careful consideration is paid to empirical validation and underlying meanings of dimensions.

9.7 Summary

This chapter offers a close examination of collected data and identifies potential biases and measurement error before the data is subject to final hypotheses testing. Data checking includes examination of raw data in relation to demographics and normality, examination of reliability and validity of measurements, characteristics and factor analysis of measurements. In addition, scale development and model conceptualisation have been done in this chapter as well. A hierarchical model has been finalised for the structural model test.

A total number of 848 valid questionnaires have been received. The data has been separated into two parts: N=350 are used for scale development and N=498 are used for validation and later hypotheses testing. Demographic factors of data, normality test and reliability and validity test are based on all 848 respondents.

SPSS has been adopted as the statistic tool to clean the data and prepare it for further analysis. The reversed item (only one) has been recoded to ensure that all indicators have the same direction in analysis. The normality test also is done to check the outliers and data

distribution in order to guarantee the quality of the data.

Descriptive statistics and congeneric measurement model of all constructs except consumer long-term coping is illustrated in the Section 9.5. Reliability and validity of these constructs have also been discussed. Cronbach's Alpha and composite reliability have been calculated to evaluate the internal reliability of the constructs, while factor analysis is applied to examine construct validity. Common method variance is also considered in order to avoid method biases.

Regarding consumer long-term coping strategies, a new scale is developed following Churchill's (1979) suggested procedure, by adopting both exploratory factor analysis and confirmatory factor analysis. An independent sample N=498 is used to validate the newly developed scale and the conceptualised model.

Last, a unidimensional model of coping has been tested against the hierarchical model of consumer long-term coping (competing model). The results indicate that coping definitely functions at a number of levels rather than as a unidimensional model. All purposes of this Chapter have been achieved and the model is ready for the hypotheses testing in the next Chapter. Next Chapter 10 will be presenting and discussing the results of structural model and hypotheses testing.

Chapter 10 Results and Discussion: Study 2

10.1 Introduction

Chapter 9 has prepared the collected data for data analysis, developed a scale for measuring consumer long-term coping and conceptualised the hierarchical model.

This chapter presents and discusses the results from the data analysis and test the proposed theoretical hypotheses. The structure and main content of Chapter 10 are presented as follows: Section 10.2 illustrates the hypotheses testing approach adopted in the present study; Section 10.3 demonstrates and discusses major findings from the data analysis and illustrates whether hypotheses are supported or not. Section 10.4 concludes with a short summary.

10.2 Hypotheses Testing Approach

Hypotheses were modified based on the results of qualitative interviews and 60 research hypotheses were specified and proposed in Chapter 6. The model of consumer long-term coping has been conceptualised in Chapter 7. The hypotheses aim to identify and examine the causal relationship between consumer psychological states (perceived stress and emotions) and consumer long-term coping, moderated by cognitive appraisal, personality traits and demographic variables. Adopting the newly developed consumer long-term coping model, each psychological state combined with one moderating factor will be examined in a causal path analysis. Specifically, perceived stress, worry, disappointment, anger, fear and hope will be tested independently with moderating factors in the consumer long-term coping model (the proposed model can be found in Section 4.5 of Chapter 4).

Therefore, two phases of SEM analysis are applied. First, measurement models are examined to assess the factors structure (see Section 9.5.4 and Section 9.6.2 of Chapter 9). Second, the structural models are tested in order to assess the data fit to the structural model and examine the hypotheses (Anderson and Gerbing, 1988).

10.3 Findings and Discussion

Measurement model examines the relationship between the latent variables and their measures. For the current research, measurement model for cognitive appraisal factors and emotions are presented in Section 9.5.3; measurement model for consumer long-term coping is presented in Section 9.6. Comparatively, structural model examines the relationships between the latent variables. Structural model for each relationship is

presented in the Appendix IX.

The Model fit of the structural models can be found in Appendix VIII. As shown, the data fits to the structural models at adequate levels (criteria can be found in Table 8-9 in Section 8.3.2.6). Sub-sections include the results of hypotheses testing and general discussions on perceived stress and emotions.

10.3.1 Findings of Perceived Stress

Drawn from Section 9.5.3.1 of Chapter 9, the mean score of perceived stress is 4.43. This means that consumers are experiencing a moderate to high level of stress in facing long-term and ongoing food safety issues. Consumers evaluate, appraise the situation and assess their individual resources in terms of their self-efficacy and locus of control (Glanz and Schwartz, 2008). Thus, the moderating effects of self-efficacy and locus of control on the relationship between stress and long-term coping are tested in SEM independently. In the SEM, the multivariate tests of the hypothesised interactive relationships among stress, cognitive appraisals and coping are examined.

Stress→Long-term Coping

Table 10-1 shows that the main effects, namely the relationship between stress and support seeking coping, and stress and avoidance coping, are supported with significant p value. Comparatively, stress has no direct effect on initiative coping. This means that stress cannot influence the choice of initiative coping independently, while interacting with moderating factors, it may have a direct impact on initiative coping. Thus, hypotheses H1a is partially (only support seeking and avoidance part) supported.

Table 10-1 Regression Weights

			S.E.	C.R.	P
INITIATIVE_COPING	<---	Stress	.042	1.209	.226
SUPPORT_SEEKING_COPING	<---	Stress	.059	4.775	***
AVOIDANCE_COPING	<---	Stress	.057	3.581	***

Stress × Cognitive Appraisal→Long-term Coping

First, positive path-coefficients of Stress*SelfEfficacy to Initiative ($\beta=.362$) and Stress*SelfEfficacy to avoidance ($\beta=.391$) demonstrate that self-efficacy has a significant impact in moderating the relationship between perceived stress and initiative coping and

perceived stress and avoidance coping (Table 10-2). The results of R^2 are 0.91 (Initiative) and 0.71 (avoidance).

Table 10-2 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Stress_x_SelfEfficacy	.362	4.524	***
SUPPORT_SEEKING	<---	Stress_x_SelfEfficacy	.130	1.738	.082
AVOIDANCE	<---	Stress_x_SelfEfficacy	.391	3.915	***

According to the two-way interaction effects for standardised variables, a high level of self-efficacy demonstrates a significant moderating effect to initiative coping. This partially supports the hypothesis of Hefficy1a (while support seeking part is not supported). Meanwhile, the interaction of stress and low level of self-efficacy leads to avoidance coping supporting the hypothesis of Hefficy1b (see Table 10-6).

High self-efficacy demonstrates that consumers believe they have the capabilities to execute required courses of action by coordinating skills under the stressful situation (Tsarenko and Strizhakova, 2013) and vice versa. The supported hypotheses show that consumers with high self-efficacy are more active in resolving problems, while with low self-efficacy choose to avoid them.

Second, positive path-coefficients of Stress*LoC to initiative ($\beta=.461$), Stress*LoC to support seeking ($\beta=.417$) and Stress*LoC to avoidance ($\beta=.809$) demonstrate that consumer's locus of control has a significant impact on moderating the relationship between perceived stress and all long-term coping strategies (Table 10-3). The results of R^2 are 0.84 (Initiative), 0.91 (support seeking) and 0.26 (avoidance).

Table 10-3 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Stress_x_LoC	.461	5.718	***
SUPPORT_SEEKING	<---	Stress_x_LoC	.417	5.842	***
AVOIDANCE	<---	Stress_x_LoC	.809	2.731	.006

The interaction of stress and locus of control leads to coping strategies, including initiative, support seeking and avoidance coping. However, the interesting finding here is that consumers with a high level of locus of control not only choose initiative and support seeking, but also avoidance coping. High locus of control shows that consumers believe

they can control the problematic food safety situations that affect their lives (Rotter, 1966). This finding shows that even if consumers have a sense of control, they may also choose to avoid the situation. Therefore, hypothesis of Hcontrol1a is supported, while Hcontrol1b is rejected (Table 10-6).

Stress × Personality → Long-term Coping

Consumers with different personality traits demonstrate different choices in dealing with the problematic food safety situation. Optimism and pessimism are dimensions of personality traits (Carver et al., 1994; De Jonge et al., 2007). They are distinct and not extreme points of one dimension (Mahler and Kulik, 2000; Benyamini, 2005).

First, positive path-coefficients of Stress*OPT to initiative ($\beta=.281$), Stress*OPT to support seeking ($\beta=.276$) and Stress*OPT to avoidance ($\beta=.424$) demonstrate that consumers with the personality of optimism have a significant impact on moderating the relationship between perceived stress and all long-term coping strategies (Table 10-4). The results of R^2 are 0.67 (Initiative), 0.72 (support seeking) and 0.78 (avoidance).

Table 10-4 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Stress_x_OPT	.281	4.190	***
SUPPORT_SEEKING	<---	Stress_x_OPT	.276	4.092	***
AVOIDANCE	<---	Stress_x_OPT	.424	5.370	***

The interaction of stress and optimism not only relates to the theorised relationship between initiative and support seeking, but also to avoidance coping. Thus, the hypothesis of Hoptimism1 is supported (see Table 10-6).

Second, negative path-coefficients of Stress*PES ($\beta=.416$) demonstrates that pessimism has a significant impact on moderating the relationship between perceived stress and support seeking coping (Table 10-5). However, there is no statistically significant moderation effect on perceived stress and initiative coping and perceived stress and avoidance coping. The results of R^2 is 0.46 (support seeking).

Table 10-5 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Stress_x_PES	.423	1.914	.056
SUPPORT_SEEKING	<---	Stress_x_PES	.416	2.767	.006
AVOIDANCE	<---	Stress_x_PES	.165	.791	.429

The interaction demonstrates that consumers tend to seek support rather than to avoid the situation as hypothesised. Therefore, hypothesis of H _{pessimism1} is rejected (Table 10-6).

Issues of Categorical Variables

Before conducting an analysis on how different levels of education and consumer family structures may impact on the relationship between consumer psychological states and long-term coping, some key issues must be clarified.

First, education level and family structure are categorical variables that need to be transferred into dummy variables in order to conduct the regression analysis. Three categories are specified for education level: high school and below, college or university degree and postgraduate degree. Two categories are generated for family structure: consumers with caring responsibility (recoded from choices in the survey: child/children under 12; family member with physical disabilities; family member with chronic physical or mental illness, and elder family member above 70) and consumers without caring responsibility.

Second, interactions of specific psychological state and education level need to be calculated. For example, the interaction of perceived stress and high school education results from multiplying both variables. Perceived stress and the other five emotions will be multiplied with dummy variables of education level and family structure. In sum, 30 interactions were generated.

Third, due to the limitation of SPSS, the hierarchical consumer long-term coping model needs to be computed into a single order model: the means of each coping construct were calculated and means of grouped constructs were calculated as well.

Stress × Education Level → Long-term Coping

Perceived stress interacts with three education level dummy variables: high school and below, college and university degree and postgraduate degree. Regressions of perceived stress, interactions and consumer long-term coping (initiative coping, support seeking coping and avoidance coping) were calculated.

First, education level has no significant effect on the relationship of perceived stress and initiative coping. Reasons are: correlations of Sig (1-tailed) are not significant; R square for model 1 (.001) and model 2 (.005) are not improved significantly; $F(3, 494) = .851$ is not significant; Standardised coefficients are not significant ($p = .174/.771$).

Second, education level has no significant effect on the relationship of perceived stress and initiative coping. Reasons are: correlations of Sig (1-tailed) are not significant; R square for model 1 (.037) and model 2 (.046) are not improved significantly; $F(3, 494) = .856$ is not significant; Standardised coefficients are not significant ($p = .053/.985$).

Third, education level has no significant effect on the relationship of perceived stress and avoidance coping. Reasons are: correlations of Sig (1-tailed) are not significant; R square for model 1 (.023) and model 2 (.025) are not improved significantly; Standardised coefficients of moderators are not significant ($p = .979/.379$).

Therefore, hypothesis of 'Hedu1a' and 'Hedu1b' are rejected. Education level has no effect on the relationship between stress and coping.

Stress \times Family Structure \rightarrow Long-term Coping

Perceived stress interacts with two family structure dummy variables: consumers with caring responsibility and consumers without caring responsibility. Regressions of perceived stress, family structure and consumer long-term coping (initiative coping, support seeking coping and avoidance coping) were calculated.

First, family structure has no significant effect on the relationship of perceived stress and initiative coping. Reasons are: correlations of Sig (1-tailed) are not significant; R square for model 1 (.001) and model 2 (.002) are not improved significantly; $F(2, 495) = .538$ is not significant; Standardised coefficient is not significant ($p = .539$).

Second, family structure has no significant effect on the relationship of perceived stress and support seeking coping. Reasons are: R square for model 1 (.037) and model 2 (.041) are not improved significantly; Standardised coefficient is not significant ($p = .143$).

Third, family structure has no significant effect on the relationship of perceived stress and avoidance coping. Reasons are: R square for model 1 (.023) and model 2 (.027) are not improved significantly; Standardised coefficient is not significant ($p = .152$).

Therefore, hypotheses of 'Hfamily1a' and 'Hfamily1b' are not supported. It shows that family structure has no effect on the relationship of perceived stress and consumer long-term coping.

Table 10-6 summarises the research hypotheses regarding stress.

Table 10-6 Summary of Research Hypotheses of Stress

Hypothesis	Code	Support
<i>When experiencing stress, consumers who have high level of self-efficacy are more likely to adopt initiative coping and support seeking strategy.</i>	Hefficacy1a	Partially
<i>When experiencing stress, consumers who have low level of self-efficacy are more likely to adopt avoidance coping strategy.</i>	Hefficacy1b	Yes
<i>When experiencing stress, consumers who have high level of locus of control are more likely to adopt initiative coping and support seeking strategy.</i>	Hcontrol1a	Yes
<i>When experiencing stress, consumers who have low level of locus of control are more likely to adopt avoidance coping strategy.</i>	Hcontrol1b	No
<i>When experiencing stress, consumers who have the trait of optimism are more likely to adopt initiative coping and support seeking strategy.</i>	Hoptimism1	Yes
<i>When experiencing stress, consumers who have the trait of pessimism are more likely to adopt avoidance coping strategy.</i>	Hpessimism1	No
<i>When experiencing stress, consumers with higher level of education are more likely to adopt initiative and support seeking coping strategies</i>	Hedu1a	No
<i>When experiencing stress, consumers with lower level of education are more likely to adopt avoidance coping strategies</i>	Hedu1b	No
<i>When experiencing stress, consumers who have caring responsibility are more likely to choose initiative coping and support seeking strategies.</i>	Hfamily1a	No
<i>When experiencing stress, consumers who do not have caring responsibility are more likely to choose avoidance coping strategies.</i>	Hfamily1b	No

10.3.2 General Discussion on Stress

Stress, cognitive appraisal and coping

The following hypotheses are discussed here: Hefficacy1a, Hefficacy1b, Hcontrol1a and Hcontrol1b.

The data supports the impact of self-efficacy on initiative coping and avoidance coping when experiencing stress. The interactive relationship between stress and cognitive appraisal operates in a complex and dynamic format which has been addressed by early researchers in the field (e.g, Bandura, 1977; Lazarus and Folkman, 1984). However, the effect of interaction and the relationship to coping has not been adequately examined. The transactional theory of stress and coping highlights that individuals evaluate the stressor and their resources and abilities to handle the situation (Lazarus and Folkman, 1984). The actual coping efforts of managing problems and regulating emotional appraisal, reduces the stress and improves individuals' functional status (Glanz and Schwartz, 2008). In considering the effect of the interactions, behavioural tendency of individuals' effective reaction to stress is avoidance or flight. This has also been established by previous research (e.g., Luce et al., 1999). Other research also links stress to support seeking strategies (Carver and Scheier, 1994). Findings from this study reinforce the importance of the interactive relationship between stress and self-efficacy, to avoidance coping strategies. For

instance, they resonate well with Duhachek (2005) who confirmed that the influence of stress on avoidance coping, is moderated by self-efficacy. However, the data in this study does not support the moderating effect of self-efficacy on the relationship between stress and support seeking coping. A potential explanation for this finding is that the perception of high self-efficacy suggests a strong likelihood of handling the situation successfully, where seeking support is mitigated (Han et al., 2016). Conversely, individuals tend to choose initiative coping to make changes to the stressful environment when high situational self-efficacy is perceived. The findings of this study have confirmed this link.

The data also supports the impact of locus of control on all long-term coping strategies, although in different ways. Locus of control is one of the key factors of cognitive appraisal in understanding individuals' coping with stressful environment (Compas et al., 1991). Although researchers such as Spector and Fox (2002) have linked higher locus of control to adopting positive behaviours, the interactive nature of stress and locus of control to coping has not been examined. This study extends on previous studies by providing evidence of this significant interaction to coping. In other words, when high locus of control is perceived in the stress environment, individuals tend to choose initiative coping and support seeking coping. Analogously, the avoidance coping shall be chosen in the condition of low locus of control. On the contrary, the data fails to confirm this link. It shows that avoidance coping is also enhanced in high locus of control. In the context of this study, when consumers experience stress and believe that they can control food safety issues that affect them, they are still likely to be coping by avoidance. As such, consumers may not have sufficient abilities to handle such problematic situations, but believe in that they can control them effectively.

Stress, personality and coping

The following hypotheses are discussed here: Hoptimism1 and Hpessimism1.

Optimism and pessimism are well-documented personality traits that influence coping (McCrae and Costa, 1986; Duhachek and Iacobucci, 2005; Ismail, 2016). Prior studies suggest that personality may facilitate coping behaviours (Conner-Smith and Flashbart, 2007), while others posit the direct influence of personality on the nature of the stressful environment (Bolger and Zuckerman, 1995). However, the interaction of stress and personality and their relationship to coping has not been addressed adequately in previous research.

The data confirms that the influence of stress on initiative coping and support seeking coping is moderated by the personality trait of optimism. The findings lend support to argument that optimism relates to positive and problem-focused coping behaviours, which either actively cope with the problem or seek support from others (Duhachek and Kelting, 2009). However, the interesting finding is that optimism also has a significant effect on avoidance coping. This demonstrates that although some consumers are optimistic about the food safety situation, they somehow may relinquish their control over the issues. One possible explanation would be that government actions or newly installed regulations may reinforce the consumers' optimistic view over the issues. In turn, they may think from their own perspectives that avoiding doing anything is acceptable as the issues are under control.

The findings of this study fail to confirm the moderating effect of pessimism on consumer avoidance coping in stressful environments. However, the data shows a significant moderating effect for support seeking coping. Despite the prior recognition of the effect of pessimism on avoidance coping (e.g., Vollrath et al., 1995; Pedersen et al., 2016), it has been posited that with anxiety related pessimism traits, individuals increasingly rely on support seeking coping (Gunthert, Cohen and Armeli, 1999). The findings fail to confirm the hypothesised relationship, but correspond to the existing understanding of anxiety-related personality traits that individuals may look for additional contingencies in order to cope with such situation.

Stress, education level, caring responsibility and coping

Hypotheses Hedul_a, Hedul_b, Hfamily1_a and Hfamily1_b are discussed here.

First, the data fails to confirm the moderating effect of education level on the relationship between stress and coping. Although prior studies have supported that patients benefit from more formal education in reducing the stress and coping with breast cancer (Caryn et al., 1996) and lower education families are more vulnerable to stressors and choose proactive coping strategies (Wills et al., 1995). The findings from this study do not show any significant effect of education on the relationship between stress and coping. The different scenario of this study compared to prior studies on patients, is that everyone eats food and safety issues have been regular issues among consumers for decades. Education may play a role in improving coping skills or in relieving stressful condition. This is a direct relationship between education and coping. For example, in the consumer interview, the Master degree holder Tie develops more coping strategies and engages more actively in dealing with the issues than the high school diploma holder Zhu, who often choose to

avoid or relinquish his control over food safety issues. However, education level on its own, as a moderator, is insufficient to have an impact on the interactive relationship in the quantitative study. Evidence cannot be found either in the qualitative study.

Second, the data also fails to prove that the relationship between stress and coping is moderated by family structure (whether or not having caring responsibilities). Little research has looked at how family structure type influences stress and coping. For example, McCubbin and Figley (2014) have explored the effect of changing family type on individuals' psychological stress and adaptation. Hall and Graff (2011) find family support networks help children with autism to cope. This study integrated different types of family, focusing on whether or not individuals have caring responsibilities or not, in context of food selection and safety issues. However, the data from this study show, family structure (caring responsibility) has no effect on the interactive relationship. A potential explanation may be that with or without caring responsibility, does not affect the objective fact of long existing food safety issues. The way consumers eat or choose to cope does not rely on caring responsibilities either. The findings here are in line with the findings of consumer interviews. For example, interviewee Zheng and Li both have generated some methods to handle the foods, however, Zheng mentioned that 'I am not a mother yet' while Li said 'I live with my mother'. These statements indicate that they cope with the issues regardless of whether or not they have caring responsibilities. In consumption, consumers may be aware of the caring responsibilities to others, but may not have the competence to act on the issues (Cova and Saucet, 2014). In other words, consumers would do what they can within their capabilities to handle food safety issues, no matter whether or not they have additional caring responsibilities. Overall, these findings add credence to the coping literature that education level and family structure play no role in affecting the interactive relationship of stress and long-term coping.

10.3.3 Findings of Emotions

The conceptualisation in this study integrates the multi-dimensional consumer long-term coping strategies with a consideration of situational and personal influences on emotions, namely cognitive appraisals and personality traits. These are considered to be rarely examined concomitantly (McCrae, 1984; Duhachek and Iacobucci, 2005). In addition, different emotions may have distinct behavioural tendencies in dealing with long-term and ongoing food safety issues. Therefore, it is necessary to look at how each emotion - identified from the literature and consumer interviews - interacts with moderating factors

that relate to specific consumer long-term coping strategies.

Emotions→Long-term Coping

Table 10-7 shows that the main effects from all negative emotions to consumer long-term coping strategies are significant. However, the relationship between the positive emotion Hope and avoidance coping is not supported. This means that hope cannot influence the choice of avoidance coping independently, while interacting with moderating factors, it may have direct impact on avoidance coping. Thus, hypotheses H1b, H1c, H1d and H1e are supported; H1f is partially (only the initiative and support seeking coping part) supported.

Table 10-7 Regression Weights

			Estimate	S.E.	C.R.	P
INITIATIVE_COPING	<---	Worry	.223	.049	4.558	***
SUPPORT_SEEKING_COPING	<---	Worry	.435	.061	7.187	***
AVOIDANCE_COPING	<---	Worry	.203	.057	3.567	***
INITIATIVE_COPING	<---	DIS	.086	.037	2.300	.021
SUPPORT_SEEKING_COPING	<---	DIS	.284	.051	5.530	***
AVOIDANCE_COPING	<---	DIS	.261	.050	5.166	***
INITIATIVE_COPING	<---	ANG	.171	.038	4.455	***
SUPPORT_SEEKING_COPING	<---	ANG	.340	.048	7.118	***
AVOIDANCE_COPING	<---	ANG	.174	.046	3.789	***
INITIATIVE_COPING	<---	FEAR	.155	.036	4.270	***
SUPPORT_SEEKING_COPING	<---	FEAR	.316	.045	6.997	***
AVOIDANCE_COPING	<---	FEAR	.200	.044	4.526	***
INITIATIVE_COPING	<---	HOPE	.752	.067	11.160	***
SUPPORT_SEEKING_COPING	<---	HOPE	.528	.065	8.083	***
AVOIDANCE_COPING	<---	HOPE	-.075	.057	-1.313	.189

Emotions × Cognitive Appraisal→Long-term Coping

Table 10-8 shows that self-efficacy as a moderating effect, has significant effects on consumer long-term coping when interacted with emotions. Only path-coefficients of Fear*SelfEfficacy to support seeking coping ($\beta=.095$, $p=.410$) and path-coefficients of Hope*SelfEfficacy to avoidance coping ($\beta=.172$, $p=.508$) are nonsignificant. The results of R^2 for supported models are all above 0.25. However, significant effects may not be in line with the hypothesised relationships.

When consumers have experienced emotions of worry, disappointment and anger, consumers with high levels of self-efficacy tend to choose both initiative and support seeking coping. Hefficacy2a to Hefficacy4a are supported (see Table 10-14). Similarly,

consumers with low levels of self-efficacy are more likely to choose avoidance coping. Hefficacy2b to Hefficacy4b are, therefore, supported (see Table 10-14).

Due to the nonsignificant path-coefficients of Fear*SelfEfficacy, Hefficacy5a is partially supported (only the initiative coping part). Hefficacy5b, however, is fully supported, demonstrating that when consumers experience fear with low level of self-efficacy they tend to choose avoidance coping strategy.

Lastly, the hypothesised relationships of the positive emotion of hope are both rejected, although the path-coefficients are significant. The reason Hefficacy6a is rejected is that the interaction shows that consumers with lower levels of self-efficacy tend to choose initiative and support seeking coping. This result supports the opposite argument of the hypothesis that high level of self-efficacy consumers would do so. Hefficacy6b is rejected due to the nonsignificant path-coefficient.

Table 10-8 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Worry_x_SelfEfficacy	0.525	5.149	***
SUPPORT_SEEKING	<---	Worry_x_SelfEfficacy	0.200	2.137	0.033
AVOIDANCE	<---	Worry_x_SelfEfficacy	0.502	3.917	***
INITIATIVE	<---	Dis_x_SelfEfficacy	0.423	5.111	***
SUPPORT_SEEKING	<---	Dis_x_SelfEfficacy	0.145	2.128	0.033
AVOIDANCE	<---	Dis_x_SelfEfficacy	0.430	4.350	***
INITIATIVE	<---	ANGER_x_SelfEfficacy	0.368	4.415	***
SUPPORT_SEEKING	<---	ANGER_x_SelfEfficacy	0.330	3.871	***
AVOIDANCE	<---	ANGER_x_SelfEfficacy	0.583	4.204	***
INITIATIVE	<---	FEAR_x_SelfEfficacy	0.671	5.324	***
SUPPORT_SEEKING	<---	FEAR_x_SelfEfficacy	0.095	0.825	0.410
AVOIDANCE	<---	FEAR_x_SelfEfficacy	0.724	4.135	***
INITIATIVE	<---	HOPE_x_SelfEfficacy	0.473	7.903	***
SUPPORT_SEEKING	<---	HOPE_x_SelfEfficacy	0.533	6.449	***
AVOIDANCE	<---	HOPE_x_SelfEfficacy	0.172	0.663	0.508

Based on the path-coefficients (Table 10-9), there are significant effects of locus of control interacting with emotions on both initiative and support seeking coping. Hcontrol2a to Hcontrol5a are, therefore, supported. However, the Hcontrol6a is partially supported (only the support seeking part). The interaction shows that low levels of locus of control lead to initiative coping, which contrasts the proposed hypothesis that high level of locus of control would do so.

Table 10-9 also shows that path-coefficients for anger, fear and hope with avoidance coping are all not significant. Thus, the hypotheses of Hcontrol4b to Hcontrol6b are rejected. Hcontrol2b is rejected as well although the path-coefficient ($\beta=.355$, $p=.035$) is significant, because the interaction shows that high levels of locus of control relate to avoidance coping rather than that of low levels of locus of control. Last, only the path-coefficient of disappointment is significant ($\beta=.307$, $p=.017$) and supports the hypothesis of Hcontrol3b. This means that when experiencing disappointment, consumers with low levels of locus of control are more likely to choose avoidance coping. The results of R^2 for supported models are all above 0.25.

Table 10-9 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Worry_x_LoC	0.571	4.558	***
SUPPORT_SEEKING	<---	Worry_x_LoC	0.358	3.038	0.002
AVOIDANCE	<---	Worry_x_LoC	0.355	2.105	0.035
INITIATIVE	<---	Dis_x_LoC	0.607	5.56	***
SUPPORT_SEEKING	<---	Dis_x_LoC	0.570	5.601	***
AVOIDANCE	<---	Dis_x_LoC	0.307	2.383	0.017
INITIATIVE	<---	ANGER_x_LoC	0.281	2.637	0.008
SUPPORT_SEEKING	<---	ANGER_x_LoC	0.621	5.739	***
AVOIDANCE	<---	ANGER_x_LoC	0.153	1.104	0.270
INITIATIVE	<---	FEAR_x_LoC	0.490	3.499	***
SUPPORT_SEEKING	<---	FEAR_x_LoC	0.459	3.315	***
AVOIDANCE	<---	FEAR_x_LoC	0.039	0.213	0.832
INITIATIVE	<---	HOPE_x_LoC	0.514	8.296	***
SUPPORT_SEEKING	<---	HOPE_x_LoC	0.423	5.854	***
AVOIDANCE	<---	HOPE_x_LoC	0.082	0.988	0.323

Emotions \times Personality Trait \rightarrow Long-term Coping

Table 10-10 shows regression weights of the interaction of emotions and optimism to long-term coping. It can be found that all effects are significant except the Hope \times OPT to avoidance ($\beta=.010$, $p=.464$). The hypotheses of Hoptimism2 (worry), Hoptimism3 (disappointment), Hoptimism4 (anger), Hoptimism5 (fear) and Hoptimism6 (Hope) are all supported due to the significant path-coefficients. The results of R^2 for supported models are all above 0.25.

Additionally, the moderating effects of the interaction between emotion and optimism on avoidance coping are also significant except the emotion of hope, which are not

hypothesised initially. This finding demonstrates that optimistic consumers may also choose avoidance coping, except in the condition that they are hopeful and optimistic.

Table 10-10 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Worry_x_OPT	0.313	4.195	***
SUPPORT_SEEKING	<---	Worry_x_OPT	0.387	5.156	***
AVOIDANCE	<---	Worry_x_OPT	0.503	5.079	***
INITIATIVE	<---	Dis_x_OPT	0.258	4.35	***
SUPPORT_SEEKING	<---	Dis_x_OPT	0.279	4.74	***
AVOIDANCE	<---	Dis_x_OPT	0.517	6.126	***
INITIATIVE	<---	ANGER_x_OPT	0.264	4.1	***
SUPPORT_SEEKING	<---	ANGER_x_OPT	0.402	5.905	***
AVOIDANCE	<---	ANGER_x_OPT	0.561	5.28	***
INITIATIVE	<---	FEAR_x_OPT	0.326	4.05	***
SUPPORT_SEEKING	<---	FEAR_x_OPT	0.460	5.505	***
AVOIDANCE	<---	FEAR_x_OPT	0.693	5.618	***
INITIATIVE	<---	HOPE_x_OPT	0.443	8.677	***
SUPPORT_SEEKING	<---	HOPE_x_OPT	0.455	7.009	***
AVOIDANCE	<---	HOPE_x_OPT	0.010	0.732	0.464

As hypothesised, consumers with personality of pessimism would choose avoidance coping no matter what emotion they have experienced. Surprisingly, path-coefficients show that interaction of pessimism and emotion to avoidance coping (Table 10-11), are all nonsignificant. Therefore, the hypotheses of Hpessimism2 to Hpessimism6 are all rejected (see Table 10-14). Consumers with negative emotions may choose certain coping strategies. Specifically, initiative coping is adopted when consumers experience disappointment ($\beta=.652$) and hope with the pessimism trait ($\beta=.565$); while support seeking coping is chosen when consumers experience worry ($\beta=.803$) and disappointment ($\beta=.192$). The results of R^2 for supported models are all above 0.25.

Table 10-11 Regression Weights

			Std. path estimate (β)	C.R.	P
INITIATIVE	<---	Worry_x_PES	0.459	1.549	0.121
SUPPORT_SEEKING	<---	Worry_x_PES	0.803	-1.991	0.046
AVOIDANCE	<---	Worry_x_PES	0.340	1.037	0.300
INITIATIVE	<---	Dis_x_PES	0.652	-2.431	0.015
SUPPORT_SEEKING	<---	Dis_x_PES	0.192	2.247	0.025
AVOIDANCE	<---	Dis_x_PES	-0.415	-1.56	0.119
INITIATIVE	<---	ANGER_x_PES	0.537	-1.605	0.108

SUPPORT_SEEKING	<---	ANGER_x_PES	0.902	1.57	0.117
AVOIDANCE	<---	ANGER_x_PES	0.129	0.225	0.822
INITIATIVE	<---	FEAR_x_PES	0.981	-1.671	0.095
SUPPORT_SEEKING	<---	FEAR_x_PES	0.514	1.581	0.114
AVOIDANCE	<---	FEAR_x_PES	0.112	0.166	0.868
INITIATIVE	<---	HOPE_x_PES	0.565	5.049	***
SUPPORT_SEEKING	<---	HOPE_x_PES	0.263	1.864	0.062
AVOIDANCE	<---	HOPE_x_PES	0.094	0.311	0.755

Emotions × Educational Level → Long-term Coping

Based on the results of regression with dummy variable (Table 10-12), education level shows no significant effect on consumer long-term coping in all situations of emotions. Correlations of Sig (1-tailed) show whether or not different education level contributes significantly to the long-term coping. They should all be significant ($p < .05$). The non-significant change in R square indicates that with the consideration of the moderators, the model does not improve significantly. The non-significant coefficients of the beta weights suggest that the moderator is not a good predictor of the long-term coping, interacting with various emotions. Therefore, all hypotheses in terms of education level interacting with various emotions are rejected.

Table 10-12 Moderating Effects of Education on the Relationship of Emotion and Coping

Relationship	Results	Code	Support
worry and initiative coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.027) and model 2 (.028) are not improved significantly (Sig. F change $p = .717$); Standardised coefficients are not significant ($p = .415/.836$)	Hedu2a	No
worry and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.104) and model 2 (.107) are not improved significantly (Sig. F change $p = .505$); Standardised coefficients are not significant ($p = .327/.667$)		
worry and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.032) and model 2 (.034) are not improved significantly (Sig. F change $p = .573$); Standardised coefficients are not significant ($p = .686/.381$)	Hedu2b	No
disappointment and initiative coping	Correlations of Sig (1-tailed) are not significant; R square for model 1 (.009) and model 2 (.011) are not improved significantly (Sig. F change $p = .584$); Standardised coefficients are not significant ($p = .304/.944$)	Hedu3a	No

disappointment and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.046) and model 2 (.052) are not improved significantly (Sig. F change $p=.207$); Standardised coefficients are not significant ($p=.082/.987$)		
disappointment and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.052) and model 2 (.053) are not improved significantly (Sig. F change $p=.789$); Standardised coefficients of moderators are not significant ($p=.555/.816$)	Hedu3b	No
anger and initiative coping	Correlations of Sig (1-tailed) are not significant; R square for model 1 (.021) and model 2 (.022) are not improved significantly (Sig. F change $p=.722$); Standardised coefficients are not significant ($p=.539/.532$)	Hedu4a	No
anger and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.107) and model 2 (.108) are not improved significantly (Sig. F change $p=.771$); Standardised coefficients are not significant ($p=.474/.836$)		
anger and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.056) and model 2 (.058) are not improved significantly (Sig. F change $p=.479$); Standardised coefficients of moderators are not significant ($p=.474/.403$)	Hedu4b	No
fear and initiative coping	Correlations of Sig (1-tailed) are not significant; R square for model 1 (.027) and model 2 (.029) are not improved significantly (Sig. F change $p=.539$); Standardised coefficients are not significant ($p=.352/.449$)	Hedu5a	No
fear and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.104) and model 2 (.107) are not improved significantly (Sig. F change $p=.457$); Standardised coefficients are not significant ($p=.215/.709$)		
fear and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.070) and model 2 (.073) are not improved significantly (Sig. F change $p=.455$); Standardised coefficients of moderators are not significant ($p=.514/.344$)	Hedu5b	No
hope and initiative coping	Correlations of Sig (1-tailed) are significant; while R square for model 1 (.354) and model 2 (.355) are not improved significantly (Sig. F change $p=.783$); Standardised coefficients are not significant ($p=.768/.563$)	Hedu6a	No
hope and support seeking coping	Correlations of Sig (1-tailed) are significant; while R square for model 1 (.170) and model 2 (.175) are not improved significantly (Sig. F change $p=.232$); Standardised coefficients are not significant ($p=.109/.402$)		
hope and avoidance	Correlations of Sig (1-tailed) are not significant; R square for		

coping	model 1 (.005) and model 2 (.008) are not improved significantly (Sig. F change p=.544); Standardised coefficients of moderators are not significant (p=.603/.296)	Hedu6b	No
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Emotions × Family Structure → Long-term Coping

Based on the result of the regression with dummy variable (Table 10-13), family structure shows no significant effect on consumer long-term coping, except for the emotion of hope. Correlations of Sig (1-tailed) show whether or not different family structure contributes significantly to the long-term coping. The non-significant change in R square indicates that with the consideration of the moderators, the model is not improved significantly. The non-significant coefficients of the beta weights suggest that the moderator is not a good predictor of the long-term coping, interacting with various emotions.

Importantly, family structure has a significant effect on the relationship of hope and avoidance coping (R square for model 1 (.005) and model 2 (.013) are improved significantly (Sig F. Change=.046); Standardised coefficient is significant (.046)). This means that when people experience hope and they have no caring responsibility, they tend to choose avoidance coping as their strategy to cope with long-term and ongoing food safety issues. Therefore, only Hfamily6b is supported. All other hypotheses in terms of family structure interacting with various emotions are rejected.

Table 10-13 Moderating Effects of Family Structure on the Relationship of Emotion and Coping

Relationship	Results	Code	Support
worry and initiative coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.027) and model 2 (.028) are not improved significantly (Sig. F change=.462); Standardised coefficient is not significant (p=.462).	Hfamily2a	No
worry and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.104) and model 2 (.109) are not improved significantly (Sig. F change=.113); Standardised coefficient is not significant (p=.113).		
worry and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.032) and model 2 (.035) are not improved significantly (Sig. F change=.255); Standardised coefficient is not significant (p=.255).	Hfamily2b	No
disappointment and	Correlations of Sig (1-tailed) are not all significant; R square		

initiative coping	for model 1 (.009) and model 2 (.009) are not improved significantly (Sig. F change=.672); F (2, 495) =2.276 is not significant; Standardised coefficient is not significant (p=.672)	Hfamily3a	No
disappointment and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.046) and model 2 (.048) are not improved significantly (Sig. F change=.229); Standardised coefficient is not significant (p=.229)		
disappointment and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.052) and model 2 (.056) are not improved significantly (Sig. F change=.165); Standardised coefficient is not significant (p=.165)	Hfamily3b	No
anger and initiative coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.021) and model 2 (.021) are not improved significantly (Sig. F change=.546); Standardised coefficient is not significant (p=.546).	Hfamily4a	No
anger and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.107) and model 2 (.110) are not improved significantly (Sig. F change=.207); Standardised coefficient is not significant (p=.207).		
anger and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.056) and model 2 (.059) are not improved significantly (Sig. F change=.189); Standardised coefficient is not significant (p=.189).	Hfamily4b	No
fear and initiative coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.027) and model 2 (.027) are not improved significantly (Sig. F change=.601); Standardised coefficient is not significant (p=.601).	Hfamily5a	No
fear and support seeking coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.104) and model 2 (.107) are not improved significantly (Sig. F change=.190); Standardised coefficient is not significant (p=.190).		
fear and avoidance coping	Correlations of Sig (1-tailed) are not all significant; R square for model 1 (.070) and model 2 (.074) are not improved significantly (Sig. F change=.167); Standardised coefficient is not significant (p=.167).	Hfamily5b	No
hope and initiative coping	Correlations of Sig (1-tailed) are significant; however, R square for model 1 (.354) and model 2 (.355) are not improved significantly (Sig. F change=.327); Standardised coefficient is not significant (p=.327).	Hfamily6a	No
hope and support	Correlations of Sig (1-tailed) are significant; however, R		

seeking coping	square for model 1 (.170) and model 2 (.173) are not improved significantly (Sig. F change=.219); Standardised coefficient is not significant (p=.219).		
hope and avoidance coping	Correlations of Sig (1-tailed) for no caring are significant; R square for model 1 (.005) and model 2 (.013) are improved significantly (Sig F. Change=.046); Standardised coefficient is significant (p=.046).	Hfamily6b	Yes

10.3.4 General Discussion on Emotions

The complex interactive relationships between emotions and moderators relating to specific coping strategies are discussed in the following sections. Table 10-14 summarises the results of the hypotheses testing for emotions.

Emotions, cognitive appraisal and long-term coping

Various situational factors are deemed influential in coping and adaptation (Pearlin and Schooler, 1978), including individuals' perceived self-efficacy in a stressful situation (Sujan et al., 1999) and perceived controllability over the situation (Schaubroeck and Merritt, 1997). However, the interactive relationships between specific emotions and situational cognitive appraisals, relating to consumer long-term coping have not been adequately examined. The research framework proposed in this study aims to investigate the dynamic effect on long-term coping. In this section, the interplay of emotions and cognitive appraisals (self-efficacy and locus of control) affecting the coping responses is discussed.

On the one hand, the data supports the impact of self-efficacy on the relationship between worry and long-term coping, disappointment and long-term coping and anger and long-term coping. This demonstrates that the behavioural tendencies of consumers are similar when experiencing worry, disappointment and anger with both high and low level of self-efficacy. The results resonate with prior studies such as Herrald and Tomaka (2002) and Webster et al. (2016) who found angry consumers to seek support for coping with the emotions. When experiencing fear, consumers with high levels of self-efficacy tend to choose initiative coping only. This finding is in line with the argument that even two strong negative emotions (anger and fear for example) have different preferences due to different levels of appraised uncertainty (Tiedens and Linton, 2001). Specifically, angry consumers with self-efficacy prefer both initiative coping and support seeking coping; while fearful consumers with self-efficacy only choose to take their initiative to cope. This highlights

consumers differ in choosing long-term coping strategies when experiencing different emotions.

Compared to the findings of negative emotions, the data fails to confirm that self-efficacy has an impact on the relationship between the positive emotion of hope and long-term coping. Prior research has linked positive emotion with direct coping actions such as support seeking in patients, with severe spinal cord injuries (e.g., Viney et al., 1989; Moskowitz et al., 1996). The findings from this study are also significant. However, the interaction shows that hopeful consumers with low self-efficacy are more likely to choose initiative and support seeking coping strategies. This lends credence to the opposite of the initial hypotheses. For example, the initial hypotheses are in line with Sujan et al. (1999) who argue that consumers who perceived themselves with higher levels of self-efficacy are more likely to engage in varied and elaborate coping behaviours. One possible explanation for this finding is rooted in the specifics of the research setting, that hopeful consumers in the long-term problematic situations may have positive view towards future situations and actively engage in dealing with the issues. This is the case despite perceiving themselves as less capable of coordinating certain skills (Tsarenko and Strizhakova, 2013).

The findings show that low efficacious consumers are choosing to engage in initiative and support seeking coping rather than high efficacious consumers when experiencing hope. The reason is threefold. Firstly, the existing coping research has overlooked the role of the positive emotions. Self-efficacy is discussed with negative emotions in the previous research, Sujan et al. (1999) and Duhachek (2005) for example. The current research is the first study to identify the positive emotion in long-term stressful consumption situations and provides additional new insights of the relationship between, the interaction (hope and self-efficacy) and long-term coping. Findings on positive emotion can be understood as a new pattern of emotion-coping relationship with the impact of self-efficacy. Secondly, the positive emotion of hope, to some extent, has facilitated the low efficacious consumers to engage with the coping behaviours. In other words, hopeful consumers are more willing to try to engage in initiative and support seeking coping, although they may believe that their abilities to handle the issue are insufficient. Third, the prominence of this relationship may be rooted in the specific of the research setting. Specifically, the current research has focused on the long-term and ongoing nature of the problematic situation, where even low efficacious consumers may come up with methods to handle the situation (Snyder et al., 1991), in a hope that the future situation will get better.

On the other hand, compared to self-efficacy which is a belief about an individuals' ability to achieve a certain goal (Tsarenko and Strizhakova, 2013), high levels of locus of control demonstrate a high controllability over the event that affect consumers (Rotter, 1966). The findings of this study support the choice of initiative and support seeking coping in the condition of experiencing all four negative emotions. Furthermore, they support the idea that consumers rely on active and support seeking coping strategies when the perception of situational locus of control is high (Duhachek and Kelting, 2009). However, when experiencing hope, only support seeking coping is chosen. This finding is partially consistent with the result of self-efficacy discussed above. Consumers with low controllability are more likely to engage in support seeking coping rather than those of high controllability.

Notably, with a low level of locus of control interacting with negative emotions which relates to adopting negative behaviours (Spector and Fox, 2002), only the relationship between disappointment and avoidance coping is moderated. However, low level of locus of control shows no impact on all other emotions. This finding is supported by consumer interviews in the current research. Specifically, as interviewee Wu expressed, she has been very disappointed and dissatisfied with the domestic food safety issues and she tried to take her mind off the issues (Dweck, 1999). This reflects the feature of avoidance coping and there may be several explanations for these findings. First, consumers with low locus of control may think that the situation is out of their control (Rotter, 1990); while the emotion of disappointment may end up with goal abandonment (Zeelenberg et al., 2000). The interaction of disappointment and low locus of control leads to disengagement and avoidance coping (Moschis, 2007). Second, the behavioural tendencies of emotions that have been examined (other than disappointment) are associated with active (Laux and Weber, 1991) or aggressive actions such as complaining behaviours (Harmeling et al., 2015). In long-term and ongoing problematic situations, consumers may attribute the issues to the self or as impersonal circumstances (Yi and Baumgartner, 2004), triggering particular coping strategies by considering the appraisals underlying the various emotions.

In summary, the findings from this study extend the current understanding of the role of cognitive appraisals by corresponding to and enriching the argument that distinct cognitive appraisals aroused by different emotions influence the activation of specific coping strategies (So et al., 2015). The findings illustrate a key premise of the coping process in long-term and ongoing stressful consumption situations, namely that the cognitive

appraisals of self-efficacy and locus of control play a key role in determining specific coping strategies in different emotions. In other words, the appraisals of the stressful consumption situation elicit different emotions, which in turn affect the coping strategies chosen to manage the issues (Patrick et al., 2009). The findings offer support to the view that cognitive appraisals provide a more comprehensive explanation of consumers' persistent behavioural responses (coping in this study) to emotions (Bagozzi et al., 1999). The significance of cognitive appraisals, as moderators, has been addressed through the findings of this study. The findings also contribute to the growing literature on consumer emotion by linking specific emotions to specific coping strategies, adding behavioural consequences of emotions. The findings not only take a close look at the effect of self-efficacy on specific emotions and coping, but also answer the call for examining: additional emotions (other than threat and anger) and coping (Yi and Baumgartner, 2004), as well as additional influential moderating cognitive appraisal factors beyond self-efficacy (Duhachek, 2005), namely the locus of control.

Emotions, personality and long-term coping

The data supports the moderating effect of optimism on all relationships between emotions and long-term coping. The findings are in line with the argument that optimistic consumers are more likely to engage in confronting the issues directly, in comparison to pessimistic consumers (Carver et al., 1993; Duhachek and Iacobucci, 2005). Prior studies have confirmed the relationship between the personality traits and coping behaviours (Bolger and Zuckerman, 1995). However, such links do not consider the individual differences in the experience of the specific emotions that presage coping (Folkman and Lazarus, 1985). The findings from this study address aspects that preceding studies have neglected. Previous research has facilitated the role of personality in choosing coping strategies (Conner-Smith and Flashbart, 2007), while the interactions of specific emotions and personality predicting long-term coping have not been examined. Drawn from the data in the current research, optimistic consumers engage more in taking actions and making direct efforts (Carver and Scheier, 2001) with the experience of both negative and positive emotion in the stressful consumption situation. Notably, the moderating effects of the interaction between emotion and optimism on avoidance coping were also significant except the emotion of hope, which were not hypothesised initially. Prior studies argue, optimistic consumers may be less likely to engage in avoidance coping (Scheier et al., 1986). The findings however, demonstrate that optimistic consumers may also choose

avoidance coping, except in conditions where they are hopeful and optimistic. There may be two explanations for these contradictory findings. First, none of the previous research has looked into the interactive relationships in the long-term and ongoing nature of the research setting. Indeed, optimistic consumers tend to choose initiative coping and support seeking coping, which is positive and problem-focused coping (Duhachek and Kelting, 2009). However, considering the long-term nature, even optimistic consumers may disengage and tend to flee away from the problematic situation, thus, activating avoidance coping behaviours. Second, drawing from the insights provided by the qualitative study, consumers hold optimistic view over the issue as they can see that government has undertaken various actions such as installing new regulations. They think that avoiding doing anything is fine as the issues are under control.

Furthermore, the data fails to support the moderating effect of pessimism. Consumers who have the personality of pessimism are strongly associated with maladaptive coping strategies (Pedersen et al., 2016). Specifically, pessimistic individuals report avoidant ways of coping in previous studies (e.g., Aspinwall and Taylor, 1992; Carver et al., 1993). However, the findings from this study show, pessimistic consumers may not engage in avoidance coping. For example, initiative coping is adopted when consumers experience disappointment and hope with the personality of pessimism; while support seeking coping is chosen when consumers experience worry and disappointment. These findings lend support to the argument that emotion is dynamic and one emotion may have multiple appraisal and behavioural tendencies, while different emotions may have the same tendency (So et al., 2015). A potential explanation of the findings may be associated with the view of pessimism and action tendencies. Previous research has argued that pessimistic consumers may generate negative expectations (Scheier and Carver, 1987) and tend to avoid the adversity by distracting and disengaging themselves (Carver and Connor-Smith, 2010). However, the expectation is not necessarily associated with the actual actions. That is to say, pessimistic consumers may expect the future to be worse, while in the long-term they may also engage in changing the problematic situation in the appraisals of certain emotions as emotions may also influence the evaluation and decision process of coping behaviours (Bublitz et al., 2010). This finding has important implication for the existing research. Previous research only sheds light on situational determinants of coping, i.e. self-efficacy. The dispositional coping tendencies are believed to be a promising venue to investigate (Duhachek, 2005). The findings of the current research show that the initial emotional experience gives rise to various coping attempts (Yi and Baumgartner, 2004);

and the enduring coping predilection of avoidance is not influenced by the personality of pessimism. This study is the first to confirm that in the long-term and ongoing stressful consumption situation, the personality of pessimism would not be influential in choosing avoidance coping in various emotional situations.

In summary, the findings of this section enrich our understanding of mapping coping strategies to different emotions with the influence of different types of personalities. Previous research suggests that how consumers appraise the stressful consumption situation and how they evaluate their ability to manage it, affects their coping responses (Lazarus and Folkman, 1984; Han et al., 2015). That is to say, it is best to integrate consumer long-term coping strategies with a consideration of situational cognitive appraisals and stable dispositional personality traits (Duhachek and Iacobucci, 2005). This premise resonates with Mischel (1973) who argue that both trait and state affect coping behaviours. Notably, the findings from this study not only have supported the interactive relationships between cognitive appraisals and specific emotions predicting particular coping strategies discussed previously. Furthermore, they also address the importance of the moderating effect of personality traits. Congenial with the premise that individual difference has long been acknowledged in influencing consumer coping tendencies or responses (Duhachek and Kelting, 2009), the findings elaborate and extend this premise by integrating the work of McCrae and Costa (1986) and Duhachek and Iacobucci (2005), considering and conceptualising the role of consumers' personality traits of optimism and pessimism on specific emotion-coping relationships. Overall, these findings bring significant insights of the underlying processes linking personality traits to specific emotion and specific coping strategies.

Emotions, education level, caring responsibility and long-term coping

The current research has also examined the relationship between the interaction of emotions and education level and long-term coping and between the interaction of emotions and caring responsibilities and long-term coping.

First, the data fails to confirm the moderating effect of education level on the relationship between emotions and coping. Although gaining more education may improve an individual's ability to cope (Chiverton and Caine, 1989) or being less vulnerable to the stressful situation (Wills et al., 1995), the findings from this study show no significant effects of education level interacting with specific emotions to predict particular coping strategies. The findings mean that education does not affect the relationship between the

appraisals of an emotion and the chosen of diverse assortment of coping strategies (Yi and Baumgartner, 2004). The semi-structured interviews have lent support to these findings as well. Interviewees in the current research have various education backgrounds from high school diploma to postgraduate degrees. Indeed, drawn from their insights, how they feel and what they do to deal with the issues has not been associated with their education backgrounds. Personal experiences (government official, journalist, etc.) are more pertinent to be influential. Possible reason is that these jobs are linked or exposed to the information regarding food safety issues more often than others. They are, therefore, more cautious and knowledgeable to deal with the issues.

Second, an alternative approach to coping research includes examining different life roles (Pearlin and Schooler, 1978) like whether or not individuals have caring responsibilities. Previous research has shed light on how family types influence emotional appraisal and coping, such as McCubbin and Figley (2014). In the long-term and ongoing food safety situation, it was expected that if consumers have more caring responsibilities such as taking care of family member or raising infants, they may also be more careful about the issues and adapt their behaviours accordingly. The data, however, fails to support the relationship between all negative emotions and coping moderated by family structure (whether or not having caring responsibilities). A potential explanation may be in line with the reason discussed in psychological stress (Section 8.3.2) that whether or not consumers having caring responsibilities does not affect the objective fact of long existing food safety issues. Methods that consumers engaged with to cope do not rely on the caring responsibility either. Overall, these findings add credence to the coping literature that family structure plays no role in affecting the interactive relationship between negative emotions and coping.

However, the data supports the hypothesis that hopeful consumers who do not have caring responsibilities are more likely to adopt the strategy of avoidance coping. The result reflects the possible reality that hopeful consumers with no caring responsibilities may relinquish their control over long-term and ongoing food safety issues as they hope that the problematic situation will get better in near future. This finding is also supported by the semi-structured interviews. For example, Zhao mentioned that she is ‘not a mother yet’, and so, has no caring responsibilities for children. She hopes that “in future most foods I have are safe and trustworthy’ while she stops from doing anything due to the information asymmetry. Comparatively, Wang is single and he has no caring responsibilities as well. He

has hope for the future situation to improve significantly. He illustrated that many more official media platforms and government agencies take initiative to disclose food safety issues. However, he chooses avoidance coping when he believes that if the price of problematic foods is low, it is not necessary to do anything such as spending time and money to sue food providers. This finding has established a hope-family relationship in prediction of avoidance coping.

Overall, the findings from the hypotheses testing have examined the research framework. Based on the conceptualisation of the consumer long-term coping, the findings have explained the differential responses to various emotions elicited with the interactions of cognitive appraisals and personality traits. Education level has no effect on the relationships across all emotional situations; while family structure has no effect on the relationship between negative emotion and consumer long-term coping.

10.3.5 Final Model: Consumer Long-term Coping

Based on the results of hypotheses testing, the conceptual model is presented in the following Figure 8-1. It is important to note that this conceptual model is an integrated model, incorporating the model of consumer long-term coping with various psychological states, personality trait and cognitive appraisal situation. In other words, how consumers choose different long-term coping strategies is in light of specific conditions including various emotional states, personality and cognitive appraisals.

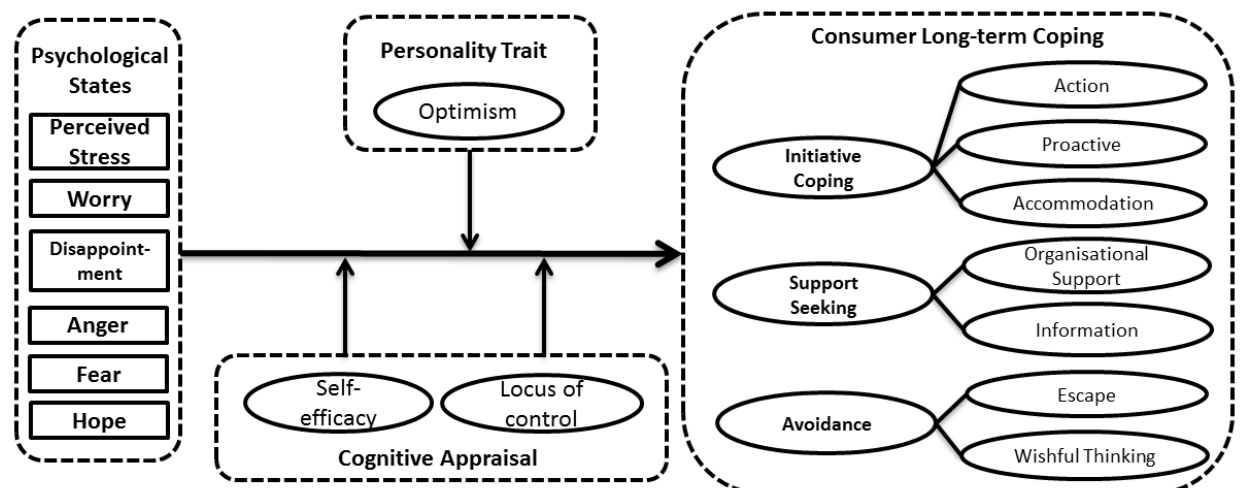


Figure 10-1 The General Conceptual model of Consumer Long-term Coping

Table 10-14 Summary of Research Hypotheses of Emotions

Hypothesis	Worry	Support	Disappointment	Support	Anger	Support	Fear	Support	Hope	Support
When experiencing the emotion, consumers who have high level of self-efficacy are more likely to adopt initiative coping and support seeking strategy.	Hefficacy2 _a	Yes	Hefficacy3 _a	Yes	Hefficacy4 _a	Yes	Hefficacy5 _a	Partially	Hefficacy6 _a	No
When experiencing the emotion, consumers who have low level of self-efficacy are more likely to adopt avoidance coping strategy.	Hefficacy2 _b	Yes	Hefficacy3 _b	Yes	Hefficacy4 _b	Yes	Hefficacy5 _b	Yes	Hefficacy6 _b	No
When experiencing the emotion, consumers who have high level of locus of control are more likely to adopt initiative coping and support seeking strategy.	Hcontrol2 _a	Yes	Hcontrol3 _a	Yes	Hcontrol4 _a	Yes	Hcontrol5 _a	Yes	Hcontrol6 _a	Partially
When experiencing the emotion, consumers who have low level of locus of control are more likely to adopt avoidance coping strategy.	Hcontrol2 _b	No	Hcontrol3 _b	Yes	Hcontrol4 _b	No	Hcontrol5 _b	No	Hcontrol6 _b	No
When experiencing the emotion, consumers who have the trait of optimism are more likely to adopt initiative coping and support seeking strategy.	Hoptimis _{m2}	Yes	Hoptimis _{m3}	Yes	Hoptimis _{m4}	Yes	Hoptimis _{m5}	Yes	Hoptimis _{m6}	Yes
When experiencing the emotion, consumers who have the trait of pessimism are more likely to adopt avoidance coping strategy.	Hpessimis _{m2}	No	Hpessimis _{m3}	No	Hpessimis _{m4}	No	Hpessimis _{m5}	No	Hpessimis _{m6}	No
When experiencing the emotion, consumers with higher level of education are more likely to adopt initiative and support seeking coping strategies	Hedu2 _a	No	Hedu3 _a	No	Hedu4 _a	No	Hedu5 _a	No	Hedu6 _a	No
When experiencing the emotion, consumers with lower level of education are more likely to adopt avoidance coping strategies	Hedu2 _b	No	Hedu3 _b	No	Hedu4 _b	No	Hedu5 _b	No	Hedu6 _b	No
When experiencing the emotion, consumers who caring responsibility are more likely to choose initiative coping and support seeking strategies.	Hfamily2 _a	No	Hfamily3 _a	No	Hfamily4 _a	No	Hfamily5 _a	No	Hfamily6 _a	No
When experiencing the emotion, consumers who do not have caring responsibility are more likely to choose avoidance coping strategies.	Hfamily2 _b	No	Hfamily3 _b	No	Hfamily4 _b	No	Hfamily5 _b	No	Hfamily6 _b	Yes

10.4 Summary

This chapter has presented the results of the data analysis based on AMOS and SPSS. Variables except demographic variables (education level and family structure) were examined and analysed via structural equation modelling in AMOS.

In the findings sub-sections, perceived stress and five emotions including worry, disappointment, anger, fear and hope were discussed and analysed individually, with the moderating effect of cognitive appraisal, personality traits and demographic variables that together trigger consumer long-term coping.

The analysis revealed that when consumers experience a stressful situation and generate stress or emotions, they would adopt different coping strategies to cope with the psychological states and the problematic situation. This is in line with the argument that coping is a highly reflexive process, in which individuals alter their coping behaviours in response to the stressful stimuli and different emotional appraisals (Folkman and Lazarus, 1985).

In general, hypotheses of cognitive appraisal and personality trait are to some extent supported in terms of affecting the relationship between psychological states and consumer long-term coping. The results were in line with the argument that both situational cognitive appraisal and individual's personality trait have an impact on coping processes (Duhachek and Kelting, 2009). However, hypotheses on demographic variables including education level and family structure were both rejected except in one situation. These results confirmed that levels of education and whether or not having caring responsibilities alone have no effect on the relationship between negative psychological states and consumer long-term coping. One exception highlighted the prediction of avoidance coping among hopeful consumers with no caring responsibilities.

This chapter has presented and interpreted the results. The next chapter is the final Chapter 9 which focuses on summarising the research findings of both qualitative and quantitative study, reporting contributions of the current study, demonstrating the implications and limitations of the research, as well as the recommendation for future research.

Chapter 11 Conclusion

11.1 Introduction

This chapter highlights research findings drawn from both the qualitative and quantitative studies and presents the main theoretical, methodological, empirical contributions and practical implications of the research. In addition, this chapter also underscores the limitations of the current research and provides recommendations for future research.

Drawn from the detailed results of data analysis (qualitative study results in Chapter 6 and quantitative study results in Chapters 7 and 8), this chapter starts with a summary of the research findings from both studies in Section 9.2. Section 9.3 illustrates the theoretical, methodological, empirical contributions and practical implication of the current research. Section 9.4 discusses limitations and recommendations for further research. Last, this chapter concludes with a short summary in Section 9.5.

11.2 Summary of Research Findings

The aim of this research was to **conceptualise and empirically explore consumer long-term coping strategies and achieve an in-depth understanding of factors that may influence the relationships between consumers' various psychological states and their long-term coping responses in the context of a long-term and ongoing food safety situation**. The results of the qualitative study show that the research objectives of identifying consumers' stress conditions and specific emotions, identifying consumers' long-term actions (instances) for dealing with the issues and assessing the theory of the transactional view of stress and coping were all achieved. The results of the quantitative study show that the research objectives of conceptualising the multi-dimensional consumer long-term coping strategies, developing a scale to measure the multi-dimensional structure and identifying and confirming moderating factors were accomplished. Details about the research findings from both the qualitative and quantitative studies follow.

1) Findings from the qualitative study

First, the results of the qualitative study show that consumers may experience different levels of stress when faced with long-term and ongoing food safety issues.

- Perceived Stress – Previous research did not examine consumers' stress level when faced with long-term and ongoing food safety issues. The current study explicitly

identified that consumers expressed different levels of stress, including feelings of a high level of stress and feelings of no stress at all. This finding is vital, as it provides a new angle for discussing stress and coping. Previous research argues that coping is activated when stress exists (e.g., Lazarus and Folkman, 1984; Eisenberg et al., 1997). However, the present findings support the idea that coping behaviours emerge where stress is not necessarily a prerequisite. Coping actions taken by consumers who have no feeling of stress have also been identified. The reasons that consumers cope with no feeling of stress can be found in Section 6.2.2.1.

Second, previous research has not shed light on empirically identifying the specific emotions of consumers faced with food safety issues. The results of the current qualitative study identify that, when faced with long-term and ongoing food safety issues, consumers experience the negative emotions of worry, disappointment, anger and fear. In addition, the positive emotion of hope was also identified from the consumer interviews.

- Worry - This study identified that consumers experience the emotion of worry. It provided evidence to support the idea that worry is central in the discussion of long-term and ongoing food safety issues (Global Attitude Survey, 2015; NFSIR, 2016).
- Disappointment - As posited by the extant research, disappointed individuals tend to flee away from situations. Based on interviewees' comments, the findings from the current research support that consumers may have behavioural tendencies other than avoidance when experienced disappointment.
- Anger - Drawn from the literature of consumer behaviour, angry consumers are more linked to aggressive behavioural tendencies, such as boycotts (Friedman, 1999) and thoughts of violence (Bougie et al., 2003). The findings of this study, on the one hand, identify the emotion of anger; on the other hand, it validates that consumers may have different behavioural tendencies in coping.
- Fear – Drawn from interviewees' illustrations, the findings provide evidence for the argument that fearful people tend to make pessimistic judgements about the situation (Lerner and Kelter, 2000).
- Hope – The findings identify different ways that consumers express hope when facing chronic stressors. Specifically, some consumers have hopes for the future that situations will improve; others have positive attitudes and interpretations of

food safety in the future. This identification of the positive emotion of hope provides evidence for the argument that, in chronically stressful situations, consumers may experience both positive and negative emotions (Folkman and Moskowitz, 2000). This is also the first study to identify a positive emotion in a long-term and ongoing food safety situation.

Third, a number of coping actions (instances) that consumers adopt to deal with long-term and ongoing food safety issues were identified. These findings, seen as coping instances, provide empirical evidence to support the conceptualisation of consumers' long-term coping strategies. From the consumer interviews, the researcher identified organisational support as a new lower-order coping strategy, which reflects the collectivist culture of Chinese consumers. Chinese consumers are more likely to rely on organisations or authorities to deal with problematic situations (e.g., Sun et al., 2004; Hui et al., 2014).

- **Action Coping** - This study did not find the emotion-based action coping in relation to cooking and food preparation described in Bingen et al.'s (2011) study. Emotion-based coping, again, is different in format. It refers to adopting indirect actions to minimise experienced emotions or changing the contents of thoughts about the situation (Luce, 1998), such as self-control (Folkman et al., 1986). The current study did not include emotion-based strategies in action coping. As discussed in the literature review (Section 3.4.2), this study argues that problem-based and emotion-based strategies are too abstract and oversimplify coping phenomena (Laux and Weber, 1991; Scheier et al., 1986). Hence, emotion-based strategies were theorised in other coping strategies (i.e., accommodation, personal support and escape). This study provides evidence of consumers taking specific actions to manage issues. It also enriches the concept of coping by including the indirect action of coping.
- **Proactive Coping** - Most previous research on proactive coping addressed preventive health and screening behaviours (Aspinwall and Taylor, 1997) and predominantly focused on illness (Miller et al., 2009). The present study showed consumers making proactive efforts to manage health threats from chronic food safety issues (Aspinwall, 2011). Interviewees' responses not only show the identification of the strategy of proactive coping, but also support the notion that people create opportunities for improvements in their life (Schwarzer and Knoll, 2003).
- **Accommodation Coping** - Previous research emphasised the strategy of

‘acceptance’, seen as one perspective of accommodation coping, meaning individuals attempt to get used to the idea that something has happened and nothing can be changed (Yi and Baumgartner, 2004). In the present conceptualisation, this strategy also incorporates behavioural, cognitive and emotional accommodation (Skinner et al., 2003).

- **Personal Support Coping** - Personal support coping functions by using available social resources (Skinner et al., 2003). This coping strategy incorporates contact-seeking support such as Daigou, the comfort and emotional support expressed by interviewees, and instrumental support, such as using social media or traditional media platforms to resolve problems. These efforts indicate the identification of the strategy of personal support coping, which includes contact seeking, emotional support and instrumental support, in comparison to previous research (e.g., Carver et al., 1989; Yi and Baumgartner, 2004).
- **Information Seeking Coping** - The present study enriches our understanding in the following aspects: 1) it identified the functions of the information seeking strategy, incorporating actions such as relying on government grading systems (hygiene system), verified certificates and brands, as well as sharing information with others; 2) it added intervention and remediation to the functions of information seeking.
- **Escape Coping** - Escape coping consists of mental disengagement and behaviour disengagement (Yi and Baumgartner, 2004). Additionally, denial has also been considered as an important aspect of escape (Duhachek, 2005). Beyond what previous studies have found, the present study also identified that consumers may not do anything (i.e., spend time and money) when they think food safety issues have no significant impact on their health and life. For example, if the food is 1 pound, they may think it is not worthy to spend 1 hour to complain and get a refund or spend 1000 pounds to sue the food provider. Hence, they often took no actions to deal with the issues but rather binned the food.
- **Organisational Support Coping** - In previous studies, actions such as finding additional contingencies or using social resources (Skinner et al., 2003) were not further specified. These actions can be divided into personal support and organisational support. The organisational support strategy includes both direct and indirect support from organisations. Drawing from consumer interviews, actions taken by consumers indicate the identification of the strategy of organisational support coping.

2) Findings from the quantitative study

In addition to these valuable findings generated from the qualitative study, this research also generated notable insights from the quantitative study. The results of structural equation modelling and regression analysis show a number of variables having a significant impact on the relationships between consumers' psychological states and long-term coping strategies. These variables were situational cognitive appraisals of self-efficacy and locus of control, as well as the relatively stable consumer personality of optimism. The following paragraphs summarise the main findings from the quantitative study.

First, the results of this study advance the notion of consumer coping by refining and offering a comprehensive conceptualisation of a multidimensional model of consumers' long-term coping and developing a scale to measure it.

- The findings support the proposed multi-dimensional model, in which higher-order coping categories encompass a number of lower-order coping categories that were deemed the best presentation of long-term coping (Duhachek and Oakley, 2007). The higher-order coping categories of initiative coping, support seeking coping and avoidance coping have been assessed by the findings as the best fits for the categorisation (Duhachek, 2005).
- The findings presented in Section 7.6.3 provide evidence to support that coping functions at a multi-dimensional level (e.g., Skinner et al., 2003). Although coping scholars have proposed various theoretical structures with multiple dimensions or orders, to the best of the researcher's knowledge, there is only one study (Duhachek, 2005) that has empirically examined the performance of the multi-dimensional conceptualisation of coping. This study not only conceptualised a multi-dimensional structure of consumers' long-term coping, but also assessed the performance of this multidimensional structure empirically.
- The findings enrich our understanding of long-term coping by establishing a list of conceptually clear and mutually exclusive lower-order coping strategies (Lazarus, 1996), including dimensions not yet reported in the consumer literature (i.e., proactive coping and organisation support). One of the study's key contributions concerning the refinement and clarification of the meaning of the dimensions of consumers' long-term coping is the proposal of seven sub-dimensions: action,

proactive, accommodation, organisational support, information seeking, escape and wishful thinking.

- The findings establish a scale to measure the multi-dimensional construct of consumers' long-term coping. The scale for measuring the concept of consumers' long-term coping was developed based on thorough conceptual definitions with the help of 20 semi-structured consumer interviews and a panel of academics. The generated items closely reflected the sub-dimensions and dimensions of consumer long-term coping and are supported by both first-order and second-order CFA goodness-of-fit indices, indicators and reliability and validity indicators.

Second, the cognitive appraisals of self-efficacy and locus of control have a significant impact on the relationships between consumer psychological states and long-term coping. The self-efficacy variable functioned differently in predicting coping strategies when consumers experience different emotions.

- Stress - The data support the impact of **self-efficacy** on initiative coping and avoidance coping when experiencing stress. Findings from this study reinforce the importance of the interactive relationship between stress and self-efficacy in the avoidance coping strategy.
- Stress - The data support the impact of **locus of control** on all long-term coping strategies, although differently for each strategy. This research extended previous studies by providing evidence of its significant interaction to coping. In other words, when high locus of control was perceived in the stressful environments, individuals tended to choose initiative coping and support seeking coping.
- Emotions - The data support the impact of **self-efficacy** on the relationship between worry and long-term coping, disappointment and long-term coping, as well as anger and long-term coping. These observed relationships demonstrate that consumers' behavioural tendencies are similar when experiencing worry, disappointment and anger with both high and low levels of self-efficacy. When experiencing fear, consumers with high levels of self-efficacy tended to choose initiative coping only. This finding was in line with the argument that even two strong negative emotions (anger and fear for example) have different preferences due to different levels of appraised uncertainty (Tiedens and Linton, 2001). Comparatively, angry consumers with self-efficacy preferred both initiative coping and support seeking coping. This result highlights consumers' differences in

choosing long-term coping strategies when experienced different emotions. Last, the findings from this study show that hopeful consumers with low self-efficacy are more likely to choose initiative and support seeking coping.

- Emotions - The findings support the choice of initiative and support seeking coping when experiencing all four negative emotions with the cognitive appraisal of the **locus of control**. The findings support the idea that consumers rely on active and support seeking coping strategies when the perception of situational locus of control is high (Duhachek and Kelting, 2009). When experiencing hope, only support seeking coping was chosen. Notably, with a low level of locus of control interacting with negative emotions, which relates to adopting negative behaviours (Spector and Fox, 2002), only the relationship between disappointment and avoidance coping was moderated. Low level of locus of control showed no impact on all other emotions.

Third, two types of consumer personalities were revealed in the results of the quantitative study: the positive personality of optimism and the negative personality of pessimism. These two types were formed due to consumers' choice of coping strategies when dealing with different psychological states.

- Stress - The data confirm that the influence of stress on initiative coping and support seeking coping is moderated by the personality of **optimism**. The findings support the argument that optimism relates to positive and problem-focused coping behaviours, which involve either actively coping with the problem or seeking support from others (Duhachek and Kelting, 2009).
- Stress - The findings do not confirm the moderating effect of **pessimism** on consumer avoidance coping in a stressful consumption environment. However, the data show a significant moderating effect for support seeking coping. Despite the prior recognition of the effect of pessimism on avoidance coping (e.g., Vollrath et al., 1995; Pedersen et al., 2016), it has been posited that individuals with the anxiety-related personality of pessimism increasingly rely on support seeking coping (Gunthert et al., 1999). The findings fail to confirm the hypothesised relationships, but do correspond to the existing understanding that individuals with anxiety-related personality traits may look for additional contingencies in order to cope with situations.
- Emotions - The data support the moderating effect of **optimism** on all relationships

between emotions and long-term coping. The findings are in line with the argument that optimistic consumers are more likely to engage in confronting issues directly compared to pessimistic consumers (Carver et al., 1993; Duhachek and Iacobucci, 2005). This study addressed aspects that preceding studies neglected. Detailed discussion can be found in Section 8.3.4.

- Emotions - The data fail to support the moderating effect of **pessimism**. Previous research argued that pessimistic individuals report avoidant ways of coping (e.g., Aspinwall and Taylor, 1992; Carver et al., 1993). However, the findings from this study show that pessimistic consumers may not engage in avoidance coping. For example, initiative coping was adopted when consumers with the personality of pessimism experienced disappointment and hope, while support seeking coping was chosen when consumers experienced worry and disappointment. These findings support the argument that emotion is dynamic and one emotion may have multiple appraisals and behavioural tendencies, while different emotions may have the same tendencies (So et al., 2015).

In contrast to Cano et al. (2006), who found that education level has a moderating effect for the coping and pain relationship, and Hall and Graff (2011), who found an effect of family support network on coping and adaptation, this research revealed that neither educational level nor family structure had a significant effect on the relationship of negative consumer psychological states and long-term coping strategies. The education level variable contained three categories, all of which showed no significant effects on the relationship between psychological states and consumer long-term coping.

- Stress - The data fail to confirm the moderating effect of **education level** on the relationship of stress and coping.
- Emotions - The data fail to confirm the moderating effect of **education level** on the relationship between emotions and coping.

Similarly, the family structure variable includes two categories, which both show no significant effect on this relationship. However, one exception was that hopeful consumers with no caring responsibilities tended to choose avoidance coping, which was in line with the initial hypothesis. These findings suggest that when consumers adopting long-term coping strategies for dealing with long-term and ongoing food safety issues and the negative emotions of worry, disappointment, anger and fear, different education levels and the amount of caring responsibilities do not affect behaviour.

- Stress - The data fail to prove that the relationship between stress and coping is moderated by **family structure** (whether or not having caring responsibilities).
- Emotions - The data fail to show that the relationships between all negative emotions and coping are moderated by **family structure**.
- Emotions - The data support the hypothesis that hopeful consumers who do not have caring responsibilities are more likely to adopt the strategy of avoidance coping. This result reflects the possible reality that hopeful consumers with no caring responsibilities may relinquish control over long-term and ongoing food safety issues as they hope that the problematic situation will improve in the near future. This finding establishes a hope-family relationship in the prediction of avoidance coping.

11.3 Research Contributions

The contributions of the current research are presented in four parts: theoretical, methodological, empirical and practical contributions.

11.3.1 Theoretical Contributions

This thesis makes theoretical contributions to both consumer psychology and consumer behaviour theory related to food safety issues in several ways:

- Conceptualisation of consumers' long-term coping strategies

The extant literature includes attempts to conceptualise and identify consumer coping strategies. For example, Mick and Fournier (1998) explored how consumers cope with the paradoxes of technology; however, they only focused on behavioural coping strategies. Yi and Baumgartner (2004) identified a number of coping strategies in relation to negative emotions in purchase-related situations, but failed to articulate coping strategies as a multidimensional construct, as the current research argues (see Section 3.4.3.2). Duhachek (2005) identified coping strategies in response to stressful consumption situations, but this result was limited to acute/eventful stressful situations rather than chronic stressful situations, which are exclusively examined in the current research.

Building on the aforementioned efforts in consumer coping theory, this study contributes by conceptualising **consumers' long-term coping strategies**, specifically by identifying and conceptualising a multi-dimensional consumer long-term coping framework. This consists of three dimensions of consumers' long-term coping: coping instances, lower-level

coping strategies and higher-level coping strategies. The researcher identified specific coping instances and lower-level coping strategies in relation to long-term and ongoing food safety issues. Drawn from the research findings, the performance of the multi-dimensional structure has been assessed and recognised as superior for examining consumers' long-term coping compared to the unidimensional structure.

Previous research on food safety issues focused on individual food scandals and hazards. For example, Li et al. (2014) investigate food safety risks in cereal and oil products in Yangtze Delta region; Xiong et al. (2017) express concerns about food safety issues in pork slaughter plants in China; and Liu et al. (2015) analyse an internet database of food safety incidents in China and provide insights into the nature of food safety issues. These individual food scandals and hazards are definitely an important part of the issues.

However, food safety in China is a situation consisting of a series of food scandals and a general problematic food condition with a long-term and ongoing nature that has had a significantly impact on consumers for decades (Liu et al., 2013). Long-term and ongoing food safety issues in China more strongly predict psychological distress compared to individual life events (e.g., Mathur et al., 2006; Norris and Uhl, 1993). Extant research on chronic stressors has only been carried out in fields outside marketing and consumer behaviour, such as human health and well-being (e.g., Deimling et al., 2006). This study enhances the current theoretical understanding of chronic stressors by examining individuals' abilities to adapt to continuities, transitions, threats and instability (Gottlieb, 1997) in long-term food consumption situations. Consumers face chronic stressors daily, as food is essential for everyday consumption. Consumers' reactions and persistent responses to long-term and ongoing food safety issues have been overlooked in the literature, which represents a lack of theoretical foundation. Accordingly, this study contributes to the study of food safety issues and consumer coping by investigating these issues from the view of long-term and ongoing strains and from the perspective of the consumer. This provides a sound theoretical foundation for how consumers deal with long-term external chronic stressful consumption situations.

- The transactional view of stress and coping

This research challenges the **traditional transactional view of stress and coping**, which establishes a strong correlation between the individual's experience of stress and the emergence of coping behaviours (e.g., Lazarus and Folkman, 1984). This research argues

that consumers may continue to cope with a problematic situation in a long-term and ongoing setting even after the **stress has diminished or faded away**. This argument is in line with the proposition that the whole process of coping is dynamic (Pearlin et al., 1981), where the level of stress changes according to appraisals. When individuals employ effective coping actions to deal with stress, the level of stress decreases (Lazarus, 2000; Moschis, 2007) and the appraisals of the situation change accordingly. After the new appraisals, consumers may still have a relatively high level of stress, or they may not have stress anymore. In the current context, long-term and ongoing food safety issues interact with the consumers, who may feel stressful after they appraise the problematic situation and their controllability and resources. They may then respond with coping actions, which in turn may manage food safety issues or regulate the induced stress and again have an impact on how food safety issues interact with the consumers. This argument is supported by the findings of the current research. The research findings show that consumers demonstrated various coping actions and behaviours to deal with problematic situations, even when no stress was expressed. The research results also suggest that consumer research into chronic strains should consider the conditions of diminished or eliminated stress. This corrective, thereby, optimise the theory's explanatory power.

11.3.2 Methodological Contribution

This thesis makes methodological contribution to consumer coping measurement literature:

- Measurement of consumer long-term coping

This study contributes to the existing literature on **consumer coping measurement** and to the operationalization of consumers' long-term coping by developing a new scale. This new scale measures the concept of consumer long-term coping strategies. Even though many different coping scales have been developed, there is no consensus on measuring coping (Skinner et al., 2003). For example, Jordan et al. (2015) found that coping measurement is context-specific and coping constructs are subject to change in various contexts. Taking a close look at the existing scales, it is easy to find that these scales are not fit for measuring the concept of consumer long-term coping, as no one measurement alone adequately reflects the construct of consumer coping (Ayers et al., 1996; Connor-Smith et al., 2000), especially when faced with chronic stressful consumption situations. Consequently, there is a need to develop a new scale for measuring this concept in the specific context with a long-term and ongoing nature. This newly developed scale has

undergone robust scale development procedure (following Churchill's (1979) procedure), including: extensive literature search; semi-structured consumer interviews; and a panel of academic experts and questionnaire survey, which applied the Likert scale for measuring each item. The reliability and validity of the scale were established using two samples in order to ensure applicability and practicability. The scale development significantly contributes to empirically validating the dimensionality of consumers' long-term coping, revealing that consumer coping is best conceptualised and measured as a multi-dimensional construct. This newly developed scale also provides a choice for future researchers who are interested in examining consumers' long-term coping strategies, especially in the food sector.

Specifically, the results of the quantitative study help develop a scale to measure consumer long-term coping. As such, this research contributes to coping measurement literature.

First, this study defines consumer long-term coping in the context of this research as '*a process whereby consumers make cognitive, attitudinal and behavioural efforts over time to manage the long-term and ongoing external demands and to regulate stress-induced emotions, to an acceptable level according to individuals' capabilities and appraisals*', which provides a foundation for measurement development.

This definition differs from the extant coping definitions in four ways: 1) it specifies the coping efforts in terms of cognitive, attitudinal and behavioural aspects; 2) it considers the long-term and ongoing settings of the particular situation; 3) it includes managing and regulating the external demand (food safety issues), as well as the psychological distress induced by demand; 4) and it addresses the individual differences in coping efforts. Considering the distinctiveness and high explanatory power drawn from the above features, this working definition of consumer long-term coping is suitable for the current research. Moreover, this definition is in line with the transactional view of stress, emotions and coping that regards coping as a transactional process between the consumers and long-term and ongoing food safety issues. Furthermore, this definition fits well into the consumer domain which is consistent with the context and scope of this research.

Notably, this definition focuses on the specific research context (long-term and ongoing food safety issues in China). Future research could apply this definition to similar contexts such as India and South-east Asian countries, while they are also encouraged to narrow it down to specific food safety issues or specific aspects of consumer coping.

Second, the results of the test in Section 7.6.3 lend support to the argument that coping functions at a multi-dimensional level (e.g., Skinner et al., 2003). This study not only conceptualises a multi-dimensional structure of consumer long-term coping, but also assesses the performance of this multidimensional structure empirically in comparison to the unidimensional structure. Hence, the findings advance our understanding in the following aspects: 1) this study reinforces the categorisation by examining the performance of the conceptualisation empirically in a long-term and ongoing stressful consumption situation; 2) the conceptualisation of consumer long-term coping is a distinct form of coping behaviour that previous research has not shed light on; 3) this study confirms that the three-factor higher-order coping strategies are superior in explaining the multidimensional structure of consumer long-term coping than the unidimensional higher-order structure, supporting the discussion in the literature review that coping functions as a multidimensional construct and the unidimensional problem-focused and emotion-focused categorisation oversimplifies the concept. Consequently, consumer long-term coping behaviour should be measured in a multi-dimensional approach.

Third, the scale development and validation procedure resonates with the multidimensional view of consumer coping. This scale validates the existence of initiative, support seeking and avoidance dimensions of consumer long-term coping. The generated items closely reflect the sub-dimensions and dimensions of consumer long-term coping and are supported by, both first-order and second-order CFA goodness-of-fit indices, indicators, and reliability and validity indicators. In summary, this study enriches our understanding and underscores the importance of inquiry into the concept of consumer long-term coping and the operationalisation of the multi-dimensional constructs. Careful consideration is paid to empirical validation and underlying meanings of dimensions.

Fourth, the specific items in the measure are intended to capture how individuals cope with long-term and ongoing food safety issues (Skinner and Zimmer-Gembeck, 2006). The findings enrich our understanding of long-term coping by establishing a list of conceptually clear and mutually exclusive lower-order coping strategies (Lazarus, 1996). This includes dimensions not yet reported in the consumer literature (namely proactive coping and organisation support). One of the key methodological contributions is that it concerns the refinement and clarification of the meaning of the dimensions of consumer long-term coping by proposing seven sub-dimensions: action, proactive, accommodation, organisational support, information seeking, escape and wishful thinking.

11.3.3 Empirical Contributions

This thesis makes empirical contributions to both consumer psychology and behaviour literature regarding food safety:

- Identifying Specific Emotions

Previous research has paid inadequate attention to examining consumers' psychological states when faced with long-term and ongoing food safety issues. The findings of this study speak to the increasing literature on consumer emotions. This study contributes to and enriches research on **consumers' psychological states** by empirically identifying the specific emotions of worry, disappointment, anger, fear and hope when facing long-term and ongoing food safety issues. To the best of the researcher's knowledge, this is the first study to identify and validate both negative and positive emotions simultaneously in a long-term and ongoing food safety situation and consumer coping. This is also the first study to identify the positive emotion of hope in such research context, advancing our understanding of consumers' possible positive emotional appraisals when facing chronic stressors. In general, this study attempted to open up the black box between emotional states and coping behaviours, as different emotions have distinct behavioural tendencies (see Section 9.2 for detailed discussion) when dealing with chronic stressors. Identifying specific emotions when faced with long-term and ongoing food safety issues enables us to get a deeper understanding of consumers' corresponding coping behaviours, along with the careful consideration of situational cognitive appraisals and dispositional personality traits.

- Identifying influential intervening factors

Extant research on the relationships between specific emotions and coping is still vague and debateable in four ways:

- 1) Consensus has not yet been reached regarding the relationships between emotions and coping. Specifically, some studies have identified direct links between stress episodes and coping strategies (e.g., Luce et al., 2001). Duhachek (2005) argues that both emotions and cognition predict coping behaviours. Furthermore, So et al. (2015) argue that coping with the stress-inducing properties of an emotion is influenced by appraisals of the situation. In addition, prior research has only examined interactions between specific emotions, self-efficacy and coping strategies. This current research contributes to the extant literature by examining the cognitive appraisal of locus of

control in addition to self-efficacy, enriching our understanding of the interactive emotion-cognitive patterns in consumers' distinct coping responses.

- 2) Extant coping literature suggests that individuals' efforts at coping are directed by individuals' personality traits and the situational elements of the stressful situation (Duhachek and Kelting, 2009), which is consistent with the claim made by Mischel (1973) that both traits and states have an impact on coping behaviours. Furthermore, coping researchers have also asserted that coping processes are best modelled by considering the interaction with situational cognitive appraisal factors and personality traits (Duhachek and Iacobucci, 2005). Extant coping research has established direct links between traits (such as assertiveness) and coping. The interactive relationships between emotion-traits in relation to coping are under researched. In addition, the personality traits of optimism and pessimism have not yet been empirically examined. Thus, the current research contributes to the extant psychological literature on coping by **theorizing and incorporating dispositional personality traits** into the examination of the relationships between specific emotions and consumers' long-term coping. This contribution underscores the importance of inquiry into the complex and nuanced coping process.
- 3) Previous research has shed light on the direct impact of demographic variables on emotions (e.g., Brummer et al., 2013) and on coping behaviours (e.g., Shormilisy et al., 2015; Wilson and Luong, 2016). However, the mechanisms behind the associations between emotions and long-term coping through particular interactive emotion-demographic patterns have been overlooked. The current research contributes to coping research by confirming that there is no significant impact of education level and family structure on the relationships between specific psychological states and consumers' long-term coping, with one exceptional condition of hopeful consumers without caring responsibilities. In other words, consumers who experienced the emotion of hope and who are without caring responsibilities are more likely to adopt the avoidance coping strategy. This finding establishes a link between hope and non-caring responsibilities and avoidance coping in relation to long-term and ongoing food safety issues.
- 4) Previous research has examined the relationships between the emotions of anger and threat and specific coping behaviours (Duhachek, 2005). In addition to the extant literature and empirical contribution that identified the specific emotions of worry, disappointment, anger, fear and hope when faced with long-term and ongoing food safety issues, this study also contributes to the psychological literature by examining

the interactive relationships of additional emotions beyond anger and threat. Consumers' coping behaviours are articulated in various emotion-cognition/personality patterns.

11.3.4 Practical Implications

This thesis has several practical implications in terms of understanding Chinese consumers and the food safety issues in the specific context of vegetables.

- Understanding Chinese consumers

The extant literature has covered some aspects of food safety from the perspective of the consumer, such as consumer perception, attitude and confidence. However, to the researcher's knowledge, no work exploring and examining consumer psychological states (including stress and emotions) and coping actions in the presence of food safety issues exists. The complexity of food safety problems, deficiencies in government policies (Zhang et al., 2015) and the 1.3 billion Chinese consumers together have generated a critical food safety situation over a long period of time. China's long-term and ongoing problematic food situation combines food hygiene, unsafe food and poisonous food issues. This research has been able to capture Chinese consumers' psychological states and their corresponding coping behaviours. In sum, this study contributes practically by identifying consumers' numerous coping actions in handling long-term food safety issues. These findings not only help food companies segment various types of consumers based on their coping responses, but also to understand particular behaviours such as changing brands, growing their own foods, reporting to official organisations (which are active coping), seeking information (support seeking coping) and relinquishing their controls (avoidance coping). The food companies would benefit by getting a better understanding of how consumers feel, what they do and what they care about in their daily food consumption.

- Media/Social Media Communication

Traditional media platforms including TV, newspaper, radio and magazines are important in terms of information communication and exchange among food consumers. With the development of the internet, social media has also become an important way for consumers to acquire, search and spread food safety information (Lin et al., 2013). Just as Shen illustrated in her interview, elderly food consumers still rely on traditional media to expose or receive food safety information; while young generations tend to use social media as

their channel to process information. The current research implies that consumers communicate their information efficiently and frequently through media and social media platforms. Traditional media could broadcast food safety information and knowledge widely, in order to help consumers improve their sense of food safety and identify the issues (Duan and Zuo, 2010). Additionally, consumers can fully communicate with each other on social media regarding any food safety issues and equip themselves with accurate, adequate and updated knowledge. Social media provides a new approach for food consumers to participate in managing and monitoring food safety issues (Liu and Zeng, 2017). Meanwhile, in future research it is worthwhile to investigate the influence of social media on communication of food safety issues, as it may also be a platform for scare mongering.

- Corporate Social Responsibilities

Food producers and retailers are important stakeholders of corporate social responsibility (CSR). Based on the findings of the present research, it can be found that consumers' knowledge on CSR is limited. During the whole process of the qualitative study, there was no interviewee ever mentioning that they have paid attention to CSR. They were not aware that their purchasing and food choices can actually have an impact on food companies (Denegri-Knott et al., 2006) and, perhaps, encourage these companies to act in a socially responsible way. Researchers have suggested that by satisfying stakeholder demand for CSR and making a level of CSR investment, companies can maximise profit (McWilliams and Siegel, 2001). The level of investment is determined through cost-benefit analysis. It is, therefore, important for consumers to acquire more knowledge on CSR as companies may be responsive to their demand. The current research makes practical implications that consumers should strengthen their awareness of CSR, and food producers and retailers should actively embrace their social responsibilities. Arguably, consumers would increase their purchase intention when food companies actively take social responsibilities (Zhao, 2013). Thus, both food consumers and food producers/retailers would benefit from companies taking social responsibilities.

- Law and Regulation Enhancement

It is not enough that food producers and retailers have self-discipline. Policy makers and relevant government departments are important stakeholders for improving food safety. It can be found from the current research that consumers are asking for a more rigorous law

and regulation system regarding food safety, such as interviewees Ann and Zhu (see Section 7.2 for details). As discussed in Chapter 2, China has established an array of national standards, certification systems and requirements (Calvin et al., 2006). However, it has been argued that many of them overlap, are not clearly defined, and/or lack clear rights and liabilities (Li, 2013). Compared to western countries, such as the UK and the US (Redmond and Griffith, 2003), China's food safety standards and control systems are also relatively immature. Thus, the current research makes the practical recommendation that law and regulation systems need to be enhanced and improved. Specifically, food law and regulations regarding food safety monitoring, food safety standards, food safety information, penalty and safety service (i.e., detecting and testing) are needed (Wang and Liu, 2015). It also has been suggested by researchers that Chinese food safety law and regulations should learn from Western countries which have a more rigorous system (Liu, 2008).

11.4 Limitations and Further Research

Despite the valuable contributions that the current research makes to consumer psychology and behaviour, limitations are inevitable in terms of research design, research method and data analysis.

Although the sample size for the present research was sufficient, limited resources (time and financial resources) restricted the method of sample selection. For example, the survey was administrated online, which automatically excludes those without access to or knowledge of the internet. Further research should pay attention to consumers who do not have access to the internet, as many of them live in rural places or under-developed regions that may lead to different life styles and different views on food safety issues. For example, according to the World Bank (2017), nearly 43% of China's total population live in rural places. These people are facing the same severe food safety issues in the long-term. However, they may also have different coping strategies. As noted by interviewee Don, her husband's parents live in the countryside and they reserve a small piece of land for their family's vegetable consumption. This is very interesting, because farmers adopt farm chemicals and fertilizers to boost production in order to sell more and earn more money. However, they grow these vegetables for themselves in an organic way to keep the foods safe and healthy. This demonstrates a different way of coping and calls for further investigation of how people living in rural places cope with long-term and ongoing food safety issues. In addition, their special positions as food producers and consumers at the

same time when facing food safety issues deserve further attention.

This also leads to another promising avenue for future research: coping outcome and effectiveness. In a broad view, coping outcomes are regarded as the personal achievement of a goal to individuals (Folkman and Moskowitz, 2004) or the consequences resulting from coping efforts. Studies on coping outcomes tend to be specific, such as venting emotions (e.g., Avison and Turner, 1988; Thoits, 1995), managing social interactions (Laux and Weber, 1991) or solving the problem and feeling better than before (McCrae and Costa, 1986; Cummings et al., 1994). Zeidner and Saklofske (1996) stated that a permanent problem resolution is the goal of adaptive coping, which assumes that mastery or resolution should be involved in coping outcomes. However, this view does a disservice to the long-term or chronic problematic situations that individuals encounter, such as long-term food safety issues. Research also shows that, when facing chronic stress, coping effectiveness is virtually non-existent (Gignac and Gottlieb, 1997). The two views of seeking permanent problem resolution and non-existing coping effectiveness are contrary to each other. Therefore, researchers are encouraged to take the conceptual model forward with the consideration of coping outcome and effectiveness to achieve a more in-depth understanding of consumers.

It is notable that consumers are actually facing distinct food safety situations. In line with the NFSIR survey discussed in Section 2.5, 79 percent of consumers encountered some but not too many food safety issues; 15 percent of them claimed to be influenced frequently; and only 6 percent of consumers never encountered any food safety issues (NFSIR, 2016). This is in line with the qualitative data, for example, Wang as a government officer have more guaranteed food resources while Rong suffers more food safety issues as a retired worker (see Section 7.2 for details). This distinction may be due to their social status, but it may also be highly associated with the highly fragmented food supply chain in different parts of China, including millions of farmers, producers, processors, traders and retailers (Yan, 2012). The present research regarded food consumers as a whole and did not further investigate them in different situations in terms of their various experiences of food safety issues. Different experiences of food safety issues may change their corresponding behaviour. For example, consumers who frequently encounter food safety issues may arm themselves physically and mentally, or they may acquire more knowledge of how to handle the issues. Arguably, there is limited research on food safety issues from the consumers' perspective (Wang et al., 2008). This research has made contributions in terms of understanding consumers when facing long-term and ongoing food safety issues. It can be

expected that in the future more research will investigate the issues from consumers' perspective, with the consideration of their previous experience of food safety issues.

When measuring consumers' psychological states, especially the specific emotions that they have experienced when faced with the food safety issues, self-reported online questionnaires were adopted. This method was chosen over other methods, such as physiological experiments due to the long-term and ongoing nature of the current research context. Despite all aforementioned advantages of this method (see Section 8.2.2), there are several limitations that need to be noted. Firstly, self-reported questionnaires are mostly based on consumers' recall of their emotions. Although this study asked consumers to report their emotions on an ongoing basis, biased or inaccurate reports may also be noted (Aaker et al., 2008). For example, some consumers may not be able to distinguish different strong negative emotions. Secondly, the questionnaire used in the current research tends to be too long for consumers to complete. It is highly possible that some consumers may have lost their patience after dozens of questions. Thus, alternative methods such as brain scanning or consumer experiments could be considered in future research to capture more accurate and objective emotions. Thirdly, all constructs were designed in one questionnaire which raises concerns about common method variance. This study has employed three methods to avoid common method variance and to minimise its impact on the data and analysis. The suitability of the coping structure in dealing with long-term food safety issues can be further examined.

The research context was long-term and ongoing food safety issues. However, due to the time frame of the whole PhD project, the researcher was not able to conduct a longitudinal study examining the development of consumer coping behaviours throughout time. Instead, this study only captures a snapshot of consumers' psychological states and coping behaviours. It would be beneficial for researchers to look at the changes and development of consumer psychological states and coping behaviours to long-term food safety issues over a longer period of time.

The researcher also attempted to identify factors that may influence the relationships between specific psychological states and consumers' long-term coping. However, these factors were examined independently in the model drawn from the extant literature. More relationships and connections in the model are worthy of research. The interactions between different stresses and emotions and the interactions between moderating factors and their effects on consumers' long-term coping strategies are suggested for future

studies. Studying the interaction of these moderating factors may create a more complex understanding of consumers' long-term coping. In general, the limitations outlined above did not affect the overall quality of the current study.

11.5 Closing Remarks

Notwithstanding some limitations, this study has achieved its aims. Based on the research findings from both the qualitative and quantitative studies, the current research identified psychological stress and specific emotions (worry, disappointment, anger, fear and hope) when faced with long-term and ongoing food safety issues. It also identified various consumer coping actions in dealing with these issues. The traditional view of transactional theory of stress was challenged and discussed through semi-structured consumer interviews. A comprehensive and integrated research framework was developed to articulate the multi-dimensional consumer long-term coping strategies. This research also confirms the moderating effect of cognitive appraisals (self-efficacy and locus of control) and personality traits (optimism) on the relationships between specific psychological states and consumers' long-term coping. The outcomes of the current research enrich the extant literature in the fields of food safety, consumer psychology and consumer behaviour. Accordingly, it is sufficient to conclude that this research provides insights on consumer behaviour in the food sector, which is a valid topic for future research and benefits consumers and the food industry at large.

Appendices



College of Social
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Appendix I Ethical Approval for the Qualitative Study

Application Approved

Ethics Committee for Non-Clinical Research Involving Human Subjects

Staff Research Ethics Application ☐

Application

Postgraduate Student Research Ethics

☒

Application Details

Application Number: 400150057

Applicant's Name: Kaidong Yu

Project Title: Consumer Coping Strategies regarding Food Safety Issues

Application Status: **Approved**

Start Date of Approval: 91/01/2016

End Date of Approval of Research Project: 09/30/2017

Please retain this notification for future reference. If you have any enquiries please email socsci-ethics@glasgow.ac.uk.

Appendix II Consent Form

Title of Project: Consumer coping strategies regarding food safety issues

Name of Researcher: Kaidong Yu

I confirm that I have read and understood the Plain Language Statement/Participant Information Sheet for the above study and have had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I consent to interviews being audio-recorded.

I acknowledge that participants will be referred to by pseudonym.

I understand that the data collected from this research will be stored securely with my personal details removed and agree for it to be held as set out in the Plain Language Statement.

I agree to take part in this research study ☐

I do not agree to take part in this research study ☐

Name of Participant

Signature

Date

Name of Researcher

Signature

Date

Appendix III Participant Information Sheet



College of Social
Sciences

Title of Study: Consumer coping strategies regarding food safety issues

Researcher: Kaidong Yu, Doctoral researcher at the University of Glasgow

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

The purpose of this research is to investigate consumer coping strategies in dealing with long term food safety issues within the Chinese food market. You will be asked questions regarding your food shopping behaviour and reactions to food safety issues. Your participation in the consumer interview is entirely voluntary. The interview will last approximately 60 minutes. You will get a summary of your interview if requested. You have the right to withdraw at any time without providing reasons. The data will be only used in the researcher's doctoral research, including thesis, conferences and journal articles.

Your personal details will be kept confidential and stored at the University of Glasgow. Please note that assurances on confidentiality will be strictly adhered to unless evidence of wrongdoing or potential harm is uncovered. In such cases the University may be obliged to contact relevant statutory bodies/agencies.

This research has been considered and approved by the College Research Ethics Committee from the University of Glasgow.

For any inquiries regarding the research, please contact the researcher:

Kaidong Yu, email: K.yu.1@research.gla.ac.uk

For further information and where to pursue any complaint: this should be the College of Social Sciences Ethics Officer:

Dr Muir Houston, email: Muir.Houston@glasgow.ac.uk

Thank you for your participation

Appendix IV Specific Items Adapted

Section A: Self-Efficacy		
Approaches:	Original items:	Adapted items:
Deductive	<p>Schwarzer and Jerusalem (1995): General Self-Efficacy Scale</p> <ol style="list-style-type: none"> 1. I can always manage to solve difficult problems if I try hard enough. 2. If someone opposes me, I can find means and ways to get what I want. 3. It is easy for me to stick to my aims and accomplish my goals. 4. I am confident that I could deal efficiently with unexpected events. 5. Thanks to my resourcefulness, I know how to handle unforeseen situations. 6. I can solve most problems if I invest the necessary effort. 7. I can remain calm when facing difficulties because I can rely on my coping abilities. 8. When I am confronted with a problem, I can usually find several solutions. 9. If I am in a bind, I can usually think of something to do. 10. No matter what comes my way, I'm usually able to handle it. 	<p>How do the statements below describe you?</p> <ul style="list-style-type: none"> ▪ I can always manage to solve the issues if I try hard enough. ▪ If someone opposes me, I can find means and ways to get what I want. ▪ It is easy for me to stick to my aims and accomplish my goals. ▪ I am confident that I could deal efficiently with unexpected events. ▪ Thanks to my resourcefulness, I know how to handle unforeseen situations. ▪ I can solve most problems if I invest the necessary effort. ▪ I can remain calm when facing difficulties because I can rely on my coping abilities. ▪ When I am confronted with a problem, I can usually find several solutions. ▪ If I am in a bind, I can usually think of something to do. ▪ No matter what comes my way, I'm usually able to handle it.
Inductive	/	
Section A: Locus of Control		
Approaches:	Original items:	Adapted items:
Deductive	<p>1).Rotter (1966) 23-item scale in handbook (Hapert and Hill, 2011), adapted by Lumpkin (1985) to 6 items:</p> <ol style="list-style-type: none"> 1. When I make plans, I am almost certain that I can make them work. 2. Getting people to do the right things depends upon ability; luck has nothing to do with it. 3. What happens to me is my own doing. 4. Many of the unhappy things in people's lives are partly due to bad luck (-) (reversed item removed) 	<p>How do the statements below describe you?</p> <ul style="list-style-type: none"> ▪ When I make plans, I am almost certain that I can make them work. ▪ Getting people to do the right things depends upon ability; luck has nothing to do with it. ▪ What happens to me is my own doing. ▪ Getting things done depends mainly on being in the right way at the right time.

	5. Getting a good job depends mainly on being in the right place at the right time. 6. Many times I feel that I have little influence over the things that happen to me (-) (reversed item removed).	
Inductive	/	
Section B: Optimism		
Approaches:	Original items:	Adapted items:
Deductive	Dember, Martin, Hummer, Howe, and Melton (1989): Extended Life Orientation Test <ol style="list-style-type: none"> 1. In uncertain times, I usually expect the best. 2. I always look on the bright side of things. 3. I'm always optimistic about my future 4. When I undertake something new, I expect to succeed. 5. Where there is a will, there is a way. 6. In general, things turn out all right in the end. 	How do the statements below describe your personality? <ul style="list-style-type: none"> ▪ In uncertain times, I usually expect the best. ▪ I always look on the bright side of things. ▪ I'm always optimistic about the future situation of food safety. ▪ When I undertake something new, I expect to succeed. ▪ Where there is a will, there is a way. ▪ In general, things turn out all right in the end.
Inductive	/	
Section B: Pessimism		
Approaches:	Original items:	Adapted items:
Deductive	Dember, Martin, Hummer, Howe, and Melton (1989): Extended Life Orientation Test <ol style="list-style-type: none"> 1. It is best not to get your hope too high since you will probably be disappointed. 2. Rarely do I expect good things to happen 3. If something can go wrong for me, it will 4. I hardly ever expect things to go my way 5. Things never work out the way I want them to. 6. If I make a decision on my own, I can pretty much count on the fact that it will turn out to be a poor one. 7. I rarely count on good things happen to me 8. Better to expect defeat: then it doesn't hit so hard when it comes. 9. Give me 50/50 odds and I will choose the wrong answer 	How do the statements below describe your personality? <ul style="list-style-type: none"> ▪ It is best not to get your hope too high since you will probably be disappointed. ▪ Rarely do I expect good things to happen ▪ If something can go wrong for me, it will ▪ I hardly ever expect things to go my way ▪ Things never work out the way I want them to. ▪ If I make a decision on my own, I can pretty much count on the fact that it will turn out to be a poor one. ▪ I rarely count on good things happen to me ▪ Better to expect defeat: then it doesn't hit so hard when it comes. ▪ Give me 50/50 odds and I will choose the wrong answer every time.

	every time.	
Inductive	/	
Section C: Perceived Stress		
Approaches:	Original items:	Adapted items:
Deductive	<p>A. Perceived Stress Scale(PSS):14 items (Cohen, Kamarak, & Mermelstein, 1983)</p> <p>B. PSS-10: 10 items (Remor 2006)</p> <p>Below is the 14-item:</p> <ol style="list-style-type: none"> 1. In the last month, how often have you been upset because of something that happened unexpectedly? 2. In the last month, how often have you felt that you were unable to control the important things in your life? 3. In the last month, how often have you felt nervous and "stressed"? 4. In the last month, how often have you dealt successfully with irritating life hassles? (-) 5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life? (-) 6. In the last month, how often have you felt confident about your ability to handle your personal problems? (-) 7. In the last month, how often have you felt that things were going your way? (-) 8. In the last month, how often have you found that you could not cope with all the things that you had to do? 9. In the last month, how often have you been able to control irritations in your life? (-) 10. In the last month, how often have you felt that you were on top of things? (-) 11. In the last month, how often have you been angered because of things that happened that were outside of your control? 12. In the last month, how often have you found yourself thinking about things that you have to accomplish? 13. In the last month, how often have 	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none"> ▪ I felt upset because of food safety issues ▪ I felt that I was unable to control food safety issues ▪ I felt nervous and "stressed" due to food safety issues ▪ I found that I could not cope with food safety issues ▪ I felt upset because of food safety issues that happened were outside of my control ▪ I found myself thinking about food safety issues that I have to deal with ▪ I felt that I could not overcome food safety issues

	<p>you been able to control the way you spend your time? (-)</p> <p>14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</p>	
Inductive	/	
Section D: Worry		
Approaches:	Original items:	Adapted items:
Deductive	<p>Yi and Baumgartner (2004):</p> <ol style="list-style-type: none">1. Worried;2. Nervous;(overlap with the emotion of fear)3. Anxious.	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none">▪ I worried about the issues▪ I felt anxious about the issues▪ I panicked about food safety issues▪ I was uncertain about the issues
Inductive	<p>Consumer Interview:</p> <ol style="list-style-type: none">1. I am panicking about the issues.2. I am uncertain about the issues.	
Section D: Disappointment		
Approaches:	Original items:	Adapted items:
Deductive	<p>Yi and Baumgartner (2004):</p> <ol style="list-style-type: none">1. Disappointed;2. Dissatisfied;3. Unfulfilled.4. Let down5. Hope dashes (overlap with emotion of hope)	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none">▪ I felt disappointed with the issues▪ I was dissatisfied with the issues▪ I felt let down with the issues▪ I felt helpless about food safety issues
Inductive	/	
Anger		
Approaches:	Original items:	Adapted items:
Deductive	<p>1).DAR5 (Hawthorne et al., 2006):</p> <ol style="list-style-type: none">1. I often find myself getting angry at people or situations2. When I get angry, I get really mad3. When I get angry, I stay angry4. When I get angry at someone, I want to hit or clobber the person(not fit)5. My anger prevents me from getting along with people as well as I'd like to(not fit) <p>2) Yi and Baumgartner (2004):</p> <ol style="list-style-type: none">1. angry2. mad3. furious	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none">▪ I found myself getting angry at food safety issues▪ When I get angry at the issues, I get really mad▪ When I get angry at the issues, I stay angry▪ I felt furious about the issues.
Inductive	/	

Section D: Fear		
Approaches:	Original items:	Adapted items:
Deductive	<p>Fear scale of breast cancer (Champion et al., 2004):</p> <ol style="list-style-type: none">1. The thought of breast cancer scares me2. When I think about breast cancer, I feel nervous3. When I think about breast cancer, I get upset4. When I think about breast cancer, I get depressed5. When I think about breast cancer, I get jittery6. When I think about breast cancer, my heart beats faster (I get frightened)7. When I think about breast cancer, I feel uneasy8. When I think about breast cancer, I feel anxious	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none">▪ The thought of food safety issues scares me▪ I felt nervous about food safety issues▪ I felt upset about food safety issues▪ I felt depressed about food safety issues▪ I felt jittery about food safety issues▪ I felt frightened about food safety issues▪ I felt uneasy about food safety issues
Inductive	/	
Section D: Hope		
Approaches:	Original items:	Adapted items:
Deductive	<p>1).Hope Scale (Snyder et al., 1991) 12 items</p> <p>1 = Definitely False 2 = Mostly False 3 = Mostly True 4 = Definitely True (agency (goal-directed determination) and pathways (planning of ways to meet goals))</p> <ol style="list-style-type: none">1. I can think of many ways to get out of a jam. (Pathways)2. I energetically pursue my goals. (Agency) (not fit)3. I feel tired most of the time. (Filler)4. There are lots of ways around any problem. (Pathways)5. I am easily downed in an argument. (Filler)6. I can think of many ways to get the things in life that are most important to me. (Pathways)7. I worry about my health. (Filler)8. Even when others get discouraged, I know I can find a way to solve the problem. (Pathways)9. My past experiences have prepared	<p>The last time I went shopping for vegetables.....</p> <ul style="list-style-type: none">▪ I can think of many ways to get out of the issues▪ I thought there are lots of ways around food safety issues▪ I knew I can find a way to solve food safety issues, even when others get discouraged▪ I felt that my past experiences have prepared me well for dealing with food safety issues▪ I felt that I was pretty successful in handling food safety issues

	<p>me well for my future. (Agency)</p> <p>10. I've been pretty successful in life. (Agency)</p> <p>11. I usually find myself worrying about something. (Filler)</p> <p>12. I meet the goals that I set for myself. (Agency) (not fit)</p>	
Inductive	/	



University
of Glasgow

College of Social
Sciences

Appendix V Ethical Approval for the Quantitative Study

Application Approved

Ethics Committee for Non-Clinical Research Involving Human Subjects

Staff Research Ethics Application ☐

Application

Postgraduate Student Research Ethics

☒

Application Details

Application Number: 400160061

Applicant's Name: Kaidong Yu

Project Title: Consumer Long-term Coping Strategies: A Study on Food Safety Issues

Application Status: Approved

Start Date of Approval: 15/12/2016

End Date of Approval of Research Project: 30/09/2017

Please retain this notification for future reference. If you have any enquiries please email socsci-ethics@glasgow.ac.uk.

Appendix VI Questionnaire (English Version)

Dear participant:

You are invited to participate in an online exploring your food consumption. The survey is for Chinese consumers aged 18 and above. If you are under age 18, please do not participate in this survey.

This survey forms part of a PhD research project. Your participation is absolutely crucial to the completion of this research and is highly appreciated. You are expected to answer all questions based on your own experience and knowledge. There is no right or wrong answer. Any information provided in this survey will be kept strictly confidential. Your participation in the questionnaire survey is entirely voluntary. You have the right to withdraw at any time without providing reasons. The survey will take approximately 15 minutes to complete.

Please note that completion of this survey indicates your consent to participate in the research. Thank you very much in advance for participating and completing the survey.

Please contact me (Kaidong Yu: k.yu.1@research.gla.ac.uk) if you have any queries regarding the research.

For further information and where to pursue any complaint: please contact the College of Social Sciences Ethics Officer (Dr Muir Houston: Muir.Houston@glasgow.ac.uk)

The first two sections A and B are about **how you see yourself** and about **your personality**. Please circle the appropriate number to express the level of your agreement.

Section A: Cognitive Factors

How do the statements below best describe you?	1= <i>strongly disagree</i> , 4= <i>neutral</i> , 7= <i>strongly agree</i>						
I can always manage to solve difficult problems if I try hard enough	1	2	3	4	5	6	7
If someone opposes me, I can find means and ways to get what I want	1	2	3	4	5	6	7
It is easy for me to stick to my aims and accomplish my goals	1	2	3	4	5	6	7
I am confident that I could deal efficiently with unexpected events	1	2	3	4	5	6	7
Thanks to my resourcefulness, I know how to handle unforeseen situations	1	2	3	4	5	6	7
I can solve most problems if I invest the necessary effort	1	2	3	4	5	6	7
I can remain calm when facing difficulties because I can rely on my coping abilities	1	2	3	4	5	6	7
When I am confronted with a problem, I can usually find several solutions	1	2	3	4	5	6	7
If I am in a bind, I can usually think of something to do	1	2	3	4	5	6	7
No matter what comes in my way, I'm usually able to handle it	1	2	3	4	5	6	7
When I make plans, I am almost certain that I can make them work	1	2	3	4	5	6	7
Getting people to do the right things depends upon ability; luck has nothing to do with it	1	2	3	4	5	6	7
What happens to me is my own doing	1	2	3	4	5	6	7
Getting things done depends mainly on being in the right way at the right time	1	2	3	4	5	6	7

Section B: Personality

How do the statements below best describe your personality?	1= <i>strongly disagree</i> , 4= <i>neutral</i> , 7= <i>strongly agree</i>
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In uncertain times, I usually expect the best	1	2	3	4	5	6	7
I always look on the bright side of things	1	2	3	4	5	6	7
I'm always optimistic about the future	1	2	3	4	5	6	7
When I undertake something new, I expect to succeed	1	2	3	4	5	6	7
Where there is a will, there is a way	1	2	3	4	5	6	7
In general, things turn out all right in the end	1	2	3	4	5	6	7
It is best not to get your hope too high since you will probably be disappointed	1	2	3	4	5	6	7
Rarely do I expect good things to happen	1	2	3	4	5	6	7
If something can go wrong for me, it will	1	2	3	4	5	6	7
I hardly expect things to go my way	1	2	3	4	5	6	7
Things never work out the way I want them to	1	2	3	4	5	6	7
If I make a decision on my own, I can pretty much count on the fact that it will turn out to be a poor one	1	2	3	4	5	6	7
I rarely count on good things happening to me	1	2	3	4	5	6	7
Better to expect defeat: then it doesn't hit so hard when it comes	1	2	3	4	5	6	7
Give me 50/50 odds and I will choose the wrong answer every time	1	2	3	4	5	6	7

The following three sections (C, D and E) relate specifically to food safety. By food safety I mean issues relating to food hygiene and safety. Specifically, it can be defined as the assurance that food will not cause harm to the consumer when it is prepared and consumed according to its intended use (World Health Organisation, 1997). The questions that follow ask you about your feelings and thoughts in relation to food safety. Please circle the appropriate number to express your level of agreement.

Section C

The last time I went shopping for vegetables.....	1=strongly disagree, 4=neutral, 7=strongly agree						
I felt upset because of food safety issues	1	2	3	4	5	6	7

I felt that I was unable to control food safety issues	1	2	3	4	5	6	7
I felt nervous and "stressed" due to food safety issues	1	2	3	4	5	6	7
I found that I could not cope with food safety issues	1	2	3	4	5	6	7
I felt upset because of food safety issues that happened were outside of my control	1	2	3	4	5	6	7
I found myself thinking about food safety issues that I have to deal with	1	2	3	4	5	6	7
I felt that I could not overcome food safety issues	1	2	3	4	5	6	7

Section D

The last time I went shopping for vegetables.....	1=strongly disagree, 4=neutral, 7=strongly agree						
I worried about food safety issues	1	2	3	4	5	6	7
I felt anxious about food safety issues	1	2	3	4	5	6	7
I panicked about food safety issues	1	2	3	4	5	6	7
I was uncertain about food safety issues	1	2	3	4	5	6	7
I felt disappointed with food safety issues	1	2	3	4	5	6	7
I was dissatisfied with food safety issues	1	2	3	4	5	6	7
I felt let down with food safety issues	1	2	3	4	5	6	7
I felt helpless about food safety issues	1	2	3	4	5	6	7
I found myself getting angry at food safety issues	1	2	3	4	5	6	7
When I get angry at food safety issues, I get really mad	1	2	3	4	5	6	7
When I get angry at food safety issues, I stay angry	1	2	3	4	5	6	7
I felt furious about food safety issues	1	2	3	4	5	6	7
The thought of food safety issues scares me	1	2	3	4	5	6	7
I felt nervous about food safety issues	1	2	3	4	5	6	7
I felt upset about food safety issues	1	2	3	4	5	6	7

I felt depressed about food safety issues	1	2	3	4	5	6	7
I felt jittery about food safety issues	1	2	3	4	5	6	7
I felt frightened about food safety issues	1	2	3	4	5	6	7
I felt uneasy about food safety issues	1	2	3	4	5	6	7
I can think of many ways to get out of food safety issues	1	2	3	4	5	6	7
I thought there are lots of ways around food safety issues	1	2	3	4	5	6	7
I knew I can find a way to solve food safety issues, even when others get discouraged,	1	2	3	4	5	6	7
I felt that my past experiences have prepared me well for dealing with food safety issues	1	2	3	4	5	6	7
I felt that I was pretty successful in handling food safety issues	1	2	3	4	5	6	7

Section E: Coping Strategies

When I am confronted with food safety issues in relation to vegetables....	1=strongly disagree, 4=neutral, 7=strongly agree						
I think about how I might best handle food safety issues	1	2	3	4	5	6	7
I try to come up with a strategy about what to do with food safety issues	1	2	3	4	5	6	7
I think about what steps to take to resolve food safety issues	1	2	3	4	5	6	7
I make a plan of action in resolving food safety issues and follow it	1	2	3	4	5	6	7
I know what has to be done in resolving food safety issues and I do it	1	2	3	4	5	6	7
I concentrate on ways food safety issues could be solved	1	2	3	4	5	6	7
I generate potential solutions for food safety issues	1	2	3	4	5	6	7
I think about the best way to handle food safety issues	1	2	3	4	5	6	7
I concentrate my efforts on doing something about food safety issues	1	2	3	4	5	6	7
I make direct efforts to deal with food safety issues	1	2	3	4	5	6	7
I try to be optimistic in spite of food safety issues	1	2	3	4	5	6	7
I work on feeling positive in relation to food safety issues no matter what	1	2	3	4	5	6	7

I work on staying positive even when food safety issues look bad	1	2	3	4	5	6	7
I get used to the idea that food safety issues happened (or are happening)	1	2	3	4	5	6	7
I accept the reality of the fact that food safety issues happened (or are happening)	1	2	3	4	5	6	7
I try to see food safety issues in a different light, to make them seem more positive	1	2	3	4	5	6	7
I look for something good in food safety issues that are happening	1	2	3	4	5	6	7
I try to do something to adjust myself to food safety issues	1	2	3	4	5	6	7
I am alert about food safety issues and try to keep the status quo	1	2	3	4	5	6	7
I am a "take charge" person in relation to food safety issues	1	2	3	4	5	6	7
I try to let things work out on their own in relation to food safety issues (-)	1	2	3	4	5	6	7
I set up my goals and try to achieve them in relation to food safety issues	1	2	3	4	5	6	7
Despite numerous setbacks, I usually succeed in dealing with food safety issues	1	2	3	4	5	6	7
I always try to find a way to work food safety issues; nothing really stops me	1	2	3	4	5	6	7
I turn food safety issues into positive experiences	1	2	3	4	5	6	7
When I experience food safety issues, I take the initiative in resolving it	1	2	3	4	5	6	7
I do something ahead to prevent food safety issues	1	2	3	4	5	6	7
I rely on others to make me feel better about food safety issues	1	2	3	4	5	6	7
I share my feelings with others I trust and respect about food safety issues	1	2	3	4	5	6	7
I have others assist me in fixing food safety issues	1	2	3	4	5	6	7
I talk to others about how I am feeling about food safety issues	1	2	3	4	5	6	7
I try to get emotional support from others about food safety issues	1	2	3	4	5	6	7
I ask others I trust for help on food safety issues	1	2	3	4	5	6	7
I ask others with certain amount of resources and experience to help me regarding food safety issues	1	2	3	4	5	6	7
I get professional help from government organisations on food safety issues (e.g., food inspection & quarantine department).	1	2	3	4	5	6	7
I tend to rely on government organisations when facing problematic food	1	2	3	4	5	6	7

safety issues							
I try to figure out ways of handling food safety issues with the help of government organisations	1	2	3	4	5	6	7
I receive some safe foods from the organisation I work for (e.g., organic vegetables distributed)	1	2	3	4	5	6	7
I receive some safe foods shared by my friends or family members getting from organisations they work for (e.g., organic vegetables distributed)	1	2	3	4	5	6	7
I talk to others to find out more about food safety issues	1	2	3	4	5	6	7
I ask others with similar experiences what they did about food safety issues	1	2	3	4	5	6	7
I often acquire information regarding food safety issues on media platforms (e.g., newspaper, TV, magazine, social media and websites)	1	2	3	4	5	6	7
I ask others who have more knowledge on food safety issues	1	2	3	4	5	6	7
I observe how others handle food safety issues	1	2	3	4	5	6	7
I have concerns about food safety issues when I face them	1	2	3	4	5	6	7
I have some vigilant behaviours in relation to food safety issues (e.g., checking restaurant's hygiene rating)	1	2	3	4	5	6	7
I try to make my mind off food safety issues by doing other things	1	2	3	4	5	6	7
I distract myself to avoid thinking about food safety issues	1	2	3	4	5	6	7
I avoid thinking about food safety issues	1	2	3	4	5	6	7
I try not to think about food safety issues	1	2	3	4	5	6	7
I wish that food safety issues would go away or somehow be over with	1	2	3	4	5	6	7
I try to forget the whole issue of food safety	1	2	3	4	5	6	7
I want to turn the clock back to when there are no food safety issues	1	2	3	4	5	6	7
I wish that I could escape from food safety issues	1	2	3	4	5	6	7
I wish I didn't have to experience food safety issues	1	2	3	4	5	6	7
I gave up in attempting to get safer foods	1	2	3	4	5	6	7
I simply do nothing about food safety issues	1	2	3	4	5	6	7
I simply try to avoid food safety issues	1	2	3	4	5	6	7

Section F: Demographic Characteristics

1. Gender ☐ Male ☐ Female
2. Age ☐ 18-30 ☐ 31-45 ☐ 46-60 ☐ Above 60
3. Education ☐ High School or below
☐ Bachelor ☐ Master ☐ Doctor
4. Family Structure (tick all that apply) :
 - ☐ child/children under 12
 - ☐ family member(s) with physical disabilities
 - ☐ family member(s) with chronic physical or mental illness
 - ☐ elder family member above 70
 - ☐ none of above

Thank you very much for your participation!

Appendix VII Questionnaire (Chinese Version)

亲爱的受访者：

您好！您被邀请参与一项关于食品消费的学术研究调查。我们的受访对象是 18 岁以上的中国消费者。如果您在 18 岁以下，请不要参与此次研究。

您的参与对于完成此项研究至关重要，我们也非常感谢您的参与。您只需根据自身的经验和经历回答所有问题，没有对错之分。所有在此问卷中提及的信息将被严格的密存。参与此次研究基于自愿原则。您有权在任何时候无条件退出问卷填写。总共填写时间约为 15 分钟。

如果您完成了此次问卷，那么就自动代表了您同意参与此次研究。提前感谢您的参与并完成问卷。谢谢！

如有任何疑问，请联系研究者（俞凯东，邮箱 k.yu.1@research.gla.ac.uk）

其他信息或投诉请联系社会科学院学术道德官员 Dr Muir Houston (Muir.Houston@glasgow.ac.uk).

请根据自身情况，按 1 到 7 分评估以下对于您认知情况的描述（1=非常不同意, 4=适中, 7=非常同意）

第一部分：认知因素

请根据下面的描述评估您的状态	1=非常不同意, 4=适中, 7=非常同意						
只要我足够努力，困难的问题总是能被解决	1	2	3	4	5	6	7
如果有人反对我，我能找到方式方法去得到我想要的	1	2	3	4	5	6	7
对我来说坚持目标并完成它是很简单的事	1	2	3	4	5	6	7
我有自信我能有效的处理未知的情况	1	2	3	4	5	6	7
由于我丰富的资源，我知道如何去应对未知的情况	1	2	3	4	5	6	7
如果我付出相应的努力，我能够解决大多数问题	1	2	3	4	5	6	7
面对困难的时候，我能够保持冷静因为我有很多应对的方法	1	2	3	4	5	6	7
每当我碰到问题的时候，我通常能找到多个解决方法	1	2	3	4	5	6	7
如果在一个窘境，我通常可以想出要做什么	1	2	3	4	5	6	7
无论遇到什么，我通常可以处理它	1	2	3	4	5	6	7
当制定计划时，我差不多可以确定我能够实施这个计划	1	2	3	4	5	6	7
让人去做对的事情靠的是能力，这和运气毫无关系	1	2	3	4	5	6	7
解决我的问题是我个人的责任	1	2	3	4	5	6	7
完成一件事主要靠在正确的时间用正确的方法	1	2	3	4	5	6	7

第二部分：个性

请根据如下的描述对您的个性进行评估	1=非常不同意, 4=适中, 7=非常同意						
在形势不确定的时候，我会期望最好的结果	1	2	3	4	5	6	7
我总是看事情好的那一面	1	2	3	4	5	6	7
我总是对未来保持乐观	1	2	3	4	5	6	7

每当我做一些新的事情时，我都会期待它们会成功	1	2	3	4	5	6	7
有志者，事竟成	1	2	3	4	5	6	7
总体上，我做的事情最后都会有好的结果	1	2	3	4	5	6	7
最好不要把期望值定过高，因为很可能会失望	1	2	3	4	5	6	7
我极少相信好事情会发生	1	2	3	4	5	6	7
如果有些事可能会出错，那么它一定会	1	2	3	4	5	6	7
我很少期待事情跟着我的想法走	1	2	3	4	5	6	7
事情从来不朝我希望的方向发展	1	2	3	4	5	6	7
如果我自己做了决定，我能很肯定最后它会是一个不好的结果	1	2	3	4	5	6	7
我极少相信好事情会发生在我身上	1	2	3	4	5	6	7
最好去期望那个相反的结果，最后就不会受伤太严重	1	2	3	4	5	6	7
给我二选一的选择，我总是会选到那个错误的答案	1	2	3	4	5	6	7

如下部分的背景是：我们中国消费者长期面对问题蔬果所造成的严重后果，比如食源性疾病，化学残留物，食品中毒等问题。并且，每年还有不同形式的食品安全事件爆发。以下的问题只涉及您的感受及想法。虽然有些问题很相似，但它们之间是有区别的，请您按照独立的问题去回答。最好不要进行思考，快速的回答。

请根据自身情况，按 1 到 7 分评估以下对于情绪的描述。

第三部分：压力

上一次您去购买蔬菜时.....	1=非常不同意, 4=适中, 7=非常同意						
您有因为食品安全而不安吗?	1	2	3	4	5	6	7
您有感到您无法控制食品安全问题吗?	1	2	3	4	5	6	7
您有为食品安全感到紧张和压力吗?	1	2	3	4	5	6	7
您有发现您无法处理食品安全问题?	1	2	3	4	5	6	7
您有因为发生的食品安全问题超出了您的控制而感到不安吗?	1	2	3	4	5	6	7

您有发现自己在想您必须处理的食品安全问题吗？	1	2	3	4	5	6	7
您有感到您无法克服这个问题吗？	1	2	3	4	5	6	7

第四部分：情绪

请根据自身情况，按 1 到 7 分评估以下对于情绪的描述。

上一次我去购买蔬菜时.....	1=非常不同意, 4=适中, 7=非常同意						
对于食品安全问题我很担忧	1	2	3	4	5	6	7
对于食品安全问题我很焦虑	1	2	3	4	5	6	7
对于食品安全问题我很惊慌	1	2	3	4	5	6	7
对于食品安全问题我很不确定	1	2	3	4	5	6	7
对于食品安全问题我很失望	1	2	3	4	5	6	7
对于食品安全问题我很不满意	1	2	3	4	5	6	7
对于食品安全问题我很泄气	1	2	3	4	5	6	7
对于食品安全问题我很无助	1	2	3	4	5	6	7
我经常发现自己对食品安全问题生气	1	2	3	4	5	6	7
当我为食品安全问题生气时，我很抓狂	1	2	3	4	5	6	7
当我为食品安全问题生气时，这种生气的情绪会保持	1	2	3	4	5	6	7
我对于食品安全问题火冒三丈	1	2	3	4	5	6	7
食品问题使我受惊	1	2	3	4	5	6	7
对于食品安全问题我很紧张	1	2	3	4	5	6	7
对于食品安全问题我很不安	1	2	3	4	5	6	7
对于食品安全问题我很压抑	1	2	3	4	5	6	7
对于食品安全问题我很焦虑	1	2	3	4	5	6	7
对于食品安全问题我很受惊	1	2	3	4	5	6	7

对于食品安全问题我很不自在	1	2	3	4	5	6	7
我能想出很多方法解决食品安全问题	1	2	3	4	5	6	7
有很多方式可以避免食品安全问题	1	2	3	4	5	6	7
即使当其他人都很气馁时，我知道我能找到解决食品安全问题的途径	1	2	3	4	5	6	7
我过去的经历使我有所准备，让我能很好的处理食品安全问题	1	2	3	4	5	6	7
我成功的处理了食品安全问题	1	2	3	4	5	6	7

第五部分：行为

请根据自身情况，按 1 到 7 分评估以下对于情绪的描述。

当我试图解决持续的长期的蔬菜食品安全问题时，我会.....	1=非常不同意, 4=适中, 7=非常同意						
我会想我如何最恰当的处理这个食品安全问题	1	2	3	4	5	6	7
我试图想出一个关于怎么处理食品安全问题的策略	1	2	3	4	5	6	7
我会想解决食品安全问题的步骤	1	2	3	4	5	6	7
我会制定一个解决食品安全问题的计划并且遵从它	1	2	3	4	5	6	7
我知道需要做什么去解决食品安全问题并且我做了	1	2	3	4	5	6	7
我专注于能解决食品安全问题的方法	1	2	3	4	5	6	7
我想出可能的解决食品安全问题的方法	1	2	3	4	5	6	7
我会想最好的解决食品安全问题的途径	1	2	3	4	5	6	7
我专注于付出努力做些事情去解决食品安全问题	1	2	3	4	5	6	7
我作出直接的努力去解决食品安全问题	1	2	3	4	5	6	7
对于已经发生的食品安全问题我尽量保持乐观	1	2	3	4	5	6	7
不管怎样我都尽力保持积极	1	2	3	4	5	6	7
当食品安全问题看起来不好的时候我也尽力保持积极	1	2	3	4	5	6	7
对于已经发生或正在发生的事情（食品安全事件）我已经习惯了	1	2	3	4	5	6	7

我接受已经发生或正在发生的事情（食品安全事件）	1	2	3	4	5	6	7
我试着从不同角度看食品安全问题，保持积极	1	2	3	4	5	6	7
对于正在发生的食品安全问题我尽量寻找好的方面	1	2	3	4	5	6	7
我尽量调整自己去适应这个食品安全问题	1	2	3	4	5	6	7
我对食品安全问题很警惕并且尽力保持警惕的现状	1	2	3	4	5	6	7
对于食品安全问题,我是一个喜欢“掌控”的人	1	2	3	4	5	6	7
我会让食品安全问题顺其自然发展(-)	1	2	3	4	5	6	7
我明确我的解决食品问题的目标并且努力达到它们	1	2	3	4	5	6	7
尽管有许多困难，我通常会成功的处理食品安全问题	1	2	3	4	5	6	7
我总会试着找方法去解决食品安全问题，没有什么能阻止我	1	2	3	4	5	6	7
我会把解决食品安全问题变成积极的经验	1	2	3	4	5	6	7
当我经历食品安全问题时，我会主动去解决	1	2	3	4	5	6	7
我会提前做一些事情去预防食品安全问题	1	2	3	4	5	6	7
在食品安全问题上，依赖其他人让我感觉更好	1	2	3	4	5	6	7
我和其他我信任和尊重的人分享我对于食品安全的感觉	1	2	3	4	5	6	7
我有其他人帮助我去解决食品安全问题	1	2	3	4	5	6	7
我会向他人倾诉我对于食品安全问题的感觉如何	1	2	3	4	5	6	7
在食品安全问题上，我试着从其他人那里得到情感上的支持	1	2	3	4	5	6	7
在食品安全问题上，我向我信任的人寻求帮助	1	2	3	4	5	6	7
在食品安全问题上，我会向有一定资源和经验的家人朋友寻求帮助	1	2	3	4	5	6	7
在食品安全问题上，我会从政府相关机构或单位得到了专业的帮助(食品检测检疫机构)	1	2	3	4	5	6	7
当遇到食品安全问题的时候，我依赖相关政府相关机构	1	2	3	4	5	6	7
我会试图在政府相关机构的帮助下找出解决食安问题的方法	1	2	3	4	5	6	7
我会从我工作的单位得到了一些安全的食品（比如分发无公害水果蔬菜）	1	2	3	4	5	6	7

我的朋友和家人会跟我分享一些工作单位分发的安全食品（比如分发无公害水果蔬菜）	1	2	3	4	5	6	7
我会跟其他人聊天获取更多食品安全相关情况的信息	1	2	3	4	5	6	7
对于食品安全问题, 我会寻问有相同经历的其他人做了什么	1	2	3	4	5	6	7
我从一些媒体（比如报纸电视杂志网络等）平台上获取了食品安全相关的信息	1	2	3	4	5	6	7
我会向有更多食品安全知识的亲戚和朋友询问	1	2	3	4	5	6	7
我会观察亲戚朋友他们如何处理食品安全问题	1	2	3	4	5	6	7
当我面对食品安全问题的时候我会提出质疑	1	2	3	4	5	6	7
对于食品安全问题, 我会有一些警惕的行为, 比如去查看餐厅的卫生评级	1	2	3	4	5	6	7
我试图不去想食品安全问题, 而是去做其他事情分散注意	1	2	3	4	5	6	7
我分散自己的注意不去想食品安全问题	1	2	3	4	5	6	7
我避免去想食品安全问题	1	2	3	4	5	6	7
我试着不去想食品安全问题	1	2	3	4	5	6	7
我希望食品安全问题会消失或者一定程度上被解决	1	2	3	4	5	6	7
我试着忘掉整个食品安全问题	1	2	3	4	5	6	7
我希望时间倒流到没有食品安全问题的时候	1	2	3	4	5	6	7
我希望我能逃脱这个处境	1	2	3	4	5	6	7
我希望我不用经历食品安全问题	1	2	3	4	5	6	7
我放弃各种为了食品更安全而做的尝试	1	2	3	4	5	6	7
在食品安全问题上, 我不做任何事情去改变这个情况	1	2	3	4	5	6	7
我单纯的试着去避免食品安全问题	1	2	3	4	5	6	7

第六部分：基本信息

- 性别 ☐ ☐
- 年龄 ☐ 30 ☐ 31 ☐ 46-6 ☐ 大于 6 ☐
- 教育程度 ☐ (专) 高中及以下

☐ 本科 ☐ 硕士 ☐ 博士

4. 家庭构成 (请选择所有适合的选项):

- ☐ 有一个或几个 12 岁以下的小孩
- ☐ 有残疾的家庭成员
- ☐ 家里有生理或心理疾病的患者
- ☐ 有一个或几个 70 岁以上的老人
- ☐ 以上均没有

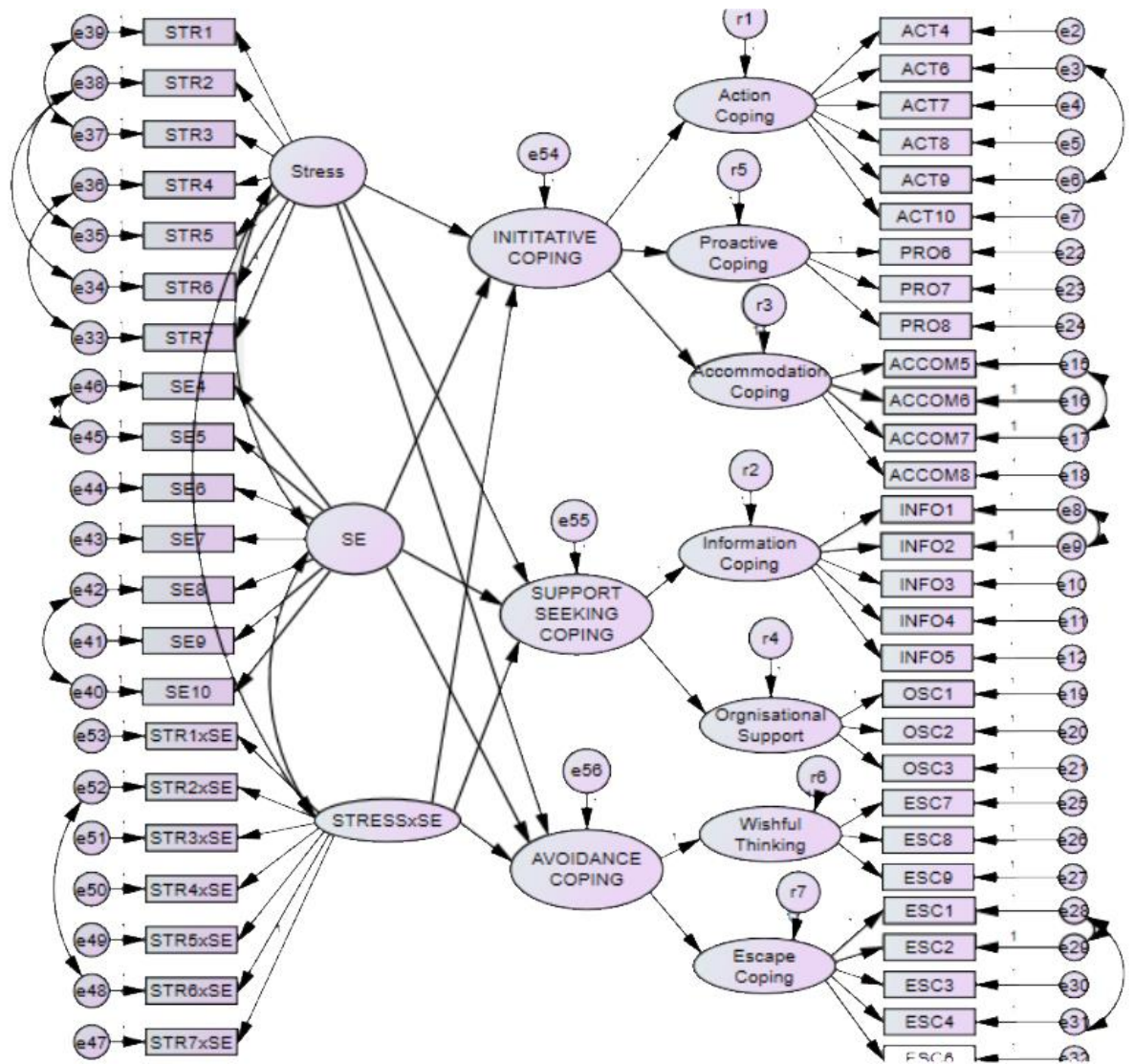
Appendix VIII Summary of Model Fit

Model fit for Structural Model in SEM

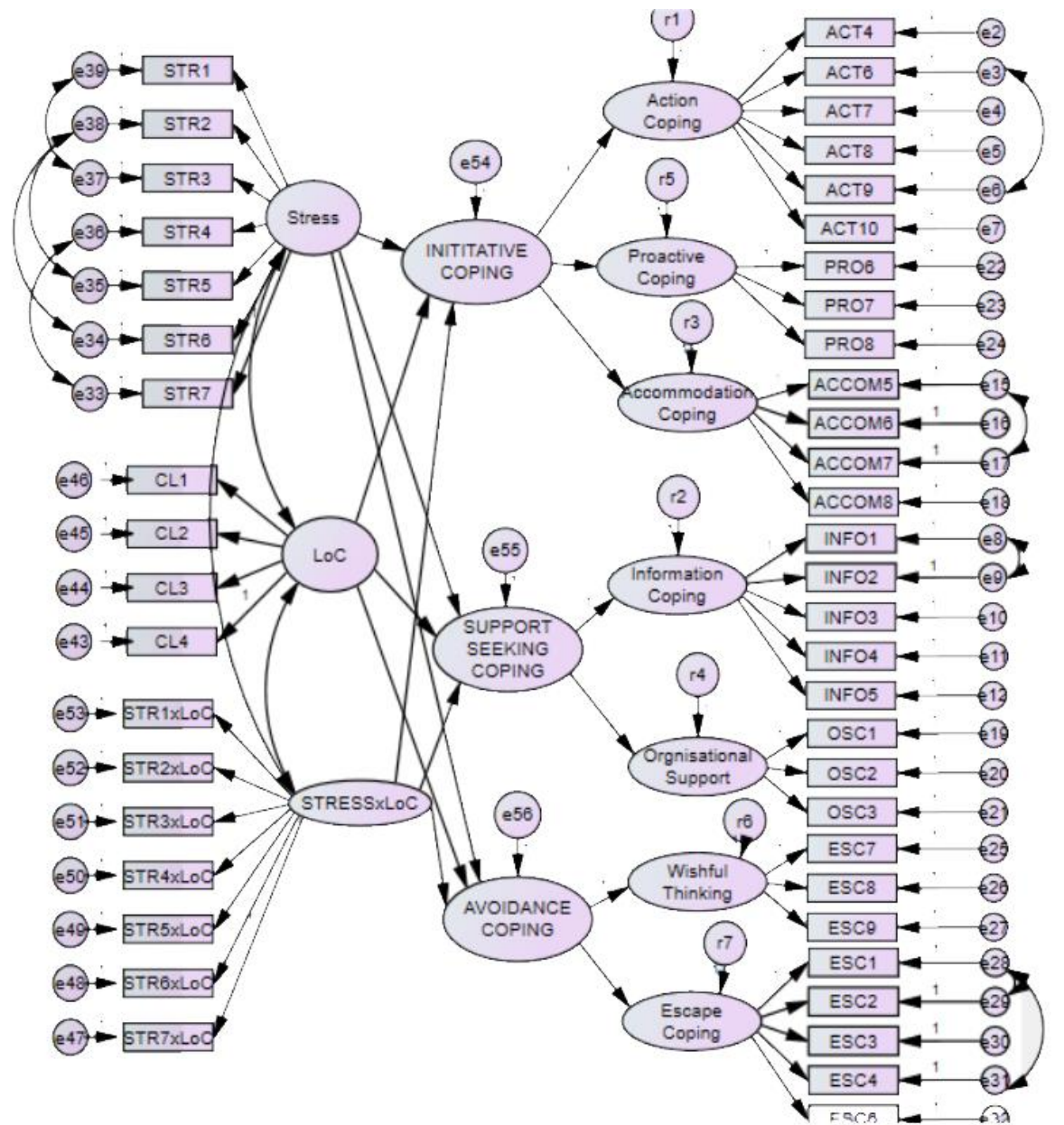
Model	Chi-square	CFI	GFI	TLI	RMSEA
Stress ×Self-Efficacy→Long-term Coping	$\chi^2(844)=9629.2$	0.754	0.883	0.723	0.082
Stress ×Locus of Control→Long-term Coping	$\chi^2(706)=8194.1$	0.793	0.872	0.763	0.083
Stress ×Optimism→Long-term Coping	$\chi^2(797)=9848.7$	0.741	0.871	0.708	0.087
Stress ×Pessimism→Long-term Coping	$\chi^2(1093)=8517.2$	0.852	0.894	0.849	0.058
Worry ×Self-Efficacy→Long-term Coping	$\chi^2(876)=7028.7$	0.782	0.862	0.757	0.059
Worry ×Locus of Control→Long-term Coping	$\chi^2(755)=6443.2$	0.793	0.849	0.766	0.063
Worry ×Optimism→Long-term Coping	$\chi^2(834)=6820.2$	0.780	0.855	0.753	0.060
Worry ×Pessimism→Long-term Coping	$\chi^2(918)=5721.3$	0.843	0.961	0.821	0.043
Disappoint×Self-Efficacy→Long-term Coping	$\chi^2(875)=7060.1$	0.878	0.958	0.852	0.059
Disappoint×LocusofControl→Long-term Coping	$\chi^2(754)=6450.2$	0.895	0.940	0.868	0.063
Disappoint ×Optimism→Long-term Coping	$\chi^2(833)=7266.4$	0.862	0.954	0.834	0.065
Disappoint×Pessimism→Long-term Coping	$\chi^2(917)=5542.0$	0.949	0.963	0.929	0.041
Anger ×Self-Efficacy→Long-term Coping	$\chi^2(875)=7074.4$	0.882	0.965	0.856	0.059
Anger ×Locus of Control→Long-term Coping	$\chi^2(754)=6589.8$	0.888	0.949	0.861	0.065
Anger ×Optimism→Long-term Coping	$\chi^2(833)=7301.3$	0.864	0.958	0.836	0.065
Anger ×Pessimism→Long-term Coping	$\chi^2(917)=5729.9$	0.943	0.967	0.922	0.043
Fear ×Self-Efficacy→Long-term Coping	$\chi^2(751)=8164.5$	0.844	0.909	0.803	0.079
Fear ×Locus of Control→Long-term Coping	$\chi^2(918)=9986.4$	0.826	0.895	0.819	0.081
Fear ×Optimism→Long-term Coping	$\chi^2(705)=8545.0$	0.786	0.901	0.755	0.085
Fear ×Pessimism→Long-term Coping	$\chi^2(897)=6583.4$	0.886	0.918	0.864	0.057
Hope ×Self-Efficacy→Long-term Coping	$\chi^2(961)=9156.7$	0.819	0.939	0.789	0.071
Hope ×Locus of Control→Long-term Coping	$\chi^2(834)=7550.4$	0.853	0.934	0.825	0.067
Hope ×Optimism→Long-term Coping	$\chi^2(917)=9195.7$	0.807	0.937	0.795	0.075
Hope ×Pessimism→Long-term Coping	$\chi^2(1010)=6858.0$	0.908	0.947	0.888	0.048

Appendix IX Structural Models

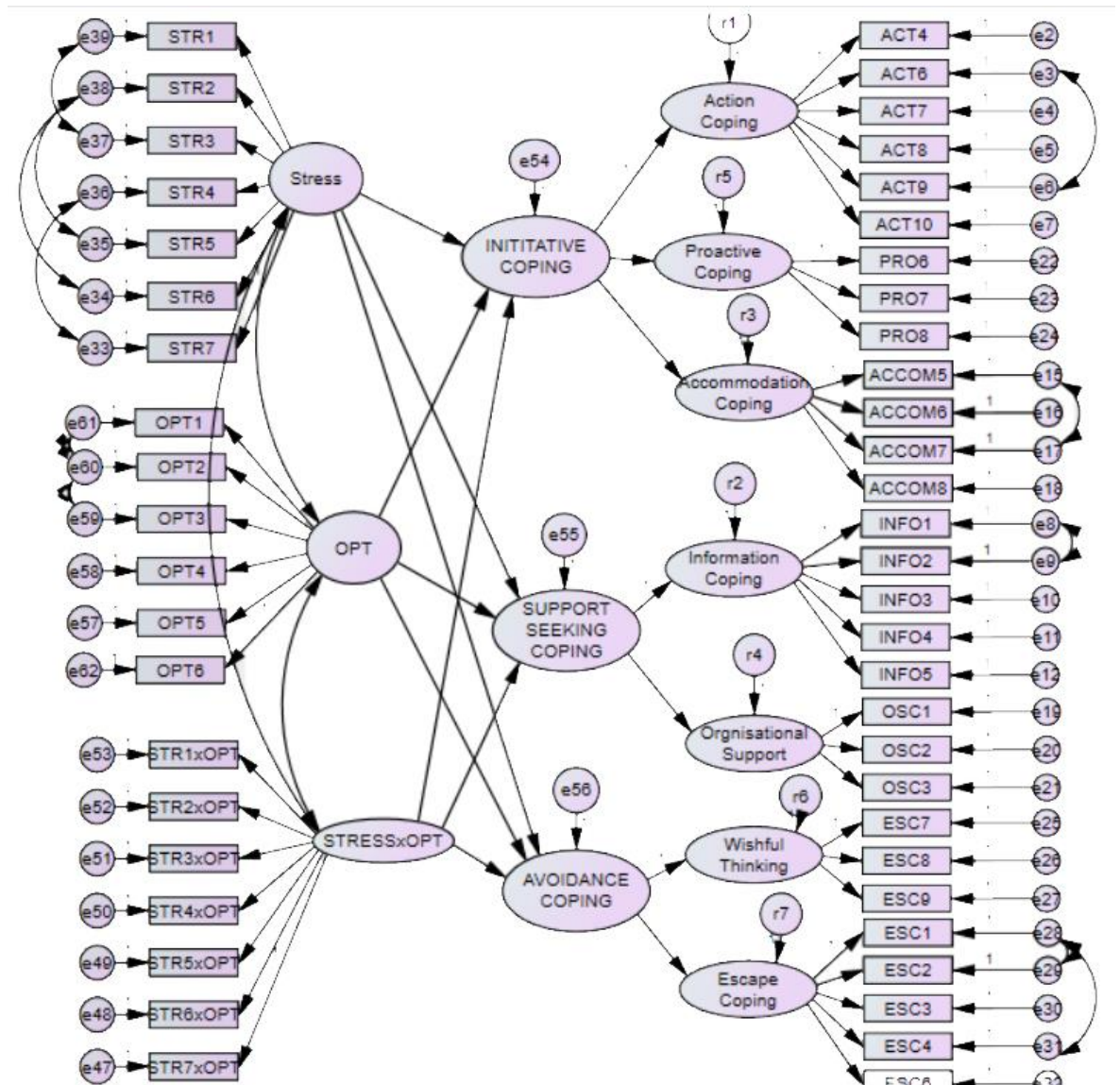
Structural Model: Stress * Self-efficacy —Consumer long-term coping



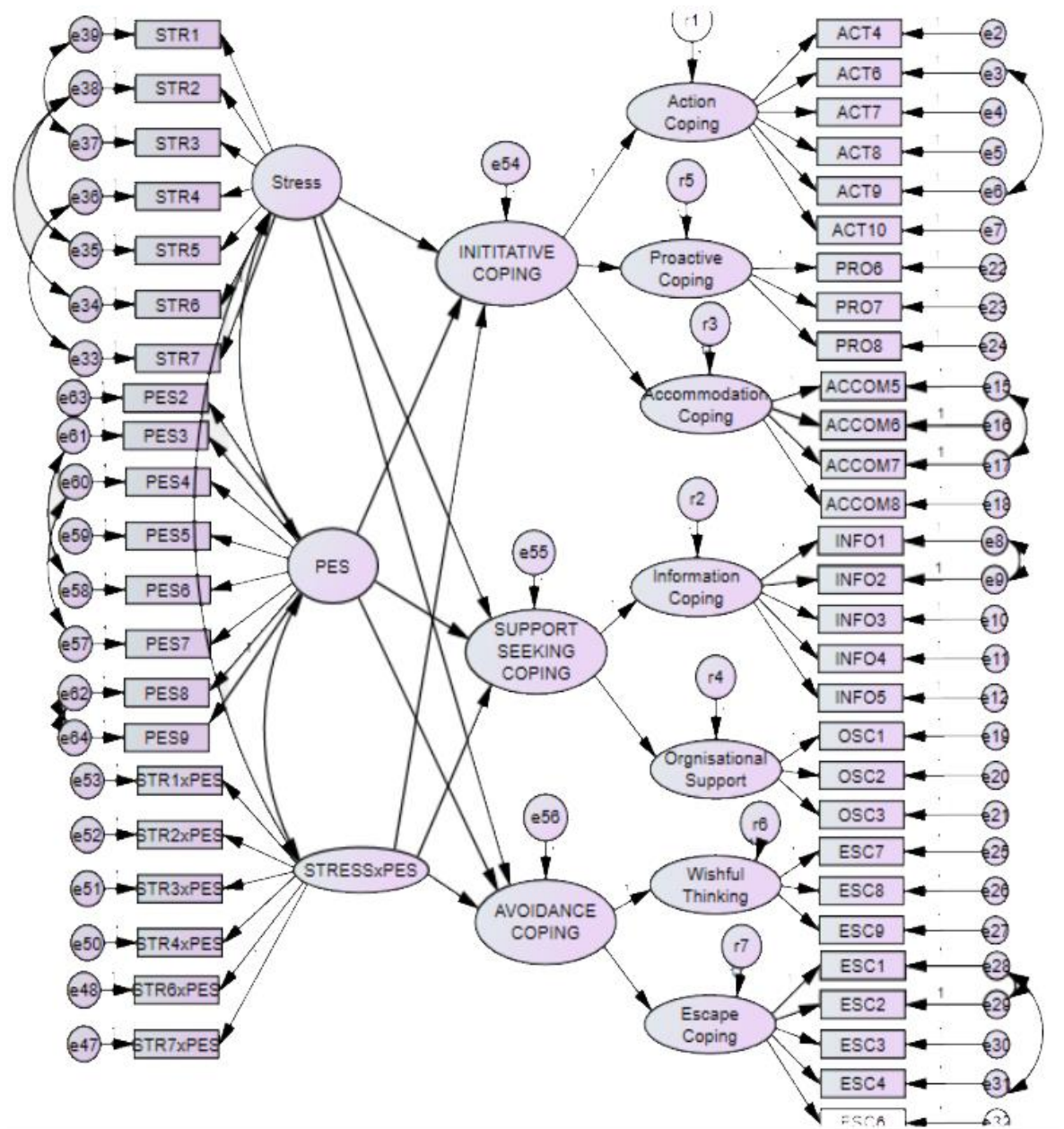
Structural Model: Stress * Locus of Control —Consumer long-term coping



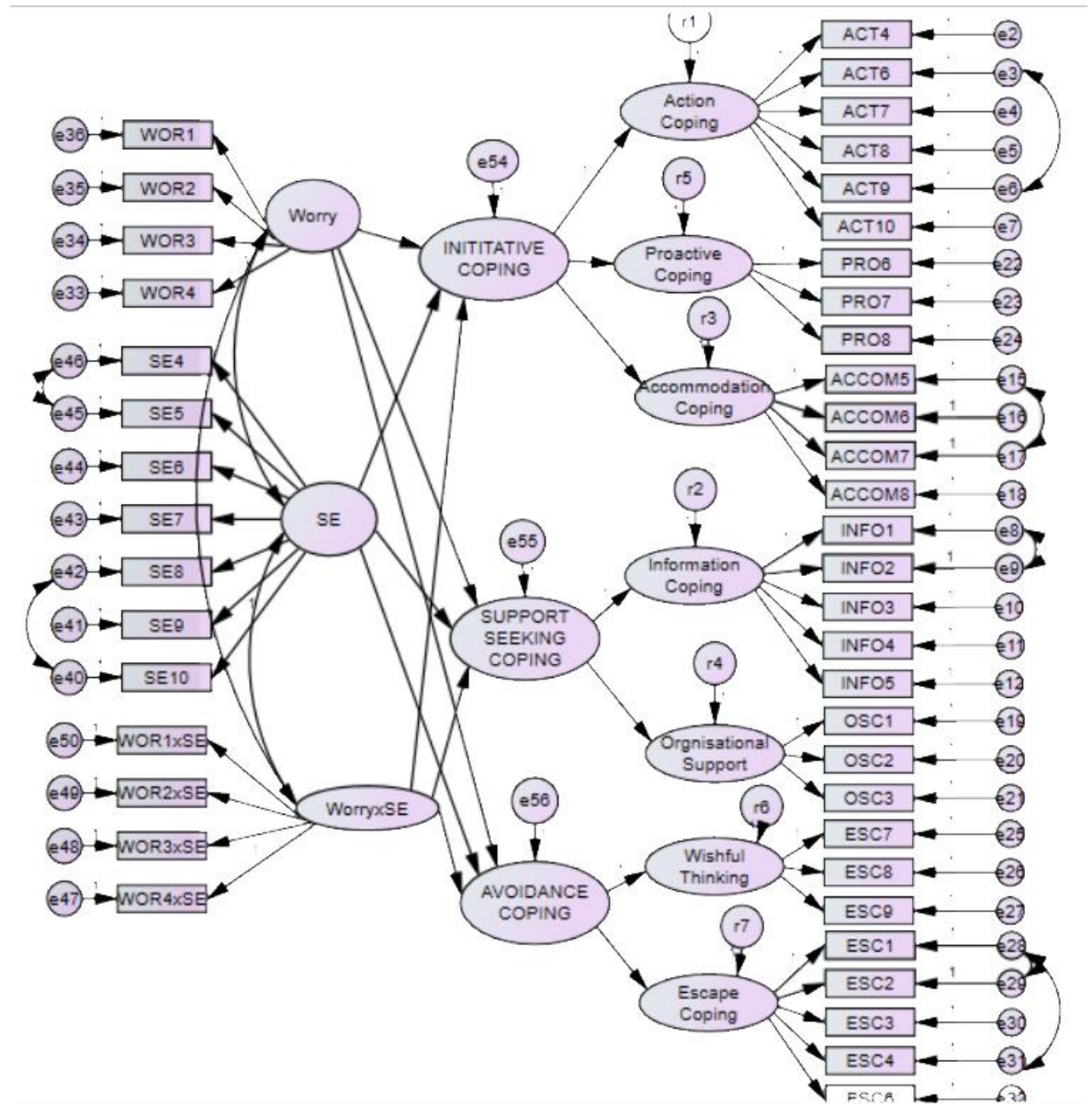
Structural Model: Stress * Optimism —Consumer long-term coping



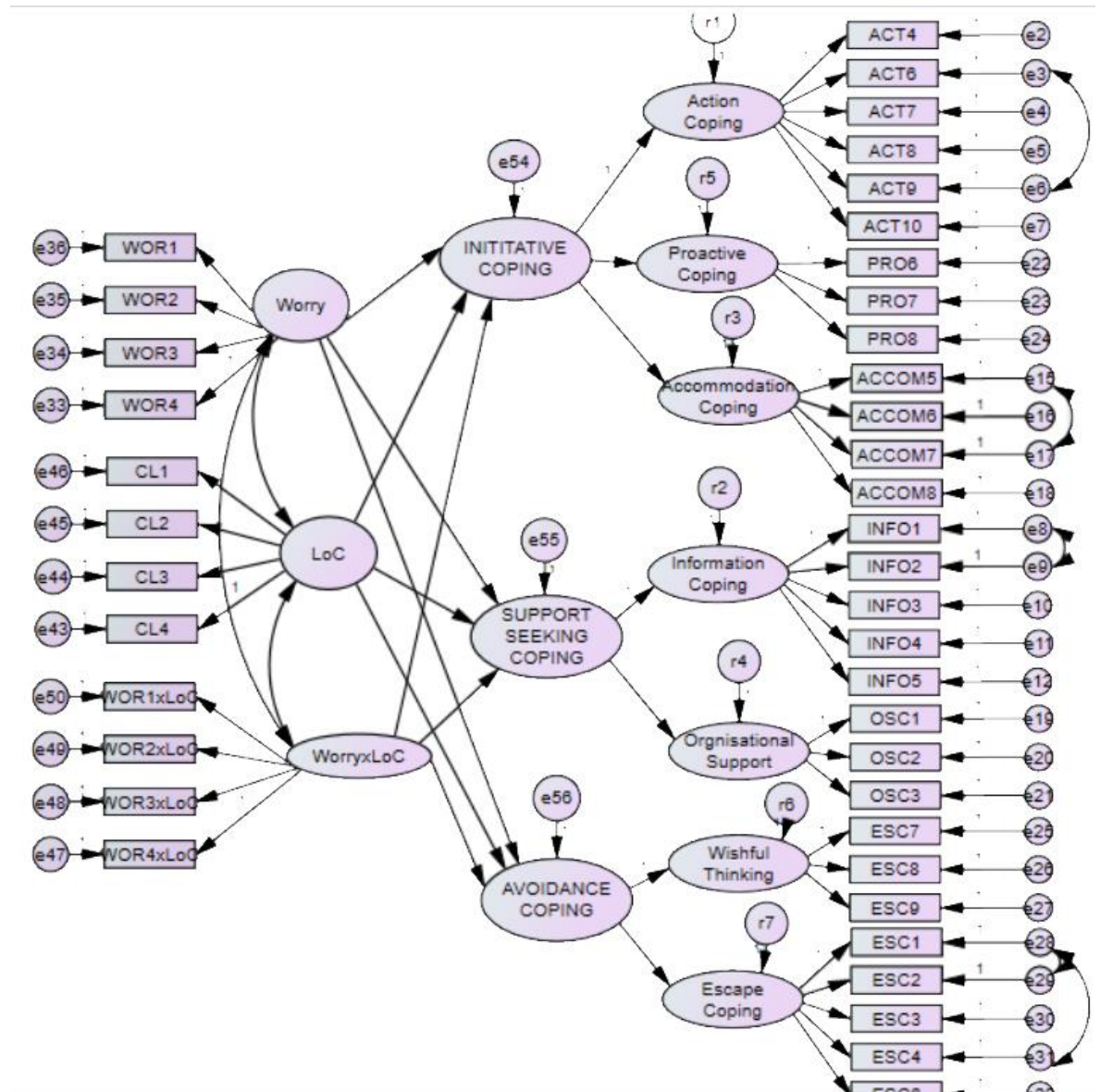
Structural Model: Stress * Pessimism —Consumer long-term coping



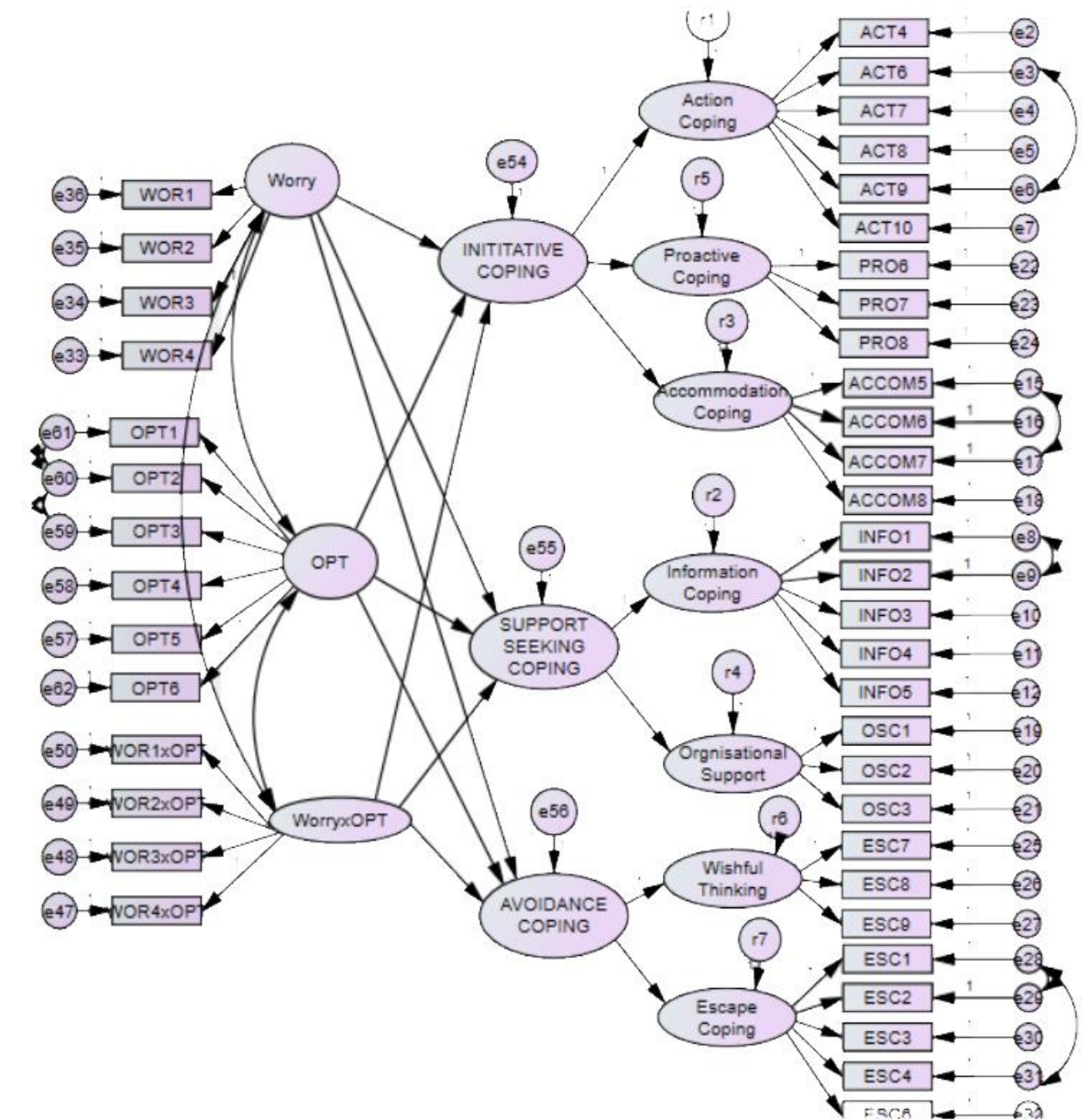
Structural Model: Worry * Self-Efficacy —Consumer long-term coping



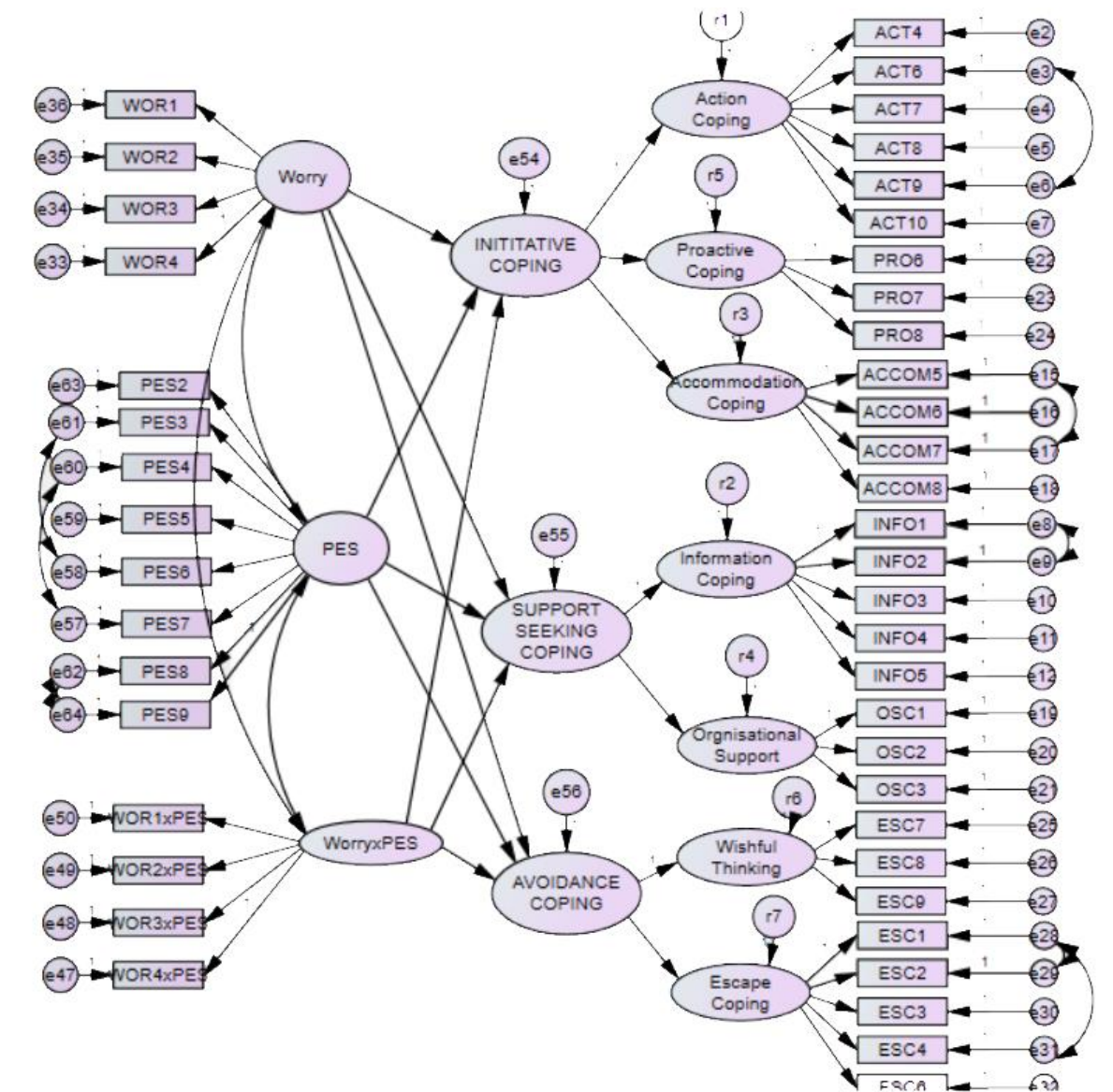
Structural Model: Worry * Locus of Control —Consumer long-term coping



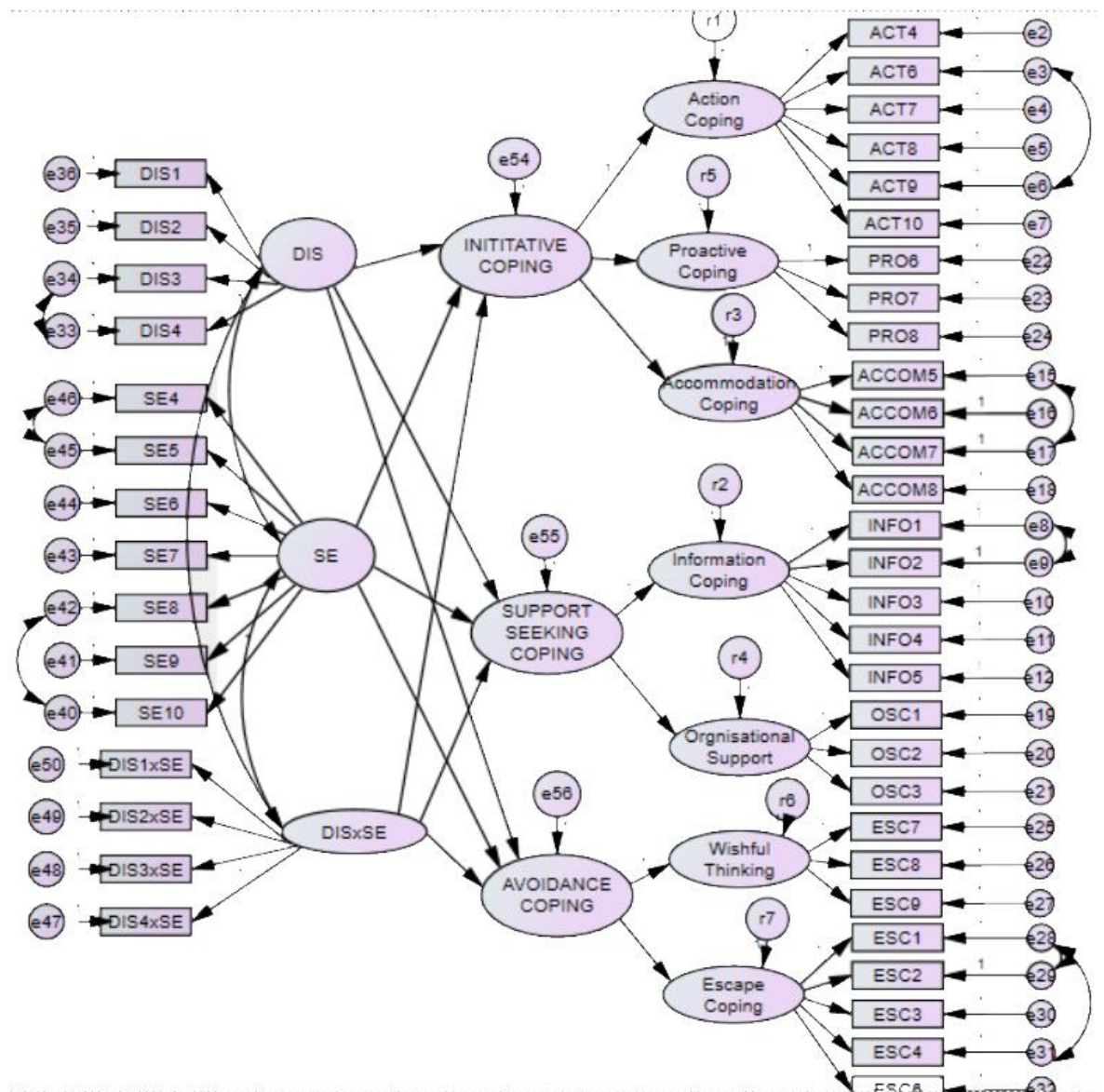
Structural Model: Worry * Optimism —Consumer long-term coping



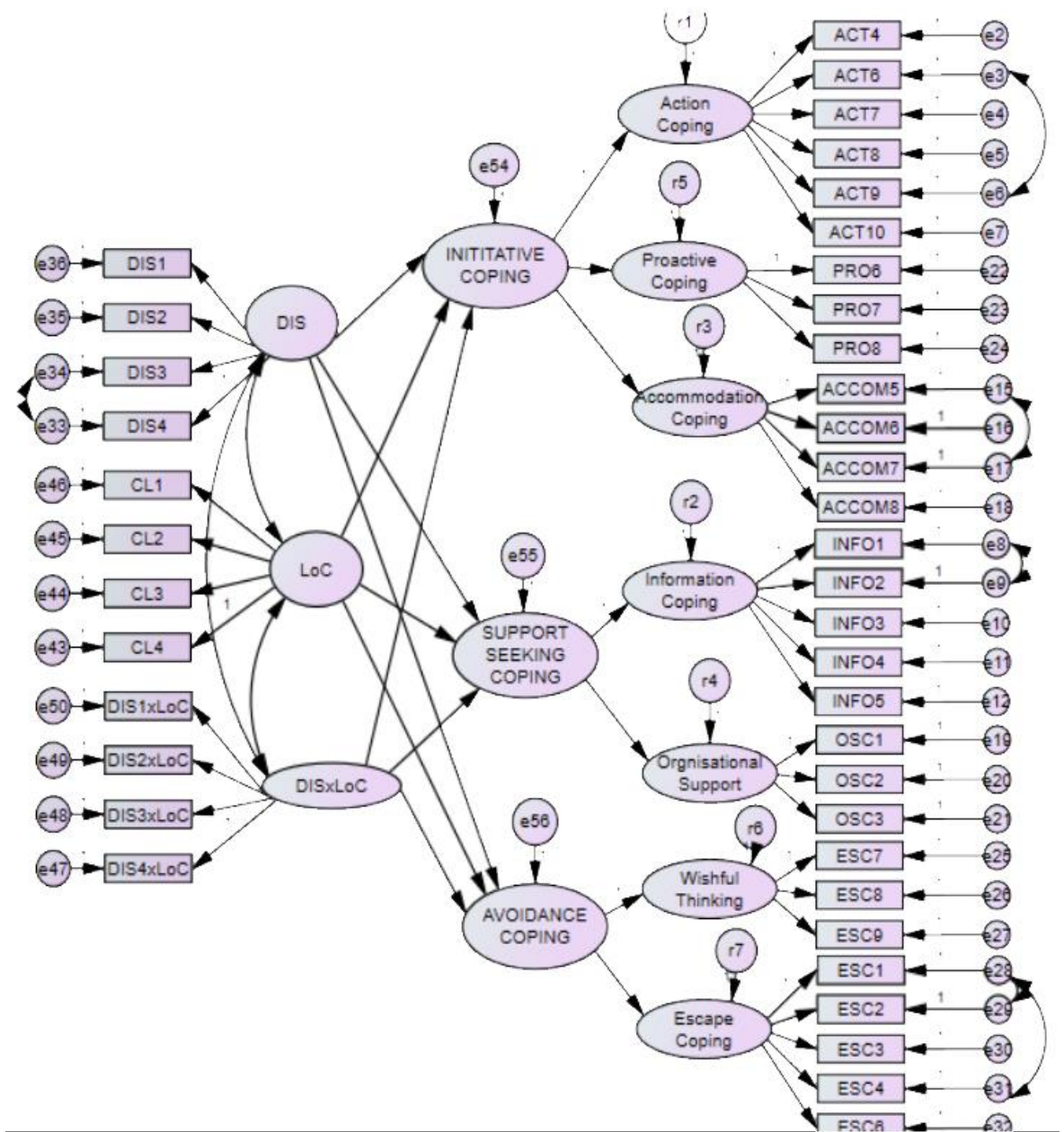
Structural Model: Worry * Pessimism —Consumer long-term coping



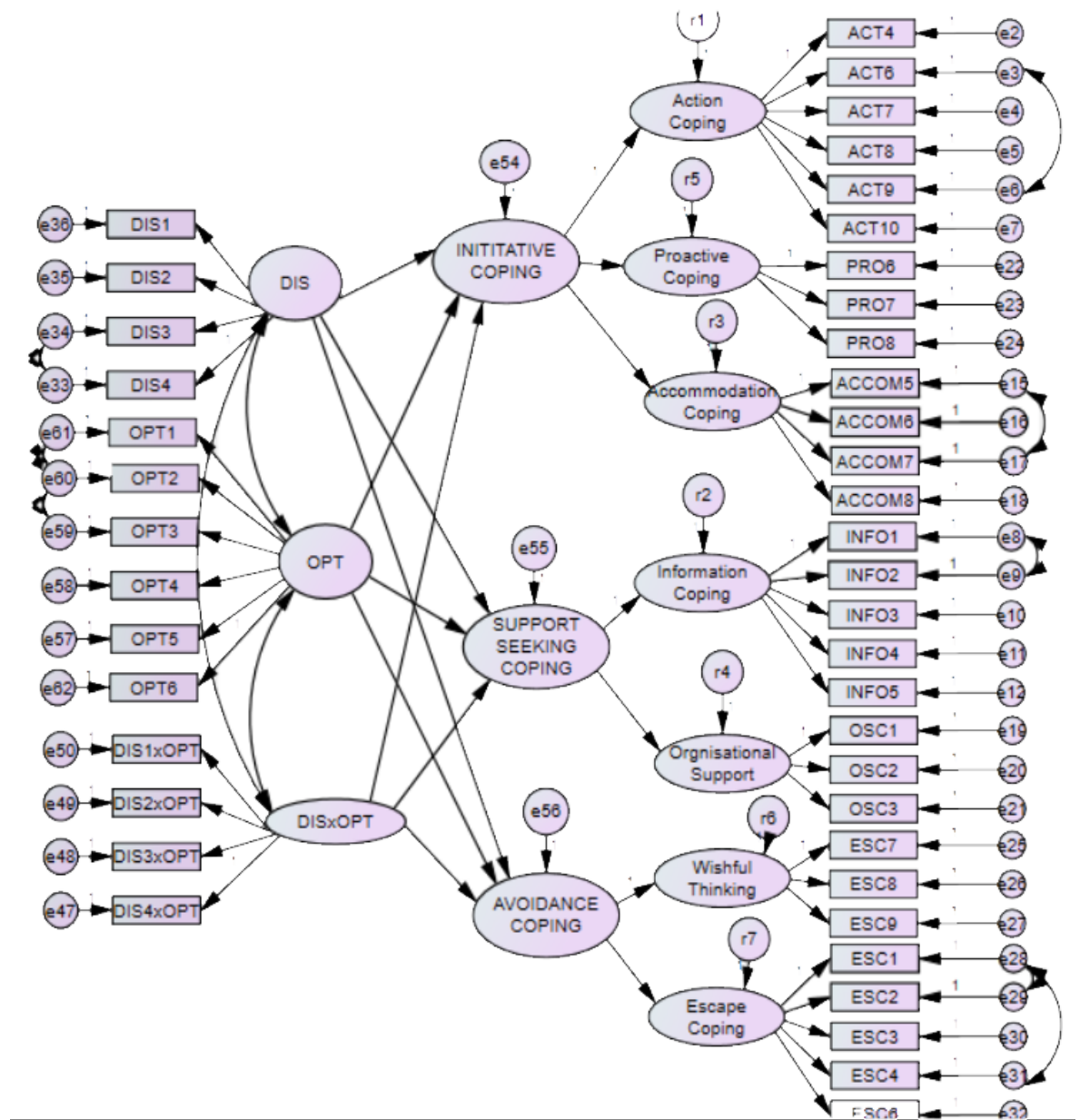
Structural Model: Disappointment * Self-Efficacy —Consumer long-term coping



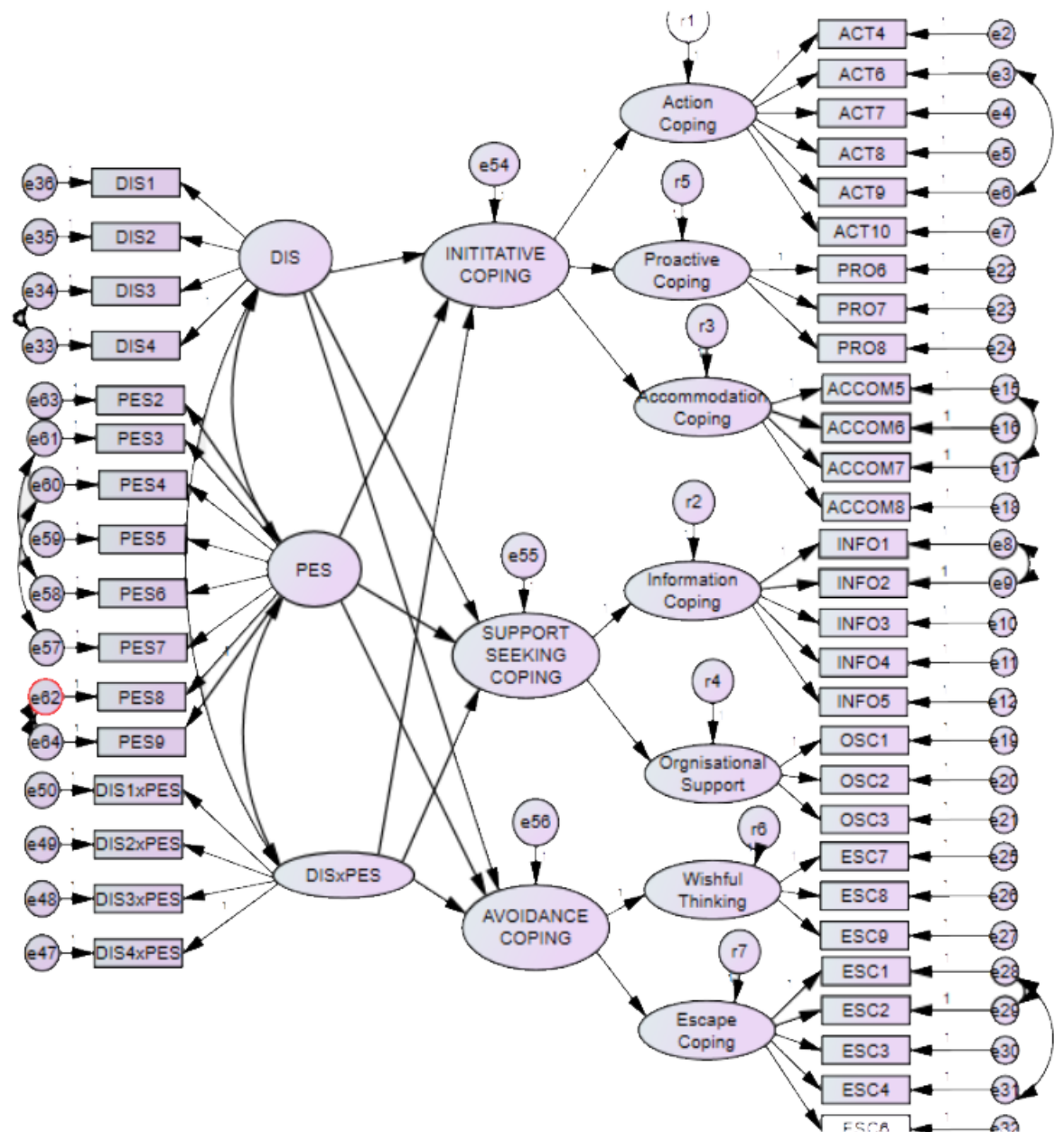
Structural Model: Disappointment * Locus of Control —Consumer long-term coping



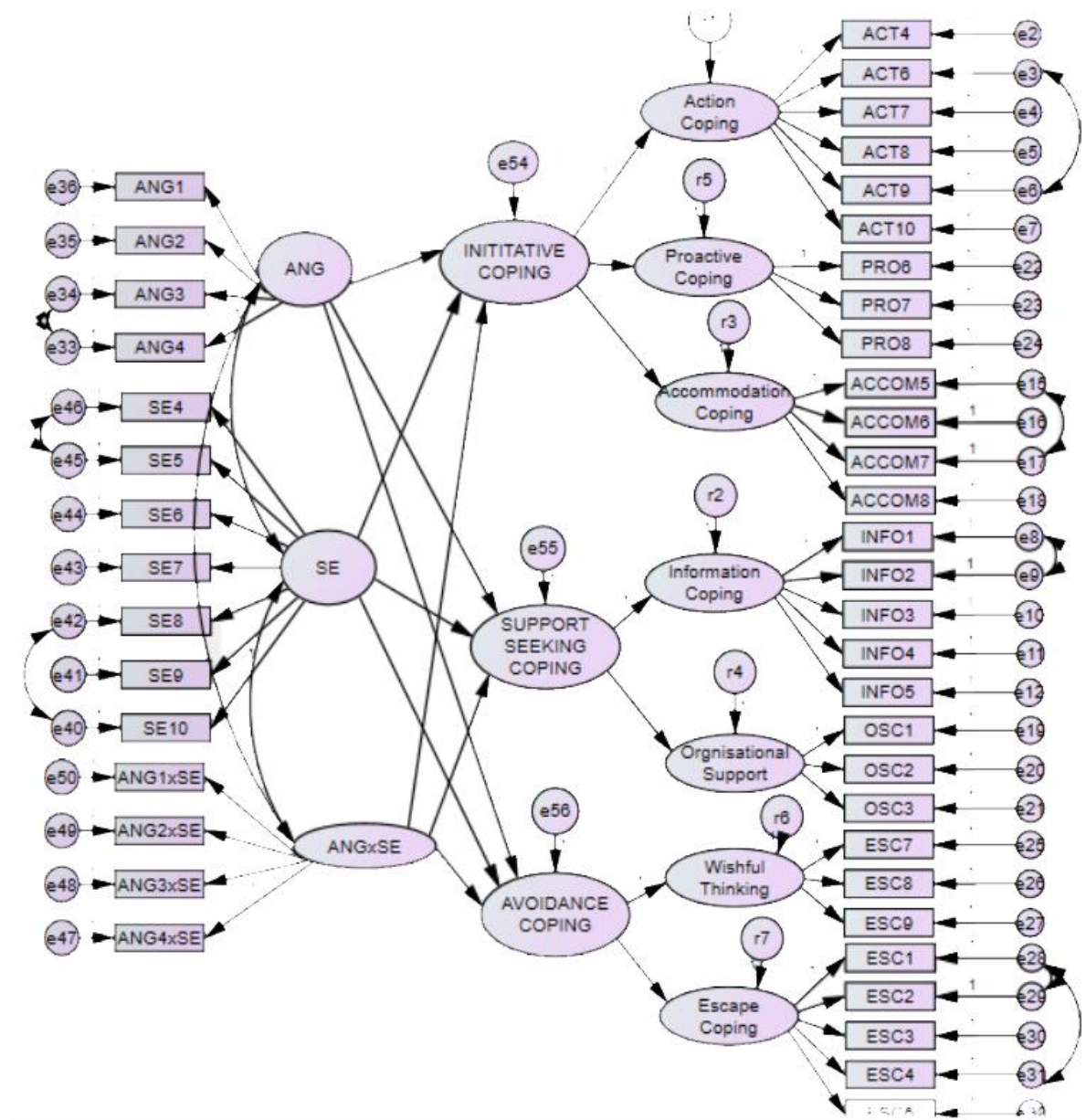
Structural Model: Disappointment * Optimism —Consumer long-term coping



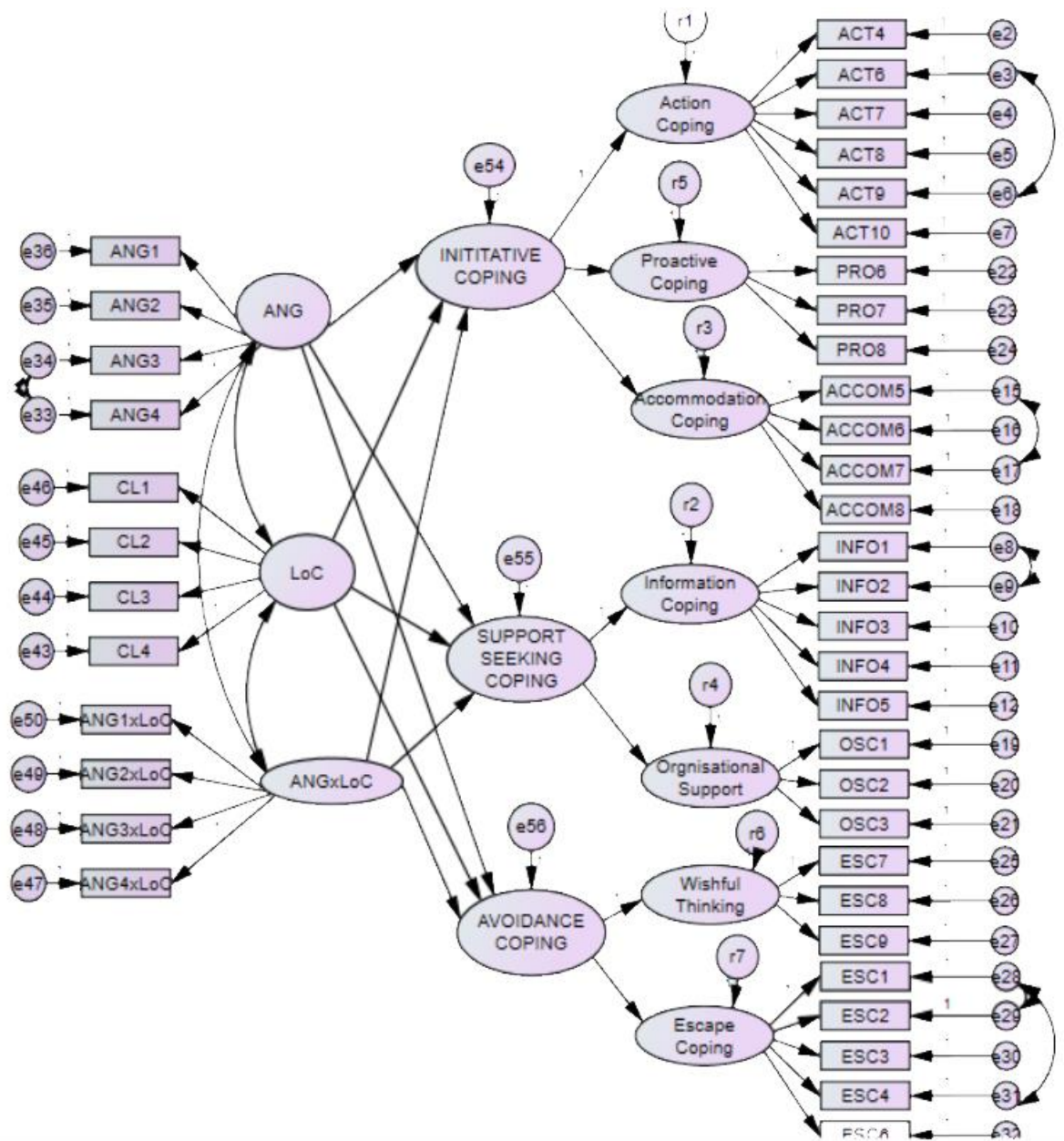
Structural Model: Disappointment * Pessimism —Consumer long-term coping



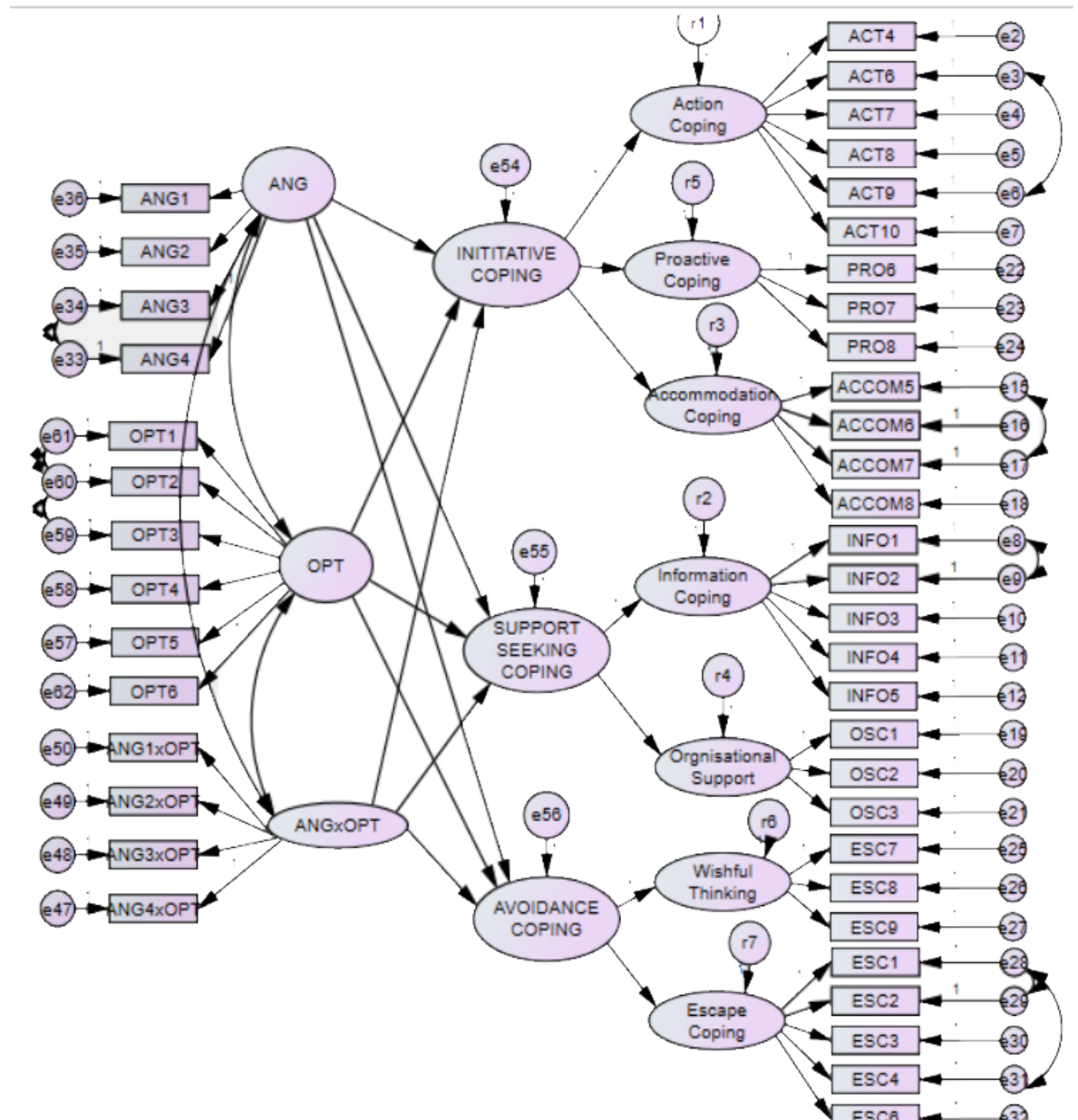
Structural Model: Anger * Self-Efficacy —Consumer long-term coping



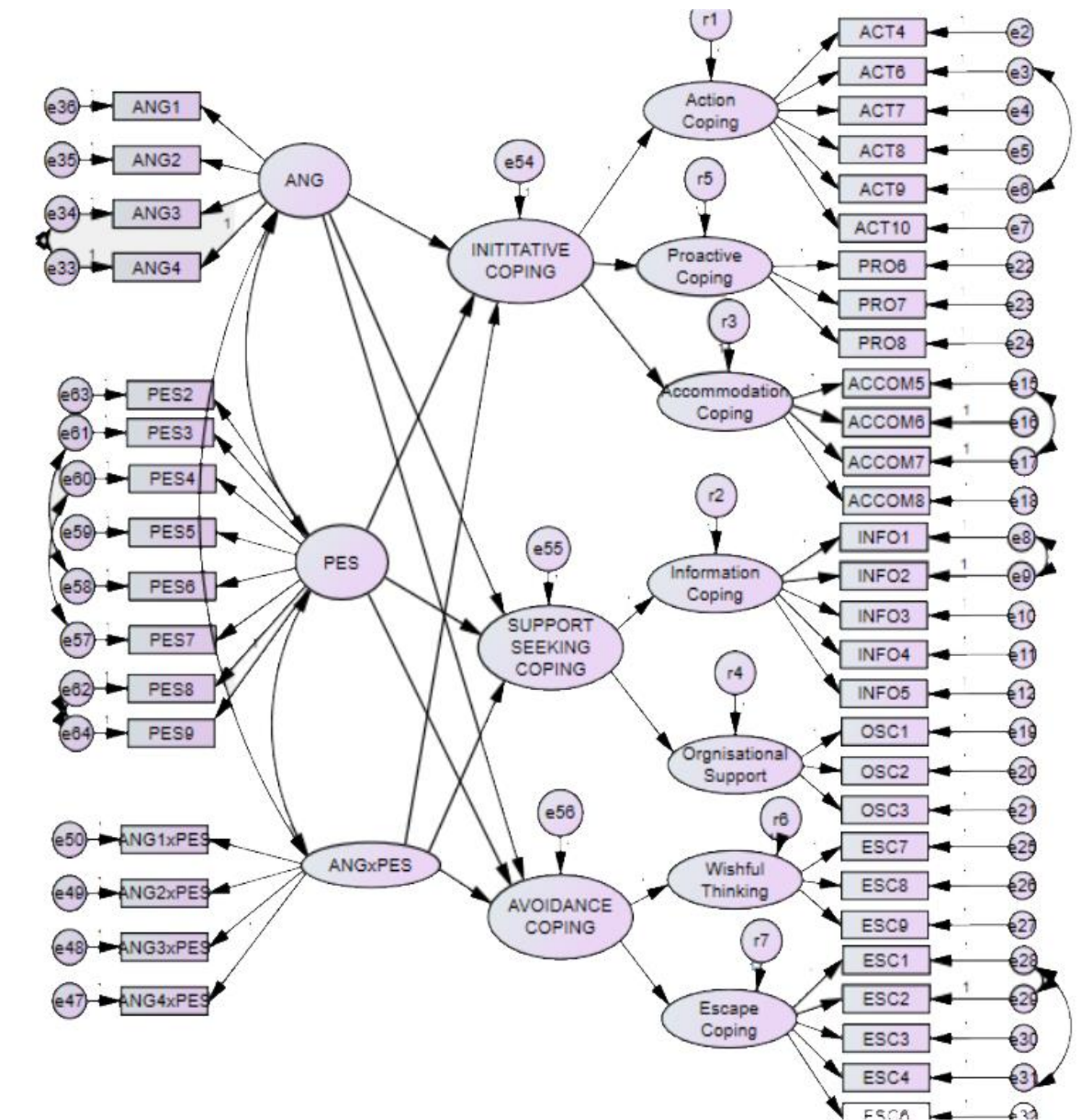
Structural Model: Anger * Locus of Control —Consumer long-term coping



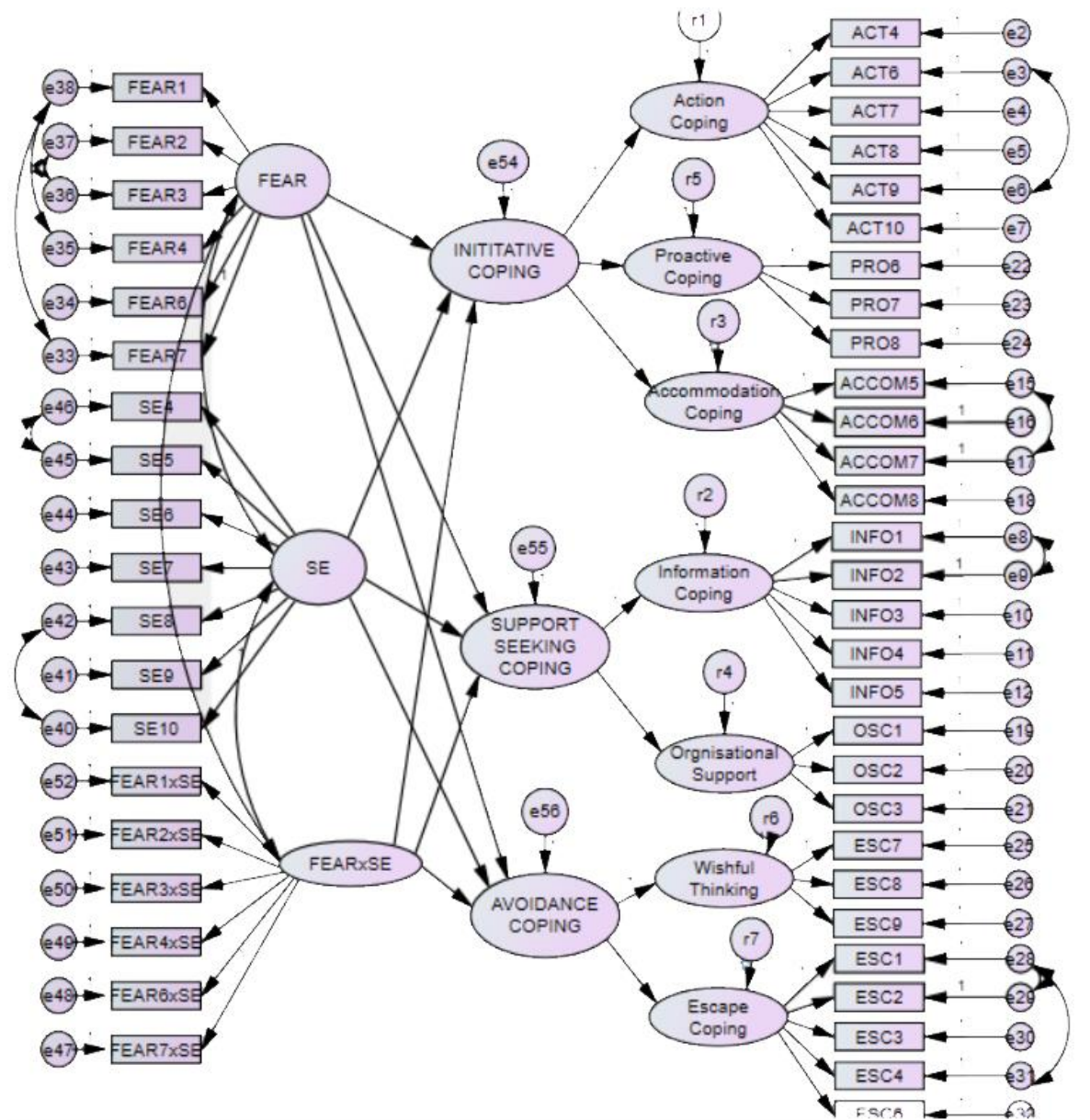
Structural Model: Anger * Optimism—Consumer long-term coping



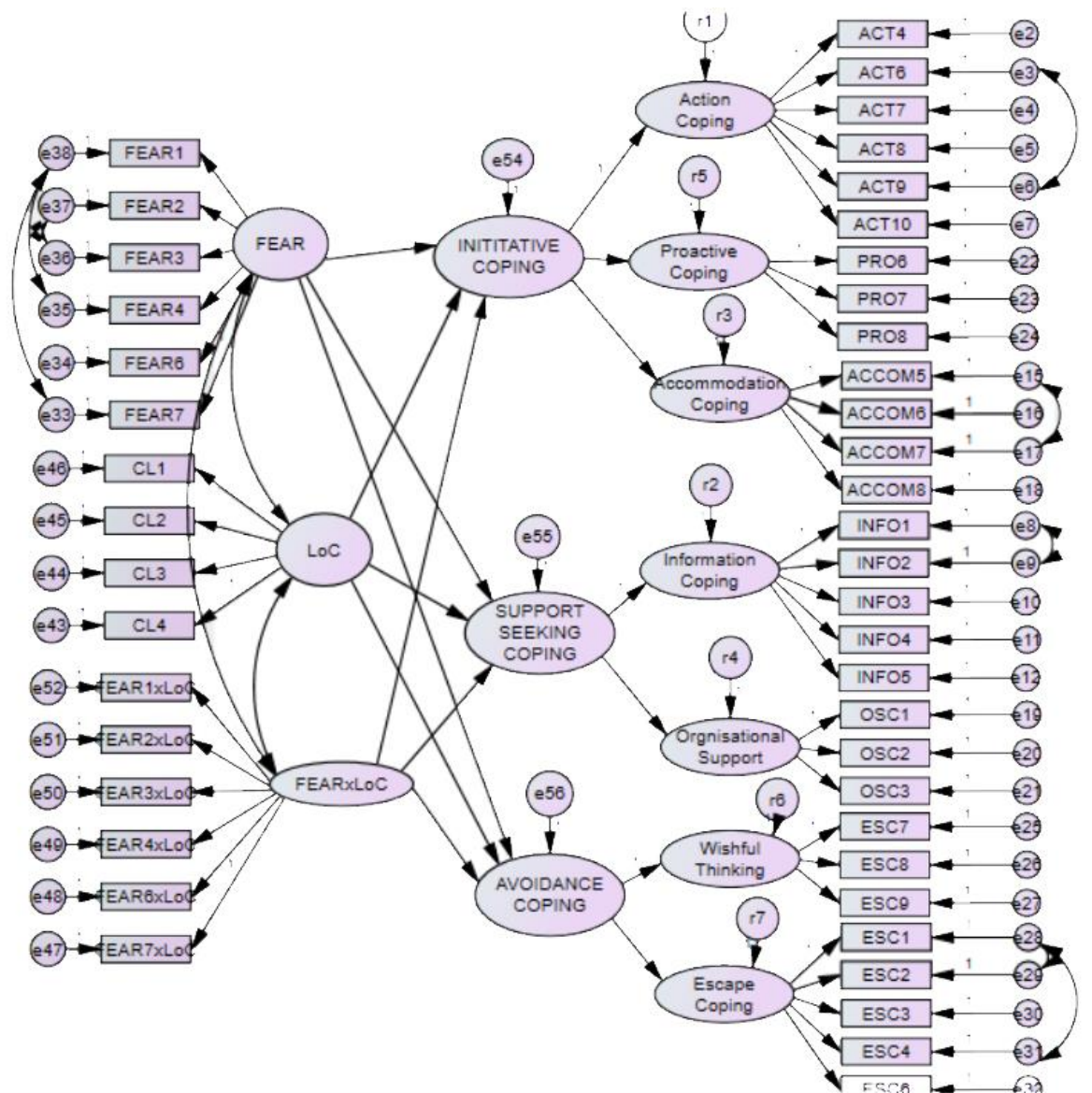
Structural Model: Anger * Pessimism—Consumer long-term coping



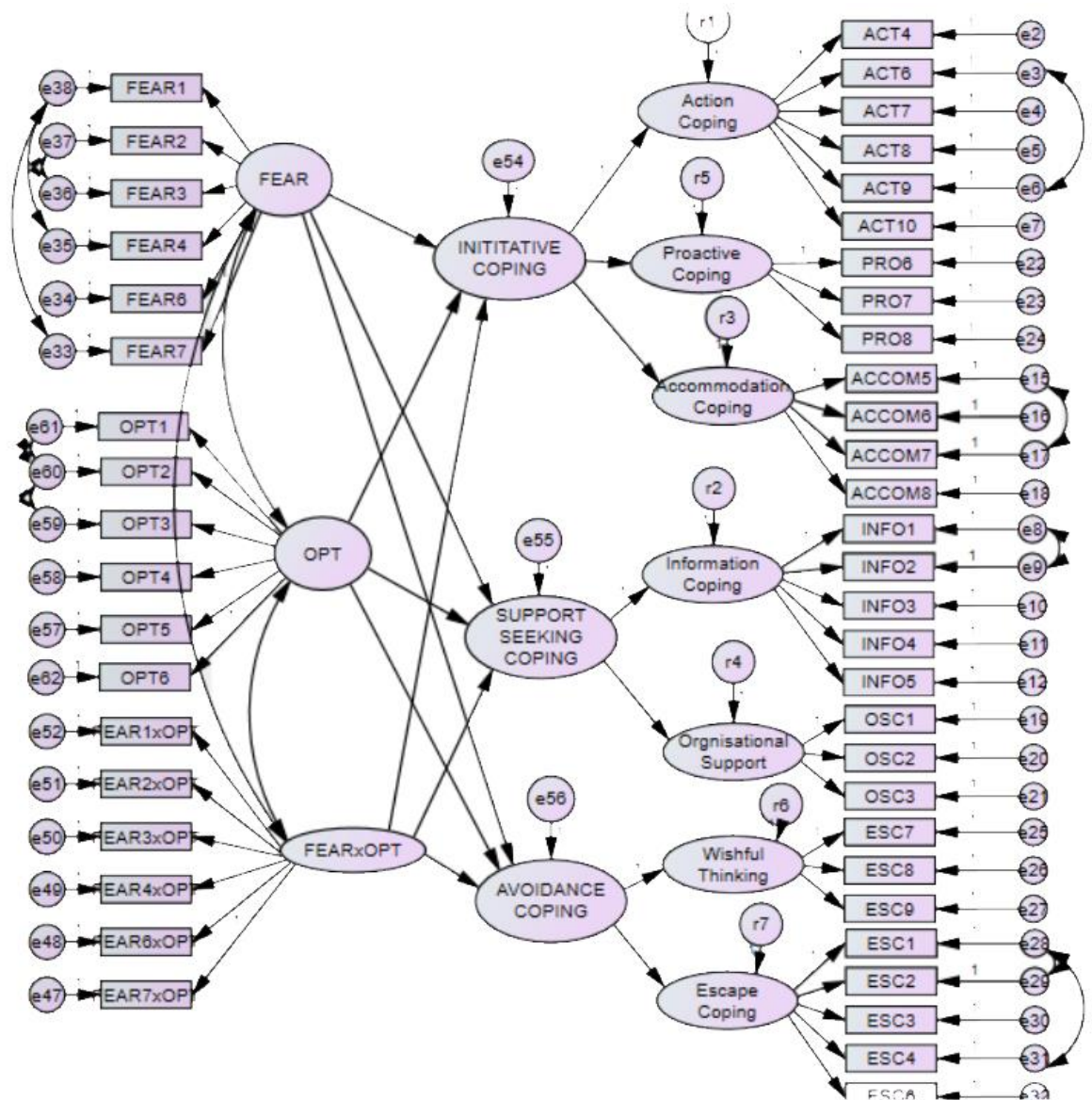
Structural Model: Fear * Self-Efficacy—Consumer long-term coping



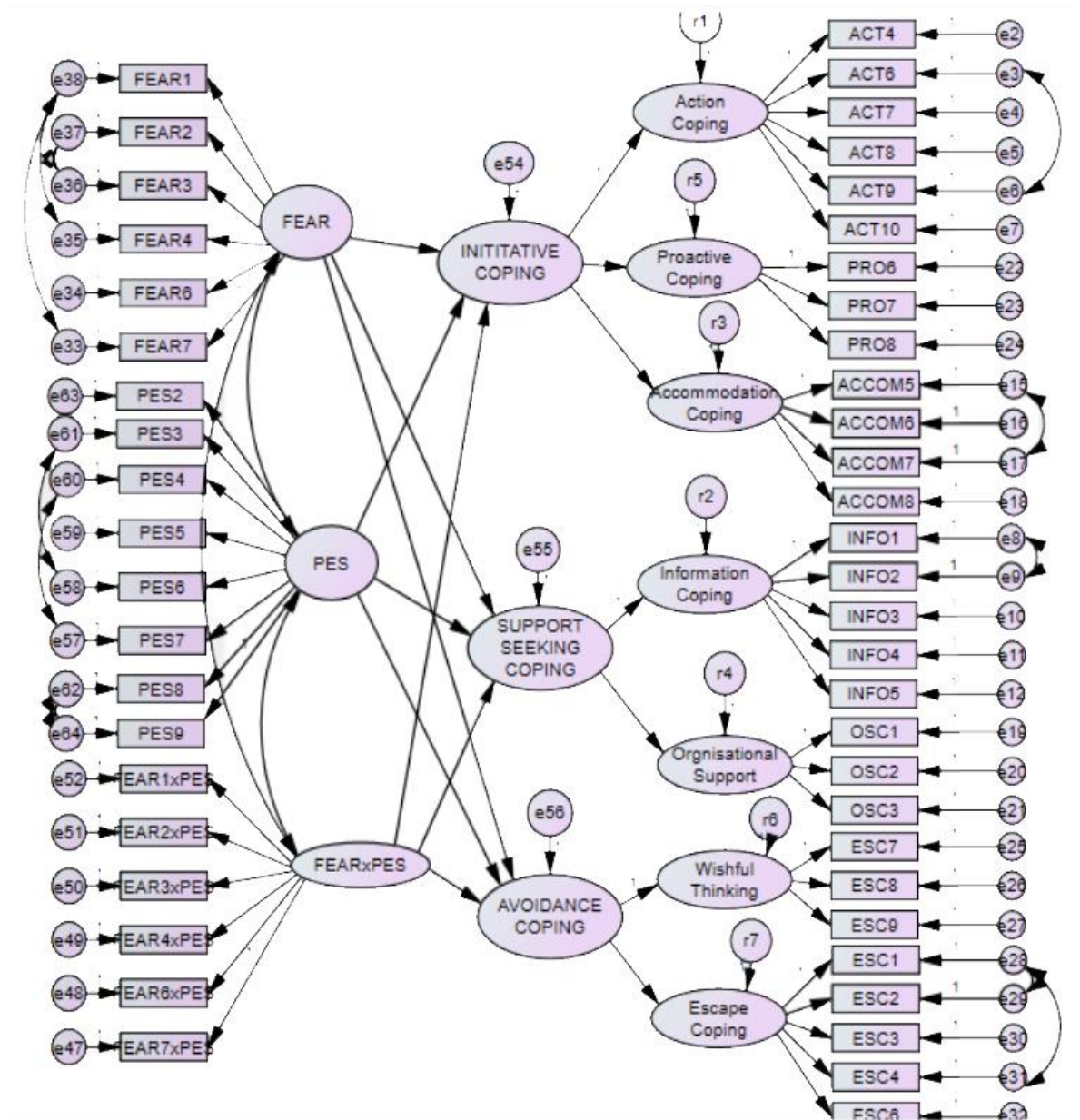
Structural Model: Fear * Locus of Control—Consumer long-term coping



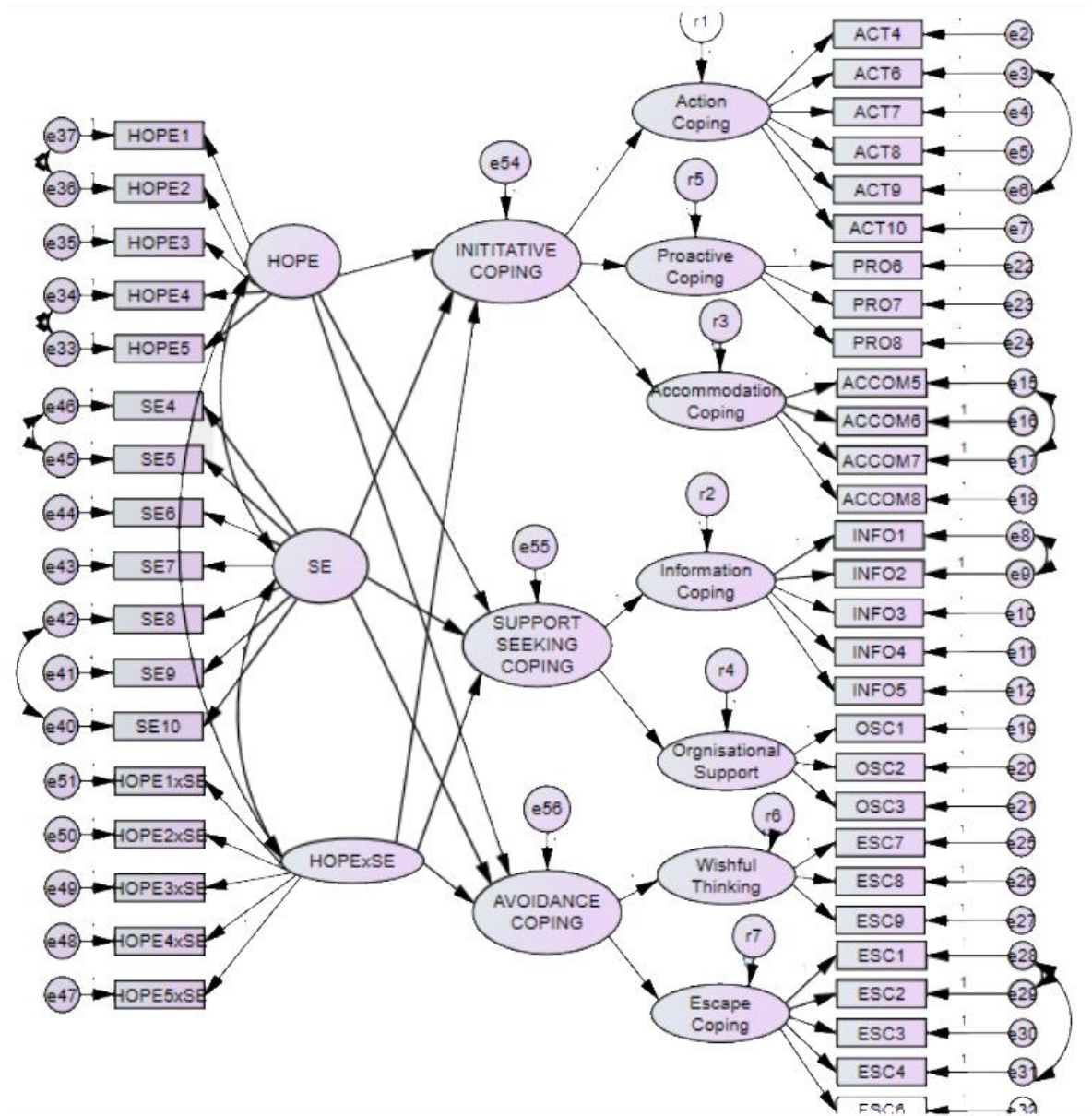
Structural Model: Fear * Optimism—Consumer long-term coping



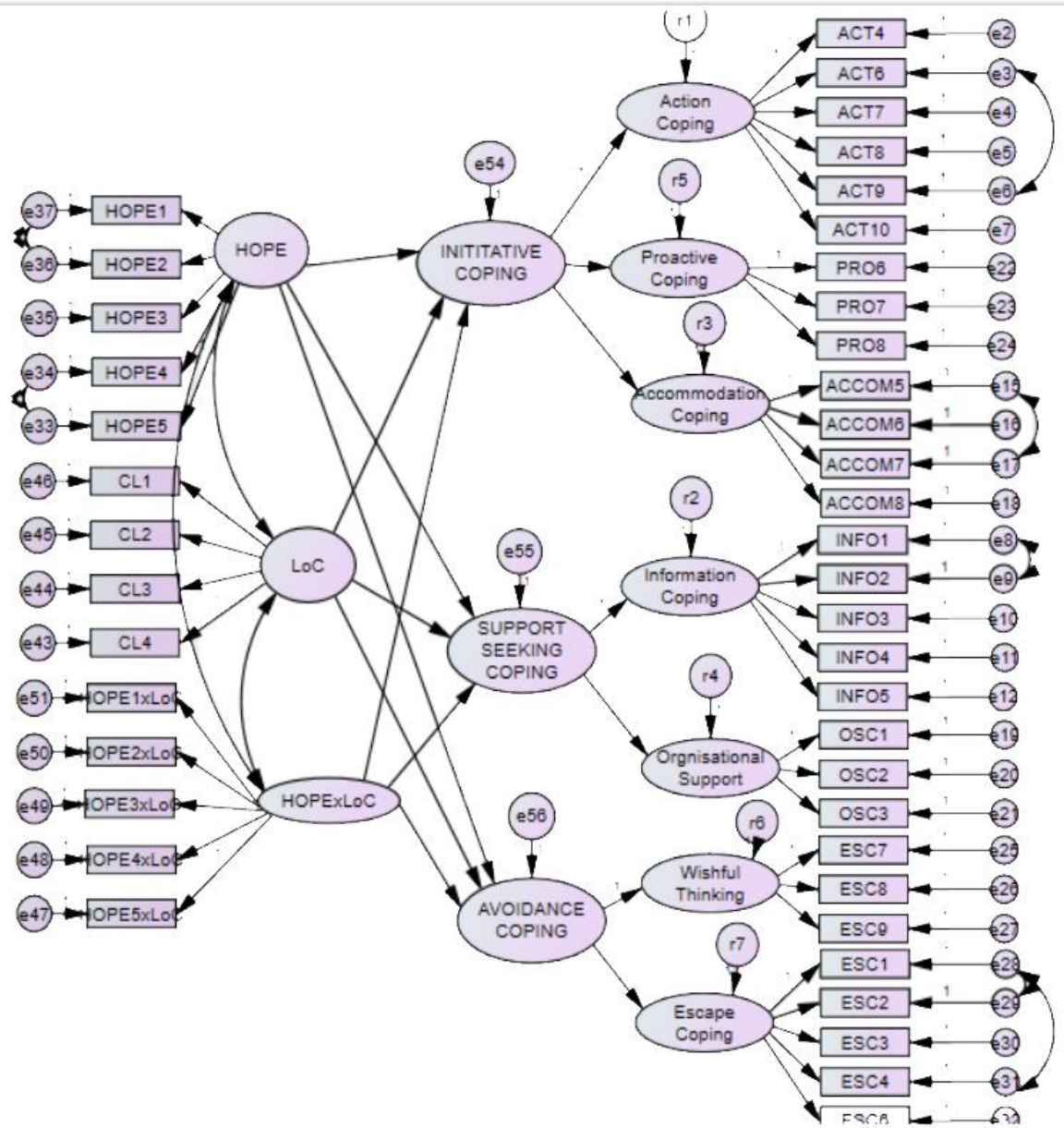
Structural Model: Fear * Pessimism—Consumer long-term coping



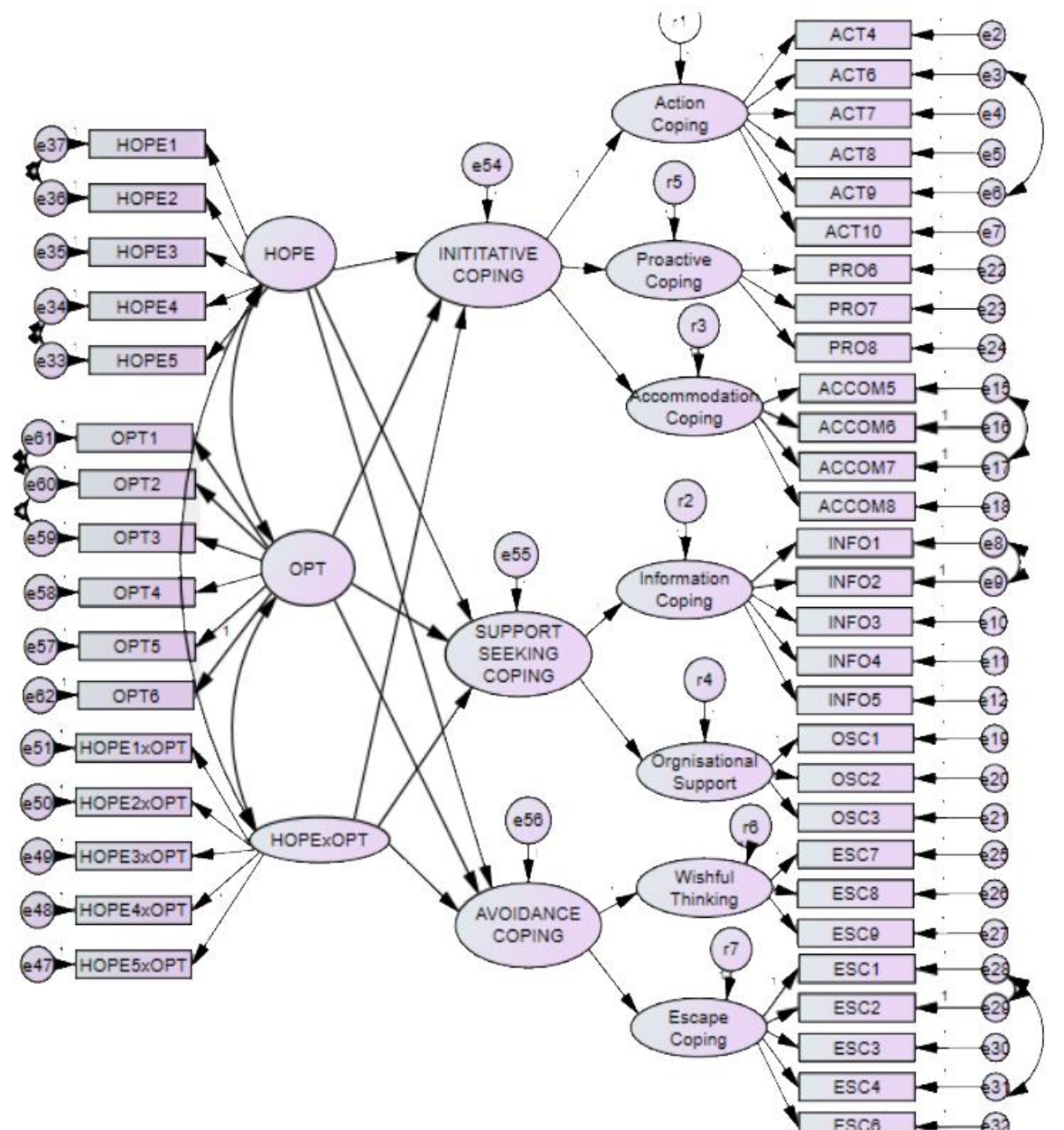
Structural Model: Hope * Self-Efficacy—Consumer long-term coping



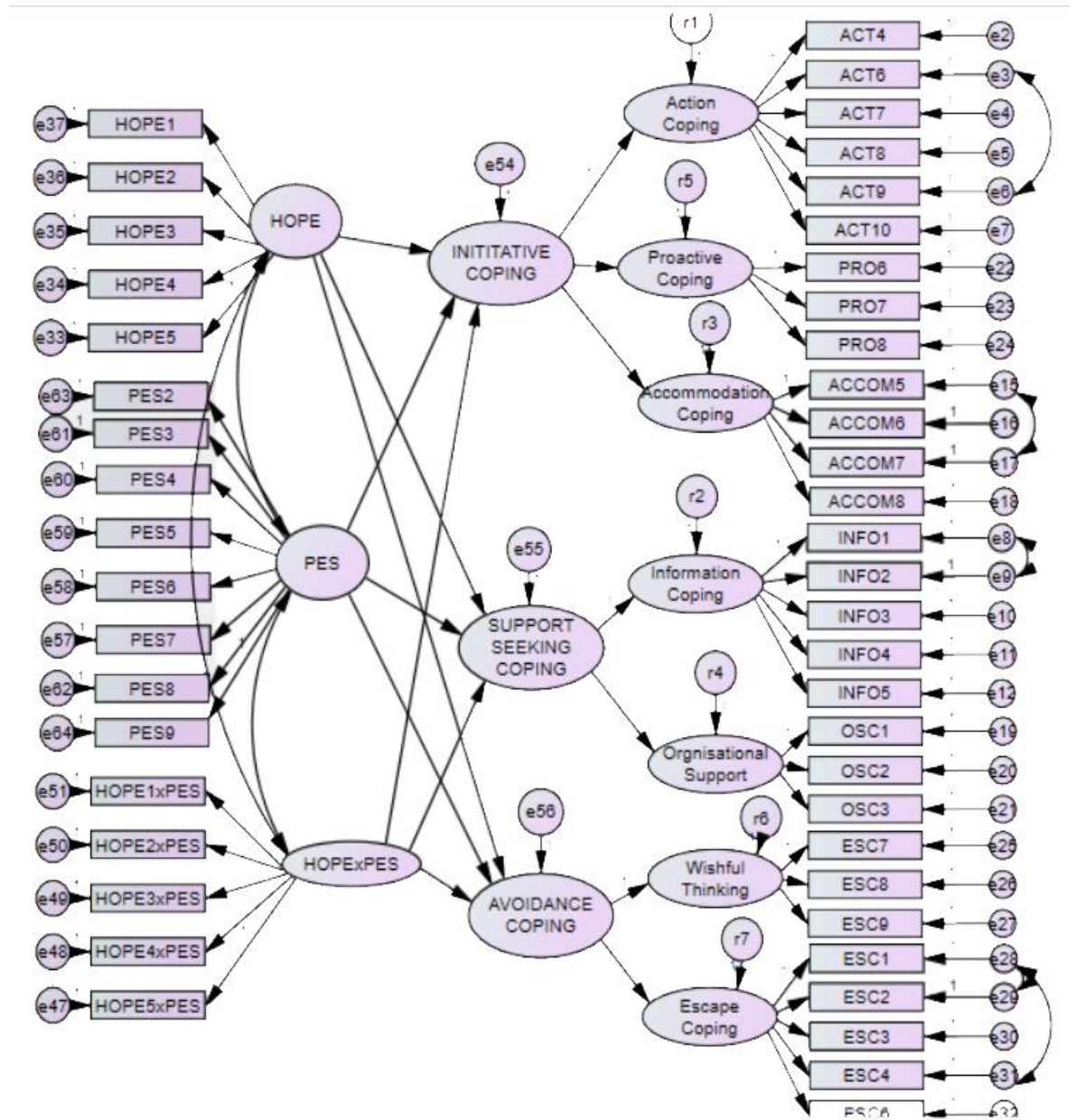
Structural Model: Hope * Locus of Control—Consumer long-term coping



Structural Model: Hope * Optimism—Consumer long-term coping



Structural Model: Hope * Pessimism—Consumer long-term coping



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