Exploring the Impact of Managerial Perception of Social Anomie on the Innovation Orientation and Innovation Performance of Small and Medium-sized Enterprises in China

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ABSTRACT

The construct of anomie is critical for understanding the broader implications of institutions for firm innovation, particularly in the context of emerging economies (EEs), where institutional development is often fragmented across subnational regions. Despite its significance, there is a paucity of research examining how firm-related actors, such as owner-managers, internalise and interpret the state of social anomie, and how such interpretations influence firm-level innovative outcomes. To bridge this knowledge gap, this study integrates the insights from institution-based view (IBV) and institutional anomie theory (IAT) to investigate how firm-level innovation orientation and performance—conceptualised as a form of positive deviance—are shaped by the interplay between managerial perception of social anomie (MPSA), competitive dynamics, and subnation-level institutional contexts. This study draws on both primary and secondary data to derive findings. The primary data were collected from 1,054 small and medium-sized enterprises (SMEs) across various regions in China, while the secondary data were obtained from the compiled subnational datasets and indices specific to the Chinese context. The results illustrate that SME innovation orientation mediates the negative relationship between MPSA and SME innovation performance in China. Furthermore, the subnation-level institutional development of product markets and competitive dynamics serve as buffering mechanisms, mitigating the adverse effect of MPSA. Conversely, the subnation-level cultural prevalence of uncertainty avoidance amplifies the adverse impact of MPSA on SME innovation performance.

This study enriches the literature on firm innovation by unravelling the impact of MPSA—an underexplored socio-behavioural consequence of China's rapid yet uneven marketisation—on firm-level innovation. It also sheds light on the boundary conditions for the anomie–innovation nexus, contributing to the theoretical development of IBV and IAT. Lastly, the findings provide practical insights for SME owner-managers and policymakers to enhance institutional support and foster resilience within innovation ecosystems to combat the anomie-induced challenges.

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"The unexamined life is not worth living." – Socrates

DECLARATION OF ORIGINALITY

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

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LIST OF ABBREVIATIONS

AO	Achievement Orientation
AT	Agency Theory
AVE	Average Variance Extracted
CI	Confidence Interval
CR	Composite Reliability
EE	Emerging Economy
Eurostat	European Statistical Office
FB	Family Business
GDP	Gross Domestic Product
HLM	Hierarchical Linear Modelling
HMRA	Hierarchical Multiple Regression Analysis
IAT	Institutional Anomie Theory
IBV	Institution-based View
ICD	Intensity of Competitive Dynamics
IGC	In-group Collectivism
IO	Innovation Orientation
IP	Innovation Performance
IDPM	Institutional Development of Product Markets
IPR	Intellectual Property Rights
KBV	Knowledge-based View
MPSA	Managerial Perception of Social Anomie
NERI	National Economic Research Institute
NPD	New Product Development
OECD	Organisation for Economic Co-operation and Development
RBV	Resource-based View
R&D	Research and Development
SD	Standard Deviation
SE	Standard Error
SME	Small and Medium-sized Enterprise
EIA	Engagement in Innovation Activities
UA	Uncertainty Avoidance
VIF	Variance Inflation Factor

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1. Introduction

This chapter aims to provide an overview of the research. First, it begins by presenting the research background, knowledge gaps, and the research context, followed by an articulation of the theoretical underpinnings and research questions. Next, the chapter introduces the adopted methodological approaches, illustrates the key research findings, outlines the research contributions, and defines the key concepts central to the research. Finally, it concludes with a detailed outline of the thesis structure.

1.1. Research Background and Knowledge Gaps

Innovation as the linchpin of economic growth and societal development has long been recognised as a central focus for both scholars and practitioners (Baumol, 2002; Ciabuschi *et al.*, 2015; Franko, 1989; Guan and Ma, 2003). The Oslo Manual defines business innovation as *'a new or improved product or business process (or combination thereof) that differs significantly from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm'* (OECD and Eurostat, 2018, p. 68). It enables businesses to engage actively in the global value chain and optimise their products and services to compete at the technological frontier (OECD, 2020a; Buciuni and Pisano, 2021). Furthermore, the immense opportunities arising from innovation are instrumental in addressing developmental challenges and advancing sustainable development goals (United Nations, 2021).

The role of institutions in shaping firm innovation has drawn substantial interest from scholars in innovation and management studies (Watkins *et al.*, 2015; Wu, 2013; Marcotte, 2014; Hong *et al.*, 2022b). Defined as *'the rules of the game'* within a society, institutions constitute *'humanly devised constraints that structure political, economic, and social interactions'* (North, 1990, p. 3). Despite extensive research on the impact of institutions on firm innovation, several knowledge gaps remain insufficiently addressed. First, the prevailing body of literature predominantly interprets institutions as exogenous factors that shape firms' strategic choices, such as innovation (Jackson and Deeg, 2019). There is a dearth of literature exploring the mechanisms of '*how institutions socialize the diverse sets of actors related to the firm'*, such as owner-managers, employees, and stakeholders (Jackson and Deeg, 2008, p. 545; Jackson and Deeg, 2019).

Second, extant literature has largely concentrated on the role of innovation-supporting formal institutions, such as legal and regulatory frameworks designed to facilitate business innovation activities. The role of informal institutions in influencing firm-level innovation activities, notably in the context of emerging economies (EEs), is relatively underexplored (Dau *et al.*, 2022; Weng *et al.*, 2021). Third, a growing body of literature highlights the need to explore how institutional environments, extending beyond the national level, influence firm-level innovation proclivity, capabilities, and performance (Hutzschenreuter *et al.*, 2020). Nonetheless, the impact of subnational-level institutions on firms' innovation, particularly within EEs where institutional asymmetries exist across subnational regions, has not been

thoroughly investigated in the current literature (Xiong and Xia, 2020; Rodríguez-Pose and Zhang, 2020).

Bridging the aforementioned knowledge gaps is crucial for advancing the understanding of how institutions shape firm innovation across diverse contexts. Specifically, the oversight of the positioning of social actors within institutional frameworks merits richer scholarly discussion. Analysing how firm-related actors (e.g. owner-managers) interpret and respond to institutional pressures can facilitate a more fine-grained explanation of how institutions socialise and imprint upon these actors (Jackson and Deeg, 2008; Jackson and Deeg, 2019). This actor-centred perspective illuminates the mechanisms by which institutional rules and social norms are internalised by the firm-related actors, thus shaping firms' proclivity and capabilities for engaging in strategic actions such as innovation (Meyer and Vaara, 2020). Furthermore, examining the interaction between formal and informal institutions, along with the subnational-level institutional variations, can enrich the understanding of the boundary conditions that define the nature and impact of institutions on firm-level innovation behaviours (Hutzschenreuter *et al.*, 2020; Dau *et al.*, 2022).

In light of these lacunae, this study proposes an integrative perspective of Institution-Based View (IBV) and Institutional Anomie Theory (IAT) to investigate the predictors of firm innovation behaviours in EEs. The integration of IBV and IAT enables a comprehensive understanding of how social actors are situated within institutional environments, providing

deeper insights into their adaptive responses to institutional consequences and pressures in EEs. This approach enriches the explanation of firm innovation in EEs by addressing not only strategic-driven antecedents but also socio-behavioural factors. Specifically, IBV focuses on a rule-based society that defines the boundaries for firms' strategic choices, whereas IAT is concerned with the embeddedness and cohesion of social actors within institutional frameworks. Furthermore, IBV understands firm innovation as a strategic choice (Meyer and Peng, 2016), whereas IAT conceptualises firm innovation as a form of positive deviance (Messner and Rosenfeld, 2012; Merton, 2017; Herington and van de Fliert, 2018).

1.2. Research Focus: Anomie–Innovation Nexus

This study focalises the state of social anomie as a core explanatory construct, positioning it as a socio-behavioural consequence of institutional development for owner-managers as pivotal actors of firms in EEs. Specifically, grounded on the IAT, this study aims to investigate how *managerial perception of social anomie*—a by-product of rapid yet uneven institutional development in EEs—influences firms' innovation behaviour. The notion of anomie, based on Merton (1968), refers to the strain arising from an incongruence between socially endorsed goals (e.g. economic success) and the restricted access to legitimate means of achieving the goals. Managerial perception of social anomie (MPSA) refers to firm owner-managers' subjective perception and understanding of '*uncertainty and ambiguity regarding basic norms, values, and conceptions of value or worth'* (Lepisto and Pratt, 2017, p. 106). The state of managerial anomie reflects the strain and challenges that firm owner-managers

encounter in navigating unclear social norms and values in institutional imbalance, manifesting as a condition of normlessness (Tsahuridu, 2011; Zhou *et al.*, 2013). The perceptual state among owner-managers can potentially shape firm innovation behaviours, as scholars argue that actors may respond to the state of anomie with positive deviance, such as through creativity and innovation (Nam *et al.*, 2014; Cullen *et al.*, 2014; Lin *et al.*, 2016; Mainemelis, 2010). Positive deviance is defined as *'intentional behaviours that depart from the norms of a referent group in honourable ways'* (Spreitzer and Sonenshein, 2004, p. 828).

Previous studies have investigated how firm innovation outcomes, as a form of positive deviance, are influenced by the anomic imbalance of social institutions and cultural contexts (Nam *et al.*, 2014; Kim *et al.*, 2020). However, they overlook the role of firm owner-managers' perception of anomie in shaping firm-level pursuit of innovation. In other words, existing research has yet to adequately investigate the microfoundations of anomie, specifically how the anomic mindsets of owner-managers—as key innovation decision-makers—relate to firm-level innovation outcomes (Bohas *et al.*, 2021).

Consequently, the rationale underpinning the focus on MPSA in this study concerns its capacity to illuminate how firm owner-managers interpret the erosion of social norms, and how such interpretations impact firm-level innovation outcomes. This conceptualisation contributes to unravelling the microfoundations of the anomie–innovation nexus by demonstrating how the macro-level anomie is translated into firm-level strategic responses

through owner-managers as sense-making agents (Zoghbi-Manrique-de-Lara and Viera-Armas, 2019). They play a key role in nurturing the conditions under which innovation is ideated and executed within firms (Runst and Thomä, 2022; Casidy and Nyadzayo, 2019). This perspective aligns with upper echelons theory, which asserts that firm-level strategic posture and outcomes reflect the experiences, beliefs, and traits of their top executives (Hambrick, 2007).

This study seeks to investigate the mechanism through which MPSA influences both firm innovation orientation and innovation performance. Such dual examination captures both the attitudinal-based and outcome-based dimensions of firm innovation behaviour, thus further clarifying the impact of managerial anomie on firm innovation as a broad concept (Stock and Zacharias, 2011; Norris and Ciesielska, 2019b). To explicate, this study seeks to unravel how MPSA may influence firms' attitudinal openness towards innovation activities (i.e. innovation orientation), and the overall effectiveness of firms' innovation efforts (i.e. innovation performance).

Further, drawing upon IBV, this study seeks to investigate the boundary conditions of the relationships between MPSA and firm innovation, including competitive intensity and sub-nation-level institutional environments in EEs. On the one hand, institutions—broadly understood as rules of the games—may alter the impact of MPSA on firm innovation performance, as they govern how firms deploy resources for effecting innovation outcomes

and regulate how firms' innovation outputs are diffused (North, 1990; Meyer and Peng, 2016). Meanwhile, institutional environments are fundamental in defining the competitive conditions in which firms operate (Chacar *et al.*, 2010, p. 1122). Integrating the microfoundation lens, this study contends that SME owner-managers' perception of competitive intensity may shape the impact of MPSA on firm innovation orientation. Both MPSA and competitive intensity in this study capture how owner-managers cognitively frame external dynamics and pressure, which in turn, may condition their psychological dispositions. Thus, they underpin firm's attitudinal openness towards innovation (Nadkarni and Barr, 2008; Staniewski *et al.*, 2016).

This study specifically focuses on the small and medium-sized enterprises (SMEs) in EEs. SMEs are integral business constituents driving economic growth and employment across the globe (Chen, 2006), particularly in emerging and developing economies (Stephan *et al.*, 2015; Puffer *et al.*, 2010). This is a key area of research given the critical role SMEs play in EEs such as China, where they represent nearly 80% of employment and over 60% of the Gross Domestic Product (GDP) in 2020 (OECD, 2020b). To grapple with the increasingly intense competition in the global market, SMEs in EEs prioritise innovation orientation and innovation performance to enhance both market position and business competitiveness (Child and Tse, 2001; Hitt and Xu, 2016; Peng and Heath, 1996). However, compared with large enterprises, SMEs in EEs often encounter greater barriers to innovate, such as limited access to resources and inadequate institutional support (Chan and Du, 2021; Ma *et al.*, 2013). In

this regard, scholars have extensively discussed the liabilities of smallness (Gimenez-Fernandez *et al.*, 2020; Choi *et al.*, 2021), which tremendously inhibit SMEs' ability to leverage resources and maintain strategic agility in their pursuit of innovation success (Lee *et al.*, 2012). Consequently, SMEs in EEs are arguably more susceptible to the anomie-induced disorientation and normlessness—a condition resulting from the institutional instability and rapid social changes in EEs—due to their limited resources and inadequate institutional support, which can affect their ability to promote innovation efforts and sustain market standing (Cheng *et al.*, 2022). Nonetheless, the effect of MPSA on SME innovation orientation and performance remains underexplored in current literature, representing a critical gap that this research seeks to address.

In summary, this study posits that the institutional predictors of firm-level innovation should be examined in conjunction with firm-related actors' interpretations of societal consequences such as the state of anomie. This perspective is especially relevant for SME owner-managers as key actors, whose vision and mindset play a significant role in shaping innovative and creative changes at both individual and organisational levels (Runst and Thomä, 2022). This study contends that MPSA—reflecting owner-managers' weakened attachment to social norms—may serve as a cognitive frame that defines firms' strategic posture and openness towards innovation, ultimately influencing their innovation performance (Bromiley and Rau, 2016). To fully investigate this phenomenon, this study draws on an integrative view of IBV and IAT. On the one hand, IAT elucidates how SME owner-managers interpret the anomie-

induced strain, and how such interpretations influence firm-level innovation outcomes (Harris *et al.*, 2016; Faßauer, 2018; Messner and Rosenfeld, 2012). On the other hand, IBV illuminates that the extent to which anomie translates, or fails to translate, into positive deviance among SMEs may depend upon the market conditions and institutional environments (Cao, 2023; Johnson and Duberley, 2011).

The following section will introduce the contextual focus of this study, and elaborate on how this research context aligns with the study's objectives, providing a foundation for examining the integrative perspectives of IBV and IAT.

1.3. Research Context

This study concentrates on the context of China, which is widely recognised as a vibrant and prominent EE (Meyer and Peng, 2016; Cheng and Yiu, 2016; Shen *et al.*, 2022). First, China's rapid economic growth has gained substantial scholarly attention within the fields of international business and management studies (Gimenez-Fernandez *et al.*, 2020; Choi *et al.*, 2021). Indeed, China has undergone profound transformations in political and economic systems over the past few decades, with these institutional and social changes significantly imprinting on the co-evolution of business environments and associated activities (Child and Tse, 2001; Hitt and Xu, 2016). This evolution of market-oriented systems has significant implications for a range of firm-related phenomena in China, including innovation (Ma *et al.*, 2015; Zhang and Merchant, 2020), market orientation (Li *et al.*, 2006), internationalisation

(Chen *et al.*, 2018; Hong *et al.*, 2015), and entrepreneurial activities (Su *et al.*, 2022b; Puffer *et al.*, 2010).

China's remarkable transition from a centrally planned economy to socialist market economy has greatly stimulated the growth of private enterprises and facilitated their openness to global markets (Zeng *et al.*, 2010; Radas and Božić, 2009a; Minh and Hjortsø, 2015; Child and Tse, 2001). Furthermore, the rapid yet fragmented marketisation development in China has engendered significant socio-economic implications, such as regional disparities and societal anomie (Snell and Tseng, 2001; Jiang *et al.*, 2020b; Zeng *et al.*, 2024). These structural consequences have received increasing scholarly attention, particularly in terms of the interplay between the institutional development of marketisation and its firm-level outcomes in the Chinese context (Zhang *et al.*, 2023; Du *et al.*, 2017; Kong *et al.*, 2022; Xie, 2017).

Moreover, the developmental trajectory of the Chinese marketisation significantly differs from that of the traditional Western counterparts, prompting scholars to adopt more nuanced theoretical perspectives and methodological approaches to uncover its implications for firms' innovation development and growth (Chan and Du, 2021; Ma *et al.*, 2013; Tung, 2016).

Scholars posit that the research on institutions should be extended to encompass richer levels of analysis, such as subnational and supra-national institutional environments. The

subnational level of China is particularly well-suited for such a research call due to its significant regional heterogeneity across a large number of provinces and municipalities (Lu *et al.*, 2018; Yao *et al.*, 2023). As Rodríguez-Pose (2013) suggests, a favourable institutional environment in one region does not necessarily ensure the same conditions in another, especially within a large and diverse country. This heterogeneity is further shaped by factors such as geographical location (e.g. coastal regions versus inland regions) and preferential policies (e.g. special economic zones), which have led to uneven marketisation and institutional environments across China's subnational regions (Xie and Li, 2018). For instance, coastal provinces and municipalities in China benefit more from stronger market-based institutional support, enhancing the efficiency of resource allocation and economic openness (Chan and Du, 2021; Xie, 2017). In contrast, some inland regions remain more significantly influenced by government intervention and local protectionism, which can stifle market-driven competition and hinder firm development (Gao *et al.*, 2010).

Further, the intra-Chinese regional disparities in economic development amplify the cultural differences across regions (Kwon, 2012). The intra-Chinese regional differences in cultural prevalence, as a form of informal institutions, are underpinned by a multitude of factors, including geographical conditions, linguistic diversity, and ethnic characteristics (Frank *et al.*, 2014; Kwon, 2012; Song *et al.*, 2019; Gong *et al.*, 2011). The variations in institutional environments across Chinese provinces, including formal and informal components, fundamentally shape how firms interact and leverage institutional environments to pursue

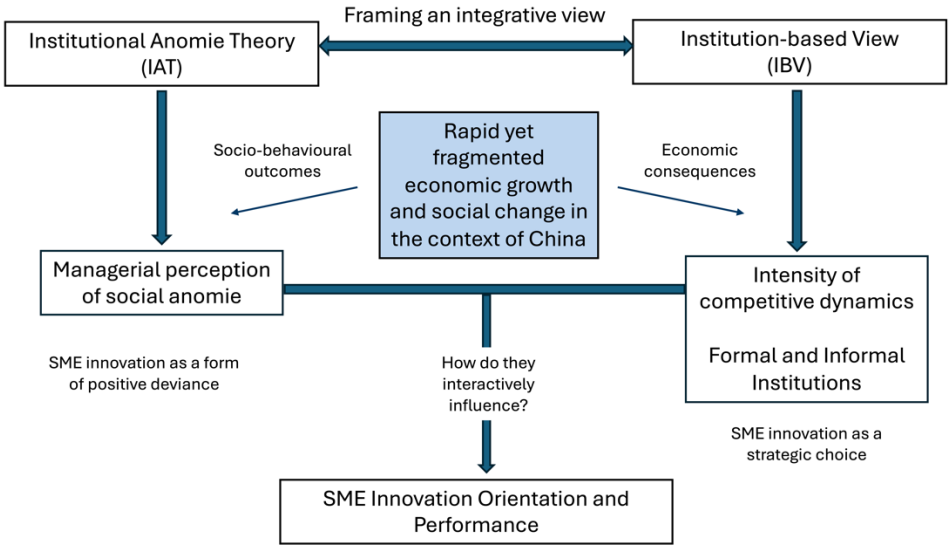
innovation within distinct societal and business climates (Zhou *et al.*, 2014). Therefore, the Chinese setting provides an ideal context for investigating the relationship between institutions and firm-level innovation in EEs, given its vast geographical scope and the heterogeneity of regional institutions (Peng *et al.*, 2015; Hong *et al.*, 2015).

In summary, this study argues that the coexistence of prominent marketisation and asymmetrical institutional development in China may create fertile ground for engendering varying degrees of social anomie across regions with different institutional characteristics (Luo, 2008b; Cheng *et al.*, 2022; Su *et al.*, 2019). This duality generates tension between economic development and institutional imbalance, exacerbating individual-level uncertainties and disrupting the social cohesion essential for facilitating business activities and growth (Su *et al.*, 2019). SME owner-managers, embedded within such environments, may navigate the anomie-catalysed strain and institutional inconsistency through engaging in positive deviance such as innovation (Mainemelis, 2010). In parallel, this perceived state of social anomie among SME owner-managers may also induce dysfunctional behaviours that constrain effective coordination of SME innovation activities in China (Tsahuridu, 2011; Zoghbi-Manrique-de-Lara and Guerra-Báez, 2018). In this regard, the context of China provides a suitable lens to explore the interaction between rapid market growth, uneven institutional support, and their implications for SME innovation orientation and performance. The next section will introduce the theoretical underpinnings of this study.

1.4. Theoretical Foundations

This study is grounded in an integrative perspective of IBV and IAT to explore the impact of MPSA on SME innovation orientation and performance, and to examine how these relationships are contingent upon the strengths of market conditions and institutional environments at the subnational level in China. The theoretical integration of IBV and IAT is presented as follows.

Figure 1-1 The rationale of integrating IBV and IAT



Source: The author

In essence, IAT provides insights into how MPSA influences SME innovation orientation and performance, while IBV explains how this interactive mechanism is conditioned by the intensity of competitive dynamics, formal and informal institutions. Building upon the

integration of IAT and IBV, this study seeks to explore how the interaction between the intensity of competitive dynamics (an economic factor) and MPSA (a socio-behavioural factor) influences SME innovation outcomes. The interaction is rooted in the uneven pace of marketisation, a key aspect of institutional development in China (Zeng *et al.*, 2024; Gang *et al.*, 2018). Specifically, the study examines how these economic pressures and societal disruptions converge to influence SME innovation orientation and performance, advancing the understanding of SME innovation in EEs.

In summary, the integrative perspectives enable a deeper analysis of how firm-related actors, specifically SME owner-managers, internalise and interpret the social anomie and strain arising from China's rapid yet uneven marketisation and economic development, and of how these factors subsequently influence SME innovation orientation and performance. Further, the theoretical integration deepens the understanding of an actor-centred view of institutions and the boundary conditions of the anomie–innovation nexus, through examining the variations of competitive dynamics and subnational institutional environments.

The rationale of integrating IBV and IAT will be fully discussed in Chapter 3.

1.5. Research Questions

Based on the integrative perspectives of IBV and IAT and the discussions above, the following research questions are framed:

Research Question 1: What is the relationship between the managerial perception of social anomie and SME innovation orientation and performance in China?

Research Question 2: How do formal and informal institutions at the subnational level influence the magnitude of the association between the managerial perception of social anomie and SME innovation in China?

Research Question 3: How does the intensity of competitive dynamics influence the magnitude of the association between the managerial perception of social anomie and SME innovation in China?

1.6. An Overview of the Research Methodology

This study employs a quantitative approach to test research hypotheses derived from the theoretical integration of IBV and IAT. Consistent with the theoretical underpinnings, research hypotheses are formulated to examine the relationships between research variables. The hypothesised relationships are empirically tested and corroborated through structured quantitative analysis.

1.6.1. Data Collection

This research draws upon a combination of primary and secondary data to produce findings. First, the secondary data were collected and compiled from the National Economic Research

Institute (NERI) marketisation index (Wang *et al.*, 2021), and the GLOBE cultural database of Chinese provinces (Zhao *et al.*, 2015). These data sources have been extensively used in existing studies in the fields of innovation and international business and management (Kafouros *et al.*, 2015; Sun *et al.*, 2019; Su *et al.*, 2022b). In addition, this study utilises a survey questionnaire approach to collect primary data, targeting the key informants of SMEs (i.e. SME owner-managers) who possess significant knowledge and control over the enterprises' innovation activities. The research measures and constructs were adopted from well-established studies (Srole, 1956; Zhou *et al.*, 2005b; Atuahene-Gima and Ko, 2001; UK Office for National Statistics, 2020; Eurostat, 2018). The reliability and validity of these constructs were rigorously evaluated using Cronbach's alpha for internal consistency, confirmatory factor analysis for construct validity, and composite reliability to ensure the robustness of the measurement model (Cheung *et al.*, 2024; Cronbach, 1951).

Specifically, the primary data collection involved administering questionnaire surveys to private SMEs across 20 provinces in China between August 2023 and May 2024. A pilot test was conducted with SME owner-managers and academic researchers prior to the formal data collection to ensure content validity, clarity, and precision in the measurement items. A total of 1,054 valid and completed responses were obtained for data analysis. Additionally, non-response bias, collection method bias, and common method bias were tested, with results indicating that the data collected are suitable for generating valid and reliable findings.

Further details of the data collection procedures will be presented in Chapter 4.

1.6.2. Data Analysis

A moderated mediation analysis was conducted to test the research hypotheses, examining the direct, indirect, and conditional effects between the research variables. First, the mediation analysis tested the indirect effect of MPSA on SME innovation performance through SME innovation orientation, employing a stepwise approach and a non-parametric bootstrapping method with 5,000 resamples (Cheung and Lau, 2008; Peltokorpi and Yamao, 2017; Aguinis *et al.*, 2017; Baron and Kenny, 1986; Hayes, 2009). Bias-corrected 95% confidence intervals were computed to provide robust estimates of the indirect effects, ensuring the reliability of the findings by relaxing the assumption of normality in the sampling distribution (Hayes, 2009; Hayes, 2012; Wen and Ye, 2014).

Hierarchical multiple regression analysis was conducted to examine the moderating effects of competitive dynamics and subnation-level institutional environments (Uhlaner *et al.*, 2013; Aguinis *et al.*, 2017). To further investigate and interpret the moderating influences, a simple slope analysis was performed to illustrate the interaction effects by computing the regression slopes at specific values of the moderators (i.e. ± one standard deviation from the mean) (Dawson, 2014). This approach allows for a precise evaluation of how the relationships between MPSA and SME innovation orientation and performance vary depending on the

levels of competitive dynamics, formal, and informal institutional settings at the subnational level in China (Aguinis *et al.*, 2017; Li *et al.*, 2019b).

In summary, the combination of bootstrapped mediation analysis, hierarchical regression for moderation, and simple slope analysis offers a statistically rigorous evaluation of the hypothesised model, ensuring robust research findings and conclusions. Additionally, robustness tests, including alternative methods and split-sample analysis, were conducted to further validate the results. Further details of data analysis will be presented in Chapter 5.

1.7. Key Research Findings

The key research findings are summarised in Table 1-1 below.

Table 1-1 Summary of research findings

Research focus	Findings	Theoretical basis
Anomie–SME innovation nexus	Managerial perception of social anomie is negatively correlated with SME innovation orientation and SME innovation performance.	IAT–anomie
Anomie–SME innovation nexus	SME innovation orientation mediates the relationship between managerial perception of social anomie and SME innovation performance in China.	IAT–anomie
Competitive dynamics as a constructive alleviator of managerial anomie	The adverse impact of managerial perception of social anomie on SME innovation orientation is alleviated under conditions of intense competitive dynamics.	IBV and IAT

Innovation-supporting formal institutions as a buffering mechanism	The adverse impact of managerial perception of social anomie on SME innovation performance is weakened in provinces/municipalities characterised by stronger institutional support of product markets.	IBV and IAT
Informal institutions as a catalysing condition	The adverse impact of managerial perception of social anomie on SME innovation performance is amplified in provinces/municipalities with a strong cultural emphasis on uncertainty avoidance.	IBV and IAT

1.8. Research Contributions

This study contributes to theoretical development and informs business practices and policymaking. The theoretical contributions are outlined in Table 1-2.

Table 1-2 Summary of research contributions

Contributions	Elaboration
Bringing the notion of anomie into the scholarly conversation on SME innovation	This study brings the notion of anomie into the scholarly conversation on firm-level innovation as a form of positive deviance. The findings of this study facilitate a socio-behavioural perspective for understanding the factors that explain SME innovation orientation and performance as a form of positive deviance in the context of EEs (Van Wijk *et al.*, 2019; Van Oorschot *et al.*, 2018), going beyond the traditional strategic-driven perspectives for explaining firm innovation (Granstrand and Holgersson, 2020). This study provides novel evidence on the microfoundations of firm innovation in EE contexts by highlighting that owner-managers' interpretations of anomie constitute a crucial mechanism that links societal strain with firm-level innovation outcomes (Palmié *et al.*, 2023).

The theoretical integration of IBV and IAT	By constructing a theoretical integration of IBV and IAT, this study enriches and complements the conventional institutional perspectives in the current body of literature (Aguilera and Grøgaard, 2019; Meyer and Peng, 2016; Voronov and Weber, 2020). To articulate, this integrative view offers a fine-grained understanding of how social actors (i.e. SME owner-managers) are embedded within the institutional frameworks, thus influencing their decision-making behaviours towards innovation. This integrative perspective responds to the call for advancing a thicker view of institutions that examines the deeper cultural contexts and social embeddedness shaped by the institutional structures (Jackson and Deeg, 2019).
The dual examination of attitudinal-based and outcome-based dimensions of SME innovation	This study pinpoints two dimensions of SME innovation behaviours: the attitudinal-based dimension (i.e. innovation orientation), which reflects firms' openness to innovation behaviours; and the outcome-based dimension (i.e. innovation performance), which captures the overall effectiveness of firms' innovative efforts (Jun *et al.*, 2021). Specifically, this approach offers nuanced insights into how managerial anomie influences both attitudinal receptiveness to innovation and the tangible outcomes of innovative efforts within SMEs in China. This dual analysis contributes to a deeper understanding of the impact of managerial anomie—an underexplored concept in management scholarship—on SME innovation behaviours, thereby paving the way for future research (Siguaw *et al.*, 2006; Zhou *et al.*, 2023; Norris and Ciesielska, 2019a).
Advancing research focus on the subnational level institutional environments	In response to the scholarly calls for a deeper explication of multilevel institutional environments, this study advances the traditional focus on nation-level institutions by extending the analysis to institutional variations at the subnational level within China (Onuklu *et al.*, 2021; Rodríguez-Pose and Zhang, 2020). Specifically, this study highlights the critical importance of evaluating both formal and informal institutional settings at the subnational level, which can significantly influence firm innovation orientation and performance, particularly in EEs. By redirecting attention to localised institutional contexts, this research advances institutional theory by offering a more sophisticated understanding of how institutional heterogeneity steers

	innovation of SMEs within EEs (Hutzschenreuter *et al.*, 2020; Dau *et al.*, 2022).

Chapter 6 will provide a comprehensive discussion of the theoretical contributions and practical implications of this study.

1.9. Key Concepts of the Study

The key concepts of this study are clearly defined in Table 1-3 below to ensure clarity and facilitate readers' understanding of the research. A comprehensive discussion of the remaining key concepts will be elaborated upon in Chapter 2.

Table 1-3 Key concepts of the current study

Concepts	Definitions
Anomie (anomia)	• Anomie is defined as a *'condition of inadequate procedural rules to regulate complementary relationship among the specialized and interdependent parts of a complex social system'* (Olsen, 1965, p. 40). • Anomie refers to the strain confronted by social actors stemming from an incongruence between socially endorsed goals and the legitimate means available to achieve them (Merton, 1938). • Anomia (micro-level anomie) refers to '*a state of mind in which the individual's sense of social cohesion—the mainspring of his morale—is broken or fatally weakened'* (MacIver, 1950, p. 85). • Managerial perception of social anomie refers to firm owner-managers' subject interpretation and understanding of *'uncertainty and ambiguity regarding basic norms, values, and conceptions of value or worth'* (Lepisto and Pratt, 2017, p. 106).

Innovation performance	Innovation performance is defined as *'the achievement in the trajectory from conception of an idea up to the introduction of an invention into the market'* (Hagedoorn and Cloodt, 2003, p. 1367).
Innovation orientation	Siguaw *et al.* (2006, p. 560) define innovation orientation as *'a multidimensional knowledge structure composed of a learning philosophy, strategic direction, and trans-functional beliefs that, in turn, guide and direct all organisational strategies and actions, including those embedded in the formal and informal systems, behaviours, competencies, and processes of the firm to promote innovative thinking and facilitate successful development, evolution, and execution of innovations'.*
Institutions	Institutions are defined as *'as humanly devised constraints that structure human interaction, and these can be formal such as rules and laws or informal such as norms of behaviors'* (North, 1990, p. 3).
Marketisation	Marketisation refers to *'a process of transferring the provision of goods and services hitherto supplied by bureaucratic, political or professional means, to market-based arrangements'* (Crouch, 2009).
Positive deviance	Positive deviance is defined as '*intentional behaviours that depart from the norms of a referent group in honourable ways'* (Spreitzer and Sonenshein, 2004, p. 828).
SMEs	In the industrial sector—encompassing the manufacturing industry, mining industry, and the industries involved in the production and supply of electricity, gas, and water—the classification is based on both the number of employees (X) and operating revenue (Y): • Medium-sized enterprises have between 300 and 1,000 employees ($300 \leq X < 1{,}000$); or revenue between ¥ 20 million and ¥ 40 million (¥20 million $\leq Y <$ ¥40 million). • Small enterprises have between 20 and 300 employees ($20 \leq X < 300$); or revenue between ¥3 million and ¥20 million (¥ 3 million $\leq Y <$ ¥ 20 million). Source: National Bureau of Statistics of China (2023)

1.10. Structure of the Thesis

The structure of the thesis is presented in Table 1-4.

Table 1-4 Thesis structure

Chapters	Descriptions
Chapter 1: Introduction	This chapter provides an overview of the study.
Chapter 2: Theoretical Underpinnings and Literature Review	This chapter proposes the theoretical foundations of the research, reviews the relevant literature, and clarifies the knowledge gaps.
Chapter 3: A Synthesis of Literature Review and Hypothesis Formulation	This chapter synthesises the existing literature on the application of the IBV and IAT to explain firm innovation, and formulates the research hypotheses and the research model.
Chapter 4: Research Methodology	Based on the research model, the adoption of methodological approaches is discussed and justified. The philosophical orientation is explained. Following this, the procedures of data collection and analysis of this study are presented in detail.
Chapter 5: Data Analysis and Hypothesis Testing	The chapter presents and discusses the results of the statistical analysis of the study.
Chapter 6: Discussion of Research Findings and Conclusion	This chapter offers an in-depth analysis and interpretation of the statistical findings. It also presents the theoretical contributions, along with the managerial and policy implications of the study. Additionally, the limitations of the research are outlined and the potential directions for future research are discussed.

The next chapter will present an in-depth literature review and establish a conceptual foundation for developing the research frameworks examined in this study.

2. Theoretical Underpinnings and Literature Review of This Study

2.1. The Conceptual Foundation of Innovation

2.1.1. Defining Innovation

The definitions of innovation are extensively discussed through various theoretical foundations (Garcia and Calantone, 2002; Jamil *et al.*, 2018). In the seminal work entitled *Capitalism, Socialism and Democracy*, Schumpeter (1942b) introduced the concept of *creative destruction*. This work defines innovation from several aspects, encompassing: the introduction of new products, new methods of production, new markets, a new source of supply, and organisational forms. Consistent with this foundation, extant literature of innovation mainly defines innovation either as a process (Adner, 2006; Gupta *et al.*, 2007; Van de Ven, 1986), or as an outcome (Becker and Whisler, 1967; Levitt, 1960; Utterback, 1971). For instance, Van de Ven (1986, p. 590) framed innovation as a process by defining it as '*the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order'*. Conversely, some scholars regard innovation as an outcome, focusing on the outputs associated with innovation. To elaborate, innovation as an outcome is embodied in the emergence of a new market offerings (Utterback, 1971; Kahn, 2018), such as a new product, business process, or business model (Crossan and Apaydin, 2010).

Understanding the distinctions between innovation as a process and as an outcome provides further insights into the nature of innovation within the literature. First, innovation as a process highlights the developmental nature of new ideas and creativity over time, which is

considered '*only necessary but not sufficient'* for innovation success (Crossan and Apaydin, 2010, p. 1169). In contrast, innovation as an outcome focuses on the tangible outputs derived from the innovation efforts, which is noted as being '*necessary and sufficient'* for successfully absorbing, adopting, and diffusing innovation. The majority of existing studies focus on innovation as an *outcome* when examining the main determinants of firm-level innovation (e.g. Sjödin *et al.*, 2020; Jiang *et al.*, 2021; Xie *et al.*, 2016b). This is because innovation outcomes substantively contribute to business growth and market development (OECD and Eurostat, 2018). This line of research, focusing on innovation as an outcome, highlights how innovation enhances firm competitiveness, supports sustained performance of firms, and promotes market growth and technological advancement.

In addition, scholars assert that innovation as a process should not be perplexed with process innovation (Crossan and Apaydin, 2010). The former pertains to the developmental activities involved in achieving innovation, such as the process of ideation and experimentation, whereas the latter focuses on the innovation outcomes manifested in operational processes, such as improvements in firms' manufacturing or distributions systems (Kahn, 2018; Crossan and Apaydin, 2010). In other words, innovation as a process represents the innovation efforts aiming at successfully introducing innovation outputs to the firm and the market (OECD and Eurostat, 2018). The concept of process innovation will be elaborated in Section 2.1.2.

This research adheres to the definition of innovation formulated by *the Oslo Manual,* which is a scientific guideline of collecting, reporting and using data on innovation published by Organisation for Economic Co-operation and Development (OECD) and European Statistical Office (Eurostat). *The Oslo Manual* defines business innovation as *'a new or improved product or business process (or combination thereof) that differs significantly from the firm's previous products or business processes and that has been introduced on the market or brought into use by the firm'* (OECD and Eurostat, 2018, p. 20). This definition focuses on business innovation as an outcome, highlighting the practical implementation and application of innovation (OECD and Eurostat, 2018).

This section has presented the conceptual foundation of business innovation, informing the study's focus on innovation as an outcome, as this conceptualisation highlights *'value creation or preservation as the presumed goal of innovation'*(OECD and Eurostat, 2018p. 20). The subsequent section will elaborate on the taxonomies of innovation and discuss how various types of innovation contribute to business performance.

2.1.2. Taxonomies of Innovation

The taxonomy of innovation plays a critical role in providing a holistic framework for fully explaining both the antecedents and consequences of innovation (Adams *et al.*, 2011; Shortel *et al.*, 2000). This study adopts the taxonomy framework of firm innovation suggested by

Crossan and Apaydin (2010). Specifically, they categorised innovation into two primary dimensions: innovation magnitude and innovation form (Crossan and Apaydin, 2010).

Magnitudes of Firm Innovation

In terms of innovation magnitude, innovation can be distinguished on the basis of the degree of newness (or novelty as defined by the Oslo Manual, P. 77), associated with innovation outcomes (Crossan and Apaydin, 2010; Chandy and Tellis, 2000). For instance, Garcia and Calantone (2002) distinguish incremental innovation from radical innovation, by which the latter is also coined as discontinuous or disruptive innovation (Schumpeter, 1942b; Christensen and Overdorf, 2000). By definition, radical innovation refers to fundamental changes that are greatly different from existing practices and patterns within an organisation, whereas incremental innovation is characterised by efforts to refine and improve existing standards within an organisation (Garcia and Calantone, 2002; Bao *et al.*, 2012). The dimension of innovation magnitude is closely related to the dimensions of innovation referent, which include industry, market, and firm as key referents. The referent dimension clarifies whether an innovation is new to the industry, market, or firm, providing further explanation of the scope and impact of the innovation (Crossan and Apaydin, 2010).

Specifically, incremental innovation, such as firms' initiatives of continuous improvement, often is new to a specific firm, whereas radical innovation mostly introduces entirely new products, services, or processes to the broader market or industry. For instance, the

development of self-service systems by airline companies represents an example of incremental innovation. This refining process demonstrates gradual improvements over existing technologies and processes, focusing on enhancing operational efficiency of these companies and passenger experience (Liljander *et al.*, 2006). In contrast, the generative artificial intelligence (Gen-AI) model *Sora*, developed by OpenAI, stands as an example of radical innovation, given its capability to generate creative and realistic videos based on user-provided text inputs (Mogavi *et al.*, 2024).

Prior research has investigated the impact of radical and incremental innovation on firms' performance and growth. Numerous scholars highlight the importance of combining both incremental innovation and radical innovation at various stages of firm development to achieve innovation ambidexterity (He and Wong, 2004; O Reilly and Tushman, 2004; Smith and Tushman, 2005; Jansen *et al.*, 2006; Lin *et al.*, 2013). Innovation ambidexterity is defined as *'the simultaneous achievement of incremental and radical innovation'*(Lin *et al.*, 2013, p. 262). Innovation ambidexterity involves the balanced deployment of exploration, which drives radical innovation, and exploitation, which underpins incremental innovation(Lin *et al.*, 2013; Moreno-Luzon, 2017; March, 1991). These dual capabilities are considered valuable for addressing managerial tensions and equilibrating operational risks, as they enable firms to navigate both short-term demands and long-term strategic goals (Lavie and Rosenkopf, 2006).

In summary, the typology based on innovation magnitudes provides a clear framework for understanding how firms develop and manage their innovation outputs according to the degree of newness/novelty (OECD and Eurostat, 2018). This typology facilitates a deeper conceptual understanding of how innovation emerges and contributes to various dimensions of the performance measures of firms.

Forms of Firm Innovation

The dimension of innovation forms focuses on the specific domains or elements that serve as the focal points of innovation endeavours. Foundationally, Schumpeter (1942b)—widely recognised as *'the prophet of innovation'*—suggests five categories of innovation: (1) a new good; (2) a new method of production; (3) a new market; (4) a new source of supply of raw materials; and (5) (the carrying out of) a new organisation of any industry (or market).

Building on Schumpeter's seminal work, a growing body of literature proposes and examines various forms of innovation. For instance, Francis and Bessant (2005) subdivide innovation into four categories: product innovation, process innovation, position innovation, and paradigm innovation (also known as business model innovation). More recently, OECD and Eurostat (2018, p. 70) introduced the typology of *'innovation types by object'*, proposing two primary categories: (1) product innovation; and (2) business process innovation. To elaborate, product innovation focuses on '*the novelty and meaningfulness of new products introduced to the market in a timely fashion'* (Wang and Ahmed, 2004, p. 304), while process innovation

pertains to '*the introduction of new production methods, new management approaches, and new technology that can be used to improve production and management processes'* (Wang and Ahmed, 2004). Innovation in different forms is not mutually exclusive, as firms can simultaneously leverage different types of innovation. For instance, business process innovation, such as improvements in production and distribution process, can accelerate product innovation by enhancing productivity and efficiency (OECD and Eurostat, 2018; Fagerberg, 2004).

According to the *Oslo Manual*, product innovation is defined *'a new or improved good or service that differs significantly from the firm's previous goods or services and that has been introduced on the market'*. In this context, products comprise both goods and services generated by firms. Business process innovation, on the other hand, refers to *'a new or improved business process for one or more business functions that differs significantly from the firm's previous business processes and that has been brought into use in the firm'*. Business process involves key functions of a business, including production of goods and services, distributing and logistics, marketing and sales, information and communication systems, administration and management, and product and business process management (Brown, 2008). Amongst these, the production of goods and services is the primary function while the others serve as supporting activities that coordinate with and facilitate the primary function (OECD and Eurostat, 2018). Furthermore, Damanpour and Aravind (2006) argue that scholars should investigate product innovation and process innovation as complementary

organisation-level properties. Accordingly, the different types of innovation are presented in Table 2-1.

Table 2-1 Taxonomies of business innovation

Categories of Innovation	Types of Innovation
Innovation Magnitude	• Continuous Innovation versus Discontinuous Innovation (Schumpeter, 1942b) • Continuous Innovation versus Disruptive Innovation (Christensen and Overdorf, 2000) • Incremental Innovation versus Radical Innovation(Garcia and Calantone, 2002)
Innovation Forms	• Product Innovation; Process Innovation; Marketing Innovation; and Organisational Innovation (Schumpeter, 1942b) • Product Innovation; Process Innovation; Position Innovation; Paradigm Innovation (Business Model Innovation) (Francis and Bessant, 2005) • *Oslo Manual Third Edition:* Product; Process; Organisational; and Marketing Innovation (OECD and Eurostat, 2005) • *Oslo Manual Fourth Edition:* Product Innovation and Business Process Innovation (OECD and Eurostat, 2018)

In summary, this study examines firm innovation as an outcome, with a particular emphasis on exploring the antecedents of firm product innovation. This research does not account for the magnitude of innovation associated with the degree of newness or novelty, due to its focus on identifying broader relationships and predictors rather than specific innovation types of firms (Si and Chen, 2020; Mendoza-Silva, 2021).

2.1.3. Innovation Orientation: An Attitudinal-based Perspective of Firm Innovation

In addition to viewing innovation as an outcome, there is a growing body of research focusing on innovation orientation, coinciding it with firms' strategic orientation towards innovative-promoting activities (Talke *et al.*, 2011; Tian *et al.*, 2024). This line of research facilitates a deeper understanding of how firms internalise innovation as a core organisational value, which significantly shapes their capacities to engage in innovation practices. The perspective of innovation orientation broadens the scope beyond conceptualising product innovation solely as an outcome (Norris and Ciesielska, 2019a).

Scholars have attached various meanings to the construct of innovation orientation, emphasising firms' attitudinal openness and behavioural propensity to engaging in innovation efforts. For instance, Zhou *et al.* (2005a, p. 1050) define innovation orientation as '*an organisation's openness to new ideas and propensity to change through adopting new technologies, resources, skills, and administrative systems'.* Integrating various streams of literature, Siguaw *et al.* (2006, p. 560) defined innovation orientation as '*a multidimensional knowledge structure composed of a learning philosophy, strategic direction, and trans-functional beliefs that, in turn, guide and direct all organisational strategies and actions, including those embedded in the formal and informal systems, behaviours, competencies, and processes of the firm to promote innovative thinking and facilitate successful development, evolution, and execution of innovations'.* In this sense, innovation orientation can be

succinctly known as *'the organisational strategies and actions toward specific innovation-enabling competencies and processes'* (Siguaw *et al.*, 2006, p. 556). The definition has been widely adopted in subsequent research to investigate how innovation orientation contributes to firm growth and development (Engelen *et al.*, 2014; Lee and Tang, 2018; Simpson *et al.*, 2006; Datta *et al.*, 2019; Farzaneh *et al.*, 2022), and is accordingly adopted in this study to further examine its nature, antecedents, and implications.

To comprehend the nature of innovation orientation, this study draws insights from the studies on entrepreneurship orientation (Stam and Elfring, 2008). Extant studies primarily conceptualise entrepreneurship orientation as either a behavioural, or as an attitudinal construct, or a combination of both (Anderson *et al.*, 2015). Specifically, entrepreneurship orientation reflects *'the simultaneous exhibition of innovativeness, proactiveness and risk taking'* (Stam and Elfring, 2008, p. 98). It embodies the collective mindsets and strategic postures of firms, emphasising the attitudinal dimensions of these traits (Kreiser *et al.*, 2020). Building on these insights, this research postulates that innovation orientation is a dimension of firms' strategic orientation, representing an *attitudinal construct* capturing firms' propensity for engaging in innovation activities and commitment to fostering a culture that encourages exploration and experimentation (Zhou *et al.*, 2005a). Hurley and Hult (1998) argue that innovation orientation (i.e. innovativeness) stems from organisation-wide values that promote openness to learning and change. In this context, corporate culture serves as the enduring system of shared values, beliefs, and norms that underpins organisational behaviour

(Sørensen, 2002). Accordingly, corporate culture provides the foundational environment in which innovation orientation can emerge and thrive (Martins and Terblanche, 2003). Innovation orientation—capturing a firm's strategic posture and disposition towards innovation—is fundamentally conditioned by the underlying values of its corporate culture.

Innovation orientation serves as a critical enabler for overcoming operational challenges and strengthening firms' capabilities to successfully create and develop new systems, processes, or products (Hurley and Hult, 1998). Such an attitudinal-based innovation perspective is essential for framing a comprehensive understanding of how firms initiate, develop, and sustain innovation outcomes (Hakala, 2011; Tian *et al.*, 2024). Previous research suggests that innovation orientation is a positive driver for firms' innovative performance (Simpson *et al.*, 2006; Lii and Kuo, 2016); financial profitability (Chuang and Lin, 2017; Maltz *et al.*, 2006; Wu, 2016); operational and internal optimisation (Zhou *et al.*, 2005a; Cheung *et al.*, 2012; Caeterling *et al.*, 2012); and acquisition of market advantages (Simpson *et al.*, 2006). Consequently, exploring the key antecedents and drivers of firms' innovation orientation is critical for enriching the current body of literature and providing useful practical implications (Li *et al.*, 2021b). Section 2.1.6 will further explain and summarise how this study positions the concept of innovation orientation along with other business-innovation-related constructs.

2.1.4. Innovation Activities

Innovation activities are defined as *'all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm'* (OECD and Eurostat, 2018, p. 68). Innovation activities are viewed as innovation efforts and implementations; however, they may not necessarily lead to the success of innovation diffusion to the market. For instance, these activities may be discontinued by firms for various reasons, remain in progress, or ultimately fail to materialise into the market. The innovation activities of firms mainly cover eight areas, as follows (see Table 2-2):

Table 2-2 Innovation activities

Innovation Activities
1. Research and experimental development (R&D) activities
2. Engineering, design, and other creative work activities
3. Marketing and brand equity activities
4. IP-related activities
5. Employee training activities
6. Software development and database activities
7. Activities related to the acquisition or lease of tangible assets
8. Innovation management activities.

Source: OECD and Eurostat (2018)

Innovation activities play a crucial role in promoting business growth and strategic progress by generating useful knowledge and information that contribute to innovation outcomes

(Ambos *et al.*, 2021; De Faria *et al.*, 2010; OECD and Communities, 2005). Firms seek to generate tangible and intangible benefits for the production of goods and services by undertaking innovation activities (Tsinopoulos *et al.*, 2019). Numerous studies substantiate the positive relationship between firms' innovation activities and innovation performance. For instance, Ceylan (2013) revealed that various types of innovation activities are fundamentally interconnected and collectively contribute to firm-level strategic progress, emphasising that product innovation activities play a pivotal role in enhancing firms' innovation performance. In addition, a large body of literature highlights the role of inter-organisational collaboration in effectively transforming innovation activities into value-added innovation performance (De Faria *et al.*, 2010; Wang and Hu, 2020; Parida *et al.*, 2012).

2.1.5. Innovation Performance: An Outcome-based Perspective of Firm Innovation

Innovation performance is defined as *'the achievement in the trajectory from conception of an idea up to the introduction of an invention into the market'* (Hagedoorn and Cloodt, 2003, p. 1367). The dimension of innovation performance is primarily concerned with the outcomes of executing innovation activities in achieving firms' objectives, such as the growth of sales and profits (OECD and Eurostat, 2018). The *outcome-based* perspective of innovation performance aims to explore the effectiveness of firms' innovation efforts, as well as the wider impact on stakeholders, economic development, societal improvement, and environmental sustainability (OECD and Eurostat, 2018). Put clearly, the dimension of

innovation performance highlights the tangible success of firms' innovation efforts. The success of innovation engagement, reflected in stronger innovation performance, plays a critical role in shaping firms' subsequent development and strategic positioning. For instance, previous empirical findings reveal that firms with stronger innovation performance are more likely to achieve greater success in internationalisation activities, particularly among SMEs (Henley and Song, 2020; Saridakis *et al.*, 2019; Singh *et al.*, 2022). Moreover, firms' innovation performance is extensively acknowledged as a pivotal component for reinforcing their competitive advantages (Chen *et al.*, 2009).

The outcome-based perspective focusing on innovation performance has received ample scholarly discussion in the current body of literature, including its conceptual elaboration and empirical investigation on its antecedents, contingencies, and strategic outcomes (Crépon *et al.*, 1998; Piening and Salge, 2015). However, scholars have highlighted the importance of pinpointing the antecedents of various dimensions of firm innovation, going beyond an outcome-based perspective (Kyrgidou and Spyropoulou, 2013; Vahter *et al.*, 2014; Anderson *et al.*, 2014; Cheng and Huizingh, 2014; Crossan and Apaydin, 2010). Specifically, as advocated by Siguaw *et al.* (2006, p. 570), the outcome-based variables of business innovation (i.e. innovation performance) *'should improve with the adoption of an innovation orientation'*.

To advance this line of inquiry, this study seeks to establish a comprehensive view that integrates the attitudinal-based perspective (i.e. innovation orientation) with the outcome-based perspective (i.e., innovation performance), enabling a thorough examination of the predictors of firm-level innovation. The following section will elaborate on the rationale and significance of adopting this dual approach, highlighting the complementary value of combining innovation orientation and innovation performance in the current study.

2.1.6. A Dual Examination of Innovation Orientation and Innovation Performance

This study proposes a dual approach encompassing both the attitudinal-based perspective (i.e., innovation orientation) and the outcome-based perspective (i.e., innovation performance) of firm innovation, aiming to provide a comprehensive and overarching perspective on firm-level innovation (Stock and Zacharias, 2011).

First, innovation orientation reflects firms' attitudinal openness towards innovation activities, fostering their capability to leverage and reform new ideas, system, and products (Hurley and Hult, 1998). Innovation-oriented firms are more capable in translating their innovation activities into substantive innovation outcomes and growth (Kyrgidou and Spyropoulou, 2013; Norris and Ciesielska, 2019a). As Hurley and Hult (1998) noted,*' it is the orientation to innovation and the capacity to implement innovations that determine whether the organization's market and learning orientations will lead to the development of the firm and*

the achievement of superior performance'. Despite its significance, there remains a paucity of literature that examines the explanatory antecedents—particularly socio-behavioural forces—that influence both firm innovation orientation and innovation performance.

Consequently, this study highlights that a dual focus on innovation orientation and innovation performance provides a holistic framework for exploring the strategic-driven and socio-behavioural antecedents of firm innovation, aligning with the study's objective of examining the anomie–innovation nexus. Specifically, this study argues that integrating the attitudinal dimension of firm innovation (i.e. innovation orientation) with the outcome dimension (i.e. innovation performance) enables a more refined and rigorous analysis of how firm-level innovation is shaped, driven, and sustained within social and market environments. Furthermore, this approach illuminates how socio-behavioural factors (i.e. the state of social anomie) influence firms' strategic intent and attitudinal receptivity towards innovation (i.e. innovation orientation), as well as the effectiveness of firms' actual implementation of innovation efforts (i.e. innovation performance) (Siguaw *et al.*, 2006; Daronco *et al.*, 2023).

In summary, this research positions firm innovation orientation and firm innovation performance as the core constructs of this study to provide richer insights into firms' attitudinal predispositions towards innovative behaviours, and the extent to which firms' innovation efforts meet their strategic objectives and create value. This research claims that this dual approach complements and enhances the traditional focus exclusively on innovation

types, speeds, and forms, thereby fully capturing how firm innovation in EEs is driven by strategic as well as socio-behavioural forces (Siguaw *et al.*, 2006; Zhou *et al.*, 2005a; Hurley and Hult, 1998).

The forthcoming section will review the main theoretical perspectives used in exploring the antecedents of firm-level innovation. This will be followed by a critical evaluation of these perspectives to demonstrate the literature positioning of this study.

2.2. Main Theoretical Perspectives for Explaining the Antecedents of Firm Innovation

Scholars recognise that firm innovation is a complex phenomenon influenced by a wide range of forces and dynamics. Consequently, prior research often distinguishes between internal (firm-level) and external (macro-level) factors to explain both the facilitators and constraints of firm innovation (Love and Roper, 2015; Yang *et al.*, 2012; Otero-Neira *et al.*, 2009).

This section presents a review of the extant literature on the antecedents of firm innovation, covering both firm-focused and macro-level dimensions. Existing studies have drawn on various theoretical perspectives to explain the key drivers of business innovation, encompassing firm-focused dimensions such as resource-based view (RBV), knowledge-based view (KBV), and agency theory (AT); and external-level dimensions such as the industry-based view and the institution-based view (IBV).

2.2.1. Resource-based View

Resource-based view (RBV) is a prominent theoretical lens broadly applied in various streams of business research, such as strategic management, international business, marketing, and operation management (Penrose, 2009; Barney, 1991). RBV primarily focuses on the utilisation and allocation of firms' internal resources to gain competitive advantages (Barney, 1991; Penrose, 2009). In relation to firm innovation, RBV stands as a predominant perspective in the current body of literature by examining how firm-level innovations are influenced by the acquisition and deployment of various resources (Camisón and Villar-López, 2014). RBV, with a particular focus on internal conditions, examines the significant firm-level factors influencing their innovation (Terziovski, 2010; Khosravi *et al.*, 2019).

A large body of empirical research has utilised the RBV to examine the antecedents of firm innovation orientation and innovation outcomes. For instance, Hadjimanolis (2000) found that small firms' technological assets significantly enhance their innovation orientation. Lau and Ngo (2004) found a positive relationship between optimal human-resource systems and firms' innovation performance. Along similar lines, Haneda and Ito (2018) found that inter-departmental collaboration and well-developed organisational resources (e.g. the integration of R&D centres) are positively correlated with business innovation success in Japan. Giudici and Paleari (2000) highlight that the limitations of financial resources can impede the ability of tech-oriented SMEs to develop innovation projects. Moreover, Curado *et al.* (2018) found that SMEs demonstrate stronger learning capacity and enhanced product innovation

performance when supported by well-developed information technology and knowledge-sharing mechanisms.

In addition, OECD and Eurostat (2018) suggest that *'management capabilities can influence a firm's ability to undertake innovation activities, introduce innovations and generate innovation outcomes'.* Specific management capabilities that stimulate innovation include professional backgrounds (Romijn and Albaladejo, 2002); technological orientation (Daellenbach *et al.*, 1999); entrepreneurial orientation (Pérez-Luño *et al.*, 2011); and functional diversity (Qian *et al.*, 2013). Scholars also argue that leadership style is a critical resource driving firms' innovation decision-making (Smith and Tushman, 2005). For example, Matzler *et al.* (2008) found that transformational leadership has a positive impact on SME innovation orientation in the context of Austria. Likewise, Kyrgidou and Spyropoulou (2013), suggest that entrepreneurial, technological, and managerial capabilities of senior executives are positively linked to the innovation orientation and innovation performance of manufacturing firms in Greece.

In addition, based on the RBV, organisational culture is extensively recognised as a key determinant for firms' innovation orientation and performance, with scholars claiming that some organisations fail to innovate, mainly due to the scarcity of supporting organisational culture (Bartos, 2007; Rogers, 2010). For instance, Hogan and Coote (2014) empirically tested the organisational culture developed by Schein (2010), revealing that an organisational

culture conducive to innovation fosters innovation norms among employees, thereby leading to a stronger presence of innovation performance within firms. More recently, Kashan *et al.* (2021) expanded the understanding of the role of organisational culture in innovation by classifying various dimensions of innovation-related culture in the Australian mining sector, further refining the link between organisation-level cultural support and innovation outcomes.

In summary, by drawing on the RBV, a large body of literature has explored the impact of firm-level resources and capabilities on firms' innovation orientation and innovation performance. Moreover, the literature has expanded the understanding of firms' resource through specific perspectives such as dynamic capabilities and knowledge management, which have emerged as theoretical extensions of RBV to explain firms' innovation (Lawson and Samson, 2001).

2.2.2. Knowledge-based View

Knowledge-based view (KBV) is used to shed light on the role of knowledge-centred activities and assets in driving firms' innovation orientation and performance (Felin and Hesterly, 2007). Essentially, scholars contend that KBV is a theoretical extension of RBV, and shift the focus towards the efficiency of knowledge exchange and activities (Leonard-Barton, 1992). Specifically, KBV posits that firm innovation is an outcome of knowledge assimilation and aggregation, during which knowledge acts as a crucial resource for firms in shaping their innovation outcomes and boosting their competitive advantages (Grant, 1996).

Consistent with KBV, there is ample empirical evidence examining the relationship between firms' knowledge-enhancing activities and capabilities and their innovation orientation and performance. For example, Yli-Renko *et al.* (2001) found that the firms' social capital significantly enhances their new product development through strengthening knowledge acquisition activities. Similarly, Donate and Guadamillas (2011) found that the positive effects of knowledge exploration and exploitation practices on firms' innovation performance are enhanced when firms cultivate a knowledge-oriented culture and leadership. Expanding on this, Robertson *et al.* (2021) argue that firms' knowledge-based dynamic capabilities, including knowledge creation, absorption, impact, and diffusion, serve as key drivers for their innovation performance.

Moreover, KBV-informed scholars have emphasised the critical role of workforce-level intellectual capital, particularly the knowledge assets employees contribute to firms. For instance, Yang and Xiao (2024) found that the positive impact of digitalisation on radical innovation in Chinese-listed SMEs is enhanced when employees are highly educated, demonstrating the complementary effects of employee knowledge and technological adoption on driving firm innovation performance.

In summary, studies based on KBV highlight the important role of knowledge-based assets, activities, and capabilities in facilitating firm innovation (Grant, 1996). This perspective discusses that firm innovation is closely linked to the strength of knowledge creation,

organisational learning, and absorptive capacity, which are developed through both external collaboration and internal synergy (Quintane *et al.*, 2011; Cohen and Levinthal, 1990; Tsai, 2001; Martín-de-Castro *et al.*, 2011).

2.2.3. Agency Theory

Agency theory (AT) addresses the relationship between business principals and agents, often referred as the principal-agent problem, investigating how the business agents coordinate goals and actions with those of the principals (Jensen and Meckling, 2019; Ross, 1973; Eisenhardt, 1989a). AT specifically focuses on the role of corporate governance in influencing various firm-level activities and phenomena such as innovation (Calabrò *et al.*, 2019).

There is a rich body of literature examining how ownership structures affect firm-level innovation performance. For instance, Liu *et al.* (2017a) posit that family ownership weakens firms' R&D investment for high-tech family businesses (FBs) in Taiwan. However, the impact of family ownership structure on firm innovation inputs and outputs remains inconclusive. For instance, Ashwin *et al.* (2015) found that family involvement in chief executive officers and chairpersons is positively associated with firms' innovation investment in the Indian context.

In addition, scholars also draw on AT to compare the variations of innovation decisions of FBs and non-FBs. For instance, Nieto *et al.* (2015) found that FBs are less likely to be engaged in innovation efforts and activities compared with non-FBs. Specifically, their research found that FBs are more inclined to adopt incremental innovation, while non-FBs tend to focus on external collaboration aiming at radical innovation. Further, scholars advance this stream of literature by merging AT with other theories to pinpoint the antecedents of firm-level innovation. For example, Matzler *et al.* (2015) incorporated AT and RBV, suggesting that family management and governance tend to reduce firms' R&D intensity, while the involvement of family employees enhances firm innovation performance.

In summary, the line of literature focusing on AT examines the role of corporate governance and the characteristics of governing boards in driving firm innovation inputs, activities, and performance, particularly in the context of FBs (Calabrò *et al.*, 2019). This theoretical perspective examines how role conflicts, such as managerial agents' risk aversion, can stifle firm innovation performance, while role coordination, such as aligning incentives and granting strategic autonomy, stimulates firm innovation performance (Balkin *et al.*, 2000; Chrisman *et al.*, 2015).

2.2.4. Industry-based View

Firms operate within an external environment where its characteristics and dynamics significantly influence their decision-making processes and performance (Simerly and Li,

2000). Specifically, industry-based view investigates the impact of environmental dynamism at the industry level on firms' innovation behaviours and performance (Dess and Beard, 1984; Peng *et al.*, 2008). Environmental dynamism is defined as *'instability and unpredictability and requires adaptation through a rapid understanding of the changing environment'* (Baik *et al.*, 2019, p. 405). This stream of research mainly focuses on the impact of industry-level conditions—such as environmental turbulence, market and industry uncertainty, competitive dynamics—on firms' innovation performance (Jaworski and Kohli, 1993). First, the role of environmental turbulence in influencing firms' innovation remains inconclusive in current literature. For instance, Tsai and Yang (2014) found that technological turbulence strengthens the positive impact of firms' innovativeness on their overall performance. Along similar lines, Bodlaj and Čater (2019) reveal that market turbulence and technological turbulence increase the perceived importance of innovation among SMEs. Nevertheless, some scholars assert that the positive effect of environmental turbulence on innovation is not significantly supported (Jaworski and Kohli, 1993; González-Benito *et al.*, 2014). In addition, this line of inquiry also focuses on other environmental determinants such as market complexity and uncertainty (Tidd, 2001). For instance, Freel (2005) found that the perceptions of uncertainty in market structures and technological environments enhance the adoption of radical innovation among SMEs in the UK.

Moreover, the impact of industry-level competitive dynamics on firm-level innovation, either as an enabler or a constraint, has received significant scholarly attention. For example,

Aghion *et al.* (2005) identified an inverted-U relationship between market competition and business innovation, indicating that while intense competition hampers innovation among firms in weaker positions, it promotes innovation among firms with closely matched competitive capabilities. Likewise, Tang (2006) argued that the relationship between the competitive environment and business innovation in the context of Canadian manufacturing sector is contingent upon the perceptions of competitive intensity among firms, particularly in relation to product and production processes.

In summary, the industry-based perspective examines how environmental dynamisms and contingencies influence firms' inclination to undertake innovation activities and achieve tangible innovation outcomes (Tidd, 2001). However, this theoretical perspective has faced significant criticism for its limitations in expounding the role of institutional environments in shaping firms' innovation orientation, capabilities, and performance. Thus, the next section will introduce an institution-based view to discuss how the extant literature analyses the relationship between institutional environments and firm-level innovation.

2.2.5. Institution-based View

Institution-based view (IBV) is a prominent theoretical perspective that examines how external institutional factors shape firm-level innovation. IBV highlights the interaction between institutions and organisations, and discusses how firms adopt various strategic actions as a response to institutional environments, including formal rules and informal

norms (Meyer and Peng, 2016). IBV is especially relevant in EEs, where institutional uncertainties prevail (Meyer and Peng, 2005; Lu *et al.*, 2008a). Building on this theoretical foundation, Zhu *et al.* (2012) analysed the context of China, as a leading EE, identifying five critical barriers that hinder SME innovation. These barriers include: (1) fairness within business competition; (2) financing accessibility; (3) legal and regulatory environment; (4) tax burdens; and (5) inadequacy of supportive measures. These factors collectively constrain the ability of SMEs in EEs to effectively engage in innovation-driven growth, highlighting the need for institutional reforms to cultivate a more supportive environment for innovation.

This section aims to offer a brief introduction to the IBV. Section 2.3.1 will present a thorough theoretical explanation of its relevance to firm innovation and institutional environments.

2.2.6. A Critique of the Reviewed Theoretical Perspectives

As presented above, RBV, KBV, and AT focus on the impact of firm-specific factors on firms' innovation orientation and performance. In contrast, the industry-based view and IBV focus on external contingencies, such as task environments and institutional contexts, to explain firm behaviours. While these perspectives offer valuable insights, the complex nature of firm innovation and the diverse contextual conditions in which it occurs reveal certain limitations in their applicability and explanatory power. Consequently, this section will critically

evaluate these theoretical lenses to clarify their explanatory limitations and illuminate the theoretical positioning for this study.

First, scholars critically observe that the RBV and KBV offer a relatively static view by emphasising the influence at the organisation level, without fully capturing the external forces that may facilitate or hamper the utilisation and cultivation of resources and knowledge (Yang *et al.*, 2012). Specifically, the RBV posits that firms with heterogenous resources are better positioned to secure and retain competitive advantages over their market rivals (Collis and Montgomery, 1995). Notwithstanding its theoretical development, RBV has faced criticism for its tautological nature, as it falls short in establishing a cohesive and integrative theoretical framework (Priem and Butler, 2001).

To explain further, Barney (1991, p. 102) originally explained that: '*A firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor*'. This conceptual statement, however, is claimed to be tautological and untestable (Peng, 2001). More clearly, Kraaijenbrink *et al.* (2010, p. 357) argue that '*the RBV is unmistakably tautological: Value and uniqueness appear in both explanans and explanandum'*. Furthermore, the conceptualisation of *value* within the RBV framework lacks precise definition, thus constraining its theoretical application and clarity. Specifically, Gibbert (2006) argued that the notion of unique resources posited by Barney (1991) is contentious for generalisation. In a

similar vein, Miller (2003) suggests that the creation of sustained competitive advantages is subject to the existing resources that firms already possess, thereby limiting the generalisability of the RBV (Connor, 2002).

KBV, as an extension of RBV, emphasises knowledge as a crucial strategic resource for firms. According to KBV, a firm's competitive advantage depends on its ability to effectively leverage knowledge to drive growth and achieve strategic outcomes (Grant, 1996). Despite its extensive application in the innovation literature, KBV shares similar limitations to those of RBV (Pereira and Bamel, 2021). To specify, the major critique states that KBV serves as an analytical perspective rather than a theoretical foundation. This is because KBV falls short in articulating the rationale and approach of knowledge transfer and activities (Grant, 2003). To address this limitation, numerous studies integrate other theories to strengthen the explanatory power of KBV, such as the reconciliation with organisational learning theory (Kogut and Zander, 1992), and perspectives of dynamic capability (Zheng *et al.*, 2011).

AT provides insights into the conflicts of interest between business principals and agents. AT plays an important role in explaining the effects of family involvement, ownership and stewardship patterns on firms' risk aversion of undertaking innovation activities (Eisenhardt, 1989a; Zhang *et al.*, 2018). Nonetheless, AT faces criticism for its limited explanations of the fundamental causes and sources of governance conflicts (Brudney, 1985). Specifically, AT falls short in capturing the impact of institutional conditions on the strength and patterns of

the governance conflicts that influence firms' innovation (Roberts *et al.*, 2005; Aguilera *et al.*, 2008). This is noted by Aguilera *et al.* (2008, p. 475) as a *'closed systems'* view that overlooks the interlinks between *'the organisation and diverse environments'.*

In relation to the analysis of external environment, the industry-based view has recognised the important role of environmental dynamisms in influencing firm-level activities. However, it mainly analyses external dynamisms as a *'task environment'* without fully addressing the intrinsic value and impact of institutional frameworks (Narayanan and Fahey, 2005). Firms' strategic choices are shaped by the combined effects of industry-level conditions, firm-specific capabilities, and *'a particular institutional framework that managers confront'* (Peng et al., 2009, p. 66), highlighting the need for a more integrative perspective that encompasses both market conditions and institutional environments.

IBV provides a more comprehensive understanding of how firms make strategic decisions within institutional frameworks, comprising formal and informal rules (Meyer and Peng, 2005). Nonetheless, IBV has been criticised for overlooking the importance of social actors and institutional interdependencies. In addition, IBV falls short in fully capturing '*how human behaviour becomes institutionalized as well as of variants of rationalist analysis*' (Willmott, 2015, p. 105). Given that IBV forms the central theoretical framework of this study, a more in-depth critique of its limitations will be presented in Section 2.3.2.

2.2.7. A Summary of the Key Theoretical Perspectives for Explaining the Antecedents of Firm Innovation

The previous sections have reviewed the main theoretical perspectives used to explore firm-level innovation. According to the literature review, IBV is crucial for exploring external determinants of firm innovation by offering a fine-grained explanation of how firm-level strategic choices are shaped by institutional environments, particularly in the context of EEs (Meyer and Peng, 2016; Puffer *et al.*, 2010; Meyer and Peng, 2005). Therefore, this effectively addresses the shortcomings of firm-focused perspectives such as IBV and KBV.

Firms operating in EEs often confront weaker institutional frameworks, which is termed as institutional voids in the current body of literature (Khanna and Palepu, 1999; Back *et al.*, 2014). Institutional voids inhibit firm innovation and entrepreneurship by complicating economic transactions, impeding access to essential resources, and increasing uncertainties in regulatory and market environments (Puffer *et al.*, 2010; Stephan *et al.*, 2015). For instance, firms' capabilities to acquire, develop, and deploy resources in EEs are highly contingent upon the institutional development, including regulatory environment and market-based mechanisms (Anand *et al.*, 2021; Tomizawa *et al.*, 2020). This condition considerably varies from advanced economies, where the '*market-based institutional framework'* is a presumed background environment (Peng *et al.*, 2008, p. 921).

Consequently, scholars concur that the context of EEs presents a more complex and intriguing research environment, warranting deeper analysis supported by more comprehensive theoretical frameworks (Meyer and Peng, 2016; Luo *et al.*, 2010). For example, the multidimensional and transformative nature of institutionalisation in EEs, such as marketisation development in China over the past few decades, is vastly different from their advanced counterparts (Estrin *et al.*, 2009).

In summary, this research claims that firm innovation in EEs—encompassing both attitudinal openness toward innovation activities and the overall innovation performance—is substantially shaped by the institutional environments in which firms operate (Pérez *et al.*, 2019; Kafouros and Forsans, 2012). Accordingly, this study seeks to examine how institutional environments, in conjunction with other factors such as the traits of firm-related actors and prevailing market conditions, influence firms' innovation orientation and performance in EEs.

2.3. Theoretical Underpinnings of this Study: Institution-based View & Institutional Anomie Theory

This section sets out to elucidate the theoretical underpinnings of this research. Based on the literature review above, it is noted that the institutional contexts play a crucial role in driving and shaping firms' innovation behaviours in EEs (Witt, 2019; Anand *et al.*, 2021; Wu and Park, 2019). Recognising the multidimensional nature of firm innovation in EEs, this study

adopts an integrative framework to offer a more comprehensive understanding of how firm-related actors, such as owner-managers, are embedded within and influenced by institutional structures, and how these dynamics influence firm-level innovation orientation and performance in EEs.

The following sections will elaborate on the theoretical foundations and analytical dimensions that constitute the integrative perspectives.

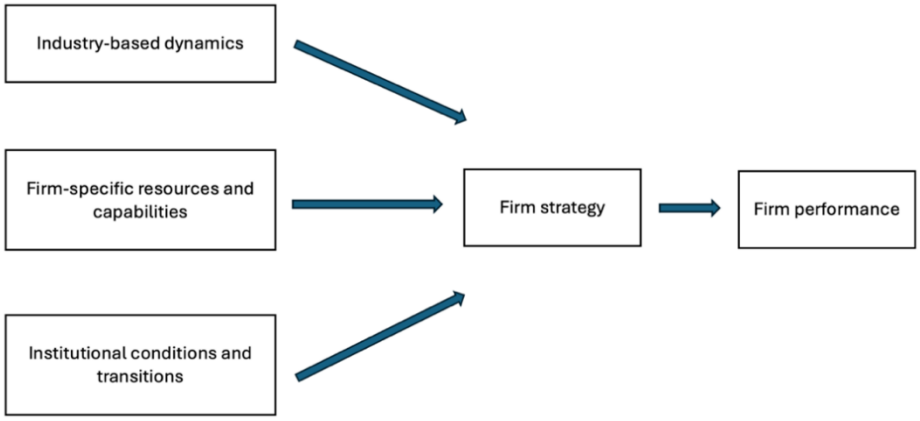
2.3.1. Institution-based View (IBV)

The role of external environment in business strategy has long been acknowledged. However, the traditional perspectives, such as RBV and industry-based view (Porter, 1997; Barney, 1991), primarily regard it as a *'task environment'* (Peng *et al.*, 2008). In other words, these perspectives primarily deem the external environment to be part of the background dynamisms (Peng *et al.*, 2008). In this regard, these perspectives fall short in systematically elucidating how institutions influence firm-level strategic actions such as innovation.

Hence, there is a growing body of literature highlighting the significance of institutions, beyond the unilateral focus of background and task environments (Meyer and Peng, 2005; Peng, 2002). To specify, IBV is instrumental in providing richer insights into understanding EEs, where institutional infrastructure and market mechanisms vastly differ from their

advanced counterparts. As such, Peng *et al.* (2008) argue that IBV emerges as a third leg in the strategy tripod, as depicted in Figure 2-1.

Figure 2-1 The strategy tripod



Source: Peng *et al.* (2008)

IBV is originally derived from *new institutionalism* in social science, encompassing fields such as economics, political science, sociology, psychology, and anthropology (Meyer and Peng, 2016). Institutions are metaphorically characterised as '*rules of the games'* by North (1990, p. 3). From the domain of economics, institutions—comprising formal and informal components—are defined as '*the humanly devised constraints that shape human interaction'* (North, 1990, p. 3). It is widely accepted that institutions affect economic performance through the process in which institutions evolve and change over time (North, 1995). Specifically, formal institutions refer to those *written* rules, including political and judicial systems, regulations, law, and government policy, whereas informal institutions consist of

unwritten rules and codes of conduct arising from the process of social transmission, such as culture, norms, practices, traditions, and rituals (North, 1990; Helmke and Levitsky, 2004).

In the fields of economics, institutions are fundamentally regarded as determinants of economic performance by reducing uncertainties and transaction costs (North, 1990). This perspective, known as *new institutional economics*, extends from the neoclassical economics. Scholars argue that the neoclassical economics, with its emphasis on scarcity and competition, overlooks *'the nature of human coordination and cooperation'* (North, 1990, p. 11). To elaborate, North's seminal framework integrates theories of human behaviours and transaction costs, illustrating how institutions influence economic performance and societal changes through various forms of institutional incentives and constraints.

On the other hand, the sociological perspectives of institutions concentrate on social activities and behaviours (Powell and DiMaggio, 2012). Specifically, Scott (2013, p. 56) proposes a comprehensive definition that: '*institutions comprise regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life'*. Building on this, Scott (1995) postulates a framework with three institutional pillars, including the regulative pillar, cultural-cognitive pillar, and normative pillar. In essence, the regulative pillar is aligned with formal institutions in economics, while the cultural-cognitive and normative pillars correspond to informal institutions (Muralidharan and Pathak, 2017; Stephan *et al.*, 2015). Specifically, Scott (1995) categorises informal

institutions into two dimensions. Normative pillars are concerned with social obligations and legitimacy of norms, while cultural-cognitive ones are associated with shared values and implicit cultural elements.

Consequently, scholars of IBV combined the core principles of institutional economics (North, 1990) and social institutionalism (Scott, 1995), formulating a novel perspective to explain how firms' strategic choices are shaped by institutional environments, notably in the context of EEs (Peng, 2002; Brouthers *et al.*, 2005).

Explicitly, IBV concentrates on the *'the dynamic interaction between institutions and organizations and considers strategic choices as the outcome of such an interaction'* (Peng *et al.*, 2009, p. 66). Specifically, Lu *et al.* (2008a) suggest that IBV provides a soundly robust perspective to uncover the driving forces of firms' innovation in the Asia-Pacific Region because of their unique patterns of industrialisation and institutional development. Firms located in EEs of the Asia-Pacific Region, are largely intervened by their formal and informal institutional settings. Consequently, numerous scholars have employed IBV as the theoretical foundation to investigate firms' innovation in EEs, with particular emphasis on the Asia-Pacific region (Minh and Hjortsø, 2015; Jiang *et al.*, 2013; Peng *et al.*, 2017; Vecchi *et al.*, 2015; He and Chen, 2021; Arun *et al.*, 2020; Zhang *et al.*, 2018; Zhu *et al.*, 2012).

In summary, firm innovation in EEs has received significant scholarly attention in management literature, in which IBV is used as the primary framework to investigate the institutional antecedents of firms' innovation orientation and performance (Meyer and Peng, 2016). The subsequent section will discuss the limitations of IBV, and is followed by a comprehensive literature review on IBV and firm-level innovation.

2.3.2. Limitations of IBV

IBV incorporates the theoretical roots in both economic and sociological domains, directing the focus upon how institutions shape firms' strategic choices (Peng *et al.*, 2017; Peng *et al.*, 2008). As discussed in the previous sections, the fundamental premise of the IBV is that firms make strategic choices, including innovation, in response to the characteristics and dynamics of the institutional environments within which they operate. This perspective highlights the critical role of institutional environments in enabling firms to effectively deploy their resources and reduce market uncertainties, thereby supporting firms in making optimal strategic decisions (Garrido *et al.*, 2014; Peng *et al.*, 2020). Indeed, IBV is a salient theoretical perspective for understanding the role of institutional environments in driving firm-level strategic choices. Nevertheless, it is subject to certain limitations, and critical remarks have been raised regarding the restricted analytical scopes of IBV (Anand *et al.*, 2021).

First, scholars note that IBV tends to emphasise the significance of a rule-based environment, while giving insufficient attention to the heterogeneity of actors at the meso-micro levels (Arshed *et al.*, 2014; Opper, 2021). This observation indicates that IBV is devoid of an analytical focus on social actors (Cardinale, 2018; Meyer and Vaara, 2020), potentially leading to a static perspective that merely assesses the overall quality of institutional environments in relation to firm-level strategic decision making (Hung and Tseng, 2017). To specify, Jackson and Deeg (2008) posit that, in the current body of literature, institutions mostly are interpreted as exogenous factors constraining firms' strategic choices. However, there is a lack of understanding about '*how institutions socialize the diverse sets of actors related to the firm'*, such as owner-managers and employees (Jackson and Deeg, 2008, p. 545). They strongly advocate that management scholars develop *'thicker understandings'* of how actors are constituted and socialised by institutions, moving beyond the traditional focus on the incentivising-constraining mechanisms of institutions on firms' strategic outcomes, such as innovation (Jackson and Deeg, 2019; Jackson and Deeg, 2008).

Along similar lines, scholars criticise institutional theory for disregarding '*the roles of actors in creating and promulgating innovation*' (Lounsbury and Crumley, 2007, p. 993), and for lacking '*due attention to agency and interest'* (Mutch, 2007, p. 1123). For instance, IBV does not sufficiently address how institutions affect market actors' behavioural orientation and practices associated with firm-level innovation activities. This observation is critical because firms' innovation can be understood as a behavioural manifestation of key actors (Schubert *et*

al., 2018; Greve, 2013). In other words, the propensity for engaging in innovation activities can be influenced by the behavioural perception of key actors of firms, such as owner-managers, who are concurrently shaped by the institutional contexts in which they are embedded (Chittoor *et al.*, 2015).

Furthermore, as Patriotta (2020, p. 868) asserted, '*institutional analysis should pay greater attention to people's lived experience within institutional orders rather than being solely concerned with an understanding of how institutions work'.* This commentary highlights the need for providing a clearer explanation of how institutions permeate and inform individuals' everyday lives and business practices (Patriotta, 2020). In a similar vein, Voronov and Weber (2020) highlight the importance of detangling between institutions, actors, and individuals. Specifically, they argue that '*the solidarity and coordination across institutional domains'* in institutional theory warrant deeper scholarly investigation (Voronov and Weber, 2020, p. 874).

Indeed, there has been an increasing interest in merging actors into examining how institutions are structured (Ben Slimane *et al.*, 2019; George *et al.*, 2015). For example, an expanding body of literature focuses on the notion of *institutional entrepreneurship* (Bruton *et al.*, 2010; Garud *et al.*, 2007). Institutional entrepreneurship refers to the actors that engage in institutionalisation process and transforming institutions, such as politicians and policy makers (Arshed *et al.*, 2014). Scholars have increasingly emphasised the importance of

microfoundations in understanding firm-level innovation; specifically, macro-level phenomena can be explained through the lens of micro-level elements, such as social actors and their interactions (Barney and Felin, 2013).

Microfoundations play a critical role in explaining firm-level innovation (Loon *et al.*, 2020; Magistretti *et al.*, 2021; Felin *et al.*, 2012). For example, Ryan *et al.* (2018) argue that microfoundations of firm innovation involve the understanding how individuals, processes, and structures interact. They highlighted the importance of considering the position of actors within the institutional environment. However, the traditional IBV perspectives appear to fall short in fully capturing the co-construction of institutions and actorhood in sufficient depth (Meyer and Vaara, 2020).

Second, IBV is often criticised for its insufficient attention to the inherent associations between multiple institutions within society. Specifically, IBV primarily focuses on the aggregate impact of institutions on firm-level strategic behaviours, without precisely capturing the interplay of various institutional elements (Jackson and Deeg, 2008). For instance, the IBV offers limited explanations of how firms navigate competing institutional pressures and establish order through strategic choices (Besharov and Smith, 2014; Mutch, 2018). This observation is aligned with the assertation by Friedland and Alford (1991, p. 244) that, '*it is the content of an institutional order that shapes the mechanisms by which organizations are able to conform or deviate from established patterns'*.

In response to this limitation, scholars have increasingly turned to the concept of institutional logics to better understand the relationship between institutional environments and organisational behaviour. Institutional logics is defined as *'socially constructed, historical patterns of cultural symbols and material practices, including assumptions, values, and beliefs, by which individuals and organizations provide meaning to their daily activity, organize time and space, and reproduce their lives and experiences'* (Thornton *et al.*, 2012, p. 2). This perspective provides a more nuanced understanding of the nature of institutional environments in organisational contexts, highlighting that institutions are not merely external constraints, but are embedded with culturally and historically constructed patterns of meaning (Thornton *et al.*, 2012). By examining how different institutional logics—such as those related to markets, professions, states, and families—interact and influence firm-level behaviours, this approach offers a grounded understanding of how firms respond to institutional pressures (Sadeghi *et al.*, 2019), thus contributing to richer insights that IBV alone may not fully capture (Greenwood *et al.*, 2014).

In summary, while IBV is valuable for exploring the impact of the institutional environment on firm-level behaviours and activities, it is not exempt from limitations. First, IBV primarily regards institutions as exogenous factors that may either incentivise or constrain firms' strategic activities. This treatment lacks a fine-grained understanding of how social actors are situated within the institutional configurations (Jackson and Deeg, 2019). Second, IBV tends to adopt a unitary view of institutions, focusing on how firms adapt their strategic choices to

align with the prescribed institutional frameworks. This perspective may overlook the complex interplay of multiple, and potentially conflicting, institutional factors that embody different logics (Greenwood *et al.*, 2014; Jackson and Deeg, 2008).

The following section will present a comprehensive review of the literature on the application of IBV in explaining firm-level innovation.

2.3.3. Literature Review: Explaining Firm Innovation through the Institution-based View

Having gained its preeminent presence in innovation and management literature, scholars have increasingly employed IBV to explore a wide range of research questions, especially in the context of EEs. This body of literature argues that institutions play a vital role in shaping organisation-level strategic activities such as innovation (Peng, 2002; Sadeghi *et al.*, 2019; Lu *et al.*, 2008a; Meyer and Peng, 2016). Extensive literature has examined how various institutional factors can either promote or hinder firms' innovation across different contexts.

Upon reviewing selected journal articles from 2013 to 2024, Table 2-3 presents a summary of the key findings from the existing literature. This review focuses exclusively on empirical studies that are relevant to the research objectives and questions of the current study.

While the review is intended to be informative, it is not exhaustive.

Table 2-3 The selected empirical research on explaining firm innovation through IBV

	Author(s)	Journal Title	Explanatory institutions factors	Perspectives of institutions	Dimensions of innovation	Methods of data collection	Key findings
1.	Bao *et al.* (2021)	*Technovation*	Legal efficiency and government support	Formal institutions	New product development (NPD) speed of the Chinese manufacturing firms	Primary data through surveys	Their findings suggest that legal inefficiency and government support are positively associated with firms' NPD speed.
2.	Barasa *et al.* (2017)	*Research Policy*	Regional Institutional quality, including regulatory and legal systems, and corruption	Formal institutions	Innovation outputs of firms based in East Africa	Compiled secondary data	Their findings suggest that institutional quality positively moderates the relationship between firms' resources and innovation outputs in the context of East Africa (i.e. Kenya, Tanzania and Uganda).
3.	Boudreaux (2024)	*Industry and Innovation*	Region-specific institutional development	Formal institutions	Innovation breadth	Compiled secondary data	Their findings indicate that: (1) Innovation breadth of private-owned enterprises is stronger than state-owned enterprises in provinces with higher degree of marketisation. (2) Innovation breadth of private-owned enterprises is weaker than state-owned enterprises in provinces with lower degree of marketisation.

4.	Bruno *et al.* (2021)	*Journal of International Business Studies*	Intellectual property rights (IPR) protection as formal institutions	Formal institutions	MNEs' innovation performance	Compiled secondary data	Their findings suggest that MNE innovation performance becomes stronger when their R&D activities are conducted in locations with stronger IPR protection.
5.	Chadee *et al.* (2021)	*Journal of Business Ethics*	Failure of formal institutions and corruption	Dual consideration of formal and informal institutions	Firms' innovation performance in Central and Eastern Europe	Compiled secondary data	Their findings suggest that: (1) The failure of formal institutions and corruption are negatively associated with firms' innovation performance. (2) Bribery activities mediate the relationship between corruption and firms' innovation performance.
6.	Chang and Gotcher (2020)	*International Business Review*	Co-production in international outsourcing and institutional pressures, including coercive, mimetic, and normative pressures	Formal institutions	Environmental innovation ambidexterity of manufacturing firms in Taiwan	Primary data through surveys	Their findings suggest that institutional pressures positively moderate the relationship between co-production and environmental innovation ambidexterity of firms.
7.	Chen *et al.* (2021b)	*Asia Pacific Journal of Management*	• Formal institutions: enforcement inefficiency • Informal institutions: Guanxi and transactional ties, including business and political ties	Dual consideration of formal and informal institutions	Innovation performance	Primary data through surveys	Their findings suggest that: (1) The positive impact of Guanxi political ties is stronger than Guanxi business ties. (2) Enforcement inefficiency moderates the relationship between guanxi ties and firms' innovation performance.

							(3) Under conditions of high enforcement inefficiency, the positive impact of transactional ties on innovation performance is more pronounced for firms experiencing lower survival pressure compared with those facing higher survival pressure.
8.	Deng *et al.* (2013)	*Asia Pacific Journal of Management*	Ownership concentration	Formal institutions	Product innovation performance of Chinese SMEs	Compiled secondary data	Their findings suggest that firms of single ownership tend to convert R&D inputs into product innovation performance more efficiently than firms with multiple owners.
9.	Devarakonda and Liu (2024)	*Strategic Entrepreneurship*	• Legitimising endorsement of government venture capital • Political ties • Social prestige.	Informal institutions	Innovation performance of startups	Compiled secondary data	Their findings reveal that: (1) Endorsements of government venture capital positively drive innovation performance of startups. (2) The positive relationship between endorsements of government venture capital and startups' innovation performance is enhanced for firms lacking (a) political ties; and (b) social prestige.

10.	Ding and Ding (2022)	*Technological Forecasting and Social Change*	Inadequacy of legal frameworks	Formal institutions	Perceived new product performance of high-tech new ventures in China	Primary data through surveys	Their findings indicate that: (1) Under conditions of high legal inadequacy, the positive relationship between technological innovativeness and perceived innovation performance is weaker. (2) Under conditions of high legal inadequacy, the positive relationship between market innovativeness and perceived innovation performance is stronger.
11.	Du *et al.* (2022)	*Journal of Business Research*	Institutional and market stability	Formal Institutions	R&D intensity	Compiled secondary data	Their findings suggest that: (1) High levels of institutional instability weaken the positive relationship between unabsorbed slack and R&D intensity of high-growth listed firms in China. (2) High levels of institutional instability strengthen the negative relationship between the absorbed slack and R&D intensity of high-growth listed firms in China.

12.	Gao *et al.* (2015)	*Journal of Business Research*	Governmental supports and relational ties	Dual consideration of formal and informal institutions	Radical innovation of high-tech firms in China	Primary data through survey	Their findings suggest that: (1) The strengths of relational ties and government support are positively correlated to firms' radical innovation. (2) The positive relationship between relational ties and firms' radical innovation is enhanced when firms are located in provinces with stronger marketisation development. (3) Market complexity decreases the positive impact of relational ties on firms' radical innovation. (4) Market complexity enhances the positive impact of government support on firms' radical innovation.
13.	Gao *et al.* (2017)	*Long Range Planning*	• Business ties and political ties • Regional development	Dual consideration of formal and informal institutions	Product innovation performance	Primary data through survey	Their findings reveal that: (1) The positive impact of business ties on firms' product innovation performance is enhanced in subnational regions with stronger institutional development. (2) The positive impact of political ties on firms' product innovation performance is reduced in subnational regions

							with stronger institutional development.
14.	Genin *et al.* (2021)	*Journal of International Business Studies*	State ownership and state affiliation	Formal institutions	Technological innovation performance of firms of high-speed train sector	Compiled secondary data	Their findings suggest that: (1) State ownership reduces the positive impact of SOE restructuration on firms' innovation performance. (2) State affiliation enhances the positive impact of SOE restructuration on firms' innovation performance. (3) State affiliation counterbalances the negative impact of state ownership on the contributions of restructuration and facilitates stronger technological innovation performance.
15.	Guo *et al.* (2016)	*Research Policy*	Government subsidy	Formal institutions	Innovation performance of manufacturing firms in the context of China	Compiled secondary data	Their findings indicate that: (1) Government subsidy is positively related to firms' innovation performance. (2) Firms that obtained government subsidies are more likely to successfully commercialise their innovation outputs to the markets. (3) The policy amendments of introducing a decentralised screening systems in 2005

							significantly increase the positive impact of government-led subsidies on firms' innovation performance.
16.	Istipliler *et al.* (2023)	*Journal of Business Research*	Firms' perceived institutional constraints	Formal institutions	Innovativeness of SMEs in Russia and Ukraine	Primary data through surveys	Their findings suggest that innovativeness of SMEs reduces the negative impact of institutional constraints on their performance.
17.	Jiang *et al.* (2023)	*Journal of Business Ethics*	• Political ties • Region-specific marketisation development	A co-evolutionary perspective of institutions	Green innovation of listed private firms in China	Compiled secondary data	Their findings reveal that: (1) Political ties are positively related to firms' green innovation. (2) The positive impact of political ties on firms' green innovation is more pronounced in regions with weaker institutional development. (3) The positive impact of green innovation on political ties is enhanced when firms are located within regions with weaker institutional development.

18.	Jiang *et al.* (2013)	*Journal of Business Research*	Firms' ownership types, including state-owned, collectively owned, privately owned and foreign-invested enterprises	Formal institutions	Innovation performance of Chinese high-tech firms	Compiled secondary data	Their findings indicate that: (1) The positive impact of firm-level R&D activities on innovation performance is stronger for privately owned and foreign-invested enterprises compared with state-owned enterprises. (2) The positive impact of collaborating with research universities on firms' process innovation is particularly strong for private-owned enterprises, compared with foreign-invested and state-owned enterprises.
19.	Jiao *et al.* (2015)	*Technological Forecasting and Social Change*	Legal environment and governmental effectiveness	Formal institutions	Innovation adoption among firms in China	Compiled secondary data	Their findings suggest that: (1) Government ownership enhances the positive impact of the legal environment on firms' technological innovation. (2) Government ownership decreases the positive impact of governmental effectiveness on firms' management innovation.

20.	Kafouros *et al.* (2015)	*Research Policy*	Region-specific institutional factors, including IPR enforcement, international openness, and research quality	Formal institutions	Innovation performance of innovation-oriented firms in China	Compiled secondary data	Their findings indicate that: The positive impact of academic collaboration on firms' innovation performance is more pronounced for firms operating in regions with (a) stronger IPR enforcement; (b) higher international openness; and (c) more intense research quality of local universities and research institutes.
21.	Lu *et al.* (2022)	*Research Policy*	Anti-corruption policy and political ties	Institutional pressure	R&D investment and innovation outputs of Chinese listed firms	Compiled secondary data	Their findings indicate that: (1) Firms' political ties strengthen the positive impact of cash holding on their R&D investment and innovation outcomes. (2) The positive moderation of political ties on the relationship between cash holding and firms' R&D investment becomes weaker when anti-corruption is present. (3) The positive moderation of political ties on the relationship between cash holding and firms' innovation outcomes becomes stronger when anti-corruption is present.

22.	Luk *et al.* (2008)	*Journal of International Business*	• A comparison of two institutional contexts (market versus transition economies) • Social capital, including Guanxi with government officials and managers of other firms	Informal institutions	Administrative and product-related innovativeness of manufacturing firms operating in Mainland China and Hong Kong S.A.R.	Primary data through surveys	Their findings reveal that: (1) Guanxi with government officials is positively correlated with administrative innovativeness of firms in Mainland China. (2) Guanxi with managers at other firms is positively correlated with firms' product-related innovativeness of firms in Hong Kong S.A.R. (3) The positive effect of administrative innovativeness on firms' overall performance becomes more pronounced when firms possess Guanxi with managers at other firms.
23.	Ma *et al.* (2015)	*Journal of Business Research*	Institutional environment entailing professional services, innovation policy and government regulation	Formal institutions	Product innovation of international joint ventures in China	Primary data through surveys	Their findings suggest that: (1) The institutional development of market intermediaries and professional services is positively related to firms' product innovation. (2) The institutional developments of social and cultural environment, transportational efficiency, are positively related to firms' innovation performance.
24.	Niu *et al.* (2022)	*International Small Business Journal*	• Region-specific institutional development	Formal institutions	R&D investment of Chinese SMEs	Compiled secondary data	Their findings reveal that: (1) Entrepreneurs with higher social status are more likely to

			• Political capital				invest more in R&D activities of firms. (2) The positive relationship between social status and firm-level R&D activities are enhanced when entrepreneurs (a) possess stronger political capital; and (b) are located in regions with more robust institutional development.
25.	Rodríguez-Pose and Zhang (2020)	*Technological Forecasting and Social Change*	• Government effectiveness • regulatory quality • control of corruption	Formal institutions	Both propensity and intensity of innovation among firms in China	Compiled secondary data	Their findings indicate that: (1) A higher quality of local-level institutions shortens firms' time in dealing with business-government relationships, thereby contributing to stronger firm innovation. (2) The negative impact of institutional weaknesses on firm innovation is particularly strong for private enterprises, compared with state-owned counterparts.
26.	Sheng *et al.* (2013)	*Journal of Business Research*	Legal inadequacy	Formal institutions	The NPD speed of high-tech companies in China	Primary data collection through surveys	Their findings suggest that the positive effect of NPD speed on firm performance is weakened when legal inadequacy is present.

27.	Shu *et al.* (2015)	*Journal of Product Innovation Management*	Government institutional support	Formal institutions	• Patenting behaviours of firms in China • Product and process innovation of firms in China	Primary data collection through surveys	Their findings indicate that: (1) The positive impact of firms' patenting motives on their patenting behaviours is strengthened under conditions of strong government institutional support. (2) The positive impact of firms' patenting behaviours on their product innovation performance is weakened under conditions of strong government institutional support.
28.	Shu *et al.* (2016)	*Journal of Business Ethics*	Government support and social legitimacy	Dual consideration of formal and informal institutions	Incremental and radical product innovation of firms in China	Primary data through surveys	Their findings illustrate that: (1) Government support, as a component of formal institutions, enhances the positive relationship between firms' green management practices and their radical product innovation. (2) Social legitimacy, as a component of informal institutions, enhances the positive relationship between firms' green management practices and their incremental product innovation.
29.	Uzuegbunam and Geringer (2021)	*Journal of International Management*	Cultural tightness and looseness (as forms of informal institutions)	Informal institutions	Adoptions of disruptive innovation of nations involved in producing	Compiled secondary data	Their findings suggest that: (1) Cultural looseness is positively related to the

					agricultural commodities		adoption of disruptive innovation. (2) The depth and breadth of global connectedness reduce the positive impact of cultural looseness on the adoption of disruptive innovation.
30.	Wang *et al.* (2015)	*Journal of Business Research*	Region-specific institutional development (captured by marketisation index)	Formal institutions	Innovation performance of manufacturing firms in China	Compiled secondary data	Their findings reveal that: (1) The positive impact of business groups on firms' innovation performance is stronger for affiliation with higher-level government agencies. (2) The positive effect of establishing business groups on firms' innovation performance is stronger when firms located in provinces with more robust institutional development.
31.	Wang *et al.* (2020a)	*Journal of World Business*	Region-specific institutional development of IPR	Formal institution Institutional polycentrism	Innovation performance of manufacturing firms	Compiled secondary data	Their findings indicate that: (1) The positive impact of government affiliation on firms' innovation performance is more pronounced when firms are affiliated with higher-level government agencies. (2) The positive impact of affiliation with higher-level government agencies on firms'

							innovation performance is more pronounced in subnational regions with weaker institutional development of IPR.
32.	Wang *et al.* (2022b)	*Journal of Small Business Management*	Region-specific marketisation development	Formal institutions	SME innovation performance in China	Compiled secondary data	Their findings reveal that: (1) The inverted U-shaped relationship between industry-university-research (IUR) alliance portfolio breadth and SME innovation performance is more pronounced when firms are located in provinces with higher levels of marketisation. (2) The inverted U-shaped relationship between IUR alliance portfolio depth and SME innovation performance is more pronounced when firms are located in provinces with higher levels of marketisation.
33.	Wei and Sheng (2023)	*Industrial Marketing Management*	Region-specific marketisation development	Formal institutions	Innovation performance of supplier firms	Compiled secondary data	Their findings suggest that the inverted U-shaped effect of geographic distance on supplier innovation is more pronounced when supplier firms are located in provinces

							with stronger marketisation development.
34.	Weng *et al.* (2021)	*Management and Organisation Review*	• Government, legal, and financial systems (formal institutions) • Bribery in business practices and informal financing (informal institutions)	Dual consideration of formal and informal institutions	The tendency of engaging in different types of innovators	Compiled secondary data	Their findings indicate that: (1) Perceived constraints of government systems positively drive firms' R&D intensity, as well as their innovation performance. (2) The lack of formal financing reduces firms' commitment to innovation activities. (3) The presence of commercial bribery enhances the positive impact of perceived constraints of government systems on firms' R&D investment and innovation performance. (4) The perceived constraints of legal systems are positively correlated with the lower R&D expenditure of firms.
35.	Wu *et al.* (2016)	*Journal of World Business*	Institutional environment of host countries	Formal Institutions	Innovation performance of Chinese internationalised firms	Compiled secondary data	The findings reflect that: (1) The parent companies demonstrate stronger innovation performance when their subsidiaries are located in countries with robust institutional development.

							(2) State ownership of internationalised firms reduces the positive impact of host countries' institutional development on innovation performance of parents of internationalised enterprises. (3) Firms' absorptive capacity enhances the positive impact of host countries' institutional development on innovation performance of parent companies.
36.	Wu *et al.* (2015)	*International Business Review*	• Institutional quality • Institutional diversity	Formal institutions	Radical and incremental innovation of exporting firms in China	Compiled secondary data	Their findings suggest that: (1) The international expansion into markets with well-developed institutions positively promotes exporting firms' innovation performance. (2) The institutional diversity of exporting markets positively drives firms' innovation performance. (3) The institutional diversity of exporting markets reduces the positive relationship between institutional quality and exporting firms' innovation performance.

37.	Xia and Liu (2021)	*Journal of International Management*	Regulatory frameworks and cultural elements	Dual consideration of formal and informal institutions	Innovation adoption among entrepreneurs	Compiled secondary data	Their findings suggest that: (1) The learning capacity of entrepreneurs mediates the negative relationship between uncertainty avoidance culture and innovation adoption among entrepreneurs. (2) The learning capacity of entrepreneurs mediates the positive relationship between collectivism culture and innovation adoption among entrepreneurs. (3) The negative relationship between uncertainty avoidance culture and learning capacity of entrepreneurs is enhanced when robust regulatory frameworks are present. (4) The positive relationship between collectivism culture and learning capacity of entrepreneurs is strengthened when robust regulatory frameworks are present.
38.	Xie and Li (2018)	*Journal of International Business Studies*	• Global openness • Region-specific R&D investment • Institutional development of market intermediaries	Formal institutions	Innovation performance of exporting firms in China	Compiled secondary data	Their findings indicate that: (1) The positive relationship between firms' exporting activities and innovation performance is enhanced when firms are located in subnational regions with stronger global openness.

							(2) The positive relationship between firms' exporting activities and innovation performance is enhanced when firms are located in subnational regions with higher R&D investment. (3) The positive relationship between firms' exporting activities and innovation performance is strengthened when firms are located in subnational regions with more robust institutional development of market intermediaries.
39.	Xie *et al.* (2019)	*Journal of Business Ethics*	Engagement in corruption	Informal Institution	Product innovation performance of private enterprises in China	Compiled secondary data	Their findings suggest that: (1) In the context of EEs with relatively weak institutions, the engagement in corruption is positively related to firms' innovation performance. (2) The presence of policy instability enhances the positive relationship between firms' engagement in corruption and their innovation performance. (3) Competitive pressures from firms in informal sectors enhance the positive

							relationship between firms' engagement in corruption and their innovation performance.
40.	Xie *et al.* (2023)	*Technovation*	Innovation-supporting institutions and nation-level cultural environment	Dual consideration of formal and informal institutions	Innovation performance The sample comprises 50 studies, with 29,456 observations.	Meta-analysis	Their findings reveal that: (1) The positive impact of collaborative innovation on firms' innovation performance is enhanced when firms are located in nations with strong innovation-supporting institutions. (2) The positive impact of collaborative innovation on firms' innovation performance is enhanced when firms are located in nations with stronger cultural emphasis on: (a) power distance; and (b) long-term orientation.
41.	Yang *et al.* (2019)	*Journal of Business Ethics*	• State ownership • Government intervention	Formal institutions	Innovation capabilities of Chinese-listed companies of environmental sectors	Compiled secondary data	Their findings suggest that: (1) State ownership reduces the positive impact of managerial focus on proactive environmental strategy on firms' innovation capability. (2) Government intervention reduces the positive impact of managerial focus on proactive environmental strategy on firms' innovation capability.

42.	Yang *et al.* (2015a)	*Industrial Marketing Management*	Regional market-based reforms	Formal institutions	Product innovation performance of firms in China	Compiled secondary data	Their findings reveal that: (1) Market-based reforms significantly enhance firms' product innovation performance. (2) Firms' absorptive capacity amplifies the positive impact of market-based reforms on their product innovation performance.
43.	Yao *et al.* (2021)	*Research Policy*	• Tax benefits • Political intervention • Region-specific marketisation level	Formal institutions	Innovation performance of micro- and -small firms in China	Compiled secondary data	Their findings reveal that: (1) Linkages with industrial associations promote firms' innovation performance through providing greater tax-related benefits. (2) Linkages with industrial associations hamper firms' innovation performance through bringing greater political intervention. (3) The positive effect of linkages with industrial associations on political intervention is weakened when firms operated in well-developed institutional contexts.
44.	Yi *et al.* (2017)	*Technovation*	• Province-level marketisation • Industry-level institutional support	Formal institutions	R&D intensity and innovation performance of	Compiled secondary data	Their findings indicate that: (1) State ownership amplifies the positive impact of firms'

			• State ownership		manufacturing firms in China		R&D intensity on their innovation performance. (2) The positive effect of state ownership on firms' innovation performance is strengthened when firms located in provinces with robust institutional environment. (3) The positive effect of state ownership on firms' innovation performance is augmented for high-tech firms than for traditional firms.
45.	Zhang and Hartley (2018)	*Journal of Business Research*	*Guanxi* with other enterprise entities and government officials	Informal Institutions	Innovation capabilities of exporting SMEs in China	Primary data collection through surveys	Their findings suggest that: (1) Guanxi established by firms with other entities is positively related to their innovation performance. (2) The positive relationship between Guanxi and firms' innovation capabilities is more significant when firms demonstrate stronger proactiveness.
46.	Zhang and Merchant (2020)	*International Business Review*	Government support (formal institution) *Guanxi* (informal institution)	Dual consideration of formal and informal institutions	Innovation capabilities of manufacturing SMEs in China	Primary data collection through surveys	Their findings suggest that government support and *Guanxi* are positively associated with SMEs' improvisation and learning capabilities, thereby promoting their innovation capabilities.

47.	Zhang *et al.* (2024c)	*Industry and Innovation*	Confucianism Formal institutional fragility	Dual consideration of formal and informal institutions	Green innovation performance of Chinese listed firms	Compiled secondary data	Their findings reveal that: (1) The prevalence of Confucian values is positively related to firms' green innovation performance. (2) The positive relationship between Confucianism and firms' green innovation performance is attenuated when firms are located in provinces with a higher level of institutional fragility.
48.	Zhou and Lin (2024)	*Technovation*	Institutional quality State ownership	Formal institutions	Green innovation performance of Chinese manufacturing multinational corporations (MNCs)	Compiled secondary data	Their findings indicate that: (1) MNCs' global diversification of operation positively drives their green innovation performance. (2) The host country's institutional quality augments the positive effect of global diversification on MNCs' green innovation performance (3) The positive effect of global diversification on green innovation performance is amplified for state-owned MNCs.

49.	Zhou *et al.* (2017)	*Administrative Science Quarterly*	Institutional development State ownership	Institutional logics Formal institutions	R&D investment and innovation performance of Chinese manufacturing firms	Compiled secondary data	Their findings reveal that: (1) State ownership is positively associated with firms' R&D investment. (2) State ownership reduces the positive impact of R&D investment on firms' innovation performance. (3) The moderating role of state ownership on the relationship between firms' R&D investment and their innovation performance is attenuated when: (a) industrial competition is stronger; and (b) firms are nascent startups.
50.	Zhu *et al.* (2012)	*Asia Pacific Journal of Management*	Institution-based barriers for SME innovation in China	Formal institutions	Risk and opportunity of SME innovation in China	Primary data through conducting interviews	Their findings highlight five institution-based barriers for SME innovation in China: (a) competition fairness; (b) financing; (c) regulatory quality; (d) tax policies; and (e) innovation-supporting ecosystems (e.g. market intermediaries).

2.3.4. Research Gaps in Exploring Firm Innovation through IBV

The literature review presented above illustrates that IBV is widely adopted to explain how firm-level innovation orientation, activities, capacities, and performance are influenced by the institutional environments, notably in the context of EEs where institutional instability prevails. An extensive body of literature has focused on exploring the institutional conditions under which firm-specific variables influence their commitments and outcomes of executing innovation activities. In essence, the existing IBV literature primarily focuses on how institutional contexts act as contingencies, altering the strength and direction of the relationship between firm-specific variables and innovation outcomes. For instance, by drawing on the context of China, Kafouros *et al.* (2015) found that the positive impact of firms' academic collaboration on their innovation performance is strengthened when firms are located in regions with greater levels of international openness and institutional development of IPR enforcement. Despite its contributions, the literature on firm innovation through the lens of IBV reveals several research gaps, pointing to the need for a more nuanced and in-depth investigation. These gaps are discussed in the following sections.

Unclear positioning of firm-related actors within institutional frameworks

First, extant studies primarily treat institutional factors as single parameters, focusing on how institutions serve as exogenous variables that may lead to various forms and intensities of

firm-level outcomes (Jackson and Deeg, 2019). This strand of discussion, despite illuminating the overarching impact of institutions, still lacks a detailed explanation of how firm-related actors (e.g. owner-managers of firms) are positioned within the institutional frameworks (Patriotta, 2020). As noted by Jackson and Deeg (2019, p. 5), there is an absence of thorough research on how diverse sets of firm-related actors, such as owners, managers, employees, and stakeholders, are *'constituted and socialized'* by the institutional settings. Consequently, it merits a richer understanding of how institutional environments and orders shape the behavioural orientation and sense-making among these actors, thereby leading to divergent levels of innovation orientation and innovation performance (Coriat and Weinstein, 2002; Lounsbury and Crumley, 2007).

The existing literature on IBV tends to overlook the consequences and agency stemming from institutional development, such as the process of marketisation in EEs like China. Specifically, how these institutional evolvements engender profound social and economic ramifications, such as intensifying competitive pressure and the state of anomie among firms, remains underexplored. These effects may subsequently shape the strategic and innovative behaviours of firms by influencing their opportunity recognition, creativity cultivation, and resource allocation (Zhang, 2007; Hong *et al.*, 2015).

Building on this understanding, this study highlights the need for addressing this knowledge lacuna by exploring the structural consequences intertwined with the trajectory of institutional development (e.g. the development of marketisation in China), particularly in relation to how actors' engagement with institutional environments influences their attitudinal openness towards innovation activities, and the overall effectiveness of innovation efforts (Storbacka, 2019). This is congruent with the assertation put forth by Patriotta (2020), who emphasised the importance of exploring *'mechanisms by which institutions penetrate and inform people's everyday experience'*.

Incomplete understanding of the role of informal institutions in influencing firm-level innovation

Second, while IBV has been a prominent theoretical perspective for expounding firms' innovation as a strategic choice, it tends to place an overemphasis on formal institutions, leaving the role of informal institutions relatively understudied in the current body of literature (Yao *et al.*, 2020). This is a significant knowledge gap given that informal institutions may play both complementary and substitutive roles in facilitating firm-level innovation, especially in the context of EEs where formal institutional weaknesses are often present (Li *et al.*, 2021a).

Scholars argue that the divergence and convergence of formal and informal institutions warrant richer scholarly discussion. In other words, the alignment or misalignment with the rules imposed by formal and informal institutions may lead to different forms and intensities of firm-level outcomes (Dau *et al.*, 2022). More crucially, in the context of EEs, the impact of firm-level attributes and properties on their innovation propensity and performance may vary substantially depending on the conditions of not only formal institutions, but also informal ones (Chan and Du, 2022). For instance, Jiang *et al.* (2023) found that, in the Chinese context, the positive impact of firms' political relational networks (i.e. informal norms) on their green innovation performance is more significant when firms are located in regions characterised by weaker institutional development of market-based mechanisms (i.e. formal rules).

Consequently, a duality perspective that considers the roles of both formal and informal institutions is instrumental in advancing the understanding of the extent to which institutional environments shape firm-level strategic choices and behavioural orientation in promoting innovativeness (Xie *et al.*, 2023). In the context of EEs where informal institutions may substitute the voids of formal rules (Weng *et al.*, 2021), the integration of both formal and informal institutions is particularly essential to revealing fuller scopes of institutional impact on firms' innovative behaviours. Bridging this gap will provide key contributions to the

enrichment of institutional perspectives in the fields of innovation and management literature (Aguilera and Grøgaard, 2019).

Limited examination of subnation-level institutional variations

Third, current studies drawing upon IBV have primarily examined the impact of institutions on firm innovation at national level. However, how subnation-level institutional variations shape firms' inclination and capabilities associated with innovation remains understudied (Harmon *et al.*, 2019). The predominant focus on nation-level institutional contexts is grounded in the *'untenable assumption of subnational spatial homogeneity'*, which may be insufficient in countries with large geographical extent and noticeable unevenness in institutional development (Hutzschenreuter *et al.*, 2020, p. 1). For instance, scholars assert that the institutional unevenness of marketisation, along with the disparities in government intervention and legal frameworks across various subnational areas in China, creates diverse forms and strengths of coercive, normative and mimetic pressures upon firms (Li *et al.*, 2018a). These subnation-level institutional variations significantly influence firms' strategic orientation and performance associated with innovation (Xie, 2017; Sun *et al.*, 2015; Tse *et al.*, 2024).

Accordingly, there is a growing body of literature examining the role of subnational institutions in driving firm innovation, particularly in the context of EEs (Liu *et al.*, 2023; Doloreux and Shearmur, 2023; Liu *et al.*, 2024b; Chen *et al.*, 2024; Wang *et al.*, 2022b). It is widely recognised that examining the role of institutional environments entails a richer analysis of multilevel institutional environments (Monaghan *et al.*, 2014). However, these studies primarily concentrate on the effect of institutional contexts on the innovation orientation, activities and performance of large firms, with SMEs receiving insufficient attention. This is a critical knowledge gap that needs to be addressed, considering that SMEs in EEs, being largely resource-constrained, are especially vulnerable to institutional fragilities, at both national and subnational levels (Minh and Hjortsø, 2015).

To advance this strand of literature, this study seeks to focus on the impact of subnation-level institutional variations on SMEs, particularly in understanding how the interaction between institutional environments and the behavioural patterns of firm-related actors (e.g., owner-managers) influences firm-level innovative orientation and performance.

In light of the aforementioned gaps, this study highlights the importance of fortifying the role of firm-related actors in understanding how institutional environments shape firms' innovation orientation and performance in China (Jackson and Deeg, 2019). Furthermore, the

subnational-level variations in formal and informal institutions across China should be further explored to provide a more comprehensive understanding of how these institutional factors shape firm-level innovation orientation and performance. Towards this objective, this study claims that an integrative perspective that complements the insights from IBV is essential to accurately position firm-related actors within the analysis of institutional impacts on firm innovation.

The following section will introduce institutional anomie theory as a complementary perspective that adds depth and value to the IBV. Its conceptual foundations, core principles, empirical evidence, and existing research gaps will be discussed.

2.3.5. Institutional Anomie Theory (IAT)

Institutional anomie theory (IAT) traces its intellectual lineages to the theoretical groundworks of Durkheim (1897) and Merton (1968) within the fields of sociology. Drawing from this foundation, Messner and Rosenfeld (1997) expanded the theoretical scope by focusing on the interplay between social institutions and cultural environments to examine the underlying drivers of social deviance, which is defined as '*any behaviour, belief, or appearance that violates prevailing social norms'* (Hogg and Levine, 2010, p. 774-777).

Various theoretical approaches have addressed the notion of *anomie* and its implications for deviant behaviours within society. Durkheim (1897) introduced the concept of anomie in his seminal work, *Le Suicide,* contending that rapid modernisation and social changes may erode normative standards among people. Specifically, anomie is defined as *'inadequate moral norms to guide and control the actions of people and groups in the interests of the total social system'* (Olsen, 1965, p. 40). Under such conditions, *'the breakdown of social integration and social regulation'* increases the rise of deviance within society (Teymoori *et al.*, 2017, p. 1011).

Subsequently, Merton (1938) advanced the research on the anomie–deviance nexus through exploring the mechanisms of structural strain. To specify, Merton contends that the incongruence between culturally prescribed goals and legitimate means available for their fulfilment creates a structural strain on individuals within society. Specifically, social actors (i.e. individuals) may resort to deviant behaviours to achieve culturally accepted goals (e.g. economic success) when legitimate means of achieving these goals are blocked, a condition referred to as structural strain (Merton, 1968; Agnew, 1992). The overarching arguments of Merton's work are concerned with the role of social stratification, asserting that the disparities in income and economic privilege serve as significant barriers for actors to achieving socially accepted goals. This structural divergence hence triggers deviant behaviours, as actors may

seek alternative means when legitimate avenues for success are obstructed (Merton, 1968; Merton, 1938).

In summary, Merton expands on Durkheim's arguments by explaining the role of structural strain, going beyond the focus on social changes and moral decay, to highlight the discrepancy between socially endorsed goals (e.g. wealth and success) and the legitimate means available to achieve them. Furthermore, within the framework of anomie-strain theory, Merton identified five distinct modes of adaptation—conformity, innovation, ritualism, retreatism, and rebellion—that social actors may adopt in response to the state of anomie. These modes illustrate how social actors navigate the misalignment between culturally prescribed goals and socially accepted means, leading to varying degrees of deviance (Merton, 2017).

Grounded in the Merton's explanation of anomie, IAT formulates that the configuration of social institutions and cultural values can induce the occurrence of deviant behaviours within society (Messner and Rosenfeld, 2012), through promoting *'more egoistic than principled or benevolent ethical reasoning'* among social actors (Cullen *et al.*, 2004, p. 412). The conceptualisation of institutions in IAT is derived from Parsons (1980), in which he contends that institutions represent the social units that constitute the society as a whole. Parsons

focuses on the consequences and functional relevance in maintaining social order and equilibrium (Parsons, 2013). Specifically, IAT posits that institutions are '*relatively stable sets of norms and values, statutes and roles, and groups and organizations that regulate human conduct to meet the basic needs of a society'* (Messner and Rosenfeld, 2012, p. 74; Parsons, 1991).

In this regard, the institutional factors in IAT—namely, economy, polity, education, and family—are described as '*the building blocks of whole societies and as such, they constitute the basic subject matter of macro-level analysis'* (Messner and Rosenfeld, 2012, p. 74). In alignment with the perspectives of social institutions, IAT highlights the interdependence of each institution in the process of socialisation and coordination to construct the fundamental institutional structure of modern society (Dillon, 2020).

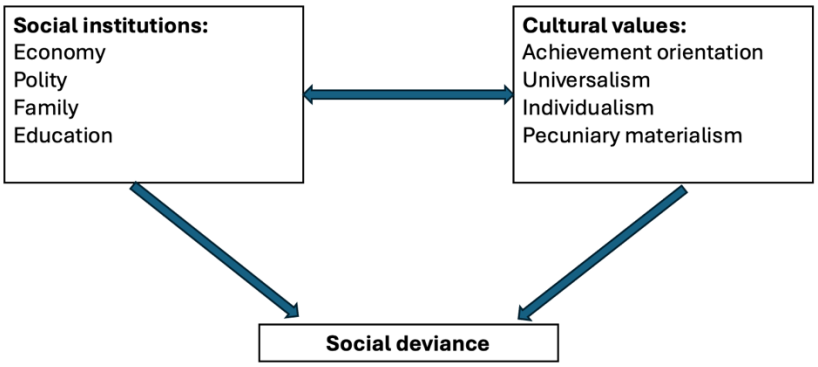
In addition, IAT constitutes a goal-driven and money-centric value framework which highlights *'a commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition'* (Messner and Rosenfeld, 2012, p. 71). Building on this theoretical foundation, the IAT framework incorporates four central cultural values, namely, achievement orientation, individualism, universalism, and pecuniary

materialism. These cultural elements reflect how societies with strong economic dominance shape both behaviours and mindsets among social actors (Hövermann and Messner, 2019).

First, achievement orientation refers to '*the degree to which a collective encourages and rewards (and should encourage and reward) group members for performance improvement and excellence'* (House *et al.*, 2004); it greatly emphasises the necessity of '*productivity, innovation and success'* in people's lifelong journey (Messner and Rosenfeld, 2012, p. 8). Individualism is defined as the degree of prioritising the self-interest over the collective groups (Hofstede, 2011; Van Hoorn, 2014). IAT clearly underlines that the value commitment of individualism and achievement orientation can aggravate the anomic pressure among social actors (GROß *et al.*, 2018; Weiss *et al.*, 2020).

Moreover, IAT conceptualises universalism differently from the Schwartz's culture model, regarding it as *'a value orientation by which standards of success apply uniformly to all members of society'* (Hövermann and Messner, 2021, p. 416). The last culture value proposed in the IAT is pecuniary materialism, which also is named as the *'fetishism of money'*, refers to people's greater concentration on wealth attainment for measuring individual status and fulfilment (Messner and Rosenfeld, 2012). To synthesise, the analytical model of IAT is demonstrated in Figure 2-2.

Figure 2-2 The IAT framework



Source: Messner and Rosenfeld (2012)

The fundamental premise of IAT is that institutional imbalance, along with cultural emphasis on egoistic values, can significantly elevate the prevalence of deviant behaviours within society (Messner and Rosenfeld, 2012; Muftic, 2006). In other words, social deviance is exacerbated by the dominance of economic institutions over other societal institutions. This economic dominance disrupts the institutional balance of power, fostering anomic conditions that intensify social deviance (Messner and Rosenfeld, 2012, p. 77).

In addition, scholars argue that the state of anomie is *'is tied to the answers of individual respondents'* (Orru, 1987, p. 187), and resides at the intersection between societal structure and individuals (Teymoori *et al.*, 2017). In correspondence with Durkheim and Merton, Srole (1956) applied the notion of anomie to individuals, capturing *'the state of an individual that*

feels overstrained, confused and deeply unsettled by the (perceived) breakdown of the moral norms of the society' (Hirtenlehner and Farrall, 2024, p. 5). This line of discussion is concerned with *'what living in an anomic context means for individuals as well as collectives'* by focusing on individuals' behavioural understanding and internalisation of social anomie (Teymoori *et al.*, 2017, p. 1015). The concept of anomie (anomia) has sparked a wide array of discussions and explanations in the fields of sociology. Table 2-4 synthesises the definitions offered by multiple theorising streams.

Table 2-4 Defining anomie in various literature streams

Authors	Analytical foci	Definition
Durkheim (1897)	Social changes and a weakening of social norms and order	Anomie is defined as '*a condition of inadequate procedural rules to regulate complementary relationship among the specialized and interdependent parts of a complex social system'* (Olsen, 1965).
Merton (1938)	Structural strain	Anomie refers to the strain encountered by social actors stemming from an incongruence between socially endorsed goals (e.g. economic success) and the legitimate means available to achieve them.
Messner and Rosenfeld (2012)	Institutional balance and cultural preoccupation with economic success	Anomie occurs when (1) economic institutions dominate and infiltrate non-economic institutions, such as the polity, family, and education; and (2) society places disproportionate cultural emphasis on

		economic success and monetary goals.
MacIver (1950)	The breakdown of individual's sense of attachment to society	Anomia (micro-level anomie) refers to '*a state of mind in which the individual's sense of social cohesion—the mainspring of his morale—is broken or fatally weakened'.*
Srole (1956)	Perceived state of society	Anomia (micro-level anomie) refers to *'a sense of disorientation and alienation in a social world that has become increasingly unfathomable, incomprehensible and imponderable'* (Hirtenlehner and Farrall, 2024, p. 5).

While these definitions reflect different analytical focuses, they fundamentally align in capturing anomie as *'a structural condition of modern social life'*(Rosenbaum and Kuntze, 2003, p. 1069). Bjarnason (2009) further assert that anomie '*is a multidimensional, multilevel concept that refers simultaneously to individuals, interactions, social structure, and cultural representations'.* Consequently, by drawing on the theoretical insights of anomie theory from existing literature, this study seeks to further explore how the perception and interpretation of the state of social anomie among firm pivotal actors (i.e. owner-managers) affect firms' attitudinal openness towards innovation activities (i.e. innovation orientation), and the effectiveness of firms' innovation efforts (i.e. innovation performance).

The existing body of literature on anomie and deviance has predominantly focused on the negative manifestations of deviance, such as ethically dubious behaviours among individuals and organisational misconduct (Cullen *et al.*, 2004; Martin *et al.*, 2007). Nevertheless, there is a growing scholarly conversation highlighting the substance of *positive deviance* as a way to enrich the theoretical understanding of anomie theory, and to better capture the diverse sets of behaviours within organisations (Vadera *et al.*, 2013; Mainemelis, 2010; Spreitzer and Sonenshein, 2003). Specifically, Spreitzer and Sonenshein (2004, p. 828) define positive deviance as '*intentional behaviours that depart from the norms of a referent group in honourable ways'*. This definition redirects the focus towards emphasising the potential constructive facets of deviance from conventional norms, rather than framing it exclusively as negative forms.

The subsequent section will discuss the general limitations of anomie theory. This is followed by a literature review on the application of IAT in the field of business and management.

2.3.6. Limitations of IAT

While IAT-anomie theory is influential in explaining various forms of deviance in societal systems, it holds certain limitations that warrant scholarly attention. First, the conceptual meaning of *anomie* remains inadequately reconciled across theoretical streams of anomie

theory. Specifically, scholars have emphasised different facets of anomie when explaining the nature and causes of social deviance. For instance, Durkheim (1897) concentrated on the weakening of social norms; Merton (1968) focused on the structural strain and the inharmony of means and goals; and Messner *et al.* (2013) focused on the institutional balance of power. Psychological sociologists contend that the structural determinism may overlook individual perceptions and experiences in understanding anomie, leading to calls for examining the perceived state of social anomie at the individual level (MacIver, 1950; Srole, 1956).

Despite their variations. these different analytical streams are compatible, as they all centre on how the ramifications and changes of social solidarity influence the patterns of deviance (Passas, 2020; Tsahuridu, 2011). Scholars have clearly highlighted the importance of examining the phenomenon of anomie in various contexts and levels, including within society (Choi and Valente, 2023), organisations (Courpasson *et al.*, 2021), and among individuals (Sánchez-Medina *et al.*, 2024). Consequently, advancing this line of inquiry entails a comprehensive analysis that reconciles various insights regarding the conception of anomie, while critically considering the contextual relevance to which it pertains (Messner and Rosenfeld, 2017).

Second, the macro-micro linkages have not been fully developed and articulated within the frameworks of IAT and other strands of anomie theory (Baumer and Gustafson, 2007). While the IAT presents rigorous arguments on the role of institutional balance and cultural emphasis in driving social deviance, it tends to neglect the interplay of individual mechanisms and macro-social circumstances. Specifically, scholars argue that the cross-level implications of how societal conditions of anomie and collective shared belief influence *'not only individual values, strains, and behaviours, but also the relations among these'* (Bernburg, 2019, p. 12).

In light of these perspectives, scholars have endeavoured to construct a more comprehensive exploration to understand how societal-institutional conditions interact with individual experiences and interpretations of the state of social anomie. For instance, Zito (2019) found that the nation-level institutional weakness aggregates the positive relationship between individuals' financial anomie and their willingness to justify morally dubious behaviours, as a form of negative deviance. Consequently, addressing the deficiency of macro-micro linkages of IAT requires further research to explore how individuals' perceptions of strain and anomie are shaped by broader socio-cultural and institutional frameworks (Bernburg, 2019).

The subsequent section will undertake an in-depth literature review, specifically on the application of IAT and broader anomie theory in the fields of business and management

studies. This literature review will critically examine existing theoretical and empirical insights to identify knowledge gaps and inform the research focus in understanding firm innovation, as a manifestation of positive deviance.

2.3.7. Literature Review: Application of Anomie Theory in Explaining Firm-Level Behaviours in Management Studies

There has been a growing body of literature exploring the implications of anomie theory for understanding business-related phenomena. Specifically, scholars have drawn insights from different strands of anomie theory to explicate the predictors of deviant behaviours, including organisation-level deviance (e.g. firms) and individual-level deviance (e.g. firm managers, employees, and consumers).

The application of anomie theory in the fields of business and management literature has primarily focuses on the negative manifestations of deviance. However, recent scholarly debates have highlighted the significance of positive deviance in advancing the theoretical understanding of anomie theory (Vadera *et al.*, 2013; Herington and van de Fliert, 2018). Table 2-5 presents a summary of how extant management studies apply the IAT and broader anomie theory to explain diverse forms of deviant behaviours.

Table 2-5 Selected empirical research on the application of IAT and anomie theory in existing management literature

	Author(s)	Title of Journal	Dimensions of Anomie	Explanatory Factors	Dimensions of Deviant Behaviours	Findings
1.	Bame-Aldred *et al.* (2013)	*Journal of Business Research*	Culture-level anomie	Cultural values: • Individualism, achievement orientation, assertiveness, and humane orientation.	Tax evasion, as a form of negative deviance	Their findings suggest that: (1) The national cultures of achievement orientation, humane orientation, and assertiveness are negatively related to firms' likelihood of engaging in bribery activities. (2) The national culture of individualism is positively related to firms' likelihood of engaging in bribery activities.
2.	Chen *et al.* (2021a)	*Journal of Business Ethics*	Institution-culture-level anomie	Cultural values: • achievement orientation and pecuniary materialism National institutional factors: • government efficiency, income inequality, foreign competition, and technological advancement	Managerial supervisors' willingness to justify ethically suspect behaviours, as a form of negative deviance	Their findings reveal that: (1) The national culture of achievement orientation increases the willingness to justify ethically suspect behaviours among managerial supervisors of firms. (2) Government efficiency and technological advancement reduce the positive impact of the cultural prevalence of achievement orientation on managerial supervisors' willingness to justify ethically suspect acts.
3.	Chen *et al.* (2015)	*Management and Organization Review*	Institution-culture-level anomie	Culture values: • Institutional collectivism and uncertainty avoidance	Bribery activities of firms	Their findings reveal that: (1) Manager-controlled firms are more likely to engage in bribery

				Social institutions: • Economic change, income inequality, and press freedom		activities compared with shareholder-controlled firms. (2) The aforementioned relationship is amplified under conditions of heightened (a) economic change and (b) income inequality.
4.	Chen (2014)	*Journal of Business Ethics*	Institution-culture-level anomie	Cultural values: • Power distance, masculinity and uncertainty avoidance Social institutions: • Economic development, social inequality, and education accessibility	Willingness to justify ethically suspect behaviours among managers and employees	Their findings suggest that: (1) Employees are more willing to justify ethically dubious behaviours than managers. (2) The employees are more likely to justify ethically dubious behaviours than their managerial counterparts when social inequality is severely high.
5.	Choi and Valente (2023)	*Organization Science*	Community-level anomie	• Community social cohesion • Local newspaper scarcity (the deficiency of community-level watchdog)	Organisation-level wrongdoing	Their findings reveal that: (1) The dearth of local newspapers is positively correlated with organisational internal wrongdoing in relation to employees' relations and corporate governance. (2) The community-level social cohesion reduces the positive impact of the dearth of local newspaper on organisation-level wrongdoing.
6.	Cullen *et al.* (2004)	*Academy of Management Journal*	Institution-culture-level anomie	Cultural values: • achievement orientation, individualism, universalism and materialism	Managers' willingness to justify ethically suspect behaviours, as a form of negative deviance	Their findings suggest that: (1) The national cultures of pecuniary materialism and universalism are positively related to

				Institutional factors: • economy, polity, family strength and education attainment		managers' willingness to justify ethically suspect behaviours. (2) The national development of industrialisation and the breakdown of family institutions are positively related to managers' willingness to justify ethically suspect behaviours. (3) The national development of educational institutions is negatively related to managers' willingness to justify ethically suspect behaviours.
7.	Cullen *et al.* (2014)	*Entrepreneurship Theory and Practice*	Institution-culture-level anomie	Cultural values: • performance orientation, assertiveness, individualism and family collectivism Institutional factors: • social stratification, education and redistributive systems	Opportunity entrepreneurship (OE), as a form of positive deviance	Their findings suggest that: (1) The national cultures of achievement orientation and in-group collectivism are positively related to rates of OE. (2) The positive impacts of achievement orientation and in-group collectivism on the rates of OE are enhanced in countries with higher levels of social stratification. (3) The positive impacts of achievement orientation and in-group collectivism on the rates of OE are weakened in countries with stronger economic distributive systems.
8.	Harris (2008)	*Journal of Retailing*	The perceived state of anomie among consumers	Consumer anomia	Fraudulent returning behaviours, as a form of negative deviance	Their findings reveal that the perceived state of anomie (anomia) among consumers is positively related to their dysfunctional

						consumer behaviours, such that higher levels of consumer anomia leads to stronger proclivity of fraudulent returning.
9.	Harris *et al.* (2016)	*Journal of Service Management*	The perceived state of anomie among consumers	Consumer anomia	Exaggerated negative word-of-mouth among consumers	Their findings indicate that consumers perceiving a higher level of anomie are more likely to disseminate negative word-of-mouth.
10.	Ji *et al.* (2019)	*Journal of Business Ethics*	Anomie-related strains	• Materialistic values • Institutional trust	Routine business deviance among SME owner-managers	Their findings suggest that: (1) Pecuniary materialism among SME owner-managers is positively associated with deviant behaviours in business routines. (2) Trust in institutional fairness among SME owner-managers is negatively associated with deviant behaviours in business routines. (3) Ethical standards of SME owner-managers mediate the relationships between: (a) Pecuniary materialism and deviant behaviours in business routines. (b) Institutional trust and deviant behaviours in business routines.
11.	Khan *et al.* (2013)	*Journal of Small Business Management*	The misalignment between firms' goals and the means available	Environmental dynamism, relational social capital, and firm performance	Entrepreneurs' ethically suspect behaviours	Their findings reveal that: (1) Entrepreneurs are less likely to engage in ethically suspect behaviours when firm performance is strong.

			to achieve them (reflecting strain and anomie).			(2) Firm performance mediates the negative relationship between entrepreneurs' relational social capital and their ethically suspect acts. (3) Firm performance mediates the negative relationship between environmental dynamism and entrepreneurs' ethically suspect acts.
12.	Kim *et al.* (2020)	*Journal of Engineering and Technology Management*	Institution-culture-level anomie	Cultural values: • performance orientation, assertiveness, individualism and uncertainty avoidance Institutional factors: • legal and regulatory quality	Firms' disruptive innovation, as a form of positive deviance	Their findings reveal that: (1) The positive impact of individualistic cultural values on firms' disruptive innovation is greater in countries with stronger rule of law. (2) The negative impact of uncertain avoidance culture on firms' disruptive innovation is weakened in countries with stronger rule of law. (3) The positive impact of individualistic cultural value on firms' disruptive innovation is enhanced in countries with stronger regulatory quality.
13.	Kim *et al.* (2022)	*Journal of Business Research*	Institution-related anomie	Institutional factors: • Educational attainment, political governance, gender equality, and trust in government	Bribery activities of women-owned small enterprises in EEs	Their findings indicate that: (1) The positive relationship between women ownership and firms' bribery behaviours are attenuated in countries with stronger political governance.

						(2) The positive relationship between women ownership and firms' bribery behaviours are attenuated in countries with stronger educational institutions. (3) The positive relationship between women ownership and firms' bribery behaviours are attenuated in countries with more rigorous institutional trust (i.e. trust in government).
14.	Mafrolla *et al.* (2022)	*Business & Society*	Institution-culture-related anomie	Cultural values: • Individualism, power distance, masculinity, and uncertainty avoidance Institutional factors: • Legal forces and family control	Accounting restatement and financial misbehaviour, as a form of negative deviance	Their findings reveal that: (1) Family ownership is negatively related to firms' accounting misbehaviours. (2) The negative relationship between family ownership and firms' accounting misbehaviours is stronger in countries with more robust legal frameworks. (3) The negative relationship between family ownership and firms' accounting misbehaviours is stronger in countries with greater cultural prevalence of uncertainty avoidance. (4) The negative relationship between family ownership and firms' accounting misbehaviours is weaker in countries with greater cultural prevalence of power distance and masculinity.

15.	Martin *et al.* (2007)	*Academy of Management Journal*	Institution-culture-related anomie	Cultural values: • Achievement orientation, individualism, and humane orientation Social institutions: • Welfare socialism and political constraints	Firms' bribery activities, as a form of negative deviance	Their findings reveal that: (1) The positive impact of the national culture of achievement orientation on firms' bribery activities is enhanced in countries with lower development of social welfare systems. (2) The positive impact of the national culture of achievement orientation on firms' bribery activities is enhanced in countries with lower political constraints. (3) The negative impact of the national culture of in-group collectivism on firms' bribery activities is stronger in countries with more robust development of social welfare systems.
16.	Nam *et al.* (2014)	*Journal of International Management*	Institution-culture-related anomie	Cultural values • Achievement orientation, uncertainty avoidance and collectivism Institutional factors • Political stability and education	Firms' innovation initiatives, as a form of positive deviance	Their findings reveal that: (1) The negative relationship between in-group collectivism cultures and firms' innovation activities is reduced in countries with better-developed educational institutions. (2) The negative relationship between uncertainty avoidance cultures and firms' innovation activities is reduced in countries with greater political stability.

						(3) The negative relationship between in-group collectivism cultures and firms' innovation is reduced in countries with greater political stability.
17.	Rosenbaum and Kuntze (2003)	*Psychology and Marketing*	The perceived state of social anomie among consumers	• Cynicism • Materialism • Valuelessness	Consumers' unethical retail disposition, as a form of negative deviance	Their findings reveal that consumers who perceive higher levels of anomie are more likely to adopt rationalisation techniques to justify the engagement in unethical retail disposition.
18.	Sánchez-Medina *et al.* (2024)	*Accounting Forum*	The perceived state of social anomie among employees	• Displacement of responsibility • Moral justification	Intention to commit accounting fraud, as a form of negative deviance	Their findings suggest that employees' perceived state of social anomie fosters moral disengagement, including mechanisms such as moral justification and displacement of responsibility, thereby increasing their intention to engage in accounting misbehaviours.
19.	Tsahuridu (2011)	*Journal of Business Ethics*	Work-related anomia and societal anomia	• Employment status • Religion	Individuals' perception of the state of work-related and societal anomie	Their findings suggest that: (1) Individuals who are employed have higher levels of perception of social anomie than those who are not employed. (2) Individuals tend to have a higher level of perceived state of work-related anomia than general societal anomia.

20.	Tuliao and Chen (2019)	*Journal of Business Ethics*	Institution-culture-related anomie	Social institutions: • Economic inequality, family disruption, educational systems, political non-involvement, and religious affiliation	Managerial supervisors' willingness to justify ethically suspect behaviours, as a form of negative deviance	Their findings suggest that the enfeeblement of economic institutions (i.e. economic inequality) leads to the decline of non-economic institutions (family, educational, and religious institutions), thus undermining managerial supervisors' ethical reasoning.
21.	Zhou *et al.* (2013)	*Journal of Business Ethics*	Managers' perception of normalising the state of social anomie	Firms' resources: • Exporting status, financial resources, external auditors, and location The climate of social anomie: • Managers' perceived severity of social disorder, theft, and crime • Managers' perceived level of normalising social anomie	Firms' bribery behaviours, as a form of negative deviance	Their findings reveal that: (1) Firms are likely to engage in bribery behaviours when they perceive a high level of social disorder. (2) Firms are likely to engage in bribery behaviours when they tend to normalise the state of social anomie.

22.	Zoghbi-Manrique-de-Lara and Guerra-Báez (2018)	*Journal of Business Ethics*	Workforce perception of the state of social anomie (i.e. the perceived state of social anomie among employees)	• Perceptual state of social anomie (anomia) • Uncompassionate feelings among employees	Deviant workplace behaviours, as a form of negative deviance	Their findings suggest that the perceived state of social anomie among employees leads to the absence of compassion (i.e. impersonality) toward co-workers, thus fostering deviant workplace behaviours among employees.

2.3.8. Research Gaps in Exploring Firm Innovation through IAT

Previous studies have provided valuable insights into the application of IAT within the fields of business and management. Upon reviewing the relevant literature on IAT and firm-level deviant behaviours, this study identifies two significant knowledge gaps that offer potential directions for the development of the theoretical framework in this research.

Limited understanding of managerial perception of anomie and positive deviance

The current body of management literature that incorporates anomie theory has primarily examined how the state of anomie at multiple levels shapes firm-level deviant behaviours, with a particular emphasis on the negative forms of deviance. More crucially, there is an expanding scholarly conversation seeking to explain positive deviance through the lens of IAT. For instance, Nam *et al.* (2014) and Kim *et al.* (2020) conceptualise firms' innovation as a manifestation of positive deviance, arguing that firms may resort to positive deviance as a response to institutional strain.

Nevertheless, the understanding of the nature and antecedents of positive deviance remains sparsely explored within the current literature. Specifically, there is a notable knowledge lacuna regarding how owner-managers, as key decision-making actors of firms, interpret and internalise the strain associated with social anomie. More importantly, it remains unclear how

the process of understanding, perceiving, and rationalising the state of anomie among owner-managers may lead to either a proclivity for or reluctance towards engaging in positive deviance (e.g. innovation).

A similar line of inquiry can be identified in the marketing literature through proposing the notion of consumer anomia, where empirical findings suggest that consumer anomia is a key predictor of dysfunctional consumption behaviours (Harris, 2008; Harris *et al.*, 2016; Rosenbaum and Kuntze, 2003). Despite the relevance of anomie in shaping organisational outcomes, management research has yet to fully present empirical evidence on how *managerial anomie* may influence innovation-promoting proclivities and behaviours, as a form of positive deviance among firms.

Consequently, this knowledge gap highlights the need for further investigation into the mechanisms through which managerial perception of the state of social anomie is translated into either enablers or inhibitors of innovative actions among firms.

Insufficient clarity on the boundary conditions linking anomie and positive deviance

The boundary conditions that may alter the relationship between anomie and firm innovation remain underexplored. Specifically, in relation to firm-level innovation, multilevel factors such as institutional environments, competitive dynamics, and organisational leadership, may

significantly influence how firms interpret and respond to the anomic pressure (Faßauer, 2018; Johnson *et al.*, 2011). Given that IAT remains a relatively new perspective for investigating positive deviance among firms, these boundary conditions have not been adequately investigated in the current literature on firm innovation (Chen *et al.*, 2021a). Further empirical research is needed to investigate the contingencies of positive deviance among firms (e.g. innovation orientation and performance), thereby contributing to a richer theoretical understanding of how firms navigate and cope with anomic environments in pursuit of innovation in EEs.

The next section will summarise the research gaps identified through the comprehensive literature review, and synthesise the theoretical underpinnings of IBV and IAT.

2.4. Summary of the Chapter

In summary, this chapter has: (1) examined the concept of innovation in the business and management literature; (2) introduced and discussed various theoretical frameworks in relation to explaining firm innovation; (3) reviewed the existing literature on exploring the antecedents of firm innovation, grounded in IBV and IAT, respectively; and (4) identified the research gaps based on the comprehensive literature review.

Anchored by this foundation, the current study claims to adopt an integrative perspective by combining the IBV and IAT to unravel the interplay of MPSA, SME innovation orientation, and SME innovation performance, market conditions, and subnational-level institutional environments. The subsequent sections will synthesise the research gaps and articulate the theoretical underpinnings of this study—specifically the integration of IBV and IAT—to inform the development of research hypotheses and model in the subsequent Chapter 3.

2.4.1. Summary of Research Gaps

The literature review has identified several significant gaps in understanding how the interaction of institutional environments and the perceived state of social anomie influences firm-level innovation, particularly in the context of EEs. The following table synthesises the research gaps identified within IBV and IAT, and illustrates the guiding research questions that this study seeks to address.

Table 2-6 Research gaps identified in IBV and IAT

Theoretical Perspectives	Research Gaps Identified	Guiding Research Questions
IBV	Unclear positioning of firm-related actors within institutional frameworks	• How do pivotal actors of firms navigate and position themselves within the institutional frameworks? • How do firm-related actors' perceptions and interpretations of institutional pressures and their

		consequences influence firm-level innovation?
IBV	Incomplete understanding of the role of informal institutions in influencing firm-level innovation	• What is the impact of informal institutional factors (e.g. cultural norms, networks, and social trust) on firm-level innovation? • How do informal institutions interact with formal institutions in influencing firm-level innovation?
IBV	Limited examination of subnation-level institutional variations	How do subnational institutional variations—both formal and informal—influence firm-level innovation, particularly in the context of EEs?
IAT (anomie theory)	Limited understanding of the concept of anomie in the context of firm innovation as positive deviance	• How do pivotal actors of firms (i.e. owner-managers) perceive the state of anomie? • What implications does this managerial perception of social anomie hold for firm-level innovation orientation and performance in EEs?
IAT (anomie theory)	Insufficient clarity on the boundary conditions influencing the link between anomie and positive deviance of firms	What contingent factors may enhance or diminish the relationship between managerial perception of social anomie and positive deviance among firms (i.e. SME innovation)?

The following section will synthesise the integrative perspectives of the IBV and IAT as the theoretical underpinnings of this research.

2.4.2. Summary of Theoretical Underpinnings

This study frames an integrative perspective of the IBV and IAT to explore the relationships between MPSA and firm-level innovation orientation and innovation performance, as a form of positive deviance. First, IBV provides valuable insights into how firms' innovation is shaped by the institutional environments in which they are embedded. Nonetheless, both IBV and the current literature tend to overlook the critical role of firm-related actors within the institutional frameworks. For instance, scholars highlight the importance for exploring how the breakdown of social solidarity may influence actors and organisations across multiple institutional systems (Voronov and Weber, 2020). This line of discussion is particularly pertinent in exploring how the reconfiguration of social cohesion may influence the extent to which pivotal actors of firms interpret and respond to institutional pressures, which may resultantly shift their commitment to making innovation-enhanced decisions.

To address this knowledge lacuna, this study integrates insights from IAT with IBV to examine the impact of MPSA on firm-level innovation as a form of positive deviance. This is in alignment with the existing literature that captures firms' innovation as positive deviance (Nam *et al.*, 2014; Kim *et al.*, 2020). This body of research has examined how firm innovation is influenced by a specific combination of social institutions and cultural dynamics. However, the precise relationship between MPSA and firm-level innovation

orientation and performance as positive deviance of firms, remains insufficiently understood. Moreover, the boundary conditions under which this relationship is altered have not been thoroughly investigated, highlighting a critical gap in the literature. These knowledge areas merit further scholarly inquiry, as they can deepen the understanding of the repercussions associated with the state of social anomie, thus informing the development of adaptive strategies aimed at reinforcing firms' innovation and creativity within anomic environments, particularly in EEs.

Consequently, the integrative perspective of IBV and IAT is instrumental in enriching the understanding of how pivotal actors of firms assimilate and interpret the societal consequences of institutional development (i.e. the state of social anomie). Furthermore, this study contributes to the growing body of literature that conceptualises firm innovation as positive deviance by shifting the focus towards MPSA as a transmission mechanism, along with other multilevel contingent factors including market conditions and institutional environments (Nam *et al.*, 2014). This theoretical integration builds a clearer conceptual link between the notion of anomie and firm innovation in the fields of innovation and management studies, hence contributing to the investigation of explanatory factors of firm innovation from both strategic-driven and socio-behavioural perspectives (Ebner, 2024; Voronov and Weber, 2020).

The subsequent chapter will elaborate on the rationale of integrating IBV and IAT in addressing the research questions. This is followed by the formulation of research hypotheses and the development of research model for analysis.

3. A Synthesis of Literature Review and Hypothesis Formulation

This chapter will synthesise the literature reviewed in the preceding chapter by linking it to the research gaps and research questions of the study. First, the rationale of integrating IBV and IAT—the theoretical underpinning of this study—will be pinpointed. In accordance with this, the research hypotheses will be formulated, and the conceptual model will be developed.

3.1. A Synthesis of the Theoretical Integration: IBV and IAT

3.1.1. Defining Institutions in IBV and IAT

Scholars have asserted the need for greater conceptual precision and methodological rigour in defining institutions within business and management studies (Aguilera and Grøgaard, 2019; Willmott, 2015). Specifically, they argue that management scholars should prioritise conceptual clarity in defining institutions, and should avoid the tendency to underestimate the role of institutions through utilising a *'variable-based'* approach (Jackson and Deeg, 2008, p. 540). The rigorous framing of integrative perspectives entails the clear delineation of distinct institutional concepts, ensuring that they are not broadly regarded as *'catch-all'* constructs (Aguilera and Grøgaard, 2019, p. 23). Consequently, this section will elucidate how the IBV and IAT—the theoretical perspectives guiding this research—conceptualise institutions. This foundation enables an integrated analysis of these perspectives, deepening the examination of how institutional factors shape firm innovation.

IBV and IAT demonstrate different conceptual understandings of institutions. Table 3-1 below summarises the key distinctions and intersections between the IBV and IAT, highlighting their conceptualisations, theoretical focuses, core arguments, and potential limitations, respectively.

Table 3-1 Complementarities and distinctions between IBV and IAT

	Institution-based view (IBV)	Institutional anomie theory (IAT)
Conceptualisation of Institutions	• *'Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction'* (North, 1990, p. 3) • *'Institutions, which arise because of the uncertainty associated with human interaction, provide structure and order, the rules of the game if you will, to human exchange, whether political, social or economic'* (North, 1989, p. 238)	• Institutions are *'relatively stable sets of norms and values, statues and roles, and groups and organizations'* that regulate human conduct to meet the basic needs of a society (Parsons, 1980; Messner and Rosenfeld, 2012, p. 74) • *'A complex of positions, roles, norms and values lodged in particular types of social structures and organising relatively stable patterns of human activity with respect to fundamental problems in producing life-sustaining resources, in reproducing individuals, and in sustaining viable societal structures within a given environment'* (Turner, 1997, p. 6)
Theoretical foci	• Institutional incentives, constraints, and social legitimacy (Meyer and Peng, 2015)	• Modernisation and normlessness (Durkheim, 1897) • Strain–anomie nexus and its impact (Merton, 1968) • Institutional balance (Messner and Rosenfeld, 2012) • Anomia/micro-anomie (i.e. the perceived state of anomie among social actors) (Teymoori *et al.*, 2017; MacIver, 1950; Srole, 1956)

Core arguments	• *'Rules of the game in a society'* (North, 1990, p. 3) • IBV focuses on the dynamic interaction between institutions and organisations, and considers strategic choices as the outcome of such an interaction (Peng, 2002, p. 253). • Firms' strategic choices are influenced by formal and informal institutions.	• Actors may respond to the state of social anomie through engaging in deviant behaviours, including positive and negative deviance. • The discrepancy between socially endorsed goals and legitimate means may lead to strain and anomie. • Economic dominance in the institutional balance over other non-economic institutions.
Potential limitations	• IBV research has devoted little attention to investigating *'how institutions socialize the diverse sets of actors related to the firm (managers, employees, owners, partner firms), or shape the interests and the interactions among those stakeholders, and hence the capabilities of firms to pursue different strategies'* (Jackson and Deeg, 2008, p. 545). • IBV fails to explicate the inherent relations between multiple institutional factors, overlooking the substance of institutional interdependence.	• Although anomie has been explored across societal, institutional, organisational, and individual levels, the conceptualisation of anomie as a multidimensional construct remains underdeveloped. • The macro-micro linkages in anomie theory are not fully captured.

Source: The author

Despite their differences in assumptions, conceptualisations, and analytical foci, this study argues that IBV and IAT are intrinsically complementary in explaining the overarching role of institutions in influencing firm-level innovation orientation and performance. IBV focuses on the logic of a rule-based society, consistent with North (1990)'s notion of *'rules of the game'*, primarily to highlight how institutions minimise transaction costs and uncertainties through formal and informal rules. These rules may either facilitate or constrain firms' strategic behaviours (Hindriks and Guala, 2015; Meyer and Peng, 2016). Accordingly, IBV considers firms' strategic choices, such as innovation as the outcome of the interaction between institutional environments and organisation (Peng, 2002; Meyer and Peng, 2015).

By contrast, IAT emanated from structural functionalism of the sociological paradigm, redirecting the focus towards the functioning of social institutions, such as economy, polity, education, and family (Messner and Rosenfeld, 2012). Specifically, IAT focuses on how these social institutions organise *'relatively stable patterns of human activities'*, creating institutional balance that influences the state of social anomie and individuals' responses (Turner, 1997, p. 6). This perspective highlights the interdependence and mutual reinforcement of social institutions through the coordination and mobilisation of social actors such as firm owner-managers (Messner *et al.*, 2019; Hövermann *et al.*, 2016).

Furthermore, IAT provides a deeper explanation of how social actors are constituted and socialised within the institutional frameworks, as well as the underlying causes of deviant behaviour among actors in the face of social anomie (Bitektine *et al.*, 2020). For instance, IAT encompasses broader social institutions, such as education and family, which are integral in the process of socialisation, enculturation, communication, and inculcation for individuals to meet different needs. IAT brings forth the societal-functional dimensions of institutions, addressing aspects that may be overlooked by the traditional IBV, which focuses primarily on formal and informal rules governing economic activities.

In summary, the integrative perspectives of IBV and IAT transcend the traditional rule-enforcing mechanisms emphasised by the IBV, offering deeper insights into firm-level innovation orientation and outcomes through the incorporation of the concept of anomie (Zhou *et al.*, 2013). Specifically, the complementary focuses of institutions in IBV and IAT are crucial for understanding the reciprocal dynamics between firm owner-managers and institutional environments.

The next section will articulate how IBV and IAT understand SME innovation.

3.1.2. Complementary Interpretations of SME Innovation Behaviours within IBV and IAT

The central phenomenon under study is SME innovation within the context of EEs. The IBV and IAT offer distinct yet complementary perspectives for understanding the nature of SME innovation. IBV captures SME innovation as a strategic choice aimed at differentiating themselves from rivals to sustain and enhance competitive advantages (Lu *et al.*, 2008a). However, IBV scholars have devoted little attention to *'how institutions socialize the diverse sets of actors related to the firm (managers, employees, owners, partner firms), or shape the interests and the interactions among those stakeholders, and hence the capabilities of firms to pursue different strategies'* (Jackson and Deeg, 2008, p. 545).

By contrast, IAT conceptualises SME innovation as a form of positive deviance. This notion is in alignment with the framework proposed by Merton (1938, p. 676), which includes innovation as one of the five modes of adaptation under conditions of anomie. The mode of innovation indicates the acceptance of ends and goals yet '*deviating from the legitimate and conventional means'* (Merton, 1938; Herington and van de Fliert, 2018). Messner and Rosenfeld (2012, p. 8) assert that the experience of anomie associates with not only negative responses, but also constructive outcomes, such as *'economic expansion and technological innovation'*. Moreover, IAT provides a concrete mechanism linking institutional settings and

social actors by positing that the institutional imbalance towards economic logic is manifested in: (1) the penetration of economic norms into other institutional dimensions; (2) the devaluation of other non-economic institutions (e.g. education and family); and (3) the accommodation of non-economic institutions to the institutional logic of market economy (Messner and Rosenfeld, 2012).

Consequently, this study argues that the dominance of economy-centred institutional logic in China may intensify MPSA morally by reshaping the shared expectations, norms, and behaviours of SMEs (Hövermann *et al.*, 2015). In such environments, SMEs are embedded within socio-cultural systems that highly prioritise economic success above all else, which generate pressure on firms to achieve such goals by any means necessary (Messner, 2022). This overstrained emphasis on economic performance may engender the erosion of moral standards and ethical norms in China (Zheng *et al.*, 2014). As a result, SME owner-managers may confront a growing disconnection between their strategic goals and the perceived legitimacy of available courses of action to achieve them. This incongruence can critically shape how innovation decisions are formed and executed under conditions of anomie.

In summary, the integrative perspective highlights the role of societal pressures and institutional support (or lack thereof) in shaping innovation orientation and performance

among SMEs in China. The combined lens of IBV and IAT is particularly relevant in environments characterised by uneven institutional development, such as China, where the strains of social anomie and institutional inadequacies coexist in a way that may either facilitate or obstruct the growth of innovation orientation and behaviours among SMEs.

The next section will further elaborate on how the integrative perspectives fully explain the central research phenomenon of SME innovation orientation and performance in China and address the identified knowledge gaps.

3.1.3. The Rationale of Integrating IBV and IAT

Both the IBV and IAT posit that innovation constitutes a responsive pattern of firms influenced by institutional forces, with IBV adopting a strategic-economic lens and IAT offering a socio-behavioural explanation.

This study argues that the primary significance of reconciling IBV and IAT lies in their capacity to comprehensively explain the interplay of institutional environments, firm-related actors (i.e. SME owner-managers), and the behavioural responses related to innovation in EEs. Through the theoretical integration of IBV and IAT, this research suggests that the rapid and fragmented development of marketisation in China may foster a state of social anomie

among SME owner-managers, which can significantly influence SME attitudinal openness to innovative practices (i.e. innovation orientation), and the overall effectiveness of SME innovation efforts (i.e. innovation performance). Further, the impact of MPSA on SME innovation orientation and performance may vary depending on the market conditions and subnational institutional contexts in which SMEs operate.

IBV explains how formal and informal institutional pillars shape firms' innovation strategies and decisions. Complementarily, IAT is concerned with how SME owner-managers are constituted and socialised by institutional environments. More importantly, it articulates how the state of social anomie shapes firms' deviant behaviours (e.g. innovation as a form of positive deviance), hence extending beyond the predominant IBV that positions institutions merely as *'exogenous constraints'* (Jackson and Deeg, 2019, p. 4).

Furthermore, integrating IBV and IAT enables an exploration of the social consequences of institutional development, which may directly or indirectly influence innovative behaviours among SMEs in EEs (Nee, 1992; Gu *et al.*, 2008). Specifically, in the context of China, the coexistence of rapid marketisation and asymmetrical institutional development may create fertile conditions for inducing social anomie among SME owner-managers, subsequently shaping SME innovation orientation and performance (Su *et al.*, 2019; Cheng *et al.*, 2022).

According to IBV, these market-oriented institutional developments in China reinforce firms' capabilities to align with formal and informal institutional frameworks, thereby driving their innovation orientation and performance (Xie, 2017; Lu *et al.*, 2008a). Concurrently, IAT suggests that this institutional imbalance may induce a sense of disconnection and disorientation (i.e. anomie) among SME owner-managers as social actors, which can potentially influence their innovation orientation and innovation performance.

In summary, this study claims that the integration of IBV and IAT can effectively address the identified research gaps (presented in Table 3-2). This integrative perspective paves the way for: (1) uncovering how SMEs owner-managers, as pivotal actors, interpret and internalise the state of social anomie, which is a socio-behavioural consequence of the rapid yet fragmented marketisation in China (addressing gap 1); (2) explaining how MPSA shapes SME innovation orientation and innovation performance, as a form of positive deviance (addressing Gap 4); and (3) providing a more fine-grained analysis of how these dynamics unfold under varying market conditions, subnation-level formal and informal institutional settings, conveying richer insights into how SMEs navigate both economic and societal strains, particularly in EEs with significant institutional deficiencies and asymmetries (addressing Gaps 2, 3, and 5).

Table 3-2 Research Gaps of IBV and IAT

Theoretical Perspectives	Research Gaps Identified
IBV	Gap 1: Unclear positioning of social actors within institutional frameworks
IBV	Gap 2: Incomplete understanding of the role of informal institutions in influencing firm-level innovation
IBV	Gap 3: Limited examination of subnation-level institutional variations
IAT (anomie theory)	Gap 4: Limited understanding of the concept of anomie in the context of firm innovation as positive deviance
IAT (anomie theory)	Gap5: Insufficient clarity on the boundary conditions influencing the link between anomie and positive deviance of firms

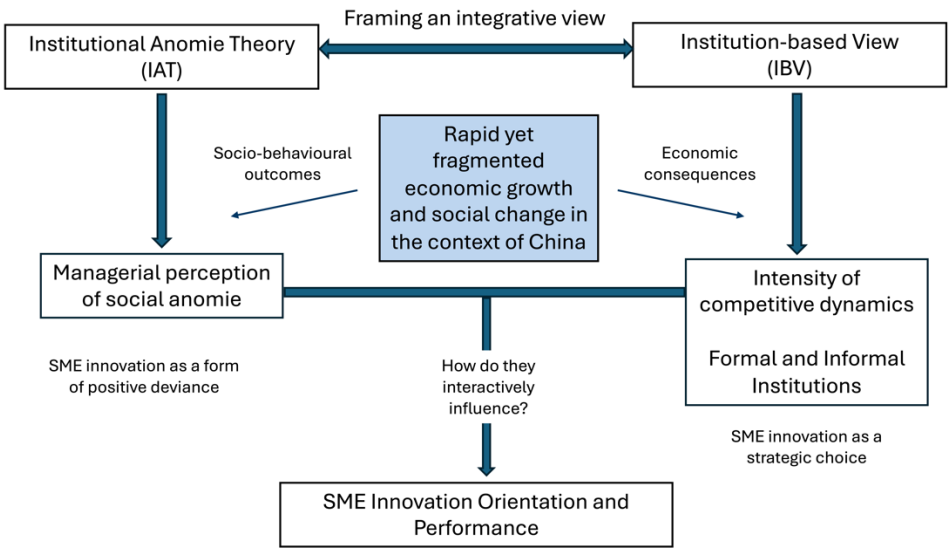
The next section will explain the key research constructs of this study based on the integrative perspective of IBV and IAT.

3.1.4. Key Explanatory Constructs: Managerial Perception of Social Anomie and Intensity of Competitive Dynamics

The integration of IBV and IAT enables a comprehensive understanding of the dual economic and socio-behavioural influences of marketisation on SME innovation orientation and performance in China. To operationalise this integrative perspective, this research focuses on two critical explanatory constructs: managerial perception of social anomie and the intensity of competitive dynamics. To elaborate, competitive dynamics represent an *economic*

consequence of the institutional development of marketisation in China, while the state of anomie is a *socio-behavioural outcome* arising from the same process of marketisation development in China (Gang *et al.*, 2012; Zhu, 2019). These perspectives converge to provide a deeper understanding of how SMEs navigate the uneven process of marketisation in China. The rationale for combining these perspectives is visually depicted in Figure 3-1 below.

Figure 3-1 The rationale of integrating IBV and IAT



Source: The author

Managerial perception of social anomie

Building upon the IAT, this study broadens the analytical focus to encompass actors' interpretation and understanding of the state of social anomie, thus addressing the existing

knowledge gap concerning the limited linkages between social actors and institutional frameworks. Specifically, this study aims to examine how the state of social anomie is perceived and interpreted by SME owner-managers (i.e. managerial perception of the state of social anomie). Managerial perception of social anomie (MPSA) refers to firm owner-managers' subjective interpretation and understanding of '*uncertainty and ambiguity regarding basic norms, values, and conceptions of value or worth'* (Lepisto and Pratt, 2017). Further, in the organisational context, Baburaj and Marathe (2023) described the perceived state of anomie as a condition marked by an absence of organisational norms and regulations, creating a sense of aimlessness among individuals such as managers and employees.

This perceptual aspect of anomie has received some scholarly attention in the current management literature. For instance, scholars found that consumers experiencing high levels of social anomie tend to engage in dysfunctional consumption behaviours (Harris *et al.*, 2016; Rosenbaum and Kuntze, 2003). Nonetheless, extant literature has not fully explicated how the state of MPSA influences SME innovation orientation and performance, as a form of positive deviance. Consequently, this study seeks to address this knowledge gap by centring on the construct of MPSA, with the aim of examining its potential impact on SME innovation orientation and performance in EEs.

Intensity of competitive dynamics

Competitive intensity reflects *'the extent to which multiple participants in an industry compete for the same customer segments'* (Sun *et al.*, 2021, p. 3). IBV argues that institutions dictate how competitive environment is organised and governed (Hall and Soskice, 2001; Peng *et al.*, 2008). Competitive dynamics—derived from the development of marketisation—play a significant role in fostering firm innovation in China. As markets expand and product choices diversify, firms are pressured to innovate in order to distinguish themselves from their rivals. The intensified competitive pressure drives firms to continually seek new approaches to improving product offerings and enhance operational efficiency, ensuring the maintenance of their market position and competitive advantages (Ahlstrom, 2010; Gokalp *et al.*, 2017).

The impact of competitive dynamics on firm innovation, either restraining or fostering it, has received considerable scholarly debate in the fields of economics and management (Marshall and Parra, 2019; Tang, 2006). The prevailing body of literature on this subject predominantly derives from the seminal works of Schumpeter and Arrow (Gilbert, 2006). Specifically, Schumpeter (1942a) posited that increased competition can dampen firms' incentives to innovate because heightened competition may diminish the profits gained from innovation. In contrast, Arrow (1962) proposed that market competition can facilitate innovation as firms

need to innovate and generate novel ideas to maintain their market standing, which is also known as the *escape competition perspective* in the existing literature (Aghion and Howitt, 2006). In the context of China, many SMEs are goal-oriented and pragmatically driven by performance and growth (Child and Tse, 2001). Therefore, competitive dynamics can motivate these SMEs to enhance stronger compositional capabilities for developing new products that meet evolving market demands and strengthen their long-term survival. This reasoning aligns with previous research evidence highlighting the role of competitive intensity in driving firm-level strategic actions in China (Su *et al.*, 2017; Sun *et al.*, 2021). Section 3.2 will explain further how SMEs in China engage with competitive intensity under anomic conditions.

Taken together, in the context of China, the uneven pace of marketisation process across subnational regions has crucial implications for SME innovative orientation and performance, both from strategic and socio-behavioural perspectives. Specifically, this research seeks to investigate how the interplay between the economic consequences and socio-behavioural outcomes of China's rapid yet fragmented marketisation influences SME innovation. This confluence generates a complex environment in which SMEs in China need to navigate the interaction between economic pressures (i.e. competitive dynamics) and broader societal

disruptions (i.e. MPSA), both of which collectively shape their capacity for innovation orientation and performance.

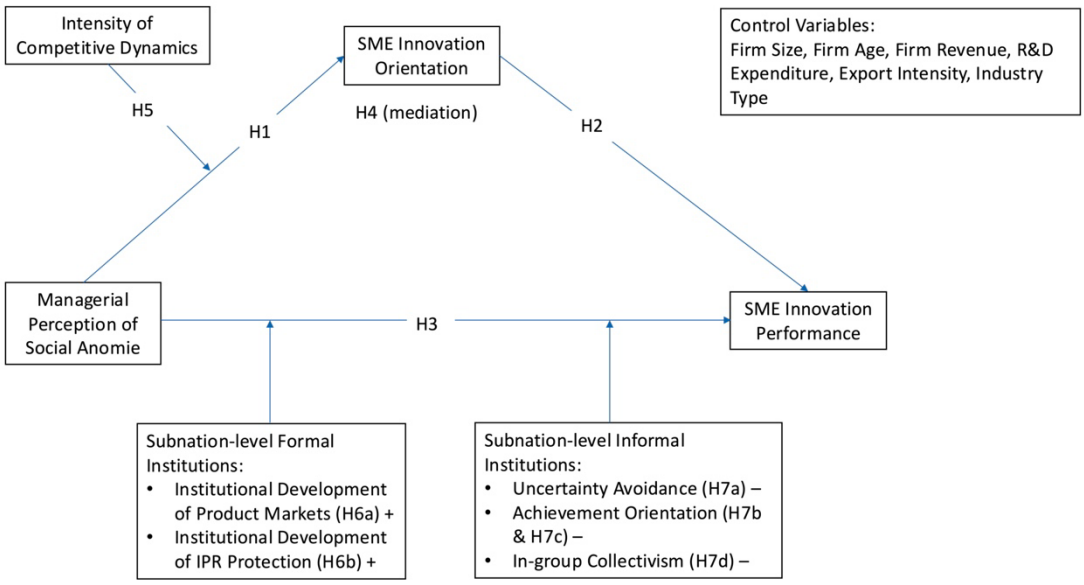
The theoretical insights of IBV and IAT provide a foundation for the development of research hypotheses, which is presented in the following section.

3.2. Hypothesis Formulation and Research Model

Building on the preceding conceptual explanations, this section will develop research hypotheses grounded in the integrative perspective of IBV and IAT. The hypothesis formulation comprises two pathways: (1) the mediating role of SME innovation orientation between MPSA and SME innovation performance (H1–H4); and (2) the boundary conditions of the intensity of competitive dynamics and institutional environments, including formal and informal institutions (H5–H7).

The research model is presented in Figure 3-2.

Figure 3-2 The research model



3.2.1. The Mediating Role of SME Innovation Orientation in the Relationship between Managerial Perception of Social Anomie and SME Innovation Performance

According to IAT, individual actors may resort to positively deviant adaptations in response to anomie; however, the empirical evidence on individual anomie (anomia) mainly reveal its disruptive consequences to various outcomes (reviewed in Section 2.3.7). Building on these insights, this study argues that anomie does not inherently or uniformly trigger positively deviant adaptations; rather, its effects are context-dependent and vary significantly among individuals and organisations. By synthesising the theoretical foundations of IAT with existing empirical findings on individual anomie (anomia), this study develops the

hypotheses on the relationship between MPSA and SME innovation as a form of positive deviance.

This study investigates two pathways through which MPSA influences SME innovation outcomes. The first is a direct pathway through which MPSA influences SMEs' allocation and deployment of innovation-enhancing recourses and assets, thereby producing immediate effect on innovation outcomes. The second is an indirect pathway that recognises the critical role of owner-managers' perceptions of their operating and societal environments in shaping a firm's strategic stance (Hambrick, 2007). Accordingly, this study contends that SME innovation orientation—reflecting a firm's strategic posture and openness towards innovation—mediates the impact of MPSA on firm innovation performance. This indirect pathway seeks to reveal the perceptual–posture–outcome transmission mechanism of the anomie–innovation nexus (Bromiley and Rau, 2016; Schumacher *et al.*, 2020).

Managerial Perception of Social Anomie and SME Innovation Orientation

IAT argues that actors may respond to the state of anomie through deviant adaptations in both negative and positive forms (Merton, 2017; Messner and Rosenfeld, 2012). Specifically, when conventional pathways to achieving socially endorsed goals, such as economic success, are obstructed, actors—including firms and individuals—may resort to alternative, and

sometimes deviant, avenues to attain these objectives. While previous studies mainly focused on the negative forms of deviant adaptation in the face of anomic state, such as firms' bribery and ethically suspect behaviours (Cullen *et al.*, 2004; Chen *et al.*, 2015), there is a growing body of literature highlighting the potential for positively deviant adaptations. These include behaviours such as innovation, which represents a constructive and adaptive response to institutional and societal anomie (Cullen *et al.*, 2014; Nam *et al.*, 2014). Specifically, Nam *et al.* (2014) view firms' innovation initiatives as a form of positive deviance in the face of institutional anomie and strain, and reveal that social institutions such as educational and political institutions can provide greater institutional balance that supports positive deviance among firms. Specifically, their findings suggest that the negative relationship between the cultural value of uncertainty avoidance and firms' innovation is reduced in countries with stronger political stability. Moreover, the positive relationship between achievement orientation culture and firm innovation is strengthened in countries with better-developed educational systems.

Despite these advances, the extant studies have overlooked the question of whether, and if so, how firms-related actors (e.g. SME owner-managers) may adopt positively deviant adaptation, such as innovation, in response to the state of social anomie. While anomie may create opportunities for positive deviance, it concurrently imposes socio-behavioural and

structural challenges that may inhibit SMEs' capacity for innovation (Chiaburu *et al.*, 2014). Specifically, how SME owner-managers internalise and interpret the state of social anomie—and how this process subsequently influences SME innovative orientation and performance, as a form of positive deviance—remain underexplored in the current body of literature.

Building on this foundation, this study emphasises the critical role of perception and understanding among SME owner-managers in fostering successful innovation outcomes in EEs. In the context of SMEs, scholars contend that the boundaries between owner-managers and enterprises are relatively small, as SME owner-managers are closely interlinked with their strategic decision-making processes (Hasle and Limborg, 2006; Rodgers *et al.*, 2022). Specifically, Rodgers *et al.* (2022, p. 3) indicate that activities of SMEs can be captured as *'a reflection of the owner-manager's decisions and actions'*. Furthermore, the attitudes, beliefs, and perceptions of owner-managers play a significant role in shaping the strategic direction and communication within SMEs (Covin and Miller, 2014; Bianchi and Wickramasekera, 2016). There is a growing body of literature highlighting the critical role of managerial perception in shaping firms' behaviour and outcomes (Kevill *et al.*, 2017; Oldham, 2024; Kautonen *et al.*, 2010; Chew *et al.*, 2022).

This line of exploration pertains to the micro-level perception of anomie (i.e. anomia), which has been subject to some investigation in management literature, with most studies concentrating on its dark sides and negative consequences (Tsahuridu, 2011; Sánchez-Medina *et al.*, 2024; Zoghbi-Manrique-de-Lara and Guerra-Báez, 2018). In other words, existing empirical evidence primarily highlights that experiencing anomie (anomia) generates psychological and behavioural challenges. For instance, Bohas *et al.* (2021) enunciate that managers immersed in an *'anomic mindset'* are more likely to remain attached to outdated paths and resist adapting to ever-changing environments. Further, they posit that managers locked into an anomic mindset often take *detours* from progressive strategies. These diversions not only obstruct managers' capabilities to foster flexibility and adapt to social changes, but also hinder the cultivation of global perspectives (Bohas *et al.*, 2021). In a similar vein, Zoghbi-Manrique-de-Lara and Guerra-Báez (2018) found that employees who perceived higher levels of anomie are more likely to be uncompassionate in the workplace settings, which subsequently leads to the decline of workplace trust and engenders reluctance to engage in collaborative activities with co-workers.

Grounded in these evidence and arguments, in relation to SME innovation, this study argues that MPSA may undermine SME innovation orientation, as it may impede SME owner-managers' proactive, forward-thinking, and collaborative tendencies, which are key elements

essential for promoting SME innovation orientation (Yu and Lee, 2017; Norris and Ciesielska, 2019b). Specifically, this research argues that, when owner-managers perceive a stronger level of anomie, they may encounter increased uncertainty and ambiguity, potentially leading to an aversion to embracing innovative practices (Chang and Arkin, 2002; Chiaburu *et al.*, 2014). This response can undermine their attitudinal openness and commitment to cultivating an innovation-supportive organisational culture, thus weakening their active engagement in innovation initiatives. In the context of China, the rapid and uneven development of marketisation may induce a perceived state of social anomie among SME owner-managers, as they face substantial challenges in navigating ambiguous rules and norms alongside inconsistent institutional support (Su *et al.*, 2019). These conditions can significantly hamper their attitudinal openness and willingness to engage in innovation activities.

Furthermore, this study proposes that the strength of MPSA may lead to psychological disruptions that inhibit SMEs' recognition of innovation opportunities. Previous empirical evidence supports this interpretation. For instance, Lepisto and Pratt (2017) suggest that encountering a situation of workplace anomie creates a significant barrier to achieving meaningful work. Therefore, such disconnection and disorientation from established norms and values, deriving from managerial anomie, may prompt SME owner-managers to resist

constructive changes and experience a declining sense of purpose in their managerial roles, thereby undermining firm-level innovation orientation. This proposition is further supported by the empirical evidence indicating that workplace meaningfulness is an important predictor of engagement in innovative behaviours. Specifically, scholars found that, when owner-managers lack a sense of meaningful work, their motivations to pursue innovative actions diminish (Almazrouei *et al.*, 2023; Bailey *et al.*, 2019). Based on these discussions, the following hypothesis is formulated:

Hypothesis 1. Managerial perception of social anomie is negatively correlated with SME innovation orientation.

Innovation orientation and innovation performance among SMEs

This study also examines the relationship between SME innovation orientation and innovation performance. Scholars found that innovation orientation is particularly critical for SMEs to manage liabilities of smallness, thus promoting their innovation capacity and performance (Karadag *et al.*, 2023). Furthermore, innovation-oriented SMEs are more proactive in identifying opportunities for growth and adaptation by consistently seeking enhancements and creativity in their product offerings and processes (Stock and Zacharias, 2011). In addition, SMEs with strong innovation orientation tend to prioritise encouraging

organisational cultures that emphasise novelty and experimentation. This proactive culture enables SMEs to effectively deploy their resources and capabilities to achieve more effective innovation outcomes (Talke *et al.*, 2011; Farzaneh *et al.*, 2022). A substantial body of literature has highlighted the constructive role of cultivating innovation orientation in driving firms' innovation performance and sustainable growth (Simpson *et al.*, 2006; Colclough *et al.*, 2019; Stock and Zacharias, 2011). For instance, Rosenbusch *et al.* (2011) propose that innovation orientation plays a particularly critical role for resource-deficient firms, as it enhances their innovation capabilities and promotes an innovation-seeking culture within firms. In a similar vein, Farzaneh *et al.* (2022) suggest that innovation orientation enables firms to identify novel opportunities and develop the know-how necessary for achieving stronger innovation performance. In the context of China, Tian *et al.* (2024) found that enterprises with stronger innovation orientation tend to perform better in the initial process of new product development (NPD), including idea generation, concept definition, and initial planning.

Collectively, these research findings indicate that innovation orientation, understood as an organisation-wide learning philosophy, can foster a shared set of attitudes and beliefs toward learning within firms. This mindset facilitates the reconfiguration of resources and

competencies of firms, thereby enhancing the innovation performance of SMEs in China (Farzaneh *et al.*, 2022). Consequently, the following hypothesis is proposed:

Hypothesis 2. SME innovation orientation is positively correlated with SME innovation performance.

Managerial perception of social anomie and SME innovation performance

Previous studies assert that the prevalence of social anomie reduces societal trust among individuals (Pauwels *et al.*, 2020), which is a critical enabler of firm innovation performance. Social trust, at both the national and regional levels, has been identified as a significant predictor of firm-level innovation activities (Ding *et al.*, 2023; Wan *et al.*, 2022; Bischoff *et al.*, 2023). For instance, Brockman *et al.* (2018) found that firms located in countries with greater levels of societal trust demonstrate stronger open innovation performance. Along similar lines, Su *et al.* (2022a) discovered that firms operating in subnational regions of China with higher social trust tend to allocate more investments in their corporate R&D activities.

Deepening this line of exploration, this study argues that, when SME owner-managers perceive amplified levels of social anomie, they are more likely to develop greater mistrust towards other business entities, which can reduce their willingness to engage in collaborative

activities, impede inter-firm and within-firm coordination, and reduce the effectiveness of information sharing with stakeholders, such as suppliers and collaborators (Brockman *et al.*, 2018). In the context of China, where rapid marketisation and uneven institutional development coexist, MPSA is particularly prone to catalysing the state of mistrust (Su *et al.*, 2019). This anomie-induced mistrust not only increases transaction costs, but also obstructs information flows and complicates coordination efforts between SMEs and their stakeholders (Su *et al.*, 2019; Jiang *et al.*, 2020b).

Specifically, the mistrust steaming from MPSA exacerbates behavioural uncertainty in SME decision-making processes by increasing the likelihood of unpredictable opportunistic behaviours from transactional partners (Krishnan *et al.*, 2016; Krishnan *et al.*, 2006; Williamson, 2008). The increased behavioural uncertainty can intensify opportunistic proclivities among the contractual parties, further discouraging SMEs from allocating resources towards long-term developmental and innovative initiatives (e.g. R&D investments) (Hsieh *et al.*, 2016). These disadvantageous conditions can lead to suboptimal inter-firm collaboration activities and reduced strategic predictability, creating significant barriers to SME innovation performance in China (Poppo *et al.*, 2016). For instance, SME owner-managers who perceive higher levels of social anomie may become more sceptical of their transactional partners, such as doubting suppliers' conformity to delivery timelines or

contractual terms. This scepticism can curb the potential of collaborative innovation activities, thus weakening overall SME innovation performance in China (Niesten and Jolink, 2012; Wang *et al.*, 2022a).

In addition, MPSA reflects a psychological state of ambiguity and disorientation (Lepisto and Pratt, 2017; Rosenbaum and Kuntze, 2003). This disorientation can curtail managerial confidence in making experimental strategic decisions such as innovative actions that entail uncertainty and risk (Bao *et al.*, 2006; Devereux *et al.*, 2020). Furthermore, this study argues that experiencing managerial anomie can engender organisational inertia (Martin *et al.*, 2009), resulting in stagnation and declined performance by creating an environment in which managers and employees are unclear about what behaviours are expected or rewarded (Sarros *et al.*, 2002; O'Donohue and Nelson, 2014). Related studies indicate that workplace alienation, closely linked to anomie, negatively affects employees' task performance (Shantz *et al.*, 2015), suggesting that MPSA may similarly create systemic barriers to SME innovation performance in China.

In the context of SMEs, the detrimental effects of MPSA are likely to be amplified due to the pivotal role of owner-managers' vision and traits in driving SME innovation performance (Najar and Dhaouadi, 2020; Marcati *et al.*, 2008; Runst and Thomä, 2022). To elaborate,

scholars contend that owner-managers of SMEs have more managerial discretion over firms' strategic actions because of resource constraints and organisational structure (Josefy *et al.*, 2015; Friedman *et al.*, 2016). As such, the presence of MPSA can create pervasive ambiguity and uncertainty within SMEs in China, which may, as a result, undermine their capacity to initiate, sustain, and complete innovation-enhancing projects, thus leading to weaker innovation performance.

Consequently, in the context of China, where collaborative engagement is central to driving SME innovation performance (Zeng *et al.*, 2010), anomie-induced mistrust among SMEs and their transactional partners can compound behavioural uncertainty in decision-making processes, obstruct innovation-enhancing cooperative activities, and exacerbate organisational inertia, thus significantly weakening SME innovation performance (Su *et al.*, 2019; Xie *et al.*, 2016a). Based on these considerations, the following hypothesis is proposed:

Hypothesis 3. Managerial perception of social anomie is negatively correlated with SME innovation performance.

Managerial perception of social anomie, SME innovation orientation, and innovation performance

Taken together, this study posits that SME innovation orientation mediates the relationship between MPSA and SME innovation performance. This mediating relationship suggests that the adverse effect of MPSA on SME innovation performance is conveyed through reducing SMEs' attitudinal receptiveness and '*commitment to more and faster innovation'* (Siguaw *et al.*, 2006, p. 559).

IAT theorists assert that the state of anomie disrupts the harmony between socially accepted goals and the legitimate means to achieve them, obscures social and organisational norms, and undermines social cohesion (Merton, 1968; Messner and Rosenfeld, 2012; Srole, 1956). While actors may respond to anomic challenges through positively deviant adaptations, such as innovation, the majority of existing empirical evidence leans towards the disruptive and disoriented consequences associated with the perceived state of social anomie. For instance, Sánchez-Medina *et al.* (2024) found that individual anomia is positively associated with the tendency to shift responsibility onto others, which in turn exacerbates fraudulent behaviours in accounting practices. The prevailing evidence highlights the largely adverse effects of social anomie, particularly its role in driving misconduct at both the firm and individual levels (Tsahuridu, 2011; Harris *et al.*, 2016)

In the context of SMEs, owner-managers are central to shaping the strategic direction and actions of their firms (Hasle and Limborg, 2006; Rodgers *et al.*, 2022). MPSA substantially influences the attitudinal and sense-making frameworks that guide how SME owner-managers interpret and respond to external uncertainties and disruptions (Azambuja and Islam, 2019). This perceived state of social anomie can curtail SMEs' willingness to take risks, thus leading to more conservative attitudes that may limit firm-level innovative responses to market opportunities (Bao *et al.*, 2006; García-Granero *et al.*, 2015)

Anchored by these insights, this study predicts that MPSA stifles SME innovation performance through undermining their innovation orientation. Perceived anomie reflects a psychological state where owner-managers feel uncertain about societal norms and organisational goals, leading to a sense of disorientation. This sense of disorientation induces *'uncertainty and ambiguity regarding basic norms, values, and conceptions of value or worth'* in their managerial practices and innovation decision-making processes (Lepisto and Pratt, 2017, p. 107; Baburaj and Marathe, 2023). Consequently, this state of MPSA may negatively affect SME innovation orientation by undermining managers' proactive engagement in innovative practices, which are inherently driven by novelty and creativity (Mention, 2011; Bohas *et al.*, 2021).

Extant research suggests that firms' owner-managers with a greater perception of social anomie are inclined to adopt more inflexible and passive perspectives in their routine business operations (Bohas *et al.*, 2021). This mindset and operational rigidity can constrain SMEs' attitudinal openness to innovation activities, subsequently limiting their capability to make innovation-oriented and adaptive decisions. As a result, reduced innovation orientation adversely affects SMEs' potential to achieve stronger innovation performance (Shantz *et al.*, 2015). This line of explanation demonstrates how MPSA can obstruct SMEs' propensity to engage in innovation activities (i.e. an attitudinal-based dimension of SME innovation), thus resulting in weaker innovation performance (i.e. an outcome-based dimension of SME innovation).

Taken together, Hypothesis 1 discusses the relationship between MPSA and SME innovation orientation, while Hypothesis 2 examines the link between SME innovation orientation and SME innovation performance. Hypothesis 3 addresses the direct effect of MPSA on SME innovation performance. Building on these hypothesised relationships, this study posits the following:

Hypothesis 4. SME innovation orientation mediates the relationship between managerial perception of social anomie and SME innovation performance.

3.2.2. Exploring Boundary Conditions: The Moderating Roles of Industry-level Competitive Dynamics and Subnation-level Institutional Environments

Grounded in the IBV, this section develops hypotheses that examine how multilevel contextual factors, including competitive dynamics and subnation-level institutional environments, shape the relationship between MPSA, SME innovation orientation, and SME innovation performance.

The intensity of competitive dynamics

This study examines the interaction between socio-behavioural outcomes (i.e. MPSA) and strategic-economic consequences (i.e. competitive dynamics) stemming from China's rapid and uneven marketisation process, specifically focusing on how the interaction of these factors influence SME innovation orientation in China. This exploration enhances the understanding of how SME innovation in China is influenced by both socio-behavioural and strategic-driven antecedents, which corresponds to the overarching research objectives.

This research predicts that the relationship between MPSA and SME innovation orientation is contingent upon the intensity of competitive dynamics. The constructive nature of competitive dynamics in facilitating firm innovation and growth has received extensive empirical evidence. For instance, O'Cass and Ngo (2007) suggest that the intensified

competitive dynamics can facilitate firms to take on the role of *strategic prospectors*, encouraging them to be more adaptive and innovative in order to survive and thrive in highly competitive environments. In a similar vein, Feng *et al.* (2018) found that the positive effect of market newness on firms' NPD integration is more pronounced with intensified competitive dynamics in the Chinese context. In addition, Sun *et al.* (2021) specifically highlight the importance of competitive intensity in the context of SMEs in EEs, indicating that competitive intensity perceived by SME owner-managers positively reinforces their compositional capabilities.

Having pondered on the above discussions, this research further asserts that SMEs perceiving higher levels of competitive intensity are more likely to build up dynamic capabilities essential for innovation, including proactiveness in opportunity-seeking activities, strong focus on organisational learning, and adaptability in fostering a shared vision (O'Cass and Weerawardena, 2010; Eldor, 2020; Weerawardena *et al.*, 2006; Adomako *et al.*, 2017). These capabilities may enable SMEs to navigate the environmental complexities posed by social anomie, thereby facilitating their attitudinal openness towards innovation activities (i.e. innovation orientation).

In contrast, a lower level of competitive dynamics creates fewer external pressures and incentives for SMEs to innovate and adapt, potentially increasing their susceptibility to organisational inertia induced by managerial anomie (Zhang *et al.*, 2024b; Johnson *et al.*, 2011). Under the low-market-driven environments, SME owner-managers may adopt more rigid and conservative approaches, as the absence of market-driven forces (i.e. competitive dynamics) reduces SME attitudinal openness to innovation practices (Cai *et al.*, 2017; Stieglitz *et al.*, 2016; Farè, 2022).

In the context of China, the intense competitive dynamics prompt SMEs to proactively seek new opportunities and swiftly adapt to evolving market demands, both domestically and internationally (Cao *et al.*, 2020). This adaptability enables SMEs in China to navigate the anomie-related barriers and enhance innovation orientation, despite the challenges inherent in the state of social anomie (Zhang *et al.*, 2024b; Yang and Yang, 2019). The drive created by competitive forces not only strengthens SMEs' innovation orientation but also counterbalances the restrictive effect of MPSA on their capacity to innovate (Olabode *et al.*, 2022). Based on these discussions, the following hypothesis is proposed:

Hypothesis 5. Competitive dynamics moderate the negative relationship between managerial perception of social anomie and SME innovation orientation, such that the negative impact of

managerial anomie on SME innovation orientation is weakened under conditions of greater competitive dynamics.

Subnation-level institutional environment

IBV highlights that well-developed institutions formulate clear and systematic rules and norms that reduce transaction costs, behavioural uncertainties, and market complexities among business players (Meyer and Peng, 2005; North, 1990). Building on these insights, this study posits that the negative effect of MPSA on SME innovation performance (i.e. Hypothesis 3) is contingent upon the subnation-level institutional environments in which firms operate, including formal and informal institutions. Furthermore, Levitsky and Murillo (2009, p. 127) assert that robust institutional environments are instrumental in *'narrowing actors' choice sets, stabilizing expectations, routinizing behaviour, and generating asset-specific investment linked to existing institutional arrangements'*. Consistent with this view, the intrinsic functions of institutions are anticipated to create stabilising forces that alleviate the negative impact of MPSA in the context of China.

To be explicit, grounded in the IBV and the extant literature on firm innovation, this study concentrates on the following institutional boundary conditions: (1) the institutional developments of product markets (IDPM) and intellectual property rights (IPR) protection, as

formal institutions; and (2) the cultural prevalence of uncertainty avoidance (UA), achievement orientation (AO), and in-group collectivism (IGC), as informal institutions.

Formal institutions

Scholars advocate for identifying domain-specific institutional factors that are integral to the phenomenon being explored (Parboteeah *et al.*, 2008; Kostova, 1999). In alignment with their assertion, the current study specifically focuses on the developments of innovation-supporting institutions. The development of innovation-supporting institutions refer to *'the extent to which administrative institutions (including the central or local government departments) provide support (e.g., policies and programs) to firms in a nation or region in order to promote firms' innovation activities'* (Shu *et al.*, 2015, p. 292). This study, hence, highlights two institutional factors essential for fostering SME innovation – subnational IDPM and IPR protection in China.

This selection corresponds to the existing studies on firm innovation in the context of China (Jiang *et al.*, 2020a; Guo and Jiang, 2022; Xia and Liu, 2022). Essentially, this study argues that the IDPM captures the efficiency of innovation diffusion, while the IPR protection reflects the safeguarding of innovation commercialisation (Wang *et al.*, 2021).

Subnational institutional development of product markets

IDPM—widely recognised as a key pillar of market-based reforms—refers to the extent to which price determination is governed by market forces rather than excessive government intervention and local protectionism, thereby facilitating equitable access to market and fair competition for all business entities (Carroll and Hannan, 1995; Gao *et al.*, 2010; Liu *et al.*, 2014). Nonetheless, in the context of China, institutions significantly vary at the subnational level (Yao *et al.*, 2023). In some regions, local governments set up barriers to protect inefficient local businesses, including sales restrictions, more stringent quality inspection standards, and other restrictive measures on non-local firms and their products (Wang *et al.*, 2021). These discriminatory practices not only disrupt firms' connection to upstream and downstream markets, but also undermine the emergence of a level playing field (Shi *et al.*, 2012). Therefore, IDPM is incorporated as a key institutional variable in this study, given its significant impact on SMEs' ability to disseminate and commercialise their product innovations effectively.

Scholars contend that the deficiencies of product market development can create significant institutional voids in EEs, which undermine market efficiency and aggravate information asymmetries that impede firms' ability to make well-informed strategic decisions (Khanna *et al.*, 2015; Khanna and Palepu, 1997; Shi *et al.*, 2017). In contrast, well-developed product

markets provide a fundamental infrastructure that enables firms to operate, compete, and thrive in a fair and orderly market environment (Kong *et al.*, 2022). Specifically, well-developed product markets optimise the efficiency and fairness of resource allocation, incentivising firms to specialise their competitive advantages and focus on productivity amelioration (Klingebiel and Rammer, 2014; Liu *et al.*, 2014).

There exists significant institutional variations in product markets across regions and provinces within China, where some provinces are typified by more effective market mechanisms, while others are subject to higher levels of government intervention (Xie, 2017; Li *et al.*, 2018a). Historically, China has undergone a transformative shift from a centrally planned system to a market-based economy, driven by liberalisation and privatisation (Child and Tse, 2001). This structural transition has sparked uneven development across regions within China, particularly in regulatory frameworks, market-oriented structures, and the extent of government intervention in business operations (Xie, 2017). For instance, in the context of China, Gao *et al.* (2010) found that firms operating in provinces with more rigorous free market mechanisms (i.e. well-developed product markets) demonstrate both stronger export propensity and export intensity. Additionally, Xia and Liu (2022) found that firms' reliance on political capital for achieving innovation performance is weakened when they are located in provinces with stronger marketisation of commercial activities. Their

findings demonstrate that market-oriented mechanisms take precedence over political ties in driving innovation outcomes in provinces with more robust institutional development of product markets.

Furthermore, the quality of IDPM is particularly significant for resource-constrained SMEs, as easing entry barriers and expanding access to a broader customer base are vital for promoting SME growth and development in China (Dickson *et al.*, 2006; Levy *et al.*, 2002; Qiao *et al.*, 2020). The robust IDPM can enhance transparency and information flow, which may effectively regulate monopolistic dominance posed by larger firms (Partanen *et al.*, 2020). Hence, in the context of China, SMEs operating in provinces characterised by stronger product markets are favourably positioned to cultivate innovation orientation and adopt innovation activities, prompting them to compete on the quality of innovation outcomes (Shi *et al.*, 2012).

Underpinned by these insights, this study argues that IDPM can function as a protective mechanism to mitigate the adverse effect of MPSA on SME innovation performance. The efficient information flow and knowledge transfer, facilitated by well-developed product markets, may encourage inter-firm collaboration and coopetition among various business entities (Feng *et al.*, 2022; Shi *et al.*, 2012). According to the IBV, these advantages cultivate

a conducive innovation ecosystem in which SMEs can engage in cooperative competition and mutual learning, thereby strengthening connection and integration among firms (Bengtsson and Johansson, 2014). These conducive dynamics may help alleviate the anomie-reduced uncertainty and scepticism in the interaction between SMEs and their transactional partners in China.

Further, well-developed product markets provide SMEs with a stable and coherent market framework that clearly defines channels and pathways for undertaking innovative projects (Liu *et al.*, 2014; Zhu *et al.*, 2012). These institutional advantages may enable SMEs to overcome the sense of disconnection and disorientation induced by MPSA, through constructing a more robust and stable environment that promotes the alignment of the shared goals among market players (Clevenger and Munro, 2022; de Vasconcelos Gomes *et al.*, 2018).

Consequently, SMEs situated in provinces with stronger IDPM can become better equipped to navigate the anomie-induced challenges and uncertainties. The well-established market mechanisms, comprising efficient resource allocation, clear market frameworks and orders, and abundant opportunities for collaboration, provide SMEs with a conducive and structured environment (Xiong and Xia, 2020; Gao *et al.*, 2010). These systemic advantages enable

SMEs to pursue innovation outcomes with greater clarity, purpose, and organisational cohesion, thereby counteracting the adverse impact of MPSA on SME innovation performance in China (Wan *et al.*, 2023).

In contrast, when SMEs operate in provinces typified by weaker IDPM, they may experience a stronger sense of isolation and disorientation (Droege and Johnson, 2007). Under such environments, the diffusion of their innovation outcomes may become obstructed by greater trade barriers and limited knowledge-sharing networks (Nooteboom, 1994). This dearth of connectivity can undermine collaboration among stakeholders and impede the access to resources essential for innovation, thereby diminishing the overall effectiveness of their innovation activities (i.e. innovation performance) (Brink, 2017; Xie *et al.*, 2023). Further, these environmental shortcomings derived from the institutional voids of product markets may exacerbate MPSA. Specifically, SME owner-managers may demonstrate stronger reluctance to materialise innovation efforts due to reduced profit margins, constrained inter-firm communication, and a shrinking customer base for product innovation (Audia and Brion, 2007). In addition, the absence of a well-integrated business environment can curtail SMEs' capabilities to adapt to market and social changes, further dampening their motivation and capacity to engage in innovation activities (Chow and Yau, 2010). As a result, the detrimental impact of MPSA on SME innovation performance may be augmented in provinces with

weaker IDPM, leaving SMEs more susceptible to anomie-induced dysfunction and normlessness.

In summary, the favourable IDPM provide SMEs with clearer roadmaps for achieving innovation, greater access to knowledge and resources, and a more stable environment in support of SME innovation in China (Xia and Liu, 2022; Gao *et al.*, 2010). This market optimum thus may enable SMEs to buffer against the adverse effect of MPSA and sustain their innovation performance. In light of these discussions, the following hypothesis is formulated:

Hypothesis 6a. The institutional development of product markets moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust institutional development of product markets.

Subnational institutional development of IPR protection

The institutional support of IPR protection pertains to the legal frameworks that safeguard original inventions and creations. The IPR enforcing system is built to cultivate an

environment where creativity and innovation can thrive (World Intellectual Property Organization, 2024). Well-developed institutions for IPR protection effectively safeguards the commercialisation of firms' innovation outcomes (EPSRC UK, 2021). According to IBV, well-enforced regulatory environments create stronger institutional incentives for SMEs to pursue strategic and innovative actions by minimising transaction costs and reducing information asymmetry (Lu *et al.*, 2008b).

Indeed, IPR enforcement in China has significantly improved over the past decade; however, it remains relatively fragmented across different subnational regions (Huang *et al.*, 2017; Ang *et al.*, 2014). A substantial body of literature has indicated that both the nation-level and region-level developments of IPR protection incentivise firms to invest in R&D activities and generate greater innovation outcomes (Song *et al.*, 2024; Sun *et al.*, 2017). For instance, Kafouros *et al.* (2015) illustrate that the positive impact of academic collaboration on firms' innovation is more pronounced when firms operating in a subnational region with stronger IPR enforcement. In a similar vein, Guo and Jiang (2022) found that the positive effect of venture capital investment on Chinese firms' innovation performance is enhanced in subnational regions with more robust institutions for IPR enforcement.

Taken together, IBV and the related empirical evidence reveal that the institutional strengths of IPR enforcement significantly enhance firms' capabilities to effectively innovate by providing sufficient legal protection to intellectual assets generated by firms. Based on the previous empirical findings, this study further argues that the subnation-level institutional development of IPR enforcement can alleviate the negative effect of MPSA on SME innovation performance.

The moderating relationship can be rationalised as follows. First, in subnational regions with robust IPR enforcement, SMEs' innovation outputs (e.g. new products with utility patents) are securely safeguarded, through clear enforcements of punitive regimes for intellectual property infringement, along with well-defined market guidelines and regulatory frameworks (Hong *et al.*, 2022a). Within these environments, SME owner-managers can develop innovative strategies with greater confidence, which can reduce the state of MPSA pertaining to uncertainties about institutional and societal instability. In essence, well-enforced IPR protection institutions serve as safety nets for firms' innovation processes, helping to reduce the ambiguity induced by MPSA (Peng *et al.*, 2017). Further, a more structured and predictable legal environment, supported by strong IPR enforcement, can alleviate the sense of instability and fragmentation that may otherwise detach owner-managers from established

norms and rules, thereby mitigating the adverse effects of MPSA on SME innovation performance (Bruno *et al.*, 2021).

Conversely, institutional weaknesses in IPR enforcement may engender higher transaction, contractual, and proprietary costs for SME innovation performance (Lin *et al.*, 2010). For instance, Li *et al.* (2019a) found that the deficiencies of IPR protection expose firms to increased risks of information disclosure and proprietary costs. Furthermore, inadequate IPR protection can spur opportunistic behaviours among business entities, which can intensify unethical practices such as counterfeiting, and the unauthorised use of intellectual property including trademarks (Brander *et al.*, 2017). These conditions can catalyse a hostile business climate, in which trust between firms may deteriorate, and the inclination to engage in collaborative innovation may become significantly weaker (Carson and John, 2013; Olaisen and Revang, 2017). As a result, SME managers may be confronted with greater tensions and unpredictability arising from the state of social anomie, which may confine their proclivity of seeking creative solutions and innovation (Thau *et al.*, 2009; Johnson *et al.*, 2011).

Consequently, this study argues that the stronger institutional development of IPR protection not only fosters a more stable and innovation-enhancing climate for SMEs in China, but also

serves as a buffering mechanism against the psychological and strategic disruptions associated with MPSA. In light of this, the following hypothesis is formulated:

Hypothesis 6b. The institutional development of IPR protection moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust institutional development of IPR protection.

Informal institutions

In accordance with the theoretical underpinnings of IBV and IAT, this study aims to explore the moderating roles of informal institutions in influencing the relationship between MPSA and SME innovation performance. Specifically, the current literature on IBV suggest that informal institutions may function as supplementary and substitutive mechanisms when formal institutions are underdeveloped in EEs (Pathak and Muralidharan, 2016; Peng, 2002; Horak and Restel, 2016). Scholars have increasingly advocated deeper exploration on the role of informal institutions in affecting firm-level phenomena including firm innovation (Dau *et al.*, 2018; Muralidharan and Pathak, 2017).

In addition, scholars argue that China demonstrates significant regional disparities in cultural backgrounds, shaped by a combination of geographical, historical, linguistic and economic factors (Kwon, 2012; Zhao *et al.*, 2015; Gu *et al.*, 2019; Obschonka *et al.*, 2019). There is a growing body of literature highlighting the importance of regional cultural contexts in influencing firm-level behaviours, particularly in countries with expansive territory such as China (Gong *et al.*, 2011; Sun *et al.*, 2019). For instance, Gu *et al.* (2019) found that Chinese firms led by chairmen from provinces with a stronger emphasis on humane orientation and collectivism are more likely to engage in charitable donations.

Consequently, this study contends that the regional variations in cultural prevalence within China—widely recognised as informal institutions—may influence the extent to which MPSA affects SME innovation performance (Xia and Liu, 2021). The selection of the cultural values (i.e. UA, AO, and IGC) is informed by the IAT cultural framework, and is consistent with the current literature on firm innovation (Messner and Rosenfeld, 2012; Tian *et al.*, 2018; Yang *et al.*, 2015b; Semrau *et al.*, 2016).

Subnation-level cultural prevalence of uncertainty avoidance

UA culture refers to *'the extent to which the members of a culture feel threatened by ambiguous or unknown situations'*(Hofstede *et al.*, 2014, p. 191). Extensive empirical

research has explored how variations in UA culture influence firm innovation. This body of literature highlights how firms embedded in UA culture are affected in relation to their innovation-driven and entrepreneurial behaviours. However, the impact of the cultural prevalence of UA on firm-level innovation activities remains inconclusive in extant literature.

For instance, focusing on Asian contexts, Hubner *et al.* (2022) suggest that firms' exploratory innovation activities are significantly lower in countries with greater cultural emphasis on UA. Similarly, Chew *et al.* (2022) found that cultural emphasis on UA is negatively related to SMEs' entrepreneurial orientation in EEs, including innovativeness, proactiveness, and risk taking. Furthermore, some scholars highlight the role of cultural prevalence of UA in influencing the efficiency and capabilities of firms' resource orchestration (Miao *et al.*, 2017). For instance, Qu and Yang (2015) found that the positive impact of inter-organisational systems on firms' supply chain collaboration becomes weaker in countries with greater cultural prevalence of UA.

Deepening this line of discussion, this study argues that SMEs operating in provinces with stronger UA culture are more susceptible to the adverse effect of MPSA. The rationale is explained as follows. First, SME owner-managers embedded within subnational regions with high UA are more resistant to changes, as their strategic activities (e.g. innovation) are shaped

by a preference for maintaining the status quo and focusing on incremental refinements. UA pertains to the reluctance to bear the risks associated with the deviation from prevailing normative practices (Lee *et al.*, 2020). These cultural conditions may constrain SME owner-managers' capabilities to recognise opportunities and effectively manage the uncertainties and ambiguities that accompany the state of social anomie.

Second, a strong cultural emphasis on UA triggers some dark sides at the organisation level, leading SME owner-managers and employees to experience a stronger sense of alienation and a perceived lack of support (Morosini and Singh, 1994). This is empirically substantiated by Jang *et al.* (2018), who indicate that UA culture amplifies the negative impact of job resources on workplace strain among employees.

Consequently, within provinces or municipalities with a strong cultural emphasis on UA in China, SME owner-managers are required to adopt transformative and flexible leadership to effectively navigate the complexities posed by social anomie (Watts *et al.*, 2020). However, building such leadership portfolio with these skillsets may become particularly challenging for resource-scarce SMEs in China, thereby limiting their capacity to manage and adapt to the anomie-induced challenges. Based on the above discussions, the following hypothesis is proposed:

Hypothesis 7a. The cultural prevalence of uncertainty avoidance moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where uncertainty avoidance culture is more strongly emphasised.

Subnation-level cultural prevalence of achievement orientation

In addition, IAT underlines the cultural significance of achievement orientation (performance orientation) in shaping the state of anomie and its connection to deviant behaviours (Cullen *et al.*, 2004; Bame-Aldred *et al.*, 2013; Martin *et al.*, 2013; Chen *et al.*, 2015; Chen *et al.*, 2016; Nam *et al.*, 2014; Messner and Rosenfeld, 2012). The cultural element of AO refers to *'the degree to which a culture's people encourage and reward people for performance'* (Javidan *et al.*, 2005, p. 62). According to IAT, a culture heavily centred on achievement can foster a *'strain of inflated expectations'* among individuals, hence increasing their sense of social anomie (Zahra *et al.*, 2005, p. 808).

Management literature has extensively explored the role of AO culture in influencing organisational behaviours such as firms' internationalisation, innovation, and the overall performance (Spillecke and Brettel, 2014; Nam *et al.*, 2014). For instance, drawing upon IAT,

Cullen *et al.* (2014) discovered that the likelihood of engaging in opportunity entrepreneurship is greater in countries characterised by a strong cultural emphasis on AO. In a similar vein, Che-Ha *et al.* (2014) indicated that firms' perceived level of AO significantly drives their innovativeness in strategic actions.

However, the IAT literature asserts that the dominance of AO culture also engenders undesirable consequences, such as negative deviance. Specifically, Martin *et al.* (2007) revealed that the cultural prevalence of AO positively increases firms' bribery behaviours, as a form of negative deviance in countries with weaker welfare systems. Along similar lines, Martin *et al.* (2013) discovered that AO culture is positively related to acquisitive crime as a form of negatively deviant consumption. More recently, drawing upon anomie theory, Chen *et al.* (2021a) suggest that a strong commitment to achievement-oriented values among executive supervisors drives them to engage in morally dubious behaviours.

Consequently, the extant empirical evidence offer mixed implications for the role of AO culture in the relationship between MPSA and SME innovation performance in China. On the one hand, the cultural prevalence of AO fosters assertiveness in risk-taking behaviours, which may, as a result, enhance SME innovation performance by encouraging firms to extend and break the boundaries with novel and creative solutions. On the other hand, this cultural

emphasis can place increased strain on social actors to attain economic success, which may give rise to negative deviance such as unethical means to meet distorted expectations (Messner and Rosenfeld, 2012).

Building on these insights, the cultural prevalence of AO may potentially moderate in two different ways. First, it may motivate SME owner-managers to engage in constructive deviance, breaking from traditional norms and practices in a way that drives innovation in pursuit of success (Kim *et al.*, 2020). Second, it is also possible that the strain to achieve materialistic success under such an achievement-oriented culture may increase MPSA, leading to a stronger sense of disconnection and ambiguity among SME owner-managers (Martin *et al.*, 2013). This cultural prevalence can stifle SME innovation potential, as they may feel disoriented and overwhelmed by conflicting societal and organisational expectations (GROß *et al.*, 2018). Consequently, informed by the above theoretical and empirical discussions, the following exploratory alternative hypotheses are proposed:

Hypothesis 7b. The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation

performance is *weaker* for SMEs located in provinces where achievement orientation is more strongly emphasised.

Hypothesis 7c (Alternative). The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is *more pronounced* for SMEs located in provinces where achievement orientation is more strongly emphasised.

Subnation-level cultural prevalence of in-group collectivism

IGC refers to *'the degree to which individuals express (and should express) pride, loyalty, and cohesiveness in their organizations or families'* (House *et al.*, 2004). In essence, the collectivistic culture emphasises the interconnectedness and mutual reinforcement among social actors, while downplaying individual goals and personal achievements (Cullen *et al.*, 2004; Triandis, 2018). The current body of literature on IAT highlights the relevance of individualistic-collectivistic cultural values in explaining the anomie-deviance mechanisms. Specifically, individualistic societies place greater emphasis on calculative logic in pursuing self-interested goals, such as economic success, which may sometimes come at the expense of ethical and legitimate considerations (Cullen *et al.*, 2004; Messner and Rosenfeld, 2012).

Management scholars have explored how collectivistic-individualistic cultural values influence anomie, strain, and deviant behaviours among firms, managers, employees, and consumers (Mafrolla *et al.*, 2023; Bame-Aldred *et al.*, 2013; Chen, 2014; Martin *et al.*, 2013). For instance, Parboteeah *et al.* (2005) argue that individuals embedded in a collectivistic culture are predisposed to cooperative and harmonious actions, prioritising the fulfilment of collective interests. Collectivistic culture values are crucial in sustaining and fostering communal integration, hence decreasing individuals' propensity to engaging in undesirable deviance (Mafrolla *et al.*, 2023; Tuliao, 2022). To articulate, Martin *et al.* (2007) asserted that the cultural prevalence of IGC fosters a shared collective vision and common goals, reinforcing social solidarity and cohesion. This cultural dynamic can thus counterbalance the negative impact of social anomie, reducing the likelihood of managers engaging in bribery behaviours, as a form of negative deviance (Martin *et al.*, 2007). Along similar lines, Chen *et al.* (2016) found the buffering role of collectivistic values in reducing negative deviance. Specifically, they found that female managers in collectivistic cultures are more likely to promote ethical acts than their male counterparts. In sum, most empirical evidence in the current body of literature illustrates that collectivistic culture values are crucial in sustaining and fostering communal integration, which can thus alleviate the state of social anomie.

Nonetheless, the cultural prevalence of IGC has different implications for firms' innovation. For instance, Çakar and Ertürk (2010) found that collectivistic cultural values, while contributing to team empowerment in SMEs, can inhibit the development of SME innovation capacity. Nam *et al.* (2014) discovered that the negative association between the cultural prevalence of collectivism and firm-level innovation is weaker in countries with stronger educational equity and political stability. Moreover, Chew *et al.* (2022) found that managerial perception of individualistic values (i.e. a reverse dimension of collectivism) positively promotes their entrepreneurial orientation.

In the context of China, a traditionally collectivist society, the collectivistic culture is particularly relevant and warrants further examination. While collectivism has historically shaped the business practices across China, rapid economic development and globalisation have prompted a shift towards individualistic tendencies in certain regions, particularly in coastal areas (Koch and Koch, 2007; Van de Vliert *et al.*, 2013). This regional cultural variation in the collectivistic culture may, thus, create varying levels of social cohesion across subnational areas within China, thereby shaping the extent to which MPSA influences SME innovation performance.

Taken together, this study predicts that the cultural prevalence of IGC may moderate the relationship between MPSA and SME innovation performance. First, collectivistic values may establish explicit norms for collective behaviours, fostering a sense of rootedness and social integration (Fischer, 2013). This cultural imprinting effect is likely to effectively shield firms from the adverse impact of the state of MPSA by reinforcing social cohesion, thereby ensuring that SMEs remain clearly oriented towards advancing innovation projects. Furthermore, in collectivistic cultures, SMEs tend to be more responsive to mimetic pressure when experiencing managerial anomie (Li and Parboteeah, 2015). This increased responsiveness and mimetic isomorphism may enable SMEs to maintain stability by learning from peer-driven innovation strategies, through which the negative impact of MPSA on SME innovation performance may be enfeebled. Based on the above discussion, the following research hypothesis is formulated:

Hypothesis 7d. The cultural prevalence of in-group collectivism moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces where in-group collectivism is more strongly emphasised.

3.2.3. Summary of the Chapter

To synthesise, based on the theoretical integration of IBV and IAT, this study develops a research model that investigates the impact of MPSA on SME innovation orientation and performance in China, and explain how such associations are contingent upon competitive dynamics and subnational institutional environments.

Specifically, this research model examines: (1) the mediating role of SME innovation orientation in the relationship between managerial perception of social anomie and SME innovation performance; (2) the moderating effect of competitive dynamics on the relationship between MPSA and SME innovation orientation; and (3) the moderating roles of subnation-level formal and informal institutional environments in the relationship between MPSA and SME innovation performance. The research hypotheses are summarised in Table 3-3.

Table 3-3 Summary of research hypotheses

Research Hypotheses
Hypothesis 1. Managerial perception of social anomie is negatively correlated with SME innovation orientation.
Hypothesis 2. SME innovation orientation is positively correlated with SME innovation performance.
Hypothesis 3. Managerial perception of social anomie is negatively correlated with SME innovation performance.

Hypothesis 4. SME innovation orientation mediates the relationship between managerial perception of social anomie and SME innovation performance.

Hypothesis 5. Competitive dynamics moderate the negative relationship between managerial perception of social anomie and SME innovation orientation, such that the negative impact of managerial anomie on SME innovation orientation is weakened under conditions of greater competitive dynamics.

Hypothesis 6a. The institutional development of product markets moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust development of product market.

Hypothesis 6b. The institutional development of IPR protection moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust IPR protection.

Hypothesis 7a. The cultural prevalence of uncertainty avoidance moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where uncertainty avoidance is more strongly emphasised.

Hypothesis 7b. The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where achievement orientation is more strongly emphasised.

Hypothesis 7c (Alternative). The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where achievement orientation is more strongly emphasised.

Hypothesis 7d. The cultural prevalence of in-group collectivism moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where in-group collectivism is more strongly emphasised.

The next chapter will provide a comprehensive justification of the research methodology employed in this study, and explain the methodological choices and their alignment with the research objectives and questions.

4. Research Methodology

This chapter will provide a detailed explanation of the research methodology adopted to examine the study's research questions and frameworks. First, it will start with a discussion of research philosophy and orientation by demonstrating the ontological, epistemological and axiological stances of this study. This philosophical paradigm underpins the selection of research methods. Second, it will review prior studies' methodological approaches to examining the relationship between institutional environments and firm-level innovation. Following this, the research design of this study—comprising the research methods, strategies, measurement instruments, and the procedures of data collection and analysis—will be presented in detail.

4.1. Research Philosophy and Paradigm of this Study

The philosophical orientation of research is fundamental to illuminating the research process and directing the judicious selection of research methods (Plakoyiannaki and Budhwar, 2021). Research philosophy is defined as *'a system of beliefs and assumptions about the development of knowledge'* (Saunders *et al.*, 2016, p. 124). Consequently, a precise articulation of the philosophical positions of ontology, epistemology, and axiology can significantly strengthen the logical consistency of the research pathways (Crotty, 1998).

It is widely recognised that philosophical orientation is fundamental to research *per se*, as philosophical positions steer the research approaches to exploring multiple social phenomena (Welch *et al.*, 2010). Specifically, the assumption of the nature of reality (i.e. ontology) substantively shapes the understanding of the nature of knowledge (i.e. epistemology) and the methods adopted (i.e. methodology) to comprehend actualities (Eisenhardt, 1989b; Welch *et al.*, 2010). Accordingly, this section aims to articulate the philosophical orientation of this research to systematically inform the research design and methods, thereby ensuring reliable and robust findings (Morgan, 1980).

First, ontology is defined as *'assumptions about the nature of reality'* (Saunders *et al.*, 2016, p. 107). Ontologically speaking, *objectivism* assumes that social entities exist in the reality that is external to social actors, whereas *subjectivism* views that reality and phenomena are socially constructed (Saunders *et al.*, 2016). Second, epistemology is originated from Ancient Greek Philosophy, concerning existence, nature, and modality of knowledge, with episteme translated as *'knowledge' or 'understanding'* (Steup and Neta, 2020). Epistemologically, positivism emphasises the independent existence of the social world and employs objective methods to investigate social reality, whereas social constructionism focuses on understanding how individuals' experiences shape and construct reality (Easterby-Smith *et al.*, 2018a). Third, axiology refers to *'the role of values and ethics within the research*

process' (Saunders *et al.*, 2016, p. 128), demonstrating how researchers position and engage with the research context (Easterby-Smith *et al.*, 2018a). Axiologically, the engagement orientation encompasses detached and engaged stances (Saunders *et al.*, 2016).

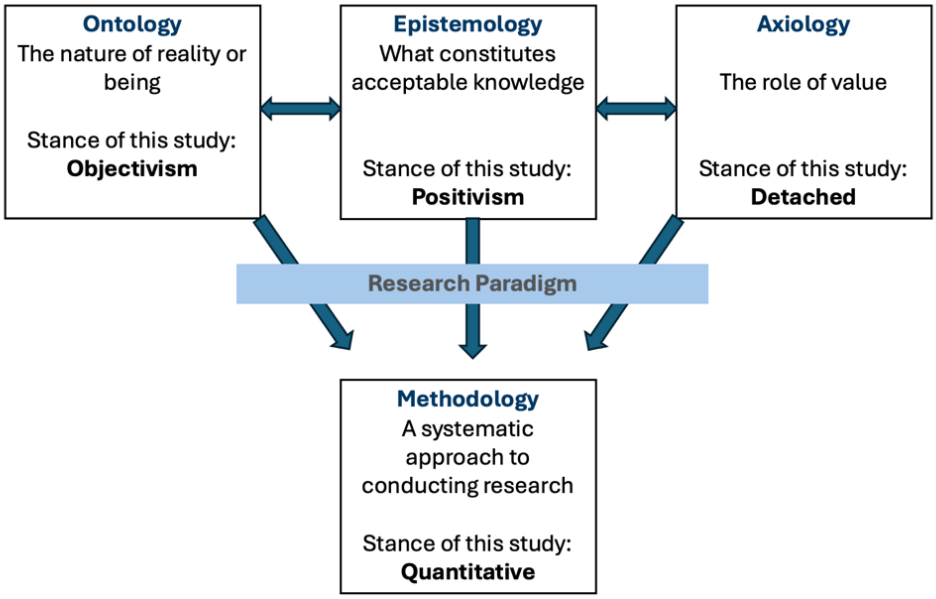
This study is grounded in the research paradigm of ontological objectivism and epistemological positivism. Specifically, based on the integrative view of IBV and IAT, this study investigates the interplay between MPSA, SME innovation, institutional environments, and competitive dynamics (Messner and Rosenfeld, 2012; Ma *et al.*, 2013). Towards this end, this study first establishes the theoretical foundations based on a comprehensive literature review (presented in Chapter 2), followed by the formulation of empirically testable hypotheses aligned with the theoretical underpinnings of IBV and IAT (presented in Chapter 3). Quantitative data were then collected and analysed using scientifically objective methods, with the hypotheses subsequently tested for theoretical corroboration (Blaikie and Priest, 2019). Throughout the research process, the researcher maintains a position of axiological detachment from the research subjects, ensuring objective observation and interpretation (Punch, 2013).

Furthermore, while scholars widely concur that the detached positivism represents a prevalent research paradigm in business and management studies (Easterby-Smith *et al.*, 2018a;

Johnson and Duberley, 2000), its underlying limitations warrant judicious consideration. To specify, scholars argue that positivism can obscure the exploration of the complexity of social world and human actions with an over-reliance on scientific methods (Wicks and Freeman, 1998). As Astley (1985, p. 497) argues, *'no theory can simply "describe" empirical reality in neutral linguistic terms; all theoretical perspectives are infused by the biases inhering in particular world views'.* Consequently, positivist researchers need to critically ponder on the positioning of theoretical frameworks and the explanation of analytical scopes to advance the quest of knowledge (Blaikie and Priest, 2017).

In summary, the research orientation and paradigm of this study is illustrated in the figure below. Specifically, this study adheres to the positivist paradigm, emphasising the significance of well-established theoretical frameworks and objective methodologies. Building upon this positivist foundation, the following section will elaborate on the corresponding research approaches and strategies employed to address the overarching research questions.

Figure 4-1 The research paradigm of this study



Sources: Saunders *et al.* (2016, p. 136); Easterby-Smith *et al.* (2018a)

4.2. Methodological Approaches

Academic research commonly adopts three approaches: quantitative, qualitative, and mixed-method (Easterby-Smith *et al.*, 2018a). This classification aligns fundamentally with the rationale behind philosophical assumptions, the nature of inquiry, the research process, and the methods employed for data collection and analysis (Creswell, 2017).

Quantitative research *'usually emphasizes quantification in the collection and analysis of data'*, while qualitative research *'usually emphasizes words rather than quantification in the collection and analysis of data'* (Bryman and Bell, 2015, p. 727). Building on these

definitions, quantitative research is viewed as a deductive approach, whereas qualitative research is associated with an inductive approach (Bryman and Bell, 2015). The deductive approach entails formulating research hypotheses based on an established theoretical foundation, and employing objectively scientific methods to corroborate or refute the proposed hypotheses (Blaikie and Priest, 2019). In contrast, the inductive approach begins with the observation of phenomena, and utilises these observations as qualitative data for *'theory generalisation and building'* (Saunders *et al.*, 2016, p. 145).

Further, the key distinctions between quantitative and qualitative approaches pertain to the logic and process of conducting research (Bryman, 2016). Specifically, quantitative approaches begin by establishing theoretical foundations, subsequently developing well-grounded hypotheses for theoretical corroboration. Based on these premises, numerical data are collected and analysed by employing scientific methods to generate research findings and conclusion. In contrast, qualitative approaches emphasise contextual understanding and explanation, deriving insights from *'the interconnections between the actions of participants of social settings'* (Bryman and Bell, 2015, p. 417). In other words, qualitative approaches place greater emphasis on interpreting processes and phenomena within a less structured paradigm (Halfpenny, 1979; Creswell, 2017).

In summary, various methodological approaches have their own strengths and are suited to different research questions and topics under study. The subsequent section will critically review the research methodologies relevant to the study of firm innovation, facilitating a well-founded rationale for the selection and justification of the methodological approach adopted in this study.

4.3. A Review of Research Methodology for Exploring Firm Innovation

An extensive body of literature has explored the antecedents and consequences of firm innovation through various theoretical lenses and analytical units (Anand *et al.*, 2021). In research streams examining the antecedents, consequences, and dynamics of firm innovation, scholars have employed quantitative, qualitative, and mixed-method approaches. The choice of approach often depends on the research context, specific research questions, and, importantly, the analytical focus on different types of innovation (Jalonen, 2012; Crossan and Apaydin, 2010; Ritala *et al.*, 2020). Innovation, by nature, is a complex and multidimensional phenomenon covering a multitude of analytical levels such as innovation orientation, inputs, activities, and performance (Crossan and Apaydin, 2010; Dziallas and Blind, 2019).

Quantitative methods are extensively employed to examine the predictors of innovation orientation and innovation performance. Specifically, scholars place a strong emphasis on exploring the predictivity and causality of firm-level innovation, as *'robust causal inference studies are an important input to policy development'* (OECD and Eurostat, 2018, p. 48). The majority of quantitative studies on firm-level innovation draw on data from government statistical databases and survey questionnaires, allowing researchers to test associations between various explanatory variables and firm innovation (Arun *et al.*, 2020; Back *et al.*, 2014; Bao *et al.*, 2012; Barasa *et al.*, 2017; Bruno *et al.*, 2021; Choi *et al.*, 2021; Nam *et al.*, 2014; Piening and Salge, 2015; Brockman *et al.*, 2018; Tsinopoulos *et al.*, 2019). This line of research primarily focuses on (1) examining the associations between external and internal factors (e.g. firm-specific resources and institutional support), and firm-level innovation orientation and performance; and (2) analysing the boundary conditions that moderate these relationships. For instance, by constructing a three-way interaction model, Karadag *et al.* (2023) found that the positive impact of human capital on firms' innovation capabilities is accentuated when firms have stronger social capital and innovation orientation. Additionally, Yi *et al.* (2017) found that the positive association between R&D intensity and innovation performance among Chinese firms are more pronounced when they have higher state ownership. In summary, the value of quantitative approaches has been widely acknowledged

by scholars when investigating firm innovation, particularly for analysing the predicting factors of innovation orientation and performance (Khosravi *et al.*, 2019).

Despite the prevailing trend of using quantitative approaches—such as through utilising surveys, secondary data, and experiments—for exploring firm innovation, scholars have identified several limitations and drawbacks associated with these methods (Faems, 2020). First, research surveys entailing quantitative data may present challenges for respondents in precisely reporting key information, such as innovation investment and outputs (OECD and Eurostat, 2018, p. 57). Specifically, different stakeholders involved in firms' innovation decision-making may interpret innovation activities and innovation outputs in distinct ways. This discrepancy necessitates carefully designed surveys targeting key decision-makers with comprehensive knowledge of firms' innovation strategies. The key-informant approach is commonly adopted to mitigate the limitations associated with self-reported survey questionnaires (Runst and Thomä, 2022; Demirbas *et al.*, 2011; Mei *et al.*, 2019).

Second, an exclusive reliance on quantitative data may fail to yield a holistic understanding of contexts where data are incomplete or insufficient (Faems, 2020). This issue is particularly pertinent when investigating innovation within informal sectors or underdeveloped economies (Mustapha *et al.*, 2022). To enhance the robustness and reliability of quantitative

approaches in examining firm innovation, scholars should pay close attention to the research design, sampling procedures, data sources, and the specific contextual factors relevant to the study.

Qualitative approaches are comparatively less prevalent in the research on firm innovation. Methods such as exploratory case studies and grounded theory, which are rooted in inductive reasoning, have become more prominent in the qualitative research on firm innovation. For instance, Ananthram and Chan (2021) used case studies to examine frugal innovation in EEs, revealing the connections between institutional constraints and the innovation practices of multinational corporations. In a similar vein, Elia *et al.* (2020) employed case studies to explore the role of virtual brand community in stimulating open innovation in the semiconductor sector. Additionally, Minh and Hjortsø (2015) applied grounded theory to investigate the impact of institutional environment on SME innovation and associated networking practices. Qualitative research, with its capacity for in-depth contextual analysis, plays a vital role in advancing the understanding of firm innovation, offering more contextualised insights that quantitative methods often cannot capture. This includes, for instance, the decision-making processes through which firms adopt innovative practices (Welch *et al.*, 2010; Minh and Hjortsø, 2015).

The next section will provide a detailed explanation of the research design employed in this study.

4.4. Research Design of This Study

The *Oslo Manual* highlights several critical factors for the rigorous data collection and analysis of firm innovation: *'coverage of the target population, the frequency of data collection, question and questionnaire design and testing, the construction of the survey sample frame, the methods used to implement the survey (including the identification of an appropriate respondent within the surveyed unit) and post-survey data processing'* (OECD and Eurostat, 2018, p. 178). In line with these guidelines, this study aims to establish a robust research design to address the research questions concerning the complex interplay of MPSA, SME innovation orientation and innovation performance in EEs.

4.4.1. Methodological Choice: A Quantitative Approach

First, this study adopts a quantitative approach for addressing the research questions. Both primary and secondary data were used to generate findings. Specifically, to examine the strategic-driven and socio-behavioural predictors of SME innovation orientation and performance in EEs, this study first utilises surveys as a research tool for collecting primary data. In addition, this study utilises secondary datasets, including marketisation index

published by the National Economic Research Institute (NERI) of China, and the subnational cultural index compiled by Zhao *et al.* (2015). Consequently, a multilevel dataset is constructed to facilitate statistical analysis and hypothesis testing.

4.4.2. Justification of the Choice of Quantitative Approach

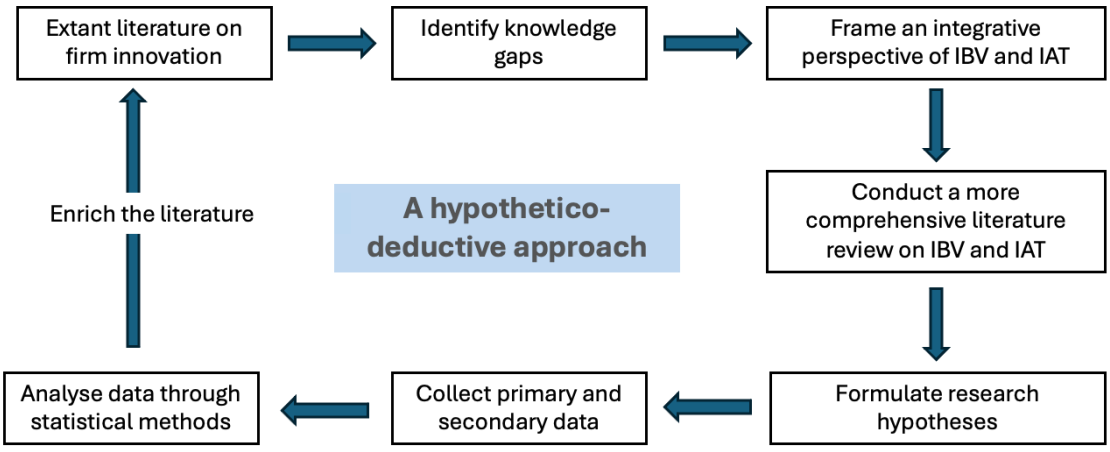
The quantitative approach has been widely used to examine the nature, antecedents and consequences of firm innovation (Crossan and Apaydin, 2010). This is because firm-level innovation is a complex phenomenon that involves multilevel factors, and objective data and methods play a crucial role in capturing these associations (Rosenbusch *et al.*, 2011; Ambos *et al.*, 2021). Moreover, Saunders *et al.* (2016) claim that the choice of research strategies is subject to the philosophical assumptions, research questions, research objectives, scope of extant knowledge and practical considerations. In alignment with the philosophical assumptions, positivist paradigm focuses on objective methods and hypothetico-deductive reasoning. The use of quantified evidence and statistical methods are particularly useful for examining the relationships between variables (Saunders *et al.*, 2016). Consequently, quantitative methods are well-suited to the objectives of this research, particularly for examining the relationship between MPSA and SME innovation as a form of positive deviance, and for explaining the conditions that influence the magnitude of the relationships.

Furthermore, quantitative methods have been widely employed in extant studies on examining the associations between institutional factors, firm-specific characteristics, and firm innovation orientation and innovation performance (Colclough *et al.*, 2019; Crossan and Apaydin, 2010). Specifically, prior studies highlight the importance of using empirical evidence and quantitative methods to shed light on the linkage between institutional environments and firms' innovation (Mariani *et al.*, 2023; Donges *et al.*, 2023). This approach has been extensively validated in a large number of empirical studies (Nam *et al.*, 2014; Kim *et al.*, 2020; Bruno *et al.*, 2021; Zhang and Merchant, 2020; Weng *et al.*, 2021; Wang *et al.*, 2020a). For instance, drawing up on IAT, Nam *et al.* (2014) utilised secondary data from the World Bank database, the GLOBE study, and the United Nations Development Programme to formulate research hypotheses examining the relationships between social institutions, national cultures, and firms' innovation activities across diverse countries. Moreover, drawing on the insights from IBV, Wang *et al.* (2022b) employed secondary data from the Chinese SMEs listed on the board of the Shenzhen Stock Exchange to examine the research hypotheses, revealing that the relationship between industry-university-research alliance portfolio and SME innovation performance becomes stronger when these enterprises are located in provinces with more robust market-oriented institutional structures.

Consequently, quantitative methods can provide a structured approach to examine the relationship between MPSA and SME innovation as a form of positive deviance. This approach—in alignment with the positivism paradigm—enables researchers to quantify and operationalise the complex construct of anomie, thereby uncovering patterns and correlations that reveal how MPSA influences SMEs' innovation orientation and performance in EEs.

Building on these insights, the research methods of this study is presented in Figure 4-2.

Figure 4-2 The research methods of this study



Source: The author

4.4.3. Research Strategies and Data Collection

Quantitative research is rooted in deductive reasoning, with experimental and survey research strategies being widely recognised as standard methods for conducting investigations. In addition, survey research is usually associated with *'the use of questionnaires or structured interviews or, possibly, structured observation'* (Saunders *et al.*, 2016, p. 168). Consistent with these premises, the research design of this study incorporates two complementary strategies. First, survey research—through utilising structured questionnaires—is employed to collect primary data at the firm level. Second, secondary data—sourced from multiple archival databases—is collated to capture institutional and cultural factors at the subnational level.

The following section will provide a detailed explanation of the research measures employed in this study, which will subsequently be incorporated into the comprehensive survey questionnaire instruments.

Research Measures and Variables

The primary objective of this study is to unravel the interplay between MPSA and SME innovation as a form of positive deviance, and to examine how such relationships vary across diverse competitive dynamics and institutional settings in the context of China.

Consequently, this study encompasses several key constructs derived from the theoretical basis of IBV and IAT. To ensure clarity in the survey design, each research construct need to be clearly operationalised and translated into concrete and measurable variables (Suddaby, 2010). The research measures and variables used in this study are summarised in Table 4-1 below.

Table 4-1 Research variables

Research Variables	Descriptions
Dependent Variables	• SME innovation orientation (mediator) • SME innovation performance
Independent Variable **Moderating/conditional Variables**	• Managerial perception of social anomie • Intensity of competitive dynamics • Subnational institutional developments of product markets and IPR protection (formal institutions) • Subnational cultural prevalence of uncertainty avoidance, achievement orientation, and in-group collectivism (informal institutions)
Control Variables	• Age of firm: Captured by the year of establishment (Majocchi *et al.*, 2005) • Firm's size: Measured by the total number of employees (Mei *et al.*, 2019) • Firm's revenue (Weng *et al.*, 2021) • Export intensity: Gauged by the ratio of export sales (Lu *et al.*, 2018) • R&D intensity: Measure by the ratio of R&D spending over total sales (Brockman *et al.*, 2018) • Industry affiliation: High-tech sector or traditional sector (Yi *et al.*, 2017)

Source: The author

To elaborate, MPSA (i.e. independent variable), SME innovation orientation (i.e. mediating variable) and innovation performance (i.e. dependent variables), and the intensity of competitive dynamics (i.e. moderating variable) and control variables are captured through using operationalised measurement items. The measurement items of these constructs are consistent with the established studies and research frameworks (UK Government and Office for National Statistics, 2021; Zhou *et al.*, 2005b; Srole, 1956; Atuahene-Gima and Ko, 2001).

On the other hand, the development of innovation-supporting formal institutions and regional cultural prevalence are measured using secondary data from archival databases (Wang *et al.*, 2021; Zhao *et al.*, 2015). The marketisation and regional cultural indexes have been widely used in previous studies (Du *et al.*, 2017; Su *et al.*, 2022b; Yi *et al.*, 2015).

The research variables, operationalisation of measures, and sources are summarised in Table 4-2 below.

Table 4-2 Research measures and operationalisations

Dependent Variables			
Research Constructs	**Operationalisation**	**Sources**	**Measurement items**
Innovation orientation	SMEs' attitudinal openness and propensity towards innovation activities	Hurley and Hult (1998); Zhou *et al.* (2005a)	To what extent does the respondent agree with the items (1 = strongly disagree, 7 = strongly agree)? • Our company pays close attention to innovation. • Our company emphasizes the need for innovation for development. • Our company promotes the need for development and utilisation of new resources.
Innovation performance	The new product sales over total sales of SMEs	The World Bank (2003);UK Government and Office for National Statistics (2021); Eurostat (2018)	What was the estimated percentage of new product sales in total sales? (in %)
Independent Variables			
Managerial perception of social anomie	The perceptual levels of normlessness, meaninglessness, pessimism about the future, futility, and social isolation among SME owner-managers.	Srole (1956)	To what extent does the respondent agree with the items (1 = strongly disagree, 7 = strongly agree)? • Nowadays a person has to live pretty much for today and let tomorrow take care of itself. • You sometimes can't help wondering whether anything is worthwhile.

			• These days a person doesn't really know whom he (or she) can count on. • It's hardly fair to bring children into the world with the way things look for the future. • To make money there are no right and wrong ways anymore, only easy and hard ways. • In spite of what some people say, the lot of the average person is getting worse, not better. • Most people really don't care what happens to others. • Most public officials are not really interested in the problems of the average man. • Next to health, money is the most important thing in life.
Moderating Variables			
Intensity of competitive dynamics	The perceived levels of competitive intensity among SME owner-managers	Atuahene-Gima and Ko (2001)	How would you assess the intensity of competition in your local market (Chinese market) regarding the following aspects? (1 = strongly disagree, 7 = strongly agree) • Extremely aggressive competition. • Intense price competition. • Strong competitor sales, promotion and distribution systems. • Very similar competitor product offerings.

Innovation-supporting formal institutions	• Product market development • IPR protection	Wang *et al.* (2021)	Product market development: • The extent to which prices are determined by the market (compiled data deriving from the Department of Price, National Development and Reform Commission of China). • Local protectionism and trade barriers. IPR protection: • The ratio of patent grants to province-level GDP.
Regional cultural prevalence	• Uncertainty avoidance • Achievement orientation • In-group collectivism	Zhao *et al.* (2015)	National cultural surveys conducted within China. Measurement items are aligned with the Global Leadership and Organizational Behaviour Effectiveness (GLOBE) cultural framework (House, 2004).

In summary, this study draws on both primary and secondary data to comprehensively examine the hypothesised model, generate findings, and address the research questions. Primary data, collected through structured surveys, assesses firm-level variables including innovation orientation, innovation performance, MPSA, competitive intensity, and control variables (i.e. SME demographics). Secondary data, sourced from established indexes, captures institutional and cultural factors, including market developments and regional cultural dimensions. The combination of multiple data sources facilitates a comprehensive

analysis of the phenomenon under study (i.e. the nexus between anomie and SME innovation), capturing firm-specific characteristics alongside broader institutional and cultural factors. In addition, this approach provides data triangulation that improves the reliability and validity of the findings by mitigating biases inherent in relying on a single-sourced data.

The following section will outline the procedures used for conducting surveys in the primary data collection process.

Survey Instrument for Data Collection: Research Questionnaire

The use of survey with questionnaires is a widely accepted approach for collecting *'standardised data from a sizeable population in a highly economical way'*(Saunders *et al.*, 2016, p. 181). Given that this study involves multiple innovation decision-makers from SMEs located across various regions of China, the use of questionnaires significantly enhances the efficiency and feasibility of the data collection process, ensuring data comparability (OECD and Eurostat, 2018). The central aim of this research is to examine the institutional and socio-behavioural predictors of SME innovation orientation and performance in the context of China. To achieve this research objective, it is essential to gather firm-level data within a suitable timeframe so that it can be analysed alongside subnational-level archival data. Thus,

the use of research questionnaires is an optimal and highly appropriate method. The following section will provide a detailed explanation of the questionnaire design (Easterby-Smith *et al.*, 2018a).

Questionnaire Design

OECD and Eurostat (2018) highlight the importance of thoroughly operationalising research constructs related to firm-level innovation into precise survey questions. Following this objective, the research questionnaire (see Appendix 1) is comprised of three sections, each aligning with specific research questions and variables. The questionnaire adheres to the previous studies that set up the observation period to three years (2017–2019), thereby enhancing data comparability amongst research respondents (OECD and Eurostat, 2018).

Moreover, the research questionnaire is framed by four key criteria, including credibility, clarity, conciseness, and comprehensibility (Sääksjärvi and Morel, 2010). With regard to credibility, the questionnaire incorporates survey items from authoritative government agencies and well-established research (OECD and Eurostat, 2018; UK Office for National Statistics, 2020; Srole, 1956), ensuring the validity of capturing firm innovation. Regarding clarity and conciseness, the questionnaire is designed with a succinct structure and an easy-to-follow layout – an approach that has been shown to enhance data quality (Luby and

Southern, 2022). In terms of comprehensibility, the questionnaire employs plain language to avoid ambiguity. Additionally, it was professionally translated into simplified Chinese to accommodate the linguistic needs of the respondents. The translation process of the research questionnaire is presented in the subsequent section.

In order to ensure that the questionnaire items precisely interpret and capture the research constructs, details regarding the congruity of the research questionnaire are presented in Table 4-3.

Table 4-3 Research questionnaire description

Questionnaire Section(s)	Description
Section A	• Section A is concerned with the general information and company profiles, including: respondent's position; year of business establishment; total number of full-time employees; main products of the company; annual revenue of the company; and the percentages of export sales and Research & Development (R&D) spending (Lu *et al.*, 2018; Mei *et al.*, 2019).
Section B	• This is the principal section of the questionnaire with the aim of capturing the degree of SME innovation orientation, activities, and performance (Zhou *et al.*, 2005b; UK Government and Office for National Statistics, 2021; Eurostat, 2018).
Section C	• This section presents questions with the aim of capturing the degree of the perceived state of social anomie among SME owner-managers (Srole, 1956; Teymoori *et al.*, 2016)

Source: The author

Questionnaire Scales

In conformity with the previous studies, this questionnaire principally employs three types of rating scales, including the seven-point Likert scale, the dichotomous scale, and the ratio scale. The Likert scale, in particular, is widely used in survey-questionnaire research due to its simplicity and the power of capturing precise variations of responses (Chyung *et al.*, 2017). While the original scaling framework proposed by Likert (1932) recommended the use of at least five categories, the optimal number of response categories remains a contentious subject of debate in scholarship (Allen and Seaman, 2007). Specifically, scholars suggest that a seven-point scale represents the *'upper limits'* of the measuring reliability (Nunnally, 1978; Allen and Seaman, 2007, p. 64), whereas others pointed out that the difference of five-point and seven-point is marginal (Cicchetti *et al.*, 1985). This questionnaire opts for a seven-point scale because it provides finer distinctions on the extent of variables such as MPSA and innovation orientation (Allen and Seaman, 2007). In addition, the use of dichotomous and ratio scales adheres to the original items of *the UK Innovation Survey* (UK Office for National Statistics, 2020). This also has been recognised as standardised measurements of firm innovation by the *European Community Innovation Survey (CIS)* (Gault, 2013; Eurostat, 2018).

The following table summarises all scales and measurements used in the research questionnaire.

Table 4-4 The use of scales in the research questionnaire of this study

Rating scales	Questionnaire item(s)	Measurements
Seven-point Likert scale	• Managerial perception of social anomie • Innovation orientation • Intensity of competitive dynamics	From strongly disagree (1) to strongly agree (7)
Dichotomous scale	Innovation activities	Yes or No
Ratio scale	Innovation outcomes	• The sales of new products over total sales • The number of invention patent applications

Questionnaire Translation

Pertaining to semantic considerations, questionnaire translation is highly significant as it determines the accuracy of data comparability and respondents' understandings (Harkness *et al.*, 2004). The questionnaire design in this research is based primarily on existing English-language measures such as those from *the UK Innovation Survey* (UK Office for National Statistics, 2020). Given that the empirical setting of this study is China, precise forward–backward translation from English to Simplified Chinese is essential prior to data collection (Brislin, 1970). The forward–backward translation approach has been widely adopted in

business research to ensure the validity of data collection in foreign contexts (Ji *et al.*, 2019; Luo *et al.*, 2005; Tang, 2011; Dirani and Kuchinke, 2011; Kim *et al.*, 2013).

The original questionnaire of this study was developed in English. It was subsequently reviewed and verified by the researchers. Following this, the questionnaire was translated into Simplified Chinese by a qualified English-to-Chinese translator. The Chinese-translated questionnaire was then sent to another researcher, proficient in both Chinese and English, for back-translation into English. The three versions of the questionnaire—original, translated, and back-translated—were compared, verified, and reviewed by the research team. Additionally, the Chinese-translated questionnaire was sent to a group of business owner-managers, who are native Chinese speakers, to review the phrasing, wording, and layout for clarity and appropriateness. This process ensures the validity and reliability of the surveys.

In summary, effective steps have been taken to carefully adapt the research questionnaire to the research objectives and questions of this study. The use of forward–backward translation has proven valuable in optimising the research design, while also enhancing communication and ensuring transparency (Song *et al.*, 2009).

The next section will present the procedures of data collection and data analysis of this study.

4.5. Data Collection

This section will present the detailed procedures of data collection and analysis of this study, comprising the introduction of unit of analysis, the empirical settings and the detailed procedures of data collections.

4.5.1. Unit of Analysis

This study seeks to investigate the interaction between MPSA, intensity of competitive dynamics and subnational institutional environments in influencing firm-level innovation orientation and performance. This study thus focuses on privately owned SMEs in China as the unit of analysis. Specifically, it examines the innovation orientation and performance of industrial SMEs, defined as enterprises in the sectors of manufacturing, mining, electricity, gas, and water production and supply (this will be further discussed in Section 4.5.3). This is consistent with the majority of existing studies examining the antecedents of firm-level innovation behaviours (Khosravi *et al.*, 2019; Frishammar *et al.*, 2012; Tariq *et al.*, 2017).

Focusing on these segments of SMEs because they represent a pillar of the economic structure and contributed to more than 70% of technological innovation in China (OECD, 2022). This enables a deeper analysis of the socio-behavioural and strategic predictors of SME innovation orientation and performance in EEs. In addition, this study argues that SMEs

in China are more liable to the effect of MPSA due to their less formalised organisational structures, limited access to stable innovation-enhancing resources, and inadequate institutional benefits (Rao *et al.*, 2023). Consequently, adopting the SME-level unit of analysis offers a meaningful lens to examine how MPSA influence SME innovation orientation and performance, aligning consistently with the overarching research objectives.

4.5.2. Empirical Setting

This study selects China as the empirical setting, which is widely recognised as a vibrant and leading EE (Meyer and Peng, 2016; Cheng and Yiu, 2016; Shen *et al.*, 2022). The Chinese context is well aligned with the scholarly inquiry on the implications of MPSA and the subnation-level institutional variations. First, China has undergone profound transformations in political and economic systems over the past few decades, with these institutional and social changes significantly imprinting on the co-evolution of business environments and associated activities, including innovation (Child and Tse, 2001; Hitt and Xu, 2016). However, the rapid yet inconsistent marketisation development in China has engendered significant socio-economic implications, such as regional disparities and societal strain (Snell and Tseng, 2001; Jiang *et al.*, 2020b). These imbalanced circumstances in China create a condition that may catalyse the state of social anomie among actors, hence disrupting the

social fabric in China and influencing SME owner-managers' propensity towards innovative behaviours (Su *et al.*, 2019; Zeng *et al.*, 2024).

Moreover, the subnational level of China provides an ideal setting for this research due to its significant regional heterogeneity across a large number of provinces and municipalities (Lu *et al.*, 2018; Yao *et al.*, 2023). The variations in institutional environments across Chinese provinces and municipalities, including formal and informal components, fundamentally shape how firms respond to institutional contexts to pursue innovation within distinct societal and business climates (Zhou *et al.*, 2014). Consequently, the empirical setting of China enables richer analysis on how subnation-level institutional variations may influence the degree of MPSA, and the magnitude of the relationship between MPSA and SME innovation orientation and performance as a form of positive deviance in EEs.

4.5.3. Procedures of Data Collection

This section will present the detailed procedures for collecting primary data through survey questionnaires administered to SMEs in China. It begins by defining the sampling frame and criteria to ensure the appropriateness of the target population, followed by a description of the pilot testing phase undertaken to refine the questionnaire. Finally, it presents the detailed procedures for distributing the final survey to the target population.

Sampling frame

To set a robust sample frame, this research precisely defines the criteria of target population and sampling units. The criteria that were used to identify the sample are:

1. Firms with more than 30 but fewer than 1,000 employees were considered eligible, aligning with SME definitions and standards in China;

2. Firm are required to be industrial enterprises, specifically in the sectors of mining, manufacturing, electricity, gas, and water production and supply, as these sectors have a strong focus on product innovation;

3. Firms should be privately owned and do not function as subsidiaries of larger corporations;

4. Firms needed to have been in operation for more than four years prior to 2017, indicating a foundation of stability and experience in their industry;

5. Respondents are required to be key decision-makers within their firms, such as owner-managers or senior executives with significant control over innovation-related activities. This criterion was crucial for ensuring that the responses collected accurately reflect informed perspectives on SMEs' innovation activities.

Pilot testing and questionnaire refinement

Prior to the formal data collection, a pilot test was administered to 12 SME owner-managers and employees in Guangdong province, through conducting semi-structured interviews

alongside the questionnaires. Specifically, the participants were asked to assess the clarity, appropriateness, and sensitivity of the questionnaire items, noting any elements perceived as unclear or confidential. Considering that SMEs in China are not legally obligated to disclose operational data (EU SME centre, 2018), this preliminary phase was crucial for refining the questionnaire and ensuring that respondents felt at ease and willing to provide accurate information.

Upon the pre-test, the research survey questionnaire was slightly adjusted and reviewed by the research team. The definitive version of the questionnaires was distributed through professional online survey platforms. Previous studies contend that online platforms are more effective in ensuring anonymity compared with offline survey questionnaires (Stewart *et al.*, 2009). Specifically, a professional survey platform WJX (https://www.wjx.cn/) was used to distribute questionnaires to the respondents. WJX is comparable to platforms like Qualtrics and Prolific, providing robust survey design tools, secure data management, and access to a large and diverse respondent pool. There is a growing body of studies utilising the same platform for collecting survey data in the context of China, particularly due to their reliability and effectiveness of collecting data across various industries and their extensive reach to a wide range of firms and stakeholders (Lou *et al.*, 2022; Li *et al.*, 2022; Chen *et al.*, 2022; Zhang *et al.*, 2021a; Ding *et al.*, 2024; Sun *et al.*, 2024; Wang *et al.*, 2023; Ma *et al.*, 2021;

Lin *et al.*, 2023; Wei *et al.*, 2023; Chen and Xiong, 2024; Zhou *et al.*, 2020). Specifically, the platform has more than 2.6 million registered users, including middle managers and senior executives from a variety of companies across China (Wang and Gao, 2021). Consequently, the use of such tools can offer a valuable resource for this study seeking to engage with a broad sample of respondents across various regions within China.

Formal data collection

In alignment with previous studies capturing the impact of subnation-level institutional variations (Zhou *et al.*, 2021; Su *et al.*, 2015), this study collected firm-level data from four regions in China—East, West, Central, and Northeast—to examine the effects of subnational institutional variations. To specify, the eastern region (e.g. Shanghai and Beijing municipalities, and Guangdong Province), known for its economic vitality and robust infrastructure, typically has more developed market-based mechanisms, greater access to resources, and a higher concentration of foreign investment (Cui *et al.*, 2020). In contrast, the western region (e.g. Guangxi Province and Sichuan Province) is often characterised by slower economic growth and less developed marketisation (Zhou *et al.*, 2021). The central region (e.g. Hunan Province) is deemed as a transitional zone that is marked by a mix of industrial development and agricultural activities. The northeastern region (such as

Heilongjiang Province), known for its historical industrial base, has faced significant economic restructuring in recent years.

Data collection in major provinces (e.g. Guangdong, Zhejiang, Fujian, Jiangsu provinces, and Shanghai and Beijing municipalities), was conducted using the directories from the local chamber of commerce, research networks, and industry linkages. Following this, a target list of firms meeting the inclusion criteria was compiled. This compiled list focuses on industrial parks, as these locations typically house a higher concentration of SMEs that align with the study's objectives and sample criteria. Additionally, the research team collaborated with local chambers of commerce to facilitate introductions to the firms, which effectively enhanced credibility and participation.

To further increase engagement, the questionnaires were designed to be concise and relevant (a single page), accompanied by clear instructions that highlighted the importance of the firms' contributions to the study (Patten, 2016). Furthermore, a cover letter was included to articulate the purpose of the study, provide the research team's contact information, and assure participants of their anonymity and confidentiality (Lietz, 2010). Follow-up reminders were scheduled to maintain communication with the firms, addressing any questions or concerns they might have regarding the survey. By implementing this targeted approach to

data collection, the first wave of collection was successfully completed, yielding 617 responses, of which 588 were considered valid. The discarded questionnaires were either incomplete or did not meet the sample inclusion criteria, mostly regarding firm size (e.g. SMEs with more than 1,000 employees).

Subsequently, due to logistical considerations and the lack of available directories, WJX was entrusted for provinces where direct access to firms was limited. This study follows the procedures established by other scholars who have utilised the same platform for recruiting respondents and participants for research (Li *et al.*, 2022; Wang *et al.*, 2023; Ye *et al.*, 2021). Specifically, the research team first provided the entrusted survey coordinators with specific criteria that align with the study's objectives (Wang *et al.*, 2023). This step ensured that the selected firms are representative of the target population. Following this, the survey coordinators administered the survey questionnaires through its extensive database and established communication channels. The platform provides real-time tracking of responses so that the research team could have timely follow-ups and checks. The data obtained through the platform underwent thorough review and validation. The research team assessed the consistency of responses to ensure alignment with the study's criteria. In line with previous studies, statistical tests were conducted to ensure that the data collected via self-administered

surveys and entrusted operators are consistent (Niu *et al.*, 2020; Hair, 2009). The potential bias of data collection methods is discussed in Section 4.5.4.

Finally, a total of 1,117 responses were collected from participants across 20 provinces and municipalities across China, demonstrating an even geographical distribution. This yielded a response rate of 37.23%, based on an initial sample size of 3,000 target respondents (firms), with approximately 150 respondents targeted in each province or municipality. The diverse geographical coverage achieved in this study is attributed to the use of a widely accessible survey platform, the research team's networking efforts, and the concise, easy-to-follow survey design.

Following this, all received responses were carefully reviewed to ensure completeness and consistency; incomplete or invalid responses were excluded from the final dataset prior to data analysis. After data cleaning and verification, 1,054 responses from 20 subnational provinces and municipalities within China—covering eastern, western, central, and northeastern regions—were retained for statistical analysis, representing the final response rate of 35.13%. Invalid responses were eliminated based on the aforementioned sample criteria, such as responses not completed by key informants, or responses from firms with too few employees (e.g. those classified as micro-enterprises). The final response rate of this

research is comparable to similar research on SMEs in Chinese contexts (Tang *et al.*, 2007; Bai *et al.*, 2021; Chen and Liu, 2020), where relatively lower response rates are deemed acceptable for the target population of SMEs (Chen and Huan, 2022).

4.5.4. Addressing Potential Biases of Using Survey Methods

This study acknowledges the inherent limitations of employing a survey approach for data collection, including potential concerns related to common method bias and non-response bias. Furthermore, as this study utilises both self-administered and third-party-administered surveys, potential collection method bias is also examined to enhance the robustness and reliability of the findings. This section outlines the measures implemented to address these limitations, ensuring the reliability and validity of the results.

Common method bias

Common method bias is a potential limitation inherent in self-reported survey data, particularly in cross-sectional studies where data for independent and dependent variables are collected from the same source (Min *et al.*, 2016). This bias can lead to statistical errors that inflate or deflate the observed correlations among research variables (Podsakoff *et al.*, 2003). This study follows the procedural and statistical approaches to address the potential common method bias in this study (Podsakoff *et al.*, 2003). Procedurally, the research questionnaires

were carefully designed to ensure anonymity, maintain clear separation between constructs, and present items in random order. To enhance construct clarity, this study employed established measurement items that have been widely validated in previous research (see Section 4.4.3). Additionally, a pilot test was conducted prior to the formal distribution of the questionnaires to refine item clarity and reduce potential biases.

Statistically, Harman's single-factor test was conducted as a diagnostic tool to assess the risks of common method bias in the dataset. This test examines whether a single factor accounts for the majority of variance, as this would indicate potential common method bias. The results are presented in Table 4-5.

Table 4-5 Common method bias testing

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.370	**45.654**	45.654	1.370	45.654	45.654
2	1.023	**34.109**	79.763			
3	.607	**20.237**	100.000			

Extraction Method: Principal Component Analysis.

The results demonstrate that the first component explains 45.654% of the variance, which falls below the 50% threshold, and is commonly used as an indicator of common method bias (Podsakoff *et al.*, 2003). The results suggest that common method bias is unlikely to be a

significant concern for this study. The variance is sufficiently distributed across multiple components—45.654%, 34.109%, and 20.237%, respectively—indicating that no single factor dominates the variance structure.

In addition, consistent with Podsakoff *et al.* (2003), this study introduced an unmeasured latent method factor by specifying a first-order factor which loaded all measurement items. A confirmatory factor analysis incorporating an unmeasured latent method factor did not improve the goodness of model fit (RMSEA = 0.11, CFI = 0.74, TLI = 0.70), relative to the original model (RMSEA = 0.03, CFI = 0.99, TLI = 0.99). The decline of the model fit indices suggested that the latent factor did not capture additional variance; therefore, common method bias is unlikely to threaten the validity of the findings of this study.

In summary, both the statistical tests confirm that common method bias is minimal and does not undermine the validity of this study.

Non-response Bias

Non-response bias is also a potential concern that can impair the comparability and validity of survey research. Existing studies primarily employ the independent samples *t-test* as a diagnostic tool for addressing non-response bias by comparing early and late respondents on

key variables. This method assumes late respondents have certain commonalties with non-respondents, allowing researchers to detect potential differences that may arise from non-response. This study assesses non-response bias by comparing early and late respondents, using two-tailed *t-statistics*.

The early and late responses were compared using independent samples *t-test* to assess potential non-response bias. The results indicated that there were no statistically significant differences between early and late respondents in terms of firm size ($p = 0.133$, $p > 0.05$) and firm revenue ($p = 0.896$, $p > 0.05$). Therefore, the results suggest that non-response bias is unlikely to affect the validity of the analysis (Hair, 2009).

Collection method bias

This study conducted two statistical analyses—an independent samples *t-test* and a chi-square test—to ensure data validity and comparability between the self-administered dataset and the data collected via the entrusted operators (Hair, 2009). First, a *t-test* for independent samples revealed no significant differences between the two datasets (i.e. self-administered and via the entrusted survey coordinator) for firm size ($p > 0.05$) and firm revenue ($p > 0.05$), confirming their comparability (Hair, 2009).

Second, a chi-square test of independence was conducted to compare the distribution of industry types between the two datasets. The test was not statistically significant ($p > 0.05$), indicating no significant differences between the two datasets in terms of industry types. This result suggests that both datasets have a similar distribution of industry types, further confirming their comparability for further analysis.

The results collectively suggest that collection method bias is unlikely to be a concern. The lack of significant differences in key variables between the self-administered and the third-party-administered datasets supports the consistency of the datasets, as they capture the same population characteristics as defined in the sample framing and criteria.

The next section will explain the statistical procedures and methods adopted for data analysis.

4.6. Data Analysis

This study constructs a moderated mediation model to investigate the complex relationships between MPSA, SME innovation orientation, SME innovation performance, and multilevel external conditions. First, the mediating relationship is examined, followed by the introduction of moderators to assess how the relationships are conditioned by different

factors. A robust statistical framework is employed, integrating bootstrapping techniques and hierarchical multiple regression analysis (HMRA) to ensure comprehensive evaluation.

The mediation effect is assessed using bootstrapping techniques to obtain precise estimates of the indirect relationships among the variables (Alfons *et al.*, 2022; Cheung and Lau, 2008). This technique enhances the reliability of the results by generating confidence intervals for the indirect effects, thereby providing an accurate understanding of the mediation process. Once the mediation effect is established, HMRA is employed to incorporate moderators into the model (Hayes, 2009; Hayes, 2012). By creating interaction terms between MPSA and moderators, this analytical approach investigates how these variables influence the strength and direction of the direct and indirect relationships between MPSA and SME innovation (Dawson, 2016).

4.6.1. Bootstrap Methods for Testing Mediation

The examination of mediating effect is essential in management studies for understanding the indirect pathways that explain complex organisational phenomena (Wood *et al.*, 2008). Drawing on IAT and IBV, this research seeks to investigate the concrete mechanism that links MPSA and SME innovation in China. Consequently, mediation testing fits the research

objectives because of its statistical power in explaining mediating (indirect) relationship between constructs (MacKinnon *et al.*, 2002).

Before presenting the research findings, this study provides an overview of the common methods used for testing mediation, thereby informing the methodological choices made herein. In essence, MacKinnon *et al.* (2002) propose three categories of mediation-testing frameworks, including (1) the causal steps approach; (2) the difference-in-coefficients methods; and (3) the products of coefficients. Following this, Wood *et al.* (2008) thoroughly reviewed all the methods in testing mediation in business and management research. For instance, the widely used four-condition approach for establishing mediation, developed by Baron and Kenny (1986), pertains to the causal steps approach, whereas another common method of Sobel (1982) test is classified under the products of coefficients.

According to Baron and Kenny (1986), a mediation effect is confirmed when four conditions are fulfilled: (1) the predictor variable is significantly associated with the outcome variable; (2) the predictor variable is significantly associated with the mediator; (3) the mediator is significantly related to the outcome variable; and (4) when the mediator is introduced into the model, the magnitude of the relationship between the predictor variable and the outcome variable is significantly reduced or nullified. The fourth condition is crucial for distinguishing

between full mediation and partial mediation (Wood *et al.*, 2008). However, there is a growing consensus among scholars that the exclusive reliance on Baron and Kenny (1986)'s conventional method may fall short in precisely capturing mediation effects, due to their limitations in Type II errors and detecting indirect effects (Aguinis *et al.*, 2017).

Consequently, numerous statisticians and researchers advocate for additional testing to assess the significance of mediation more accurately, particularly endorsing bootstrapping as a rigorous method (MacKinnon *et al.*, 2002; Biesanz *et al.*, 2010; Hayes, 2009). Specifically, Preacher and Hayes (2004) argued that, compared with the Sobel test, the bias-corrected bootstrap approach demonstrates greater statistical power for confirming mediation, particularly in relatively small samples (Biesanz *et al.*, 2010). This is because the Sobel test relies on the assumption of a normal sampling distribution, which is often violated in management research, where sampling distributions tend to be small and asymmetric (Cheung and Lau, 2008). In contrast, the bootstrap approach does not depend on the assumption of normality and thus is considered more powerful for mediation analysis (Hayes, 2009).

Accordingly, consistent with the established practices in the innovation and management studies (Pinho and Prange, 2016; Biraglia and Kadile, 2017), this study first adopts the

stepwise approach outlined by Baron and Kenny (1986) to examine and corroborate the correlations among the predictor, mediator, and outcome variables; following this, the bootstrap approach is employed to verify the significance of the mediation effect (Preacher and Hayes, 2008). The combination of both the stepwise approach by Baron and Kenny (1986) and the bootstrapping techniques suggested by Hayes (2009) for mediation analysis is evidenced as methodologically robust in the current management research (Mor *et al.*, 2013; Chen and Nadkarni, 2017; Biraglia and Kadile, 2017; Hånell *et al.*, 2018).

4.6.2. Hierarchical Multiple Regression Analysis

This study argues that the effect of MPSA on SME innovation orientation and performance may not be uniform across different subnational contexts in China. Hence, the subnational-level institutional environments and the intensity of competitive dynamics are recognised as potential moderators (i.e. boundary conditions) of these relationships. To be explicit, moderation testing provides a clearer understanding of how these contextual factors interact with MPSA, adding depth to the understanding of the relationships between MPSA and SME innovation in China.

In line with the established practices in moderated mediation analysis, this study adopts HMRA, which is a method that focuses on the sequential examination of the relationships

among variables (Preacher and Hayes, 2004; Hayes, 2015). The HMRA approach assesses the unique contributions of each set of variables, thus providing clarity on the individual and collective impacts of various explanatory variables. The HMRA method examines moderated mediation effects through creating interaction terms between the independent variable (i.e. MPSA) and moderators (i.e. competitive dynamics and subnation-level formal and informal institution). This approach is widely endorsed in current management studies (Feng and Wang, 2016; Xie *et al.*, 2018; Hasan *et al.*, 2018; Peltokorpi and Yamao, 2017; Nakos *et al.*, 2019; Lythreatis *et al.*, 2021)

However, it is crucial to consider the limitations of the HMRA approach. First, HMRA is predicated on the assumption of linearity in the relationships between independent and dependent variables (Cohen *et al.*, 2013). To address this limitation, this study employs bootstrapping techniques to assess the mediation effect (Edwards and Lambert, 2007). The bootstrapping method enhances the robustness of the mediation analysis by generating confidence intervals for the indirect effects without relying on the assumption of normality (Hayes, 2009). This approach provides empirical evidence supporting the mediation pathways, allowing the subsequent HMRA to focus on the interaction effects with enhanced rigour (Alfons *et al.*, 2022). The methodological approach of employing bootstrapping techniques in conjunction with HMRA for moderated mediation analysis has been

extensively adopted by management scholars (Liu *et al.*, 2021; Zhao and Liu, 2020; Xie *et al.*, 2018; Peltokorpi, 2015; Peltokorpi and Yamao, 2017; Farzaneh *et al.*, 2022).

Second, the HMRA approach is sensitive to multicollinearity, which can distort the estimates of regression coefficients, inflate standard errors, and lead to inaccurate interpretations among variables (Kalnins, 2018). To address this concern, it is essential to conduct thorough statistical diagnostics, such as calculating variance inflation factors, to identify and preclude the issues of multicollinearity present in the model (Shrestha, 2020). The results of statistical diagnoses will be presented in subsequent Chapter 5 to ensure the robustness and reliability of the analysis.

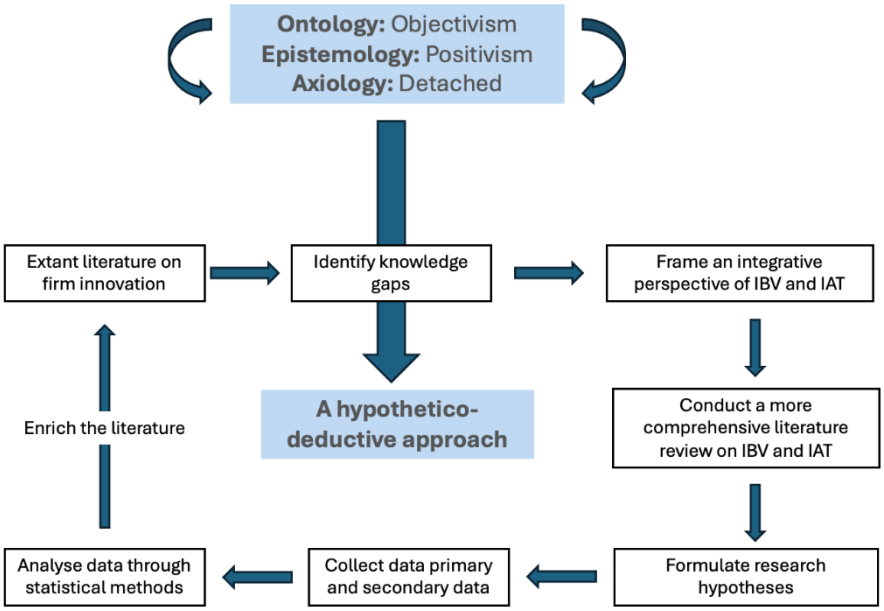
4.7. Summary of the Chapter

This chapter first explains the research orientation and the philosophical paradigm that underpin this study, positioning it within a positivist framework that aligns with the empirical examination of the relationship between MPSA and SME innovation orientation and performance in the context of China. Towards the research objectives, quantitative methods are chosen as they support the hypothetico-deductive approach that unravels the relationships between research variables.

In terms of data collection, survey questionnaires are employed as an efficient means of collecting standardised data from a large sample, thereby facilitating data comparability on key constructs. The detailed procedures of data collection are presented in this chapter, including the design and refinement of the questionnaires, operationalisation of the variables, measurement instruments, pilot tests, and the steps of undertaking data collection, which are essential for ensuring content, face, and construct validity. Following this, the methodological approaches for data analysis are explained. Specifically, this study constructs a moderated mediation framework, employing HMRA, a stepwise approach, and bootstrapping techniques to robustly examine and estimate the associations between research variables.

Consequently, the methodology of this study (presented in Figure 4-3) accords with the positivist paradigm, which emphasises the importance of objective observation and empirical evidence in understanding social phenomena (Easterby-Smith *et al.*, 2021). The hypothetico-deductive approach is employed to formulate testable hypotheses derived from the theoretical frameworks. Specifically, the theoretical integration of IBV and IAT serves as a foundation for hypothesis development, enabling a structured investigation into the relationships between MPSA, SME innovation, and external contingencies. This systematic paradigm establishes a robust methodological approach.

Figure 4-3 The research methodology of the current study



Source: The author, adapted from Saunders *et al.* (2016, p. 136) & Easterby-Smith *et al.* (2018a)

5. Data Analysis and Hypothesis Testing

This chapter will present the findings of the quantitative analysis based on the primary and secondary data. First, the key constructs and measures of this research will be clearly defined. Second, in accordance with the recommended procedures (Hair, 2009), the validity and reliability of the research measures will be evaluated. Third, the descriptive data and characteristics of the research sample will be reported. Next, the fourth section will present the statistical results of the research models. Finally, this chapter will conclude with a summary of the hypothesis testing results and discusses their relevance to the research model and the existing literature.

5.1. Key Constructs and Measures of this Study

A research construct is defined as *'a term specifically designed for a special scientific purpose, generally to organise knowledge and direct research in an attempt to describe or explain some aspect of nature'* (Peter, 1981, p. 134). Defining constructs prior to data analysis is crucial for undertaking reliable study, as this step lays the groundwork for the operationalisation and measurement of all constructs (Antil, 1984).

Consistent with the theoretical underpinnings of IBV and IAT, this research examines the relationship between MPSA, SME innovation, intensity of competitive dynamics, and subnation-level institutional environment. Specifically, this study concentrates on two aspects

of SME innovation as outcome variables, including innovation orientation and innovation performance. The former one pertains to SMEs' attitudinal openness towards innovation activities, and the latter one captures the overall effectiveness of their innovation efforts.

Based on the literature review, competitive intensity and MPSA are identified as the explanatory variables in this study. Numerous studies have utilised industry-level indicators, such as the Herfindahl index, to capture the degree of competitive environment, which may fall short in pinpointing the firm-specific competition (Tingvall and Poldahl, 2006; Ascani and Gagliardi, 2020; Stenholm *et al.*, 2016). Consequently, scholars contend that using perception-based measures to assess competitive intensity provides a more accurate understanding of firm idiosyncrasies in the face of competitive environment (Tang, 2006). Specifically, the perception-based measures can illuminate various dimensions of market competition, encompassing product competition, price competition, and capabilities of competitors (Tang, 2006; Farè, 2022; Atuahene-Gima and Ko, 2001). In line with this view, competitive intensity, innovation orientation, and MPSA are considered as latent constructs in this study. Relevant items are structured in the research questionnaire to measure them (presented in Section 4.4.3).

In addition, this study explores the contingent role of subnation-level institutions in influencing the relationship between MPSA and SME innovation performance. The institutional factors are derived from secondary data sources, including government statistics, composite indices, and validated indicators from existing literature.

Consistent with the previous innovation research, this study incorporates several control variables that may potentially influence SME innovation, including firm size, firm age, firm revenue, R&D expenditure, industry types, and export intensity. First, firm size was captured by the natural logarithm of total employees to address the liability of smallness (Mei *et al.*, 2019). Second, firm age was measured by the number of years since establishment to distinguish the varying impacts on newer and more established SMEs (Coad *et al.*, 2016). Third, firm revenue—as an indicator of resource endowment and market position—was measured by three dummy variables representing four annual turnover groups (< CNY 3 million; CNY 3 – 20 million; CNY 20 – 400 million; ⩾ CNY 400 million) (Weng *et al.*, 2021). Fourth, R&D expenditure was measured as the ratio of R&D spending to total revenue, given its well-documented contribution to technological progress and innovation outcomes (Leung and Sharma, 2021). Fifth, industry type was coded as a dummy variable distinguishing high-tech from traditional sectors to control for sector-specific dynamics (Yi *et al.*, 2017). Finally, export intensity—measured by the ratio of export sales to total sales—was

included, as previous studies reveal that firms engaged in export activities demonstrate stronger learning capabilities and knowledge advantages that foster innovation outcomes (Love and Ganotakis, 2013).

All research constructs and measures are presented in Table 5-1.

Table 5-1 Research constructs and measures

	Operationalisation Measures	Sources
Dependent variables		
Innovation Performance	The ratio of new product sales over total sales	OECD and Eurostat (2018)
Engagement in innovation activities (for robustness checks)	Did this business make major changes in the following area? (1: Yes; 0: No) New business practices for organising procedures (e.g. supply chain management, business re-engineering, knowledge management, lean production, quality management, etc).	UK Office for National Statistics (2020)
Mediator		
Innovation Orientation (IO)	To what extent does the respondent agree with the statements? (1 = strongly disagree, 7 = strongly agree) • (IO_01) Our company pays close attention to innovation. • (IO_02) Our company emphasizes the need for innovation for development. • (IO_03) Our company promotes the need for development and utilisation of new resources.	Zhou *et al.* (2005a)
Independent variable		
Managerial perception of social anomie (MPSA)	To what extent does the respondent agree with the statements? (1 = strongly disagree, 7 = strongly agree) • (MPSA_01) Nowadays a person has to live pretty much for today and let tomorrow take care of itself.	Srole (1956) Robinson and Shaver (1973)

	• (MPSA_02) You sometimes can't help wondering whether anything is worthwhile. • (MPSA_03) These days a person doesn't really know whom he (or she) can count on. • (MPSA_04) It's hardly fair to bring children into the world with the way things look for the future. • (MPSA_05) To make money there are no right and wrong ways anymore, only easy and hard ways. • (MPSA_06) In spite of what some people say, the lot of the average person is getting worse, not better. • (MPSA_07) Most people really don't care what happens to others. • (MPSA_08) Most public officials are not really interested in the problems of the average man. • (MPSA_09) Next to health, money is the most important thing in life.	
Moderating variables		
Intensity of competitive dynamics (ICD)	How would you assess the intensity of competition in your (Chinese) local market regarding the following aspects? (1 = strongly disagree, 7 = strongly agree) • (ICD_01)Extremely aggressive competition. • (ICD_02) Intense price competition. • (ICD_03) Strong competitor sales, promotion and distribution systems. • (ICD_04) Very similar competitor product offerings.	Atuahene-Gima and Ko (2001) Atuahene-Gima (1996)
The subnation-level institutional development of product markets	A sub-dimension of the provincial marketisation index of China (The average value of 2017–2019) • The degree of market-determined pricing for products • The reduction of local protectionism and market entry barriers in product markets	Wang *et al.* (2021)
The subnation-level institutional development of IPR protection	A sub-dimension of the provincial marketisation index of China (The average value of 2017–2019) • Protection of intellectual property rights	Wang *et al.* (2021)

Cultural Dimensions	• Uncertainty avoidance • Achievement orientation • In-group collectivism	Zhao *et al.* (2015)
Control variables		
Firm size	The number of firm employees	Yi *et al.* (2017)
Firm age	The number of years since business establishment	Kafouros *et al.* (2015)
Firm revenue (three dummy variables were created)	Four categories of firm revenue (In ¥ CNY): (1) X < 3m; (2) 3m ≤ X < 20m; (3) 20m ≤ X < 400m; (4) X > 400m)	Ko *et al.* (2021)
R&D expenditure	The ratio of research and development (R&D) expenditure over the total revenue	Leung and Sharma (2021)
Industry classification (Dichotomous variables)	Traditional industry (coded as 0); High-tech industry (coded as 1)	National Bureau of Statistics of China (2023)
Export intensity	The ratio of export sales over the total sales	Leung and Sharma (2021)

The research questionnaire encompasses the collection of objective data as well as various measurement items. Regarding the measurement items, this study used the seven-point Likert scales to assess the key informants (i.e. SME owner-managers)' views on the perceptual statements related to the underlying constructs of this study – including innovation orientation, competitive intensity, and managerial perception of social anomie. Given the close alignment between the SME owner-managers and the firms, SMEs' strategic decisions largely reflect and convey the thinking and actions of the owner-managers (Rodgers *et al.*, 2022). Hence, this approach can effectively capture firm-level dynamics by consulting with SME owner-managers (Brunswicker and Vanhaverbeke, 2015; Casidy and Nyadzayo, 2019).

After outlining the key constructs and variables of this study, the examination of reliability and validity is presented in the following section.

5.2. Reliability and Validity Tests

Assessing reliability and validity is instrumental in carrying out data analysis in social science research, as it rigorously ensures the robustness and credibility of research findings (Short *et al.*, 2010). Specifically, validity reflects *'the extent to which measures and research findings provide accurate representation of the things they are supposed to be describing'* (Easterby-Smith *et al.*, 2018b, p. 604). There are multiple aspects of validity, such as content validity, face validity, construct validity, convergent validity, and divergent validity.

Convergent and divergent validity are considered as the sub-dimensions of the construct validity (Tharenou *et al.*, 2007). Reliability, on the other hand, pertains to *'the consistency of measurement in a composite variable formed by combining scores on a set of items'* (Easterby-Smith *et al.*, 2018b, p. 598). Internal consistency reliability is essential for framing multi-item measures in empirical research; hence, it has received substantial attention in management research, wherein multi-item scales are the most common instruments for measuring constructs (Bearden and Netemeyer, 1999).

This study employs multi-item scales to capture three underlying constructs that are not directly observable, including innovation orientation, competitive intensity, and MPSA. The remaining measures rely on hard data. For instance, innovation performance is measured by the ratio of new product sales over total sales (Kafouros *et al.*, 2015). Given that the validity of hard data is inherently objective, reliability and validity tests are generally not required (Easterby-Smith *et al.*, 2018b). Consequently, a comprehensive assessment of reliability and validity of the three constructs (i.e. innovation orientation, MPSA, and competitive intensity) is conducted before the statistical hypothesis test (Diamantopoulos *et al.*, 2012).

In the subsequent section, in line with the recommended practices (Hair, 2009), various aspects of reliability and validity will be thoroughly examined. Regarding reliability, internal consistency reliability is assessed. In relation to validity, content validity is first evaluated in a qualitative fashion; next, confirmatory factor analysis and statistical tests are performed to assess the construct validity, convergent validity, and discriminant validity of this study.

5.2.1. Internal Consistency Reliability

Internal consistency reliability is indispensable for producing reliable and consistent research findings with accurate measuring instruments (McCrae *et al.*, 2011). Traditionally, Cronbach's alpha is utilised to assess internal consistency reliability of measurement models

(Cronbach, 1951). This approach has been extensively employed and discussed in extant literature, engendering various views on the cut-off values of Cronbach's alpha. For instance, Nunnally and Bernstein (1994) stipulated that the acceptable value of Cronbach's alpha should be 0.70 or greater, which has been commonly adopted as the threshold in the majority of management studies. However, there is a divergence among scholars regarding the acceptable thresholds for Cronbach's alpha. To illustrate, Cortina (1993) conducted a thorough examination of Cronbach's alpha in relation to its application and interpretation, suggesting that the Cronbach's alpha thresholds can be flexibly lower for scales with a smaller number of items (e.g. 2–3 items). The Cronbach's alpha values at 0.5 to 0.6 can still be deemed suitable (Cortina, 1993). Along similar lines, Field (2013) concurs that Cronbach's alpha values around 0.6 are acceptable, arguing that Cronbach's alpha coefficients are sensitive to the number of scale items.

This study first employs Cronbach's alpha coefficient to evaluate the internal consistency reliability of the latent constructs. The results in Table 5-2 indicate that the Cronbach's alpha values for competitive intensity ($\alpha = 0.718$) and MPSA ($\alpha = 0.871$) surpass the acceptable threshold of 0.70. Nonetheless, the Cronbach's alpha value for innovation orientation is comparatively lower ($\alpha = 0.596$). Although it falls below the target threshold of 0.70 as

formulated by Nunnally (1994), it can still be considered sufficiently reliable given the limited composition of the measurement scales consisting of only three items.

As noted by Tharenou *et al.* (2007), obtaining a Cronbach's alpha of 0.70 may be difficult for scales with a small number of items (e.g. two or three items). Accordingly, it is widely acknowledged that Cronbach's alpha values above 0.50 are considered acceptable when the number of items is small (Field, 2013; Hinton *et al.*, 2014; Cortina, 1993).

Table 5-2 Cronbach's alpha of the research constructs

Constructs	Number of items	Cronbach's Alpha
Innovation orientation	3	0.596
Competitive intensity	4	0.718
Social anomie	9	0.871

In light of the limitations of Cronbach's alpha, scholars highlight the importance of reporting supplementary measures to verify internal consistency reliability, such as composite reliability (CR) (Hair *et al.*, 2017; Streiner, 2003). Accordingly, the CR of the three constructs is also evaluated (Table 5-3). The results indicate that they all exceed the threshold value of 0.70 (Bagozzi and Yi, 1988). Notably, the CR of innovation orientation is 0.787, providing further evidence of the internal consistency reliability of the measurement model, despite having a relatively low Cronbach's α compared with the other latent constructs.

Table 5-3 CR results of the research constructs

Constructs	Number of items	CR
Innovation orientation	3	0.787
Social anomie	9	0.899
Competitive intensity	4	0.816

Consequently, the results confirm that the internal consistency of all the constructs for this study is adequately reliable and appropriate.

5.2.2. Content Validity

Following the assessment of reliability, the validity of the constructs is evaluated. First, content validity reflects *'whether the items designed for the measure adequately cover the domain of interest'*. Current scholarly practices mainly involve conducting in-depth literature review and consulting with the experts of the relevant subjects to ensure content validity (Bryman and Bell, 2015).

First, the selection of measurement items in the research questionnaire is based on the thorough literature review and pilot test (see Chapter 4). Before distributing the definitive questionnaires, a pilot test was conducted to SME owner-managers and academic researchers to ensure that the items have adequate comprehensibility and clarity (Bobko *et al.*, 2007). In addition, this study adopts the existing measures that have been widely validated in previous

research. Validated measures have undergone rigorous pre-validation in previous research, thus offering a concrete foundation for the application in this study (DeVellis and Thorpe, 2021).

To elaborate, the measurement scales of MPSA were developed by Srole (1956) and subsequently were adapted by Robinson and Shaver (1973). Specifically, Srole (1956) originally postulated the five-item scales to measure the state of anomie and, based on this, Robinson and Shaver (1973) developed the original five-item scales by adding four items to further capture the nature of pecuniary materialism associated with the state of social anomie. Empirically, Poresky *et al.* (1981) examined the reliability and validity of the proposed measures of the perceived state of social anomie, suggesting that the enlarged nine-item scales, as formulated by Robinson and Shaver (1973), yield stronger reliability and validity than the original five-item one. In addition, both measurement scales of anomie have been widely used in previous research in the fields of sociology and management (Caruana and Chircop, 2002; E. Tsahuridu, 2006; Sánchez-Medina *et al.*, 2024; Zoghbi-Manrique-de-Lara and Guerra-Báez, 2018; Harris *et al.*, 2016).

Likewise, the measures of innovation orientation and competitive intensity are adopted from extant literature. Regarding innovation orientation, the three-item scales were developed by

Zhou *et al.* (2005b) to capture firms' openness and inclination towards innovation-promoting activities. These scales have been applied in previous management studies (Karadag *et al.*, 2023). In respect of competitive intensity, this study employs the four-item scales developed by Atuahene-Gima and Ko (2001), which are validated in previous research (Yang and Meyer, 2019; Wang *et al.*, 2020b). Consequently, the measures of MPSA, innovation orientation, and competitive intensity effectively cover the intended domains of the research interests in this study, demonstrating an adequate level of content validity.

For further analysis, the following sections conduct statistical analyses to examine the validity sufficiency of this study.

5.2.3. Construct Validity

Unlike content validity, it is widely recognised that construct validity can be assessed through statistical indicators. First of all, Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity are used to evaluate the data suitability for factor analysis, which is the primary steps for construct validation (Kaiser, 1970; Bartlett, 1937). Specifically, the KMO test evaluates sampling adequacy, and the Bartlett's test examines whether measurement items (i.e. observable variables) are significantly interrelated to identify latent constructs (Shrestha, 2021). These tests ensure that the data meets the necessary criteria for carrying out valid

factor analysis, which is a crucial procedure for assessing construct validity (Williams *et al.*, 2010). With regard to the cut-off values, KMO values range from 0 to 1, and a higher KMO value (closer to 1) indicates that the sample is adequate and ideal for conducting factor analysis. Additionally, obtaining statistical significance from the Bartlett's test suggests that the items are well correlated, thereby corroborating suitability for factor analysis.

Table 5-4 Construct validity test results

Constructs	KMO test	Bartlett's test of sphericity
Innovation orientation	0.629	Significant ($p < 0.001$)
Intensity of competitive dynamics	0.740	Significant ($p < 0.001$)
Managerial perception of social anomie	0.895	Significant ($p < 0.001$)

The results are presented in Table 5-4. The Bartlett's test results for all constructs are significant ($p < 0.001$), suggesting that the correlations are sufficiently large for conducting factor analysis. In addition, the KMO test results for innovation orientation, competitive intensity, and MPSA are 0.629, 0.740, and 0.895, respectively. The KMO values above 0.50 are deemed acceptable (Kaiser and Rice, 1974). The KMO value for MPSA is regarded as great (KMO = 0.895; KMO > 0.80 is deemed great); the KMO value for competitive intensity falls within the good range (KMO = 0.740; KMO > 0.70 is deemed good); and the value for innovation orientation is adequate (KMO = 0.629; KMO > 0.60 is deemed adequate)

(Dziuban and Shirkey, 1974; Field, 2013). Consequently, the results of the KMO measures and Bartlett's test of sphericity suggest that the measurement items are suitable for factor analysis.

5.2.4. Confirmatory Factor Analysis

After verifying the suitability for factor analysis, this study also performed confirmatory factor analysis (CFA) to further examine construct validity and factor structure (Hinkin, 1995). Easterby-Smith *et al.* (2018b) suggest that CFA is particularly appropriate for research that possesses a clear idea of what underlying constructs constitute. In addition, Brown (2015) contends that CFA is especially useful for confirming model fit when using previously validated measures. This explicitly leads to the choice of CFA because this study has well-defined scale construction (i.e. innovation orientation, competitive intensity, and managerial perception of social anomie).

Consistent with existing research (Taras *et al.*, 2023; Koveshnikov *et al.*, 2014), CFA was conducted to evaluate construct validation. Explicitly, Kline (2023) suggested a CFA procedure of reporting key statistical indices, including (1) the Chi-square divided by the Degrees of Freedom (χ^2/df); (2) Comparative Fit Index (CFI); (3) the Root Mean Square Error of Approximation (RMSEA); and (4) the Standardised Root Mean Square Residual

(SRMR). To provide a comprehensive assessment of the model fit, this study, as per the guideline proposed by West *et al.* (2012), also computes the Tucker-Lewis Index (TLI).

The model fit indices and the pertinent cut-off values are summarised in Table 5-5 below.

Table 5-5 CFA model fit indices

Model fit indices	Estimates	Cut-off values (West *et al.*, 2012)
χ^2/df	1.645	< 2
CFI	0.992	> 0.95
RMSEA	0.025	< 0.06
SRMR	0.062	< 0.08
TLI	0.989	≥ 0.95

Collectively, in alignment with the established guidelines (West *et al.*, 2012; Kline, 2023), the results of the model fit indices indicate that the intrinsic relationships between the measurement model and the underlying constructs (i.e. MPSA, innovation orientation, and competitive intensity) are well captured in this study. This provides further evidence to support the validity of the measurement model.

To examine further, convergent and discriminant validity are assessed in the subsequent sections.

5.2.5. Convergent Validity

This section focuses on examining convergent validity, which is a core dimension of construct validity. Campbell and Fiske (1959, p. 83) define convergent validity as *'the agreement between two attempts to measure the same trait through maximally different methods'*. Consistent with other existing research (Bello *et al.*, 2016; Mustafa *et al.*, 2022; Oura *et al.*, 2016), the procedure suggested by Hair (2009) is carried out to holistically assess the convergent validity of this research. Specifically, three criteria, according to Hair (2009), should be fulfilled to demonstrate satisfactory convergent validity: (1) Composite reliability (CR) should be 0.7 or above; (2) Standardised Factor Loading (λ) values should be 0.6 or above; and (3) Average Variance Extracted (AVE) values should be 0.5 or above. The results are presented in Tables 5-6 & 5-7.

Table 5-6 Standardised factor loading results

Constructs	Dimensions	Standardised factor loadings
Innovation orientation (IO)		
	IO_01	0.774
	IO_02	0.753
	IO_03	0.699
Intensity of competitive dynamics (ICD)		
	ICD_01	0.762
	ICD_02	0.740
	ICD_03	0.701
	ICD_04	0.696
Managerial perception of social anomie (MPSA)		
	MPSA_01	0.643
	MPSA_02	0.708

	MPSA_03	0.758
	MPSA_04	0.711
	MPSA_05	0.601
	MPSA_06	0.755
	MPSA_07	0.760
	MPSA_08	0.774
	MPSA_09	0.634

Extraction method: Principal Component Analysis

Table 5-7 CR and AVE results

Constructs	Number of items	CR	AVE
IO	3	0.787	0.551
MPSA	9	0.899	0.518
ICD	4	0.816	0.526

Note: CR values also are reported in the previous section of internal consistency reliability.

Regarding the first criterion (Table 5-7), the results demonstrate that the CR values for all constructs exceed the thresholds of 0.70, indicating that the items within each construct are consistent and measure the same underlying construct.

In relation to the standardised factor loadings (Table 5-6), the construct of innovation orientation is measured by three items, all of which have good factor loadings above the target threshold value of 0.60, indicating good correlations between the measurement items and the latent construct. ICD, measured by four items, shows strong standardised factor loadings, which are consistently larger than 0.60 (Hair, 2009). The construct of MPSA is measured by nine items, and the factor loading results indicate strong correlation between

measuring items and the latent construct. All items demonstrate factor loadings greater than 0.60, meeting the recommended threshold (Kline, 2014). Collectively, these high loadings indicate that the measurement model has robust convergent validity.

Third, the AVE values (see Table 5-7) for innovation orientation, MPSA, and competitive intensity are 0.551, 0.518, and 0.526, respectively, which meet the acceptable threshold value of 0.50 (Bagozzi and Yi, 1988). Consequently, the results confirm that all the three constructs demonstrate adequate convergent validity.

Consequently, the factor loadings, CR, and AVE are all consistent with the criteria suggested by Hair (2009). These results suggest that the measurement models have good convergent validity, providing solid foundation for subsequent data analysis.

5.2.6. Discriminant Validity

Following the examination of convergent validity, discriminant validity for the research constructs is meticulously verified. Discriminant validity is defined as a parameter that *'can be meaningfully differentiated from other traits'* (Campbell and Fiske, 1959, p. 100). In other words, the assessment of discriminant validity determines whether the measures of specific

latent constructs can be distinguished from the others, ensuring that the measurement model can effectively capture various constructs (Easterby-Smith *et al.*, 2018b).

Current research mostly draws on the Fornell-Larcker criterion—the Average Variance Extracted-Shared Variance (AVE-SV) method—to evaluate the adequacy of discriminant validity (Fornell and Larcker, 1981). Specifically, discriminant validly is evaluated through comparing the values of the square root of AVE with the corresponding inter-construct correlation coefficients (Najafi-Tavani *et al.*, 2014). To establish strong discriminant validity, the square root of AVE should be consistently greater than all the inter-construct correlation estimates (Bauer and Matzler, 2014; Fornell and Larcker, 1981).

Therefore, the correlation matrix, encompassing the three latent constructs, is presented along with the values for the square root of AVE for each construct. The results (see Table 5-8) illustrate that the values of the square root of AVE are greater than the corresponding inter-construct correlation coefficients, thereby indicating that discriminant validity is unlikely to be a concern in this study. Specifically, the diagonal values are the square roots of the AVE, whereas the off-diagonal values are the correlation coefficients. For instance, the AVE value for ICD is 0.526 (Table 5-7), hence the square root AVE is computed as 0.725. This value (0.725) is greater than: (1) the correlation coefficient between competitive intensity and

innovation orientation (0.358); and (2) the correlation coefficient between competitive intensity and MPSA (0.037). These results, therefore, indicate very good discriminant validity for the measurement model in this study.

Table 5-8 The results of the Fornell-Larcker criterion

	ICD	IO	MPSA
ICD	**0.725**	0.358 **	0.037
IO	0.358 **	**0.742**	-0.128 **
MPSA	0.037	-0.128 **	**0.720**

Note: The bold numbers on the diagonal represent the square root of the AVE for each construct (*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.10$).

5.2.7. Summary of the Reliability and Validity Test

In accordance with the established scientific guidelines and criteria, the reliability and validity of this study have been rigorously examined. Table 5-9 presents the statistical methods used and the relevant benchmarks for assessment. The results are summarised in Table 5-10.

To sum up, the results confirm that the cut-off values derived from statistical criteria are fully fulfilled, thereby providing concrete evidence for the reliability and validity of the measurement models in this study.

Table 5-9 Reliability and validity statistical criteria

Criterion	Benchmark	Source
Standardised factor loadings	> 0.60	Hair (2009)
Cronbach's alpha	> 0.50	Cronbach (1951); Cortina (1993)
Composite reliability	> 0.70	Hair (2009)
KMO	> 0.60	Kaiser and Rice (1974); Field (2013)
Bartlett's test of sphericity	Significance	Bartlett (1937)
AVE	> 0.50	Hair (2009)
Fornell-Larcker approach	$\sqrt{AVE}$ > Highest Inter-construct Correlation	Fornell and Larcker (1981)

Table 5-10 Summary of the reliability and validity test

Constructs	Measurement items	Standardised factor loadings	Cronbach's alpha	Composite reliability	KMO	Bartlett's test of sphericity	AVE	Fornell-Larcker approach
Innovation orientation (IO)	IO_01	0.774	0.596	0.787	0.629	Sig. ($p < 0.001$)	0.551	Verified
	IO_02	0.753						
	IO_03	0.699						
Intensity of competitive dynamics (ICD)	ICD_01	0.762	0.718	0.816	0.740	Sig. ($p < 0.001$)	0.526	Verified
	ICD_02	0.740						
	ICD_03	0.701						
	ICD_04	0.696						
Managerial perception of social anomie (MPSA)	MPSA_01	0.643	0.871	0.899	0.895	Sig. ($p < 0.001$)	0.518	Verified
	MPSA_02	0.708						
	MPSA_03	0.758						
	MPSA_04	0.711						
	MPSA_05	0.601						
	MPSA_06	0.755						
	MPSA_07	0.760						
	MPSA_08	0.774						
	MPSA_09	0.634						

In summary, the results clearly illustrate that the research constructs of this study are both valid and reliable, thereby underpinning the subsequent data analysis. Upon evaluating the reliability and validity, the descriptive data of the research sample are presented in the next section, followed by an exposition of the statistical model findings.

5.3. Descriptive Data and Characteristics of the Sample Firms

This section presents the descriptive data and characteristics of the sample firms. Given that the empirical context of this research is SMEs in China, this study conforms to the SME definition formulated by the National Bureau of Statistics of China. Specifically, in the context of China, SMEs are defined as enterprises with *'fewer than 1,000 employees or revenue below 400 million RMB'* (National Bureau of Statistics of China, 2023). Furthermore, the SME standards in China vary significantly across different sectors; the aforementioned definition adopted in this research is applicable to industrial SMEs, including those operating in the sectors of manufacturing, mining, and the production and supply of electricity, heat, gas, and water.

Notably, existing studies on Chinese SMEs have largely adopted this definition, suggesting that this is a more contextually appropriate approach to analyse the development of SMEs in China (Li *et al.*, 2022; Tang *et al.*, 2017; Zhang and Merchant, 2020; Tang and Tang, 2012).

The below tables (Tables 5-11 to 5-18) provide a comprehensive overview of the distribution of the sample firms by size, age, revenue, position, export intensity, industry, and geographical location.

Table 5-11 Distribution of sample firms – by size

Distribution of sample firms – by size

		Freq.	Percent (%)	Cumulative Percent (%)
Number of employees	20–100	180	17.1	17.1
	101–200	176	16.7	33.8
	201–300	135	12.8	46.6
	301–400	97	9.2	55.8
	401–500	143	13.6	69.4
	501–600	112	10.6	80.0
	601–700	63	6.0	86.0
	701–1,000	148	14.0	100.0
	Total	1,054	100.0	

Table 5-12 Distribution of sample firms – by age

Distribution of sample firms – by age

		Freq.	Percent (%)	Cumulative Percent (%)
Year since business establishment	4–10	348	33.0	33.0
	11–20	501	47.5	80.6
	21–30	197	18.7	99.2
	>30	8	.8	100.0
	Total	1,054	100.0	

Table 5-13 Distribution of sample firms – by firm revenue

Distribution of sample firms – by firm revenue

		Freq.	Percent (%)
Annual revenue of firms (¥ CNY)	X < 3m	71	6.7
	3m ≤ X < 20m	278	26.4
	20m ≤ X < 400m	474	45.0
	X > 400m	231	21.9
	Total	1,054	100.0

Table 5-14 Distribution of the key informants – by position

Distribution of the key informants – by position

		Freq.	Percent (%)
Respondents' positions	Owner	541	51.3%
	General manager	278	26.4%
	Sales director	122	11.6%
	Production/operation director	90	8.5%
	Other senior positions	23	2.2%
		1,054	100.0

Table 5-15 Distribution of sample firms – by industry

Distribution of sample firms – by industry

		Freq.	Percent (%)
Industry types	Traditional	826	78.4
	High-tech	228	21.6
	Total	1,054	100.0

Table 5-16 Distribution of sample firms – by export intensity

Distribution of sample firms – by export intensity

		Freq.	Percent (%)	Cumulative percent (%)
Ratio of export sales	No export sales	128	12.1	12.1
	0–25%	368	34.9	47.1
	26%–50%	376	35.7	82.7

51%–100%	182	17.3	100.0
Total	1,054	100.0	

Table 5-17 Distribution of sample firms – by location (province)

Distribution of sample firms – by location (province)

Province number		Freq.	Percent (%)
01	Anhui Province	50	4.7
02	Guangdong Province	59	5.6
03	Beijing	54	5.1
04	Fujian Province	53	5.0
05	Guangxi Province	50	4.7
06	Henan Province	52	4.9
07	Hubei Province	53	5.0
08	Hunan Province	53	5.0
09	Jiangsu Province	53	5.0
10	Jiangxi Province	52	4.9
11	Liaoning Province	56	5.3
12	Shandong Province	52	4.9
13	Shaanxi Province	51	4.8
14	Shanghai	53	5.0
15	Sichuan Province	53	5.0
16	Zhejiang Province	53	5.0
17	Chongqing	53	5.0
18	Hebei Province	50	4.7
19	Heilongjiang Province	52	4.9
20	Shanxi Province	52	4.9
	Total	1,054	100.0

Table 5-18 Distribution of sample firms – by location (region)

Distribution of sample firms – by location (region)

	Freq.	Percent (%)
Eastern region	427	40.5
Central region	312	29.6

Western region	207	19.6
Northeastern region	108	10.2
Total	1,054	100.0

As observed in Table 5-11, all the sample firms conform to the SME definition adopted in this study, with fewer than 1,000 employees (National Bureau of Statistics of China, 2023). The average size of the sample firms in this study is 392 employees. This average firm size (392) accords with the previous studies on Chinese SMEs (Tang *et al.*, 2017; Hu and Hughes, 2022). In addition, a large proportion of the sample firms have fewer than 500 employees, representing 69.4% of the entire sample. As shown in Table 5-12, the average age of the sample firms in this study is 14.23 years. A significant proportion of the sample firms are relatively young. The vast majority of the sample (80.6%) have been in operation for fewer than 20 years, established in or after 2003.

Regarding financial performance (Table 5-13), most sample firms (78.1%) reported annual revenue of less than ¥ 400 million. Besides, 474 firms, representing 45.0% of the sample firms, have annual revenues ranging from ¥ 20 million to ¥ 400 million. In addition, as illustrated in Table 16, the great majority of the sample firms (87.9%) engage in export sales. There are 182 firms (17.3%) reporting high export intensity, with export sales constituting between 51% and 100% of their total revenues.

In accordance with the guideline by National Bureau of Statistics of China (2017), high-tech industries encompass six categories: pharmaceutical manufacturing, aerospace and spacecraft equipment manufacturing, electronics and communications equipment manufacturing, computer and office equipment manufacturing, medical instrumentation and apparatus manufacturing, and information chemical manufacturing. In line with this industry taxonomy, 228 SMEs are classified as high-tech-industry firms in this study, representing 21.6% of the sample firms. In addition, 826 firms (78.4%) are segmented as traditional-industry firms (Table 5-15).

The geographical distribution of the sample firms contains a diverse selection of provinces within China (Table 5-17 and Table 5-18). Specifically, the survey data was collected through SMEs operating in 20 provinces across China, covering the eastern, western, central, and north-eastern regions. In adherence to the previous studies, this approach was adopted to mitigate region-selection bias for conducting survey research in China (Gao *et al.*, 2017; Lu *et al.*, 2021b; Wang *et al.*, 2013). In each province, between 50 and 60 SMEs were selected to ensure a valid and representative sample. Over 40% of the sample firms are from the eastern region, which is characterised by more advanced economic and market development (Li *et al.*, 2018a). As discussed previously, this study adopts a key-informant approach to collect primary data from SMEs' key decision-makers associated with innovation activities. Table 5-

14 displays that 77.70% of the respondents (819) are owners or general managers of the firms, and the rest of the respondents all are senior executives (e.g. sales director) that are closely involved in firms' innovation decision-making.

In summary, the research sample is well aligned with the central research focus of SMEs in China and the sampling frame defined in this study. After reporting the characteristics of the sample firms, the subsequent section will present the findings from a series of statistical analyses.

5.4. Regression Analysis

5.4.1. Descriptive Statistics, Correlation Matrix, and Multicollinearity Diagnostics

Descriptive statistics, correlation matrix, and multicollinearity diagnostics are presented in Table 5-19. Specifically, the values of mean, standard deviation, and bivariate correlations of all variables are computed. Dummy variables (i.e. industry and revenue variables) are not included in the correlation matrix, but are incorporated into the subsequent hypothesis testing. In accordance with the recommended practices (Aiken *et al.*, 1991), all discrete variables are standardised to ensure uniform treatments and consistent scaling. Computing standardised scores effectively reduces multicollinearity issues and provides a more precise interpretation for all variables in the regression models (Gujarati and Porter, 2009). This method is widely

employed in previous studies (Hartmann and Uhlenbruck, 2015; Villaverde and Maza, 2015; Li *et al.*, 2018b).

To further diagnose potential multicollinearity, variance inflation factor (VIF) of all variables is examined (Table 5-19). According to the criteria formulated by Hair (2009), VIF values greater than 5.0 are indicative of potential multicollinearity issues. The results reveal that all variables in this study have VIF values below 1.5, with the highest being 1.493 for IPR protection. These findings confirm that the regression model is unlikely to be affected by multicollinearity concerns.

Table 5-19 Means, standard deviations, and correlation matrix of variables

Variable	Mean	SD	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Innovation performance	.350	.188		1.000												
2. Innovation orientation	18.510	1.942	1.193	.172**	1.000											
3. Managerial perception of social anomie	36.290	11.757	1.090	-.081**	-.128**	1.000										
4. Competitive dynamics	23.100	3.213	1.166	.138**	.358**	.037	1.000									
5. IDPM	7.499	1.631	1.244	-.008	-.001	-.001	-.010	1.000								
6. IPR protection	11.612	2.553	1.493	.011	.040	-.065*	.017	.220**	1.000							
7. Uncertainty avoidance	4.343	.093	1.443	.051	.043	-.042	-.023	.389**	.339**	1.000						
8. Achievement orientation	4.672	.129	1.426	.011	.041	-.018	.010	.140**	-.272**	.233**	1.000					
9. In-group collectivism	5.091	.098	1.227	-.008	.036	.022	.053	.232**	.190**	.120**	.272**	1.000				
10. Firm size (ln)	5.642	.935	1.126	.001	-.037	.035	-.019	-.003	-.085**	-.087**	-.059	-.028	1.000			
11. Firm age	14.231	7.068	1.111	-.098**	-.071*	.061*	.005	-.037	-.095**	-.058	-.022	-.081**	.284**	1.000		
12. R&D expenditure	.231	.174	1.202	.301**	.032	.224**	-.018	.003	-.112**	-.035	-.043	-.055	.113**	.064*	1.000	
13. Export intensity	.301	.224	1.154	.207**	.001	.093**	.005	.009	-.041	-.027	-.042	-.069*	.164**	.121**	.330**	1.000

Note: n = 1,054; Industry and revenue dummies are not included in the correlation matrix.
** Significance at the 0.01 level (two-tailed)
* Significance at the 0.05 level (two-tailed)

5.4.2. Hypothesis Testing

Based on the theoretical framing of IAT and IBV and the comprehensive literature view, the research hypotheses are developed and summarised in Table 5-20. The research model is presented in Figure 5-1.

Figure 5-1 The research model

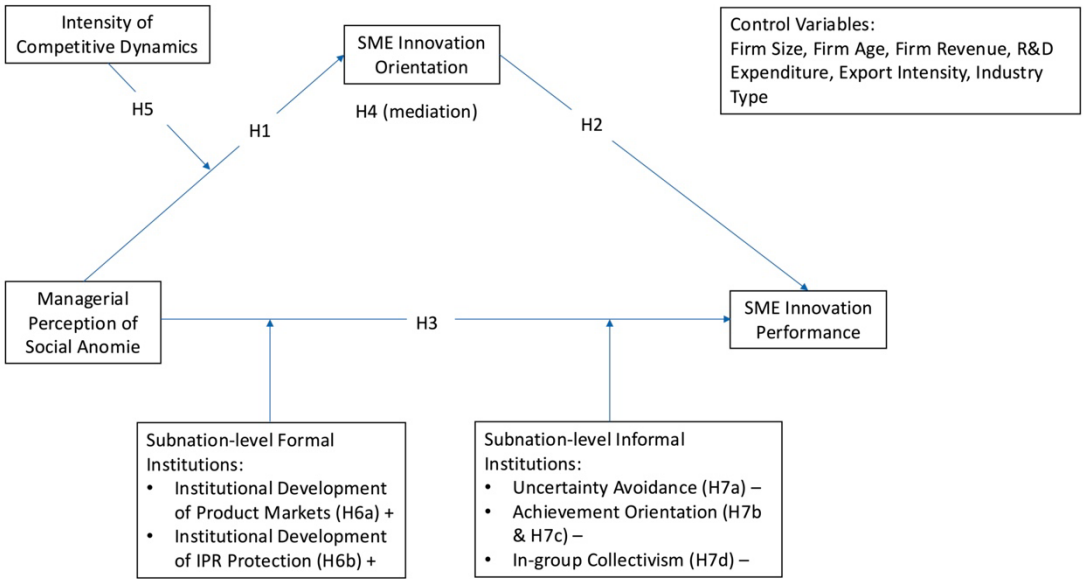


Table 5-20 A summary of research hypotheses

Research Hypotheses
Hypothesis 1. Managerial perception of social anomie is negatively correlated with SME innovation orientation.
Hypothesis 2. SME innovation orientation is positively correlated with SME innovation performance.
Hypothesis 3. Managerial perception of social anomie is negatively correlated with SME innovation performance.

Hypothesis 4. SME innovation orientation mediates the relationship between managerial perception of social anomie and SME innovation performance.

Hypothesis 5. Competitive dynamics moderate the negative relationship between managerial perception of social anomie and SME innovation orientation, such that the negative impact of managerial anomie on SME innovation orientation is weakened under conditions of greater competitive dynamics.

Hypothesis 6a. The institutional development of product markets moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust institutional development of product markets.

Hypothesis 6b. The institutional development of IPR protection moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust institutional development of IPR protection.

Hypothesis 7a. The cultural prevalence of uncertainty avoidance moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where uncertainty avoidance is more strongly emphasised.

Hypothesis 7b. The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where achievement orientation is more strongly emphasised.

Hypothesis 7c (Alternative). The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where achievement orientation is more strongly emphasised.

Hypothesis 7d. The cultural prevalence of in-group collectivism moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where in-group collectivism is more strongly emphasised.

Consistent with the existing innovation and management research (Pinho and Prange, 2016; Biraglia and Kadile, 2017), this study first adopts the stepwise approach outlined by Baron and Kenny (1986) to examine the correlations among the predictor, mediator, and outcome; next, the bootstrap approach is employed to verify significance of the mediation (Preacher and Hayes, 2008). The combination of both the stepwise approach by Baron and Kenny (1986) and the bootstrapping techniques suggested by Hayes (2009) for mediation analysis, is evidenced as methodologically robust in current management research (Mor *et al.*, 2013; Chen and Nadkarni, 2017; Biraglia and Kadile, 2017; Hånell *et al.*, 2018).

The mediation analysis

To examine the mediating role of SME innovation orientation in the relationship between MPSA and SME innovation performance, the following conditions are examined and corroborated sequentially: Condition one – the relationship between MPSA (predictor) and SME innovation performance (outcome) is statistically significant; Condition two – the relationship between MPSA (predictor) and SME innovation orientation (mediator) is statistically significant; and Condition three – The association between SME innovation orientation (mediator) and SME innovation performance (outcome) is statistically significant.

The regression results are presented in Table 5-23. The hypotheses were tested using ordinary least squares (OLS) multiple hierarchical regression analysis (MHRA) (Lindner *et al.*, 2021). The use of MHRA enables researchers to examine the changes of the models' predictive capability, thus providing a more accurate estimation of the correlations between variables (Hopkins and Ferguson, 2014; Hayes, 2015).

First, Model 1 incorporates the control variables to examine their effects on SME innovation performance (i.e. outcome variable); Model 4 includes the control variables to examine their effects on SME innovation orientation (i.e. mediating variable).

Towards the mediation analysis, the relationship between MPSA (explanatory variable) and SME innovation performance (outcome variable), *viz.* Condition 1, is examined in Model 2. The findings illustrate that the negative correlation between MPSA and SME innovation performance is statistically significant, thus lending support to Hypothesis 2 ($\beta = -0.194$, $p < 0.001$).

Hypothesis 1, which posits that MPSA is negatively associated with SME innovation orientation (Condition 2), is tested in Model 6. The findings reveal a statistically significant negative relationship between MPSA (explanatory variable) and SME innovation orientation

(mediating variable) (β = -0.278, $p < 0.001$), thereby validating Condition 2 and supporting Hypothesis 1.

In addition, Model 3 validates Condition 3 concerning the relationship between mediator and outcome variable. Specifically, Model 3 reveals that SME innovation orientation is positively related to SME innovation performance (β = 0.086, $p < 0.005$). Consequently, Hypothesis 3 is statistically supported, and Condition 3 is validated.

Collectively, the results above have fulfilled the three conditions outlined by Baron and Kenny (1986). The results of the three conditions are summarised in Table 5-21 below:

Table 5-21 Stepwise approach of mediation results

	Paths	Results
Condition one (H3)	MPSA → IP	Supported
Condition two (H1)	MPSA → IO	Supported
Condition three (H2)	IO → IP	Supported

In addition, the coefficients of the effect of MPSA (explanatory variable) on SME innovation performance (outcome variable) in Model 2 (total effect) and Model 3 (mediator is present) are compared (Rucker *et al.*, 2011). The effect of MPSA (explanatory variable) on SME innovation performance (outcome variable) diminishes from the total effect in Model 2 (β = -

0.194, $p < 0.001$) to the direct effect in Model 3 ($\beta = -0.174$, $p < 0.001$). Statistical significance is maintained in both models.

According to the causal steps method developed by Baron and Kenny (1986), the findings offer preliminary evidence that SME innovation orientation, serving as a mediator, partially accounts for the relationship between MPSA and SME innovation performance. However, previous studies highlight that the Baron and Kenny (1986)'s stepwise method (i.e. causal steps approach) warrants further examination because of its relatively low statistical power (MacKinnon *et al.*, 2002). Specifically, Hayes (2009) contested the sufficiency of the causal steps approach to establish mediation, noting that *'the existence of an indirect effect is inferred logically by the outcome of a set of hypothesis tests'*. As such, scholars have advocated the use of bootstrapping as an optimal and highly accurate method for examining mediation effect (MacKinnon *et al.*, 2002; Zhao *et al.*, 2010; Hayes, 2009; Wen *et al.*, 2010).

Consequently, this study draws on the bootstrap approach to examine the significance of the mediating relationship. In conformity with the previous mediation-examination studies (Peltokorpi and Yamao, 2017; Dheer and Lenartowicz, 2018), the mediating effect was examined by using the bootstrap technique with 5,000 resamples to estimate the 95% confidence interval (CI) for the indirect effect (Alteren and Tudoran, 2016). Mediation is

considered statistically significant when the 95% CI does not contain zero (Hayes, 2012). The bootstrap results (see Table 5-22) reveal a significant indirect relationship (i.e. mediation) between MPSA and SME innovation performance through SME innovation orientation, with an indirect effect coefficient of -0.034 (SE = 0.009, 95% CI [-0.053, -0.017]), confirming statistical significance as the 95% CI does not include zero. The bootstrap analysis corroborates Hypothesis 4 (Peltokorpi and Yamao, 2017; Preacher and Hayes, 2004).

To synthesise, the aforementioned results provide strong evidence for Hypotheses 1, 2, 3, and 4. The findings confirm that MPSA negatively influences SME innovation orientation (Hypothesis 1) and SME innovation performance (Hypothesis 3). Additionally, Hypothesis 2 is supported, indicating that SME innovation orientation is positively correlated with SME innovation performance. Furthermore, Hypothesis 4, which posits that SME innovation orientation mediates the relationship between MPSA and SME innovation performance, is strongly supported by the bootstrap analysis (Hayes, 2009). The mediation results illuminate that both SME innovation orientation and innovation performance are adversely affected when SME owner-managers perceive a higher level of social anomie.

The subsequent section explores the boundary conditions of the mediating relationship through a moderated mediation analysis.

The moderating effect of the intensity of competitive dynamics

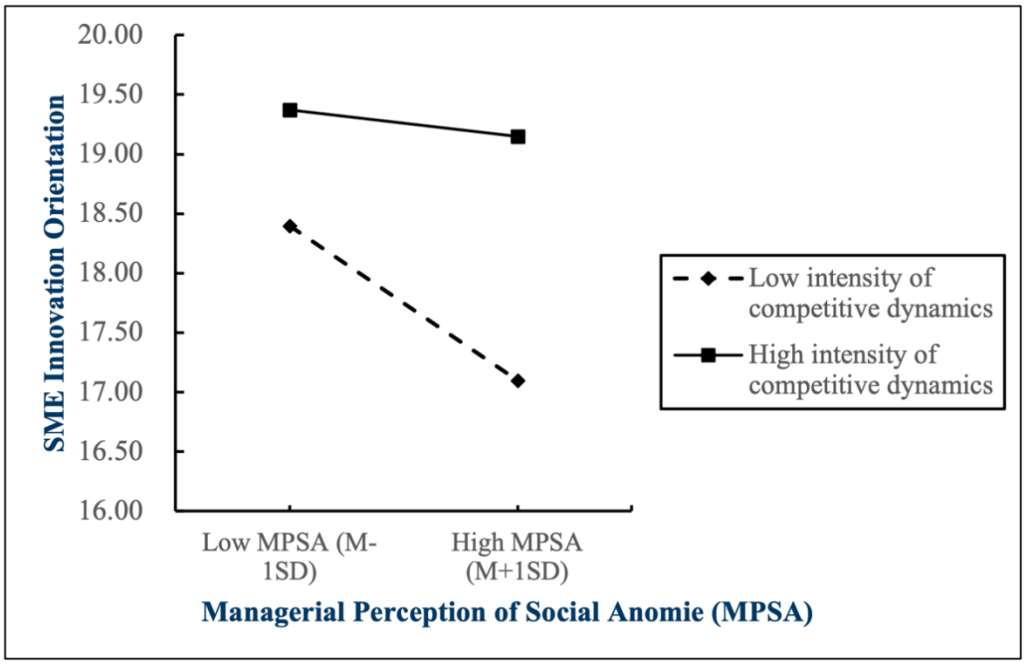
Hypothesis 5 postulates that the intensity of competitive dynamics moderates the negative relationship between MPSA (explanatory variable) and SME innovation orientation (mediator). Model 6 includes an interaction term of MPSA and competitive intensity to analyse their interactive effect (see Table 5-23). The results of Model 6 reveal that the interactive effect between MPSA and the intensity of competitive dynamics on SME innovation orientation is statistically significant ($\beta = 0.137$, $p < 0.001$). In addition, to further interpret the magnitude and direction of the moderating effect, a simple slope analysis is carried out (Aiken *et al.*, 1991; Dawson, 2014). Specifically, the simple slope analysis compares the effect of MPSA on SME innovation orientation when the intensity of competitive dynamics is low (one standard deviation below the mean) versus when the intensity of competitive dynamics is high (one standard deviation above the mean) (Dawson, 2014).

To facilitate the interpretation of moderation, the resulting interaction between MPSA and competitive dynamics is visually presented through a plot (Figure 5-2). The dashed line in Figure 5-2, representing the condition of a lower level of competitive dynamics, demonstrates a significantly steeper slope than the solid line which is indicative of the condition of a higher level of competitive dynamics. In this sense, the findings illustrate that the negative effect of

MPSA on SME innovation orientation is more pronounced when firms perceive a lower level of competitive dynamics. By contrast, under the condition of a higher level of competitive dynamics (the solid line in Figure 5-2), while the negative correlation between MPSA and SME innovation orientation remains, the slope is shallower, in comparison to the condition of a lower level of competitive dynamics (i.e. the dashed line in Figure 5-2).

Taken together, the analysis supports Hypothesis 5 that competitive dynamics can moderate the adverse impact of MPSA on SME innovation orientation.

Figure 5-2 The moderating effect of competitive dynamics between managerial perception of social anomie and SME innovation orientation



Probing further, the analysis also examines whether the mediating effect is moderated by the levels of competitive dynamics. Previous studies employed the bootstrap technique to conduct moderated mediation analysis, suggesting that this method can generate salient statistical power and ensure estimation accuracy (Preacher *et al.*, 2007; Verwaal, 2017). In line with the recommended procedures (Peltokorpi and Yamao, 2017; Hayes, 2012), three levels of competitive dynamics are segmented into: (1) one standard deviation below the mean; (2) mean; and (3) one standard deviation above the mean. Following this, the 95% CIs derived from bootstrapping are compared at these levels. The bootstrap results are presented in Table 5-22 below.

Table 5-22 Bootstrap results of the mediation analysis

Intensity of competitive dynamics (moderator)	Bootstrapping indirect effect	Bootstrapping standard error (SE)	Boot lower limit 95% CI	Boot upper limit 95% CI
Low (– 1SD)	-.051	.014	**-.081**	**-.025**
Mean (0)	-.034	.009	**-.053**	**-.017**
High (+ 1SD)	-.017	.006	**-.031**	**-.006**

Table 5-22 suggests that the bootstrap 95% CIs at high (+1SD), mean (0), and low levels (-1SD) are statistically significant, with all 95% CIs excluding zero (Low 95% CI [-0.081, -0.025]; Mean 95% CI [-0.053, -0.017]; and High 95% CI [-0.031, -0.006]) (Hayes, 2012). These results indicate that there is a consistently mediating relationship between MPSA and

SME innovation performance through innovation orientation, across multiple levels of competitive dynamics. This provides further evidence to the mediating effect of SME innovation orientation between MPSA and SME innovation performance, as formulated in Hypothesis 4.

In addition, the results reveal that the mediating effect is enhanced at a lower level (-1SD) of competitive dynamics (Boot indirect effect = -0.051; Boot SE = 0.014). The findings suggest that the mediating effect of MPSA on SME innovation performance, through its adverse impact on SME innovation orientation, is more pronounced under conditions of weaker competitive dynamics.

Table 5-23 Regression results of the moderated mediation model: Hypotheses 1–5

	SME Innovation Performance			SME Innovation Orientation		
	Model 1 Controls only	**Model 2** Controls, IV, moderator	**Model 3** Controls, IV, moderator, and mediator	**Model 4** Controls only	**Model 5** Controls, IV, Moderator	**Model 6** Controls, IV, moderator, and interaction
Predictor Managerial perception of social anomie (MPSA)		-.194 (.039) ***	-.174 (.040) ***		-.236 (.039) ***	-.278 (.039) ***
Mediator: Innovation orientation			.086 (.031) **			
Moderator: Competitive intensity (CI)		.143 (.029) ***	.113 (.030) ***		.352 (.029) ***	.377 (.029) ***
Interaction term: MPSA*CI						.137 (.029) ***
IDPM		-.035 (.031)	-.033 (.031)		-.024 (.032)	-.026 (.031)
IPR protection		.024 (.034)	.022 (.034)		.026 (.035)	.015 (.034)
UA		.055 (.034)	.052 (.034)		.032 (.034)	.040 (.034)
AO		.018 (.034)	.015 (.034)		.028 (.034)	.026 (.034)
IGC		-.014 (.031)	-.014 (.031)		.005 (.031)	.009 (.031)
Control variables						
Firm age	-.134 (.030) ***	-.116 (.030) ***	-.112 (.030) ***	-.071 (.033) **	-.049 (.030) †	-.051 (.030) †
Firm size (ln)	-.022 (.032)	-.004 (.031)	-.003 (.031)	-.031 (.034)	-.006 (.031)	-.004 (.031)
R&D expenditure	.274 (.031) ***	.304 (.031) ***	.298 (.031) ***	.037 (.033)	.081 (.031) **	.082 (.031) **
Export intensity	.136 (.031) ***	.134 (.030) ***	.135 (.030) ***	-.004 (.033)	-.007 (.031)	-.011 (.030)
Industry	-.036 (.070)	.010 (.073)	-.045 (.075)	.566 (.073) ***	.583 (.071)***	.548 (.071) ***
Revenue dummy	Included	Included	Included	Included	Included	Included

R	.363	.424	.431	.251	.462	.475
R^2	.132	.179	.186	.063	.214	.226
F	19.827 ***	15.130 ***	14.802 ***	8.785 ***	18.803 ***	18.918 ***
Observations	1,054	1,054	1,054	1,054	1,054	1,054

Note: Standardised coefficients are reported; standard errors are presented in parentheses.
,**, * and † denote significance at the 0.1%, 1%, 5%, and 10% level ($p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.10$).

The moderating effects of the subnation-level institutions

This study also investigates the boundary conditions of the subnation-level institutional environments in driving the impact of MPSA on SME innovation performance. To explore the moderating effect of subnation-level institutional factors on managerial anomie and SME innovation performance, MHRA is performed. This approach was widely employed in other studies that investigate the role of subnation-level institutional variations in driving firm-level activities in the context of China (Gao *et al.*, 2015; Wang *et al.*, 2015; Lu *et al.*, 2021b; Shen *et al.*, 2023; Gao *et al.*, 2017; Zhang *et al.*, 2021b; Liu *et al.*, 2024a; Wu and Chen, 2014).

First, the results of Hypothesis 3 have confirmed that there is a statistically significant and negative correlation between MPSA and SME innovation performance. To unravel the complex relationship between MPSA and SME innovation performance, several boundary conditions based on IBV are examined. Hypotheses 6a and 6b are concerned with the formal institutional environments (i.e. the subnation-level IDPM and IPR protection), while Hypotheses 7a, 7b, 7c, and 7d pertain to the informal institutional environments (i.e. the subnation-level cultural prevalence of uncertainty avoidance, achievement orientation, and in-group collectivism).

The regression results are presented in Table 5-24. The negative correlation between MPSA and SME innovation performance is verified repeatedly in Model 8 in the absence of the interference of the competitive dynamics. The results reveal that there is a significantly negative correlation between MPSA and SME innovation performance ($\beta = -0.213$, $p < 0.001$). Additionally, Model 10 tested the direct effects of MPSA and the moderators on SME innovation performance. The findings also corroborate the negative correlation between MPSA and SME innovation performance ($\beta = -0.174$, $p < 0.001$). Most importantly, Model 11 introduced all the interaction terms to examine the moderating relationships (H6 and H7). The findings are presented in the following sections.

The moderating effect of the subnation-level institutional development of product markets

As presented in Table 5-24, Model 11 reveals that the interaction term of MPSA and the subnation-level IDPM is statistically significant ($\beta = 0.110$, $p < 0.001$). In other words, the subnation-level IDPM positively moderates the negative relationship between MPSA and SME innovation performance, such that the negative impact of MPSA on SME innovation performance is mitigated in the presence of strong IDPM. Consequently, these findings lend statistical support to Hypothesis 6a.

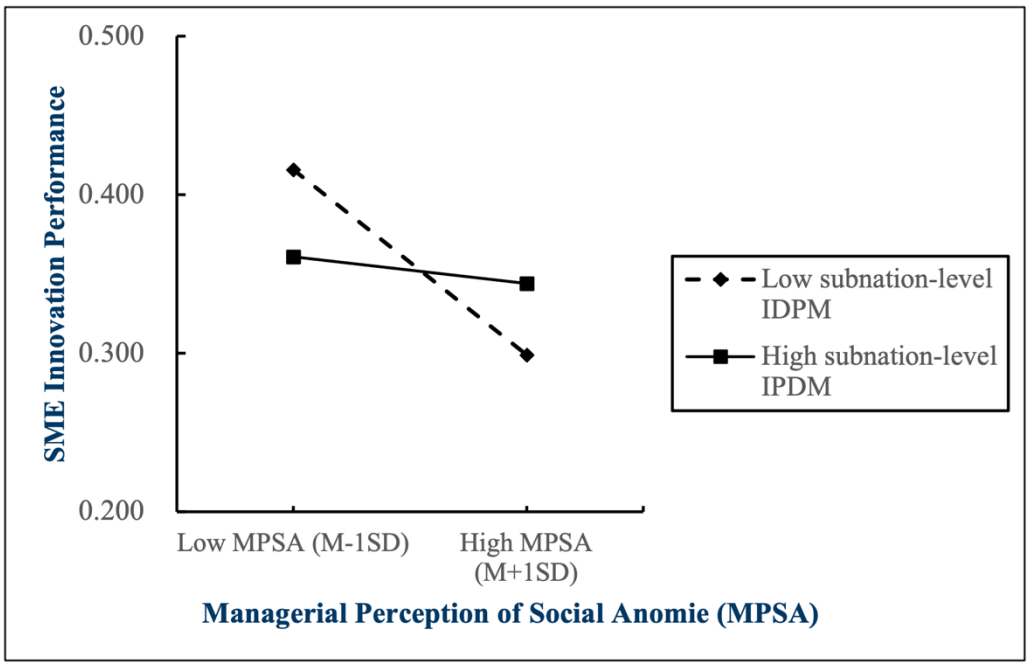
Following this, a simple slope analysis was performed to further interpret the moderating effect of IDPM on the negative relationship between MPSA and SME innovation performance (Aiken *et al.*, 1991; Dawson, 2014). Specifically, the simple slope analysis compares the effect of MPSA on SME innovation performance under conditions of high and low levels of the subnation-level IDPM. The high and low levels are represented by one SD above the mean and one SD below the mean, respectively.

To facilitate the interpretation of the moderation effect, the resulting interaction is visually presented through a plot (Figure 5-3) (Dawson, 2014). The plot demonstrates that the negative effect of MPSA on SME innovation performance is alleviated when stronger subnation-level IDPM is present.

As depicted in Figure 5-3, both lines demonstrate a decreasing trend, indicating that SME innovation performance is significantly diminished as MPSA intensifies. However, the slope of decline considerably varies depending on the level of the subnation-level IDPM. Specifically, the high-IDPM line (the solid line) is much flatter and decreases less steeply compared with the low-IDPM line (the dashed line). The flatter trajectory of the high-IDPM line suggests that the subnation-level IDPM significantly moderates the negative impact of MPSA on SME innovation performance.

In other words, SMEs located in provinces with more robust institutional support of product markets are inclined to overcome the negative impact of MPSA on SME innovation performance. In contrast, the steeper decline observed in the low-IDPM line (dashed line in Figure 5-3) indicates that the subnation-level institutional deficiencies in product markets exacerbate the detrimental effect of MPSA on SME innovation performance.

Figure 5-3 The interaction between managerial perception of social anomie and the subnation-level institutional development of product markets



The moderating effect of the subnation-level institutional development of IPR protection

The potential moderating effect of subnational-level institutional development of IPR protection on the relationship between MPSA and SME innovation performance was

evaluated in Model 11. This model incorporated all explanatory and moderating variables to test the proposed boundary condition of subnation-level development of IPR protection.

The analysis yielded a non-significant interaction term between managerial perception of social anomie and subnational-level IPR protection (β = -0.012, p = 0.736). This result indicates that the level of subnational IPR protection does not significantly influence the relationship between MPSA and SME innovation performance. Consequently, Hypothesis 6b is not supported.

The moderating effect of the subnation-level cultural prevalence of uncertainty avoidance

The moderating effect of cultural prevalence of UA is examined by assessing the interaction term of MPSA and cultural prevalence of UA in Model 11 (Table 5-24). The results indicate that the interaction term of managerial anomie and UA culture is statistically significant (β = -0.065 , $p < 0.05$). These findings indicate that the subnation-level cultural prevalence of UA significantly moderates the negative association between MPSA and SME innovation performance. Consequently, Hypothesis 7a is supported.

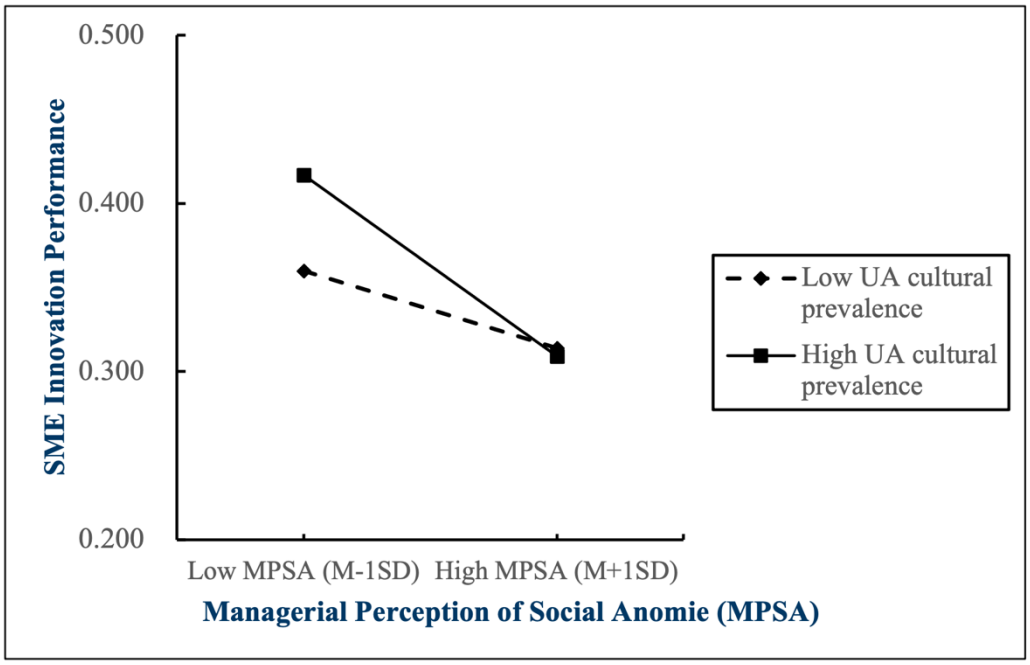
In a similar vein, a simple slope analysis was carried out to interpret the moderating effect of the cultural value of UA on the negative correlation between MPSA and SME innovation performance (Aiken *et al.*, 1991). Consistent with the recommended practices (Dawson, 2014; Liu *et al.*, 2017b), the simple slope analysis compares the effect of the MPSA on SME innovation performance under high and low UA cultural conditions. The high-level UA culture is indicated by one SD above the mean, while the low-level UA culture is denoted by one SD below the mean.

To facilitate interpretation of the moderation, the resulting interaction is visually presented through a plot (Figure 5-4) (Dawson, 2014). As illustrated in Figure 5-4, there is a clearly negative correlation between MPSA and SME innovation performance, with both lines reflecting downward trends. Nonetheless, the decline slope of the high-UA line (the solid line in Figure 5-4) is steeper than that of the low-UA line (the dashed line in Figure 5-4). This reveals that the negative effect of MPSA on innovation performance is more pronounced for SMEs operating in provinces characterised by strong cultural prevalence of UA.

These findings suggest that high levels of UA culture amplify the detrimental effect of MPSA on SME innovation performance. On the other hand, the negative impact of MPSA on SME innovation performance is comparatively weaker under the condition of low UA culture (the

dashed line in Figure 5-4), implying that SMEs operating in provinces with a lower cultural emphasis on UA are inclined to be insulated from the adverseness of MPSA. These findings provide support for Hypothesis 7a, affirming that the subnational-level cultural prevalence of UA moderates the negative relationship between MPSA and SME innovation performance.

Figure 5-4 The interaction between social anomie and uncertainty avoidance culture



The moderating effect of the subnation-level cultural prevalence of achievement orientation

The potential moderating effect of subnational-level cultural prevalence of achievement orientation (AO) on the relationship between MPSA and SME innovation performance was assessed using Model 11. The analysis revealed a non-significant interaction term (β = -

0.049, p = 0.144), indicating that AO cultural prevalence does not significantly moderate the relationship between MPSA and SME innovation performance. Consequently, Hypotheses 7b and 7c were not supported.

The moderating effect of the subnation-level cultural prevalence of in-group collectivism

To evaluate the potential moderating influence of subnational-level in-group collectivism (IGC) on the relationship between MPSA and SME innovation performance, the results generated in Model 11 was evaluated. The findings revealed a non-significant interaction term (β = -0.014, *p* = 0.649). These results indicate that the subnation-level cultural prevalence of IGC does not moderate the relationship between MPSA and SME innovation performance. Accordingly, Hypothesis 7d fails to gain statistical support.

Table 5-24 Regression results: The moderating effect of the subnation-level institutional environment: Hypotheses 6–7

			SME Innovation Performance		
	Model 7 **Controls only**	Model 8 **IV**	Model 9 **ICD & IO**	Model 10 **Moderators**	Model 11 **Interaction terms**
Predictor					
Managerial perception of social anomie (MPSA)		-.213 (.039) ***	-.181 (.039) ***	-.174 (.040) ***	-.163 (.040) ***
Moderators					
IDPM				-.033 (.031)	-.033 (.031)
IPR protection				.022 (.034)	.012 (.034)
UA				.052 (.034)	.063 (.034) †
AO				.015 (.034)	.017 (.034)
IGC				-.014 (.031)	-.014 (.031)
ICD			.110 (.030) ***	.113 (.030) ***	.109 (.030) ***
IO			.086 (.031) **	.084 (.031) **	.081 (.031) **
Interaction					
MPSA*IDPM					.110 (.032) ***
MPSA*IPR					-.012 (.036)
MPSA*UA					-.074 (.032) *
MPSA*AO					-.049 (.033)
MPSA*IGC					-.014 (.031)
Control variables					
Firm age	-.134 (.030) ***	-.115 (.030) ***	-.113 (.030) ***	-.105 (.030) ***	-.105 (.030) ***
Firm size (ln)	-.022 (.032)	-.017 (.031)	-.011 (.031)	-.003 (.031)	-.005 (.031)
R&D expenditure	.274 (.031) ***	.296 (.031) ***	.294 (.031) ***	.298 (.031) ***	.297 (.031) ***
Export intensity	.136 (.031) ***	.138 (.031) ***	.136 (.030) ***	.135 (.030) ***	.133 (.030) ***
Industry types	-.036 (.070)	.073 (.072)	-.045 (.075)	-.039 (.075)	-.038 (.074)
Revenue dummy	Included	Included	Included	Included	Included

R	.363	.393	.427	.431	.444
R-square	.132	.154	.182	.186	.201
F	19.827 ***	21.168 ***	21.089 ***	14.802 ***	12.045 ***
Observations	1,054	1,054	1,054	1,054	1,054

Note: Standardised coefficients are reported; standard errors are presented in parentheses.
,**, * and † denote significance at the 0.1%, 1%, 5%, and 10% level (p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10).

5.5. Robustness Checks

Robustness checks were undertaken to verify the validity and reliability of the findings reported in the main analysis (see Section 5.4). These tests focused on the examination of the mediating and moderating effects confirmed in the main analysis, ensuring that the results remain consistent under alternative analytical techniques. The robustness checks include two key methods: (1) alternative measures and methods, which examined the direct and mediating effects of MPSA on SME innovation performance through SME innovation orientation; and (2) the split-sample analysis, which examined the subnational-level variations in the relationship between MPSA and SME innovation performance.

5.5.1. Alternative Measures and Estimation Methods

Logit Regression Analysis

To further validate the findings, this study included an alternative outcome measure to perform the regression analysis for robustness checks. Specifically, SMEs' engagement in innovation activities (EIA) is a binary variable capturing whether SMEs executed new practices and activities in pursuit of innovation outcomes (see Table 5-1). The logit regression analysis (See Table 5-25) demonstrated consistent findings: (1) the negative effect of MPSA on EIA is significant ($\beta = -0.18$, $p < 0.01$); (2) the positive effect of innovation orientation on EIA is significant ($\beta = 0.33$, $p < 0.001$).

The bootstrap robustness checks confirm that innovation orientation mediates the effect of MPSA on EIA (β = -0.07; Boot SE = 0.02; 95 % CI [-0.12, -0.04]), as the 95% CI excludes zero, thereby substantiating the hypothesised mediation. (Hayes, 2009).

Table 5-25 Logit regression analysis for robustness checks

MA → EIA	**Direct effect**	**Indirect effect (through IO)**
Coefficient	-0.18	-0.07
SE	0.07	0.02
95% CIs	[LLCI: -0.32, ULCI: -0.03]	[LLCI: -0.12, ULCI: -0.04]
IO → EIA		
Coefficient	0.33	
SE	0.08	
95% CI	[LLCI: 0.17, ULCI: 0.51]	

Note: Bootstrap resample = 5,000. SE = standard error.

Sobel Test

In addition, the Sobel test was conducted to verify the mediating effect of SME innovation orientation in the relationship between managerial perception of social anomie and SME innovation performance. The Sobel test specifically evaluates whether the indirect effect of an independent variable on a dependent variable through a mediator is statistically significant by analysing the path coefficients and their standard errors (Preacher and Leonardelli, 2001). The mediating effect was evaluated using the Sobel test, which yielded a test statistic of -2.28 and a corresponding p-value of 0.023. These results substantiate the mediating effect is statistically significant ($p < 0.05$), thereby providing further support for Hypothesis 4.

5.5.2. Split-sample Analysis

A split-sample analysis was employed to test the robustness of the moderating effects of the subnational IDPM as formal institutions, and the subnational cultural prevalence of UA as informal institutions, on the correlation between MPSA and SME innovation performance.

The moderating role of subnational IDPM

In line with the established practices in prior studies (Wu et al., 2022; Gao et al., 2017; Hair et al., 2010), the sample was divided into three groups based on the subnational IDPM levels: SMEs located in provinces or municipalities with high IDPM (n = 216), medium IDPM (n = 473), and low IDPM (n = 365). The categorisation was based on the IDPM indices derived from the marketisation composite (Wang *et al.*, 2021). Specifically, provinces or municipalities with IDPM indices exceeding the mean plus one standard deviation (Mean + 1SD) were categorised as high-IDPM regions, those between the mean and mean + 1SD as medium-IDPM regions, and those below the mean threshold as low-IDPM regions (Wu *et al.*, 2022). The results of the split-sample analysis are presented in Table 5-25.

Table 5-26 Robustness checks: IDPM

	Model 12			Model 13			Model 14		
	SME innovation performance								
		High IDPM			Medium IDPM			Low IDPM	
Predictors		**BootLLCI**	**BootULCI**		**BootLLCI**	**BootULCI**		**BootLLCI**	**BootULCI**
MPSA	-.076 (.088)	-.244	.098	-.220 (.062) ***	-.360	-.090	-.190 (.062) ***	-.313	-.061
IO	.016 (.062)	-.095	.142	.107 (.051) **	.007	.207	.067 (.050)	-.031	.155
ICD	.124 (.062) **	.009	.232	.056 (.048)	-.047	.168	.145 (.050) **	.058	.234
Controls									
Firm age	-.061 (.073)	-.203	.079	-.230 (.055) ***	-.343	-.120	-.045 (.038)	-.127	.016
Firm size (ln)	-.088 (.070)	-.219	.044	.032 (.050)	-.063	.135	-.011 (.045)	-.100	.102
R&D expenditure	.283 (.066) ***	.134	.433	.251 (.054) ***	.139	.359	.315 (.046) ***	.199	.397
Export intensity	.463 (.100) ***	.249	.698	.141 (.076)	-.031	.311	.098 (.032) **	.070	.372
Industry dummy	Included			Included			Included		
Revenue dummy	Included			Included			Included		
R	.555			.391			.493		
R-square	.307			.153			.243		
F	8.234 ***			7.585 ***			10.324 ***		
Observations	216			473			365		

Note: Standardised coefficients are reported; standard errors are presented in parentheses. Bootstrap sample size: 5,000
,**, * and † denote significance at the 0.1%, 1%, 5%, and 10% level (p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10).

The split-sample analysis re-examined the contingent nature of the relationship between MPSA and SME innovation performance across varying levels of IDPM. In regions characterised by high levels of IDPM (Model 12), the adverse impact of MPSA on SME innovation performance was insignificant ($\beta = -0.076$, $p = 0.386$). The bootstrap analysis with 5,000 resamples indicated that the 95% CI [-0.244, 0.098] includes zero, confirming the insignificance of the moderating effect.

Conversely, in regions with low levels of IDPM (Model 14), the negative effect of MPSA on SME innovation performance was significant ($\beta = -0.190$, $p < 0.001$), revealing the vulnerability of SMEs operating in underdeveloped institutional environments. Similarly, in regions with medium levels of IDPM (Model 13), the relationship remained significantly negative ($\beta = -0.220$, $p < 0.001$), further corroborating the detrimental influence of MPSA under less supportive institutional conditions.

In summary, the split-sample analysis findings reinforce Hypothesis 7a, demonstrating that the relationship between MPSA and SME innovation performance is moderated by the subnational variations in IDPM. Robustness checks confirm that high levels of IDPM can effectively neutralise the adverse effects of managerial anomie.

The moderating role of the subnational cultural prevalence of UA

Along similar lines, the split-sample analysis was performed to re-examine the moderating effect of subnational cultural prevalence of UA. The sample was divided into three groups based on the UA cultural indices derived from the cultural composites (Zhao *et al.*, 2015). Due to the relatively small variability and narrow range of cultural values, the sample was divided into three groups based on percentile thresholds computed from the distribution of the variable (Stine, 1989). Specifically, the 33rd percentile and the 67th percentile were used as cutoffs to generate three groups: low-UA (n = 419), medium-UA group (n = 321), and high-UA (n = 314) (Gomez, 2003; Hernández-Perlines *et al.*, 2021). This percentile bootstrap method maintains sufficient group sizes for robust statistical analysis and has been widely used in extant studies (Batsakis and Singh, 2019; Gregorič *et al.*, 2021).

The split-sample analysis is presented in Table 5-26. In provinces or municipalities with stronger cultural emphasis on UA (i.e. the high-UA group), the relationship between MPSA and SME innovation performance is statistically significant ($\beta = -0.194$, $p < 0.001$). The bootstrap 95% CI [-0.339, -0.050] does not include zero, confirming the robustness of this negative effect. Similarly, in low-UA provinces or municipalities, the negative effect of MPSA on SME innovation performance remains significant ($\beta = -0.138$, $p < 0.001$), with the bootstrap 95% CI [-0.248, -0.024] also excluding zero. Furthermore, the negative effect of

MPSA on SME innovation performance in the medium-UA group is significant (β = -0.213, p < 0.001), with the bootstrap 95% CI of [-0.381, -0.050], reinforcing the consistency of this negative relationship across varying levels of UA. However, the strength of the coefficient decreases from [-0.194] in the high-UA group to [-0.138] in the low-UA group. The 0.056-unit reduction provides evidence that the adverse impact of MPSA on SME innovation performance is weakened in provinces or municipalities with a lower cultural emphasis on UA.

Table 5-27 Robustness checks: the subnational cultural prevalence of UA

	Model 15			Model 16			Model 17		
	SME innovation performance								
	High UA			Medium UA			Low UA		
Predictors		**BootLLCI**	**BootULCI**		**BootLLCI**	**BootULCI**		**BootLLCI**	**BootULCI**
MPSA	-.194 (.074) **	-.339	-.050	-.213 (.085) ***	-.381	-.050	-.138 (.058) *	-.248	-.024
IO	.126 (.064)	-.013	.268	.033 (.052) **	-.066	.137	.070 (.044)	-.019	.157
CI	.083 (.086) **	-.047	.221	.140 (.049)	.040	.236	.115 (.045) **	.030	.206
Controls									
Firm age	-.301 (.064) ***	-.426	-.172	-.096 (.060)	-.236	.002	-.012 (.042)	-.091	.066
Firm size (ln)	.023 (.065)	-.217	.044	.014 (.061)	-.115	.124	.002 (.044)	-.094	.095
R&D expenditure	.284 (.068) ***	.151	.421	.267 (.070) ***	.097	.369	.323 (.046) ***	.228	.418
Export intensity	.161 (.106)	-.050	.365	.120 (.209) ***	.080	.537	.192 (.069) ***	.041	.353
Industry dummy	Included			Included			Included		
Revenue dummy	Included			Included			Included		
R	.432			.439			.488		
R-square	.187			.192			.238		
F	6.302 ***			6.689 ***			11.548 ***		
Observations	314			321			419		

Note: Standardised coefficients are reported; standard errors are presented in parentheses. Bootstrap sample size: 5,000
,**, * and † denote significance at the 0.1%, 1%, 5%, and 10% level (p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10).

In summary, the robustness tests reveal that the negative correlation between MPSA and SME innovation performance is significantly moderated by the subnational cultural prevalence of UA, thereby providing further corroboration for Hypothesis 7a.

5.6. Summary of the Hypothesis Testing Results

Table 5-27 summarises the results of the hypotheses testing. The regression analysis is comprised of three pathways: (1) the mediating role of SME innovation orientation in the relationship between MPSA and SME innovation performance (Hypotheses 1–4); (2) the moderating role of the intensity of competitive dynamics in the relationship between MPSA and SME innovation orientation (Hypothesis 5); and (3) the moderating role of subnational institutional environments in the relationship between MPSA and SME innovation performance (Hypotheses 6–7). The findings will be discussed in the subsequent chapter.

Table 5-28 Summary of hypotheses testing

Research Hypotheses	Results
Hypothesis 1. Managerial perception of social anomie is negatively correlated with SME innovation orientation.	Supported
Hypothesis 2. SME innovation orientation is positively correlated with SME innovation performance.	Supported
Hypothesis 3. Managerial perception of social anomie is negatively correlated with SME innovation performance.	Supported
Hypothesis 4. SME innovation orientation mediates the relationship between managerial perception of social anomie and SME innovation performance.	Supported

Hypothesis 5. Competitive dynamics moderate the negative relationship between managerial perception of social anomie and SME innovation orientation, such that the negative impact of managerial anomie on SME innovation orientation is weakened under conditions of greater competitive dynamics.	Supported
Hypothesis 6a. The institutional development of product markets moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust institutional development of product markets.	Supported
Hypothesis 6b. The institutional development of IPR protection moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the negative impact of managerial anomie on SME innovation performance is mitigated for SMEs located in provinces characterised by more robust IPR protection.	Not supported
Hypothesis 7a. The cultural prevalence of uncertainty avoidance moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where uncertainty avoidance is more strongly emphasised.	Supported
Hypothesis 7b. The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where achievement orientation is more strongly emphasised.	Not supported
Hypothesis 7c (Alternative). The cultural prevalence of achievement orientation moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is more pronounced for SMEs located in provinces where achievement orientation is more strongly emphasised.	Not supported
Hypothesis 7d. The cultural prevalence of in-group collectivism moderates the negative relationship between managerial perception of social anomie and SME innovation performance, such that the adverse impact of managerial anomie on SME innovation performance is weakened for SMEs located in provinces where in-group collectivism is more strongly emphasised.	Not supported

6. Discussion of Research Findings and Conclusion

This chapter discusses the research findings and illustrates the theoretical contributions and practical implications of this research. First, this chapter begins with a reiteration of the theoretical foundations and the research questions of this study. Second, the findings derived from the quantitative analysis are discussed. Third, the theoretical and practical implications of the research are presented. Following this, the limitations of the study are outlined, and future research directions are suggested. Finally, the conclusion of this study is presented.

6.1. Reiterating the Research Focus and Theoretical Underpinnings

6.1.1. The Core Subject of this Research: SME Innovation

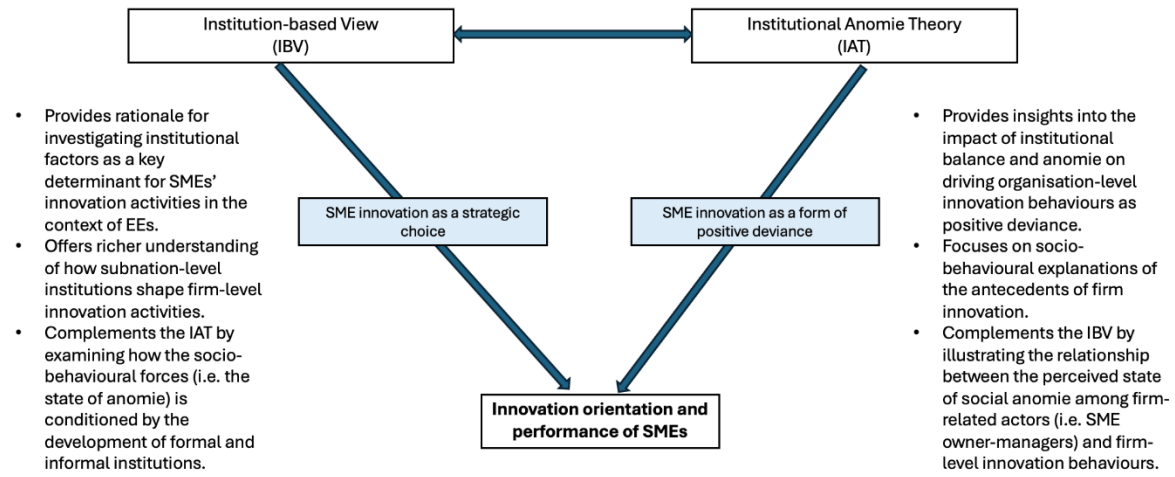
By cultivating innovation, SMEs in EEs can reinforce their strategies to more effectively differentiate themselves from their rivals and to flexibly adapt to the market demands, thereby gaining significant competitive advantages (Sahut and Peris-Ortiz, 2014). Given these factors, previous research has concentrated on exploring determinants of SME innovation orientation and performance in multiple contexts (Zhang and Hartley, 2018; Brunswicker and Vanhaverbeke, 2015). Grounded on an integrative view of IBV and IAT, this study extends this domain of knowledge by: (1) investigating the effect of MPSA on SME innovation orientation and innovation performance in the context of China; and (2) examining how the magnitude of these relationships are conditioned by the intensity of competitive dynamics and the subnation-level formal and informal institutions.

The following section will recapitulate the theoretical underpinnings of this study and discusses the values of incorporating both theoretical perspectives.

6.1.2. Theoretical Underpinnings and Research Model

IBV provides a fundamental understanding of the importance of institutions in shaping SMEs' innovation as strategic choices, while IAT enriches this perspective by elucidating the socio-behavioural implications of institutional impacts on SME innovation behaviours in EEs, as a form of positive deviance. The rationale of integrating IBV and IAT is presented in Figure 6-1.

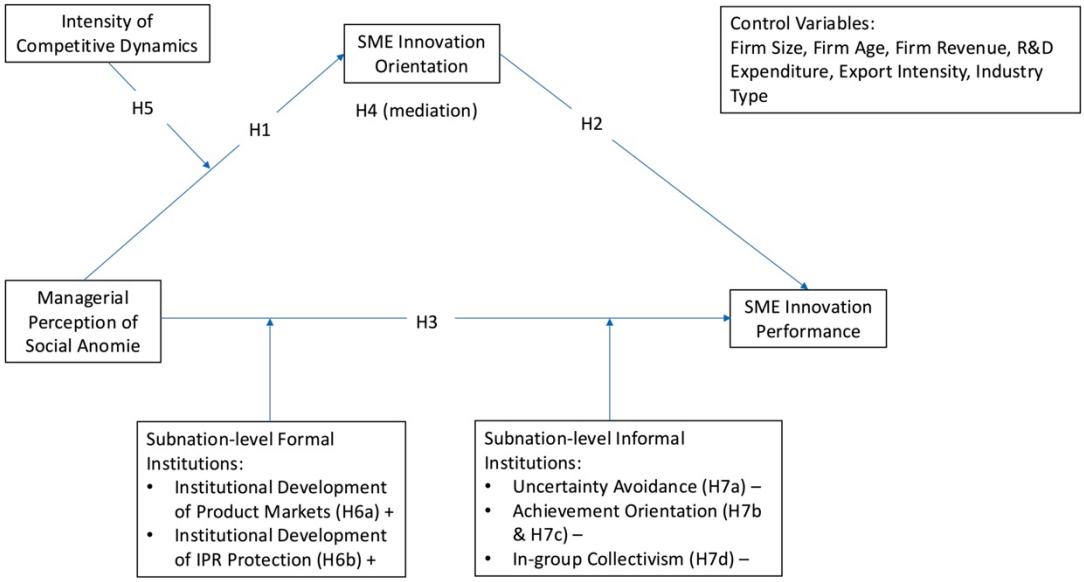
Figure 6-1 The rationale of integrating IBV and IAT



Source: The author

Built on the integrative perspective of IBV and IAT, the research model of this study is presented in Figure 6-2.

Figure 6-2 The research model



The subsequent section will present the detailed discussion of research findings.

6.2. Discussion of Findings: The Repercussions of the Managerial Perception of Social Anomie

The results of statistical analysis lend strong support to the proposition that MPSA significantly hinders both SME innovation orientation and innovation performance in China. Innovation orientation represents firms' attitudinal openness towards innovation-seeking

activities that are promotive to firm-level innovation outputs and implementations (Farzaneh *et al.*, 2022). Innovation performance, on the other hand, is an outcome of multidimensional factors derived from the execution of innovation efforts (Robertson *et al.*, 2023). The findings contributes to a richer understanding of the repercussions of experiencing social anomie among SME owner-managers in EEs. By addressing both SME innovation orientation and innovation performance, the study illustrates how the psychological barriers induced by social anomie can undermine SMEs' innovation potential and commitment to sustaining stronger innovation performance.

Some findings of the study are consonant with the previous studies on the repercussions of the state of anomie on organisational phenomena, such as its adverse effect on employees' task performance (Shantz *et al.*, 2015), its role in triggering unethical consumer behaviours (Rosenbaum and Kuntze, 2003), and its tendency to induce meaninglessness and ambiguity in entrepreneurial practices (Gregori *et al.*, 2021). This study extends this line of exploration by further uncovering how anomie-induced barriers and strains can constrain SMEs' adaptive capacity and innovative potential, thereby enriching a holistic understanding of the scope of anomie theory in relation to firms' positive behaviours (Nam *et al.*, 2014; Kim *et al.*, 2020).

The research findings are discussed in more depth in the subsequent sections.

6.2.1. Managerial Perception of Social Anomie and SME Innovation Orientation

The results of this research illustrate that MPSA significantly weakens SME innovation orientation in China. This opens up further scholarly debates on the relationship between the construct of anomie and firm-level strategic actions, advocating a more in-depth examination of the socio-behavioural antecedents of SME innovation in EEs. First, the analytical focus on innovation orientation contributes to the existing innovation literature by unravelling the distinctions and synergies between firms' innovation-oriented value system and its subsequent competency development and outcomes (Siguaw *et al.*, 2006). This study puts forth a holistic perspective to establish the linkage between the anomic state and its behavioural implications for SME innovation, thus enabling a more instrumental approach to explain firm-level innovation in EE contexts, such as China, where institutional support is unevenly developed (Su *et al.*, 2019). The findings consolidate and advance current knowledge on how subnational institutional variations generate heterogeneous conditions that influence the extent to which anomic pressure affects firms' commitment to innovation activities, and their subsequent innovation performance (Bieliński and Hövermann, 2023; Cao, 2023).

This study sheds light on the construct of innovation orientation through examining the process by which the perceived state of social anomie undermines the value and openness

that SMEs attribute to innovation and creativity. Specifically, this study unravels how MPSA may lead to a misalignment between SMEs' strategic focus and their attitudinal openness to facilitating innovation success, thus refraining their efforts to promote an innovation climate that actively motivates innovation-seeking behaviours among SMEs (Worren *et al.*, 2002; Li *et al.*, 2021b). The findings of this study significantly contribute to the extant literature on the relationship between the notion of anomie and firm innovation by highlighting the role of *managerial perception* of social anomie in explaining firms' innovative behaviours. To articulate, the current study advances the prior research that mainly examines how the configuration of social institutions and cultural values drives firm-level innovation activities as a form of positive deviance (Nam *et al.*, 2014; Kim *et al.*, 2020). Further, it deepens this line of inquiry by illustrating how SME owner-managers, as pivotal actors within firms, perceive and internalise the state of social anomie. Thus, the research findings provide a more fine-grained explanation of how the state of MPSA influences SME innovative thinking and behavioural orientation in EEs. This study broadens the application of anomie theory in the studies of innovation and management through framing the construct of anomie through microfoundations (i.e. managerial perception of social anomie).

Moreover, the findings of this study provide richer insights into the behavioural implications of anomie in the context of EEs. Anomie-strain theory posits that anomie emerges amidst

rapid changes of social and market development. EEs such as China have undergone tremendous transformations in market structures, legal frameworks, and social environments (Puffer *et al.*, 2010; Hitt and Xu, 2016; Cheng and Yiu, 2016; Cheng *et al.*, 2022). The coexistence of rapid market development and asymmetrical institutional development within China may create fertile ground for social anomie (Luo, 2008b; Zeng *et al.*, 2024). Extant literature, however, appears to offer limited exploration of the impact of social anomie—a ramification of rapid urbanisation and economic transformation in China—on firms' actions within such dynamic contexts (Messner, 2022; Su *et al.*, 2019).

The findings of this study provide explicit empirical evidence that the state of social anomie intensifies in tandem with the rapid and fragmented marketisation in China. These results are consonant with the assertions of the IAT theorists, who depicted China's marketisation process as a *'state-market entanglement'* that may disrupt institutional norms and induce social anomie (Messner, 2022, p. 8). This condition fosters a collective preoccupation with economic success and rationality among social actors, including SME managers, leading to a psychological sense of disassociation and normlessness (Luo, 2008a).

This study provides further evidence to reinforce scholars' assertions that an anomic mindset among managers prompts a reliance on outdated and idealised perspectives on business

operations, resulting in adherence to past practices rather than adaptation to ever-evolving social and economic environments (Bohas *et al.*, 2021). Further, the study deepens these insights by illuminating how MPSA stifles SME innovation orientation and performance in EEs such as China, where institutional support is relatively uneven and unstable. These findings offer richer insights into the contextual applicability of anomie theory, particularly in the context of EEs where disparities in institutional norms and development are prevalent (Kim *et al.*, 2020).

In respect of the negative association between MPSA and SME innovation orientation in China, this study provides empirical evidence that owner-managers with a higher perception of social anomie tend to possess inflexible and passive outlooks in their daily business operations, thereby constraining their openness to breakthroughs in technological enhancement and creativity in NPD (Chiaburu *et al.*, 2014; Bohas *et al.*, 2021). These findings further illustrate how the anomic state can disincentivise SMEs in EEs, rendering them reluctant to seize burgeoning market opportunities and demands through engaging in innovative solutions. The inertia associated with MPSA can constrain SMEs' responsiveness and adaptability in the face of social anomie in EEs (Martin *et al.*, 2009).

In summary, this study reveals that the innovation trajectory of SMEs is hindered by the prevailing state of social anomie in the context of China. These findings resonate with and extend the previous studies on the construct of anomie in management literature, such as Bohas *et al.* (2021), who argue that social anomie leads to a contraction of diverse talents, a decline in firm agility, and a reduction in proactive behaviours. These factors collectively create substantial barriers to SMEs' attitudinal openness and preparedness for engaging in innovation activities.

The next section will elucidate the results on the positive relationship between SME innovation orientation and SME innovation performance.

6.2.2. SME Innovation Orientation and SME Innovation Performance

This study offers further insights into the association between the attitudinal-based and outcome-based dimensions associated with SME innovation in China. Specifically, the findings corroborate a strong positive relationship between SMEs' innovation orientation (i.e. attitudinal-based) and their innovation performance (i.e. outcome-based) in China. Innovation orientation is a crucial construct that provides a complementary explanation to the innovation input-output perspectives (Siguaw *et al.*, 2006; Farzaneh *et al.*, 2022). Previous research posits that a narrow focus on product and process innovation is inadequate for building

sustained competitive advantages for firms. In contrast, as highlighted by Siguaw *et al.* (2006), exploring innovation orientation is instrumental in comprehending *'the more sweeping effects of the organization, as a whole, on innovation'* (Siguaw *et al.*, 2006, p. 558).

Accordingly, this study sheds light on the role of innovation orientation in driving innovation performance, particularly for SMEs in the context of EEs. Specifically, the results demonstrate that strong innovation orientation enables SMEs to optimise resource utilisation and enhance dynamic capabilities, thereby facilitating the adoption of innovation-focused activities. These conditions facilitate stronger innovation ecosystems for SMEs, thereby consolidating their overall innovation performance (Norris and Ciesielska, 2019a). These findings are consistent with the previous research regarding the positive outcomes of innovation orientation on performance (Simpson *et al.*, 2006; Colclough *et al.*, 2019; Stock and Zacharias, 2011; Norris and Ciesielska, 2019a), and highlight the importance of innovation orientation as a core component of strategic orientation for SMEs in EEs (Zhou *et al.*, 2005b). In addition, Rosenbusch *et al.* (2011) propose that innovation orientation plays a particularly critical role for resource-deficient firms, as it can promote the enhancement of firms' innovation capabilities and innovation-seeking culture. Taken together, the findings contribute to the current body of literature on firm innovation by examining the role of

innovation orientation—capturing firms' attitudinal openness towards innovation efforts—in sustaining their innovation performance, particularly for SMEs in China.

Furthermore, this study advocates for a dual examination of the impact of MPSA on both innovation orientation and subsequent innovation performance of SMEs. This duality perspective accounts for the psychological and behavioural implications of anomie on both SMEs' attitudinal openness to innovation activities (i.e. innovation orientation), and the effectiveness of their innovation efforts (i.e. innovation performance), thus facilitating a deeper understanding of how the adverse impact of social anomie is translated into firm-level responses and outcomes. The theoretical contributions of the duality approach of the attitudinal and outcome-based dimensions of SME innovation will be further discussed in Section 6.3.1.

The next section will discuss the findings on the relationship between the managerial perception of social anomie, SME innovation orientation, and innovation performance.

6.2.3. The Mediating Effect of SME Innovation Orientation on the Relationship between Managerial Perception of Social Anomie and SME Innovation Performance

This study contributes to the advancement of innovation and management literature by illustrating the mediating mechanism of the anomie–innovation association. Specifically, this study found that SME innovation orientation mediates the negative relationship between MPSA and SME innovation performance. By analysing the mediating pathway, this study provides a more refined understanding of how MPSA is channelled into weaker innovation performance through undermining SME innovation orientation.

The findings of this study highlight the importance of exploring how key actors of SMEs perceive and internalise the state of social anomie, thereby positioning anomie as a socio-behavioural property that influences SMEs' innovation orientation and performance. The micro-level exploration of anomie in this study (i.e. managerial perception of anomie) offers fine-grained insights into the penetration effect of the state of social anomie on SME innovation orientation and outcomes in EE contexts (GROß *et al.*, 2018). This study advances the *cognitive foundation* of anomie in explaining SME innovation as a form of positive deviance, aligning with Konty (2005, p. 107) observation that anomie provides a lens through which to understand how individuals navigate and respond to structural strains. Specifically,

it pinpoints how the presence of anomie influences SME owner-managers' coping strategies and adaptive behaviours, shaping their approach to innovation.

The findings resonate with the existing research on the construct of social alienation (Chiaburu *et al.*, 2014). The state of social alienation shares commonalities with social anomie as they are both concerned with the imprinting effect of societal change on individuals' experiences (Kalekin-Fishman, 2006). Moreover, Travis (1993) asserted that the conceptualisation of anomie by Durkheim (1897), *'is essentially a social psychology of aspirations, which, if left unfulfilled, induce social disaffiliation, or alienation in the modern sense'.* While the adverse impact of alienation on organisational behaviours has been discussed to some extent in prior studies (Chiaburu *et al.*, 2014), there is a notable gap in explicit research examining how the managerial perception of anomie affects firm-level actions, such as innovation. Relatedly, Bao *et al.* (2006) found that employees with a heightened sense of alienation tend to have lower willingness and receptivity to social and economic reforms. This study extends existing knowledge by focusing on how the state of social anomie is interpreted and assimilated by SME owner-managers, as the pivotal actors of the firms, and by illustrating how this process shape SMEs' behavioural patterns of innovation and their subsequent innovation performance in EEs (Fleming *et al.*, 2016).

Furthermore, this study enriches the understanding of how anomie-related challenges constrain SME innovation orientation and performance in EEs, corroborating the disruptive nature of the state of social anomie identified in prior research. While anomie predominantly exerts a negative influence, the emergence of positive deviance appears to be highly contextual and conditional (Herington and van de Fliert, 2018). This suggests that positive deviance is not an automatic response to the state of social anomie in EEs where institutional imbalance and social decohesion are notably present, but is potentially contingent on specific enabling factors and conditions that enable firms to navigate anomie-induced challenges. Hence, these findings call for deeper examination of the precise mechanisms and contextual factors that facilitate positively deviant adaptation among firms in the face of social anomie, thus contributing to the theoretical development of anomie theory in the innovation and management literature (Vadera *et al.*, 2013).

In summary, this study finds that SME innovation orientation—reflecting SMEs' attitudinal openness to innovation activities—serves as a key explanatory factor for why the amplified perceived state of social anomie among SME owner-managers correlates with weaker innovation performance. The findings reveal and deepen the understanding of how SME innovative behaviours are influenced by socio-behavioural antecedents, specifically the

managerial perception of social anomie, within the context of EEs (Nam *et al.*, 2014; Bohas *et al.*, 2021; Sánchez-Medina *et al.*, 2024).

The subsequent sections will elaborate on the boundary conditions of the negative relationships between managerial perception of social anomie, SME innovation orientation, and SME innovation performance.

6.2.4. The Moderating Role of the Intensity of Competitive Dynamics

This study reveals that the mediating relationship between MPSA and SME innovation performance through innovation orientation is contingent upon the intensity of competitive dynamics. To specify, the findings demonstrate that the negative impact of MPSA on SME innovation orientation is alleviated when competitive dynamics intensify. The moderated-mediation analysis enhances the predictive and explanatory power of the research model by unravelling the conditions under which innovation orientation better explains the linkage between MPSA and SME innovation performance.

First, the findings highlight the constructive nature of competitive dynamics in the marketplace, which aligns with and supplements the current scholarly conversation on the role of competitive intensity in driving firm innovation (Bouncken *et al.*, 2020; Bachmann *et*

al., 2021; Kemper *et al.*, 2013). This study illustrates that competitive dynamics are conducive to safeguarding the detrimental effect of managerial anomie on SME innovation orientation. This observed relationship can be explained by the tendency that SMEs perceiving higher levels of competitive intensity are more likely to build up dynamic capabilities essential for innovation, including proactiveness in opportunity-seeking activities, strong focus on organisational learning, and adaptability in fostering a shared vision (O'Cass and Weerawardena, 2010; Eldor, 2020; Weerawardena *et al.*, 2006). These capabilities, as a result, can help firms in navigating through the environmental complexities posed by social anomie.

These findings resonate with previous studies emphasising that competitive intensity prompts firms to become more proactive in seeking new opportunities and striving to excel in market changes (O'Cass and Ngo, 2007; O'Cass and Weerawardena, 2010). In addition, the findings are aligned with the prospect theory, which suggest that firms are motivated to undertake risky and exploratory activities when faced with threats such as rivalry (Abebe and Angriawan, 2014). In essence, this study reveals that competitive dynamics can facilitate firms to take on the role of *strategic prospectors*, encouraging them to be more adaptive and innovative in order to survive and thrive in highly competitive environments, thus helping them alleviate the adverse impact of social anomie (O'Cass and Ngo, 2007).

Consequently, this study contributes to the theoretical frontiers of IBV and IAT by elucidating the complex interplay between economic and societal outcomes of institutional development in shaping firm-level innovative behaviours. Specifically, based on the IBV, the findings advance the understanding of how the institutional development of market-based mechanisms facilitate competitive dynamics. In parallel, the study extends the IAT by exploring how anomie, conceptualised as a socio-behavioural outcome of the same institutional development process in China, influences firm-level innovation behaviour (Gang *et al.*, 2012; Zhu, 2019).

In summary, this study enriches the understanding of how economic-strategic factors (i.e. competitive intensity) and socio-behavioural factors (i.e. the state of anomie) interactively influence SME innovation orientation. The findings are particularly significant in the context of large EEs like China, where uneven institutional development produces distinct and interrelated economic and societal challenges. These findings suggest that the intensity of competitive dynamics functions as an adaptive mechanism, motivating firms to undertake exploratory and long-term-oriented activities, thereby alleviating the negative impact of MPSA on SME innovation orientation. This line of exploration enriches both the IBV and IAT by demonstrating their combined relevance in explaining firm-level innovation behaviours. It offers a refined understanding of how the institutional development of marketisation simultaneously generates economic forces, such as competitive dynamics, and

societal forces, such as anomie, which interactively shape firm-level innovation in the context of China (Sun *et al.*, 2021).

The following section will discuss the findings related to the contingent effects of the subnational institutions on the association between MPSA and SME innovation performance.

6.2.5. The Moderating Role of the Subnation-level Institutional Environment

This study illustrates that the institutional environment at the subnation-level within China, including formal and informal institutions, significantly alters the magnitude of the detrimental effect of MPSA on SME innovation performance. By integrating insights from IBV and IAT, this study reveals the interplay between institutional environments and the anomie-associated strain within organisational settings. This study advances the IBV by contextualising the impact of MPSA within firm-level settings, thus offering a comprehensive analysis of how institutional conditions moderate the relationship between MPSA and SME innovation performance in EEs. This integration enriches the explanatory scope of both IBV and IAT by bridging the strategic-driven and socio-behavioural dimensions to provide a richer understanding of how institutions influence SME innovation performance in EEs.

Formal Institutions

This research found that the subnation-level IDPM significantly alleviates the negative impact of MPSA on SME innovation performance in China. In other words, SMEs operating in provinces with weaker institutional development of product markets tend to be more susceptible to the adverse impact of social anomie on their innovation performance.

Through integrating IBV and IAT, this study extends the line of discussion about the relationship between MPSA and firm-level activities by revealing the mechanism through which the impediment of MPSA is mitigated and counterbalanced by the subnation-level IDPM. The findings highlight the critical interaction between institutional environments and firm-level perception and activities, and affirms the view that effective formal institutional support is instrumental in providing a more conducive business environment and mitigating the detrimental effect of social anomie on SME innovation performance (De Clercq and Dakhli, 2009; Snell and Tseng, 2001). Specifically, this study conceptualises anomie (anomia) as *'social malintergration'* (Srole, 1956, p. 712), and *'the breakdown of the individual's sense of attachment to society'* (MacIver, 1950, p. 84). The findings suggest that the subnation-level innovation-supporting institutions can play a stabilising role in mitigating the state of anomie, which arises from structural imbalances within the social system (Orrù, 1987; Saini and Krush, 2008).

This study corresponds to the previous studies which highlighted the critical role of institutional development of product markets in promoting firms' performance in China (Gao *et al.*, 2010). For instance, scholars argue that a well-structured product market provides strong foundation for firms' development and growth strategy by facilitating market efficiency in resource allocation (Liu *et al.*, 2014). In addition, Shi *et al.* (2017) argue that the subnational IDPM promotes the information transparency of firms' coordination and communication, hence enhancing the market-based competition and firms' productivity. Deepening these insights, this study found that the effectiveness of product market institutions not only enhances the contributory impact of strategic advantages on firm-level outcomes, but also provides stabilising forces that mitigate the negative impact of social anomie on SME innovation performance.

Nonetheless, this study found no statistically significant moderating effect of subnation-level institutional development of IPR protection on the relationship between MPSA and SME innovation performance in China. These results suggest that the impact of MPSA on SME innovation performance does not vary considerably across different levels of subnational institutional development of IPR protection. These findings are somewhat unexpected, and the possible interpretations for the observed insignificance are presented as follows.

First, the sample of this research is mostly comprised of SMEs in traditional industries, such as textiles and clothing, and machinery and components. These traditional SMEs may place lower emphasis on obtaining patents and trademarks (Lin *et al.*, 2021). The region-specific institutional development of IPR protection may not directly influence their innovation outcomes and, therefore, may fail to serve as an effective buffer against the adverse impact of MPSA on SME innovation performance. To elaborate, the notable challenges faced by Chinese SMEs in traditional sectors may not be adequately addressed by the development of IPR alone, thus creating no substantial moderating effect on the relationship between the perceived state of social anomie and SME innovation performance (Wang and Kesan, 2022).

In addition, previous research on the relationship between formal institutional support and SME innovation suggests that intellectual property policies may be less crucial than other forms of support, such as tax incentives, in promoting R&D activities, particularly for SMEs in China (Wang and Kesan, 2022). This is probably because, SMEs in China, compared with their larger counterparts, tend to focus on incremental and frugal innovation activities, in which they may encounter greater financial constraints in applying patents and obtaining trademarks protection (Zhang *et al.*, 2024a). In this sense, the formal institutions of IPR protection may interact more effectively with firms' knowledge-related factors such as absorptive capacity to enhance the overall innovation performance (Lu *et al.*, 2021a).

Consequently, compared with the critical role of IDPM, the subnational differences in the institutional development of IPR protection may be less impactful in buffering the negative relationship between MPSA and SME innovation performance. Further, the cross-sectional nature and the design of this study may limit the explanatory power (Rindfleisch *et al.*, 2008). It is possible that the benefits of stronger institutional support of IPR enforcements can take time to develop and materialise; therefore, their effect on mitigating the negative impact of MPSA may not be fully captured in short term.

Informal Institutions

To provide a holistic understanding of how institutional factors influence the relationship between MPSA and SME innovation performance in China, this research investigates how the relationship is conditioned by the subnation-level informal institutions, specifically the subnational cultural variations. Cultural norms have been widely investigated as a form of informal institutions in previous studies (Holmes Jr *et al.*, 2013; Xia and Liu, 2021; Williams and Vorley, 2015), as cultural environments implicitly guide firms' innovation practices by establishing shared belief within the process of communication (Muralidharan and Pathak, 2017).

The results found that in provinces where cultural prevalence of UA is stronger, the negative impact of MPSA on SME innovation performance is more pronounced. Uncertainty avoidance culture refers to *'the extent to which the members of a culture feel threatened by ambiguous or unknown situations'* (Hofstede *et al.*, 2014, p. 191). Previous studies found that firms embedded within environments with a strong culture of uncertainty avoidance are more inclined to leverage established information and resources to address operational challenges (Malik *et al.*, 2021). The cultural context of uncertainty avoidance leads to conformity to established norms, thereby inhibiting firms' commitment to innovative actions, which are exploratory in nature (Watts *et al.*, 2020; Mueller *et al.*, 2013). The findings of this study extend the current body of literature by examining the interactive effect between the perceived social anomie among SME owner-managers and the cultural context within which they are embedded on SME innovation performance in EEs. Specifically, high UA culture exacerbates the negative impact of MPSA on innovation performance by increasing risk aversion and resistance to changes, and constraining firms' focus on experiential thinking (Kreiser *et al.*, 2010; Miao *et al.*, 2016). The combination of these barriers associated with UA culture creates a more challenging environment for fostering innovation among SMEs, thereby intensifying the negative effect of MPSA on SME innovation performance in China.

Nonetheless, the analysis revealed that the two cultural dimensions—achievement orientation and in-group collectivism—did not yield significant results as moderators in the relationship between MPSA and SME innovation performance (i.e. Hypotheses 7b, 7c, and 7d were not supported). First, the results found no statistical significance for the moderating effect of the subnation-level cultural prevalence of AO on the negative relationship between MPSA and SME innovation performance in China. A plausible interpretation for this result is that, although the achievement orientation is a cultural dimension deeply rooted in the IAT framework, its moderating effect on the relationship between MPSA and SME innovation performance, as a form of positive deviance, may be limited due to its complex nature in driving SME innovation. Specifically, while AO has been associated with fostering firm-level positive and proactive outcomes (Chew *et al.*, 2022; Semrau *et al.*, 2016), IAT suggests that it can concurrently amplify the societal strains on individuals to achieve economic success. This intensification of strains can potentially compound its constructive effect on driving SME innovation performance in EEs where formal institutional support is inconsistent. For instance, prior research informed by IAT highlights that a strong cultural prevalence of AO can provoke tendencies toward negative deviance, such as ethically contentious behaviours and bribery (Cullen *et al.*, 2004; Martin *et al.*, 2007).

In addition, the moderating effect of the subnational cultural prevalence IGC on the relationship between MPSA and SME innovation performance was found to be insignificant. The lack of significance in the analysis may be due to the phenomenon of cultural clash occurred in China. Specifically, the cultural clash between the Chinese traditional culture (e.g. emphasis on collective interests) and the Western popular culture (e.g. emphasis on individual achievement) becomes particularly noticeable in China due to the co-evolvement of government-led market development and cultural and economic globalisation (Zhou *et al.*, 2017; Tsai and Zhou, 2015). This state of cultural confrontation may trigger weakening social cohesion and behavioural norms among social actors, leading to a decline in the prevalence of collectivistic culture in China.

These insignificant findings warrant further exploration into the conditional and contextual factors that influence how cultural dimensions interact with the state of social anomie in shaping positive deviance among firms in EEs. This paves the way for future research to pinpoint the way through which firms navigate the anomie-induced strain across various cultural contexts, enriching the explanatory scopes of IAT in the innovation and management literature.

The next section will provide a synthesis of the discussion on all research findings.

6.2.6. Summary of Findings and Analytical Discussion

The concept of anomie has been extensively analysed in the fields of sociology and psychology, particularly in relation to societal and personal dysfunctions; however, its examination within management literature remains relatively limited (Zoghbi-Manrique-de-Lara and Guerra-Báez, 2018; Mafrolla *et al.*, 2023; Chen *et al.*, 2021a; Sánchez-Medina *et al.*, 2024). This notable knowledge lacuna is somewhat unexpected, given that anomie often emerges in environments of rapid social and economic development, which, as a result, can profoundly shape organisation-level behaviours (Messner and Rosenfeld, 2017; Caruana *et al.*, 2001; Van Akkeren and Buckby, 2017).

The integrative perspectives of IBV and IAT adopted in this study facilitate a more comprehensive understanding of how social anomie alters the responsive strategies of firms, which are widely recognised as key and opportunistic social actors in a marketised society (Adelstein, 2010; Chandler and Mazlish, 2005). Consequently, this study advances this body of literature by providing more in-depth insights into how the absence of social norms and stability (i.e. the state of social anomie) influences SME owner-managers' behavioural orientation, particularly concerning their innovation decision-making activities. To articulate, this study captures anomie as *'a perceived state of society'* among SME owner-managers

(Teymoori *et al.*, 2016, p. 3), and explores its socio-behavioural impact on the process of pursuing and achieving firm-level innovation.

In summary, this study opens up a new avenue for academic discussion on the relationship between MPSA and SME innovation orientation and innovation performance, conceptualised as a form of positive deviance (Herington and van de Fliert, 2018). To specify, the findings highlight that firm-level innovation can be explained by the interaction between strategic-driven factors (i.e. competitive dynamics), institutional environments, and socio-behavioural antecedents (i.e. MPSA). Further, this study contributes to the expanding body of research on the impact of anomie on firm-level outcomes (Zoghbi-Manrique-de-Lara and Guerra-Báez, 2018; Gregori *et al.*, 2021; Ji *et al.*, 2019). It calls for further research to examine how the robust institutional support can create conditions that mitigate the psychological barriers and behavioural strains associated with social anomie among firm-related actors, thereby sustaining positive innovation outcomes of SMEs.

The next section will articulate the theoretical contributions and practical implications of this study.

6.3. Contributions and Implications of this Study

This study makes contributions to the current body of literature on firm innovation and offers valuable implications for business practitioners and policymakers. The theoretical contributions and practical implications are discussed as follows.

6.3.1. Theoretical Implications and Contributions

This research explores the complex linkage between MPSA, subnational institutions, market conditions, and SME innovation by integrating the theoretical perspectives of IBV and IAT, which originate from the disciplines of management and sociology, respectively. This approach effectively fulfils the call for interdisciplinary studies in exploring the intersection between business and society (de Bakker *et al.*, 2019). Notably, this study, to the best of the researcher's knowledge, is the first to explore the interplay of MPSA, the subnational institutional factors, the intensity of competitive dynamics, and SME innovation behaviours. By doing so, this study contributes to the innovation and management literature in four ways, which are elaborated below.

Bringing the concept of anomie into the scholarly conversation on SME innovation

The extant management literature tends to explore firm innovation from a strategy-driven perspective (Mendoza-Silva, 2021; Cortes and Herrmann, 2021); there is a paucity of

research on unravelling how firm-level innovation activities are shaped, enabled, or constrained by socio-behavioural forces such as anomie. Yet, the notion of anomie is critically important in comprehending the business environment due to its profound impact on behavioural orientation among social actors such as SME owner-managers, particularly in EEs where rapid institutional and societal changes are prevalent (Cheng *et al.*, 2022; Burkatzki, 2008). Specifically, the rapid and fragmented institutional development in China augments anomie-related uncertainty and misalignment. However, how SME owner-managers perceive the state of social anomie and how these interpretations shape SME innovation orientation and performance, potentially as an adaptive response, remains understudied.

This study addresses this critical knowledge gap by framing a comprehensive framework to explore how MPSA influences SME innovation orientation and performance, and how these relationships are conditioned by the competitive dynamics and subnational institutions in EEs. By doing so, this study contributes to the application of anomie theory in examining firm positive deviance in innovation and management literature (Merton, 2017; Nam *et al.*, 2014; Cullen *et al.*, 2014; Messner and Rosenfeld, 2012; Kim *et al.*, 2020; Mafrolla *et al.*, 2023; Schweitzer *et al.*, 2024). The findings of this study advance the microfoundations of

firm innovation by revealing how the anomic mindsets and perceptions of owner-managers influence firm-level innovation outcomes (Palmié *et al.*, 2023; Magistretti *et al.*, 2021).

Moreover, this study offers novel insights into how the state of social anomie influences SME innovation orientation and innovation performance. Indeed, prior research has acknowledged that IAT can be applied for fruitfully explaining and predicting antecedents of firm-level innovation activities as a form of positive deviance (Nam *et al.*, 2014; Kim *et al.*, 2020). However, they largely focus on a macro-level explanation of social institutions and cultural contexts, overlooking the role of perceptual anomie as a source of individual-level variance (Orrù, 1987). This study addresses this knowledge gap by uncovering and empirically validating a transmission mechanism of how managerial sensemaking of anomie influences their firm's strategic posture and, consequently, determines innovation performance (Schweitzer *et al.*, 2024; Zoghbi-Manrique-de-Lara and Viera-Armas, 2019).

Moreover, by exploring the anomie–innovation nexus, this study posits that orchestrating socio-behavioural perspectives within theoretical frameworks can enhance the understanding of the mechanisms through which institutional norms and social values shape firm-level innovation behaviours. This approach highlights the scholarly significance of incorporating

societal dynamics to better understand how firms navigate complex environments and adapt their innovation strategies in response to broader institutional and social contexts in EEs.

The theoretical integration of IBV and IAT

As posited by Messner *et al.* (2013, p. 15), *'institutional theory needs to explore in-depth exactly how institutions generate behaviour'.* The integration of IBV and IAT in this study is well-aligned with this assertion, providing more fine-grained insights into how SME innovation activities are shaped by behavioural and institutional factors at multiple levels. Specifically, IBV is primarily concerned with a *rule-based* explanation of institutional factors, arguing that firm-level behaviours and activities are enacted within legitimacy of the institutional frameworks (Hindriks and Guala, 2015). IAT, on the other hand, pertains to the reasoning of how institutional balance triggers anomic mindset among social actors, thus shaping deviant behaviours in response to the strain (Rosenfeld and Messner, 2017). Hence, IAT provides an *actor-based* perspective, explaining how actors are constituted by social institutions, which subsequently drives their behavioural responses. The complementarity of both theoretical perspectives lie in their fundamental assumptions, contextual focus, and explanatory power (Messner and Rosenfeld, 2017; Aguilera and Grøgaard, 2019). To elaborate, IAT clearly captures the linkage between social institutions and individuals'

behavioural response through examining how the state of anomie is triggered among social actors.

The integrative perspectives framed in this study contribute to the theoretical development of both IBV and IAT. It enriches the analytical scopes of IBV by incorporating a more nuanced explanation of actors' behavioural manifestations, as formulated by IAT. Specifically, the integrative perspectives not only facilitate the understanding of how firms' strategic choices conform to the formal and informal institutions, but also examine how institutional development provokes social actors' behavioural responses that may deviate from the social norms under conditions of anomic strain (Bernburg, 2019). This study contributes to the theoretical enrichment of IAT by providing further evidence on the phenomenon of positive deviance among firms (i.e. SME innovation), extending beyond the traditional focus on negative deviance (Piazza *et al.*, 2024).

This study illuminates how formal and informal institutions can buffer or amplify the negative impact of MPSA on SME innovation orientation and performance, contributing to a deeper understanding of the boundary conditions of anomie theory in explaining firm innovation as a form of positive deviance.

In summary, the integrative perspectives highlight the value of bridging institutional theory with socio-behavioural and actor-centred explanations. The integration deepens the continued scholarly conversation on the role of institutions in shaping firm-level innovation activities and deviant behaviours. Furthermore, it illuminates how firm-level actors, particularly SME owner-managers, are imprinted by institutional developments in EEs and how they interpret and respond to institutional consequences, such as the state of social anomie.

Advancing research focus on the subnational institutional environment

As noted by Hutzschenreuter *et al.* (2020), firms activities *'take place at the intersection of different locational levels within different geographic units'.* This study expands the frontiers of institutional theory by focalising the institutional impact at the subnational level. Specifically, this study reveals that the subnation-level institutional environments—comprising both formal and informal institutions—significantly alter the magnitude of the detrimental impact of MPSA on SME innovation orientation and performance.

In alignment with the research objectives, the selection of China as the empirical setting provides fruitful insights into the critical role of subnational institutional environment in driving SME innovation. This study demonstrates that the uneven institutional development across large EEs such as China holds significant implications for the perceived state of social

anomie and innovation performance among SMEs. Furthermore, it highlights the necessity for further examining how multilevel institutions influence firms' innovation behaviours, including but not limited to innovation orientation, innovation-driven performance, innovation speed, and various types of innovation (Sahut and Peris-Ortiz, 2014; Siguaw *et al.*, 2006). Consequently, future studies should consider integrating complementary theoretical perspectives, such as IBV and IAT, as employed in this study, to illuminate the role of subnational institutions in driving firm-level activities and to advance this nascent research stream.

The dual examination of attitudinal-based and outcome-based perspectives of SME innovation

This research contributes to the current literature by analysing the impact of anomie on different facets of SME innovation, including innovation orientation, representing their attitudinal propensity towards innovation-promoting activities; and innovation performance, indicating the actual outcomes derived from their innovation efforts (Siguaw *et al.*, 2006; Crossan and Apaydin, 2010). Previous research on firm innovation suggests that, in the context of EEs such as China, it is important to account for how both firms' attitudinal openness to innovation and the tangible outcomes of their innovation activities are influenced by multilevel antecedents (Rodríguez-Pose and Zhang, 2020). The dual examination of

innovation orientation and innovation performance offers richer insights into how SMEs in China initiate, implement, and excel in their innovation efforts (Radas and Božić, 2009b; Owalla *et al.*, 2022).

In addition, considering that anomie is a relatively underexplored construct in management and innovation literature, incorporating both attitudinal-based (i.e. innovation orientation) and outcome-based (i.e. innovation performance) dimensions of SME innovation frames a holistic view of the complex nature of anomie. By examining both dimensions, this approach bridges the gap between intent and execution in the innovation process, highlighting the interconnectedness of mindset and performance of innovation in SMEs within fragmented social contexts in China (Chapman and Hewitt-Dundas, 2018; Wilson *et al.*, 2023).

Scholars found that firms with stronger innovation orientation are more likely to sustain competitive advantages (Tian *et al.*, 2024), and to foster an organisational culture that embraces creativity and innovativeness (Lee and Tang, 2018). The findings of this study are consistent with these insights, indicating a positive association between SMEs' innovation orientation and their innovation performance in China. Further, this study adds value to the current body of literature by illuminating how the state of social anomie concurrently influences SMEs' innovation orientation and innovation performance. Specifically, it offers

nuanced insights into how social anomie disrupts SMEs' motivation and openness to innovation activities, thereby impeding their capacity to achieve optimised innovation outcomes. In this sense, this study provides an in-depth exploration of how both attitudinal and outcome dimensions of SME innovation are jeopardised by the state of social anomie (Siguaw *et al.*, 2006).

Further, this dual approach facilitates a more precise explanation of the relationships between MPSA and SME innovation, and the contingencies that influence these relationships. Specifically, the intensity of competitive dynamics has a significant impact on the relationship between MPSA and SME innovation orientation (i.e. the attitudinal dimension), whereas subnation-level institutional environments exert a more pronounced impact on the relationship between MPSA and SME innovation performance (i.e. the outcome dimension). These findings are crucial for developing more targeted firm strategies and policy recommendations that address both attitudinal and practical obstacles imposed by the state of social anomie, ultimately fostering greater positive innovation outcomes (Cheng *et al.*, 2022).

The contributions of this study are summarised in Table 6-1 below. Taken together, this study incorporates the socio-behavioural aspects of anomie into the dual examination of SME innovation orientation and performance. It conveys significant insights that MPSA negatively

influences both SMEs' disposition and readiness to innovate (i.e. innovation orientation), as well as the tangible success of their innovation efforts (i.e. innovation performance). This suggests that future studies should adopt a multidimensional approach to investigate how both attitudinal and outcome aspects of SME innovation in EEs are influenced by strategic, socio-behavioural, and institutional factors.

Table 6-1 Summary of the research contributions

Contributions	Elaboration
Bringing the notion of anomie into the scholarly conversation on SME innovation	• This study brings the notion of anomie into the scholarly conversation on firm-level innovation as a form of positive deviance. The findings of this study facilitate a socio-behavioural perspective for understanding the factors that explain SME innovation orientation and performance, as a form of positive deviance in the context of EEs (Van Wijk *et al.*, 2019; Van Oorschot *et al.*, 2018), going beyond the traditional strategic-driven perspectives for explaining firm innovation (Granstrand and Holgersson, 2020). • This study contributes to the application of anomie theory in examining positive deviance among firms in innovation and management literature, and lays a foundation for future research to explore the conditions under which firms in EEs may respond to anomie-induced strain with positive deviance (Merton, 2017; Nam *et al.*, 2014; Cullen *et al.*, 2014; Messner and Rosenfeld, 2012; Kim *et al.*, 2020; Mafrolla *et al.*, 2023; Schweitzer *et al.*, 2024).
The theoretical integration of IBV and IAT	• By constructing a theoretical integration of IBV and IAT, this study enriches and complements the conventional institutional perspectives in the current body of literature (Aguilera and Grøgaard, 2019; Meyer and Peng, 2016; Voronov and Weber, 2020). To be explicit, the integrative perspectives offer fine-grained understanding of how firm-related actors (i.e. SME owner-managers) are embedded within the institutional frameworks, and how the economic consequences (competitive dynamics) and socio-behavioural outcomes (MPSA) interactively influence SME innovation orientation and performance in EEs.

Advancing research focus on the subnational level institutional environments	In response to the scholarly calls for a deeper explication of multilevel institutional environments, this study advances the traditional focus on nation-level institutions by extending the analysis to institutional variations at the subnational level within China (Onuklu *et al.*, 2021; Rodríguez-Pose and Zhang, 2020). Specifically, this study highlights the critical importance of evaluating both formal and informal institutional settings at the subnational level, which can significantly influence the impact of MPSA on SME innovation orientation and performance, particularly in EE contexts.
The dual examination of attitudinal-based and outcome-based dimensions of SME innovation	The dual examination of attitudinal-based and outcome-based dimensions establishes a more robust analytical framework, paving the way for further exploration of the relatively underexplored construct of anomie within innovation literature. Specifically, this study contributes to a deeper understanding of how anomie-induced strains not only curtail SMEs' attitudinal openness to innovation, but also translate these impacts into diminished innovation outcomes (Siguaw *et al.*, 2006; Zhou *et al.*, 2023; Norris and Ciesielska, 2019a).

The subsequent section will discuss the practical implications of this study.

6.3.2. Practical Implications

This research has important implications for business practitioners and policymakers, offering insightful perspectives to understand how MPSA influences SME innovation orientation and innovation performance in EEs.

First, this study brings the notion of anomie to the forefront of discussion among SME owner-managers, enabling them to recognise the complex mechanism through which social

anomie influences their innovation orientation and performance. Specifically, this study highlights the psychological disadvantages related to the presence of anomie; thus, SME owner-managers can build a deeper understanding of the psychological and behavioural logics underlying their innovation decision-making process (Chen, 2014). Moreover, the findings of this research can inform SME owner-managers about the importance of developing supportive organisational structures and cultures to alleviate and buffer against the negative effect of social anomie on their innovation thinking and activities.

Second, the findings of this study have significant implications for SME key decision-makers regarding their leadership styles and managerial capabilities. Specifically, in face of the anomie-induced strains, SME owner-managers are advised to develop leadership and managerial skills to focus on enhancing innovativeness and adaptability. For instance, SME owner-managers can benefit from adopting more flexible and transformative leadership styles that are conducive to reducing workplace anomie among employees (Sarros *et al.*, 2002; Chiaburu *et al.*, 2014).

Third, the findings highlight the constructive nature of competitive dynamics in fostering SME innovation orientation. Previous studies contend that a higher level of competitive intensity can drive firms to focus on developing new products and adopting creative

strategies to consolidate their market position in the competitive environment (Farè, 2022; Tang, 2006). The findings of this study further encourage SME owner-managers in EEs to recognise and learn the critical importance of managing uncertainties and challenges in competitive markets. While intense competition is regarded as challenges to market expansion, this study asserts that competitive dynamics can encourage SMEs to outperform and distinguish from their rivals by adopting more proactive strategies, exploring new market opportunities, and refining their product offerings and quality (Aliasghar *et al.*, 2022). The capabilities developed in response to competitive intensity are crucial for SME owner-managers in overcoming the negative effect of MPSA on their innovation decision-making process.

From a policy formulation perspective, this research points out the importance of establishing protective and adaptive mechanisms to promote a fair competitive environment and develop innovation-supporting institutions. First, the findings suggest that the policy implementation by subnational authorities warrants further discussion as the region-specific institutional frameworks can provide an effective buffer against the negative effect of social anomie on firms' innovation behaviours and outcomes. For instance, both national and subnational authorities may consider formulating more impactful policies and initiatives to reduce local protectionism in product markets (Zhang *et al.*, 2023). As the institutional effectiveness of

product markets strengthens, SMEs can benefit from less restricted market access and more efficient resource allocation, thereby broadening their sales channels and approaches in pursuit of innovation (Wang *et al.*, 2021). It is noteworthy to mention that some provinces within China still have certain restrictive measures for market entry of external competitors, which may attenuate the development of market-based mechanisms and reduce the efficiency of resource allocation (Luo *et al.*, 2021; Xie, 2017). Institutional barriers of product markets can exacerbate the adverse impact of social anomie among SMEs, thus undermining their innovation capabilities and performance.

To help alleviate the anomic strains among social actors, policymakers can prioritise the policy formulation to refine market entry regulations and promote healthy competition, especially in less-developed provinces, which can significantly promote the free flow of goods and services (Shi *et al.*, 2017). In addition, policymakers may consider developing and supporting initiatives that strengthen social cohesion and provide a stable and supportive environment for businesses (Čadil *et al.*, 2017). These initiatives, through cultivating a favourable innovation ecosystem, can help firms to address and reduce the risks associated with the state of social anomie. Moreover, these comprehensive developments of formal institutions can reduce firms' reliance on and entanglement with informal institutions, thereby mitigating the adverse effects of the cultural prevalence of UA. Formal institutions provide a

stable and effective framework that enables firms to operate with greater confidence, reducing the constraints imposed by uncertainty-averse cultural norms (Chan and Du, 2022). In sum, both business owner-managers and policymakers can gain a deeper understanding of the effect of MPSA on both SME innovation orientation and performance. This study highlights the perniciousness of social anomie on SME innovation behaviours, and emphasises the importance for SME owner-managers to develop strategic skills and harness valuable resources to tackle the challenges posed by the state of social anomie. These preventative actions are expected to reinforce SMEs' defence mechanism against social anomie, thus promoting their innovation orientation and innovation performance. In addition, policymakers, encompassing national and subnational government agencies, should devote greater effort to the design and execution of innovation-supporting institutions to foster a more favourable business environment for SME innovation.

The practical implications of this study are summarised in Table 6-2.

Table 6-2 Practical implications of the current study

Practical Contributions	Insights
Enables SME owner-managers to recognise the complex mechanism through which social anomie influences their innovation orientation and performance.	This study helps SME owner-managers comprehend the nature of social anomie as a socio-behavioural consequence of the rapid and fragmented marketisation in China, guiding them to develop leadership and managerial skills to focus on enhancing innovativeness and adaptability in the face of social anomie.

Highlights the importance of managing healthy competitive dynamics within markets.	This study reveals the constructive nature of competitive dynamics in driving SME innovation and mitigating the inertia associated with social anomie. Specifically, this study provides practical insights for owner-managers to deploy competitive pressures as an assert for driving adaptability in response to anomic challenges. For policymakers, the findings suggest that fostering a healthy competitive environment can be instrumental in empowering SMEs to remain innovative and resilient, even in socially fragmented contexts.
Highlights the importance of establishing protective mechanisms to promote a fair competitive environment and develop innovation-supporting institutions.	For policymakers, this study highlights the importance of establishing fair and robust institutions to build protective mechanisms that strengthen SME resilience and responsiveness in the face of social anomie, thereby safeguarding their capacity for engaging in innovation activities.

6.4. Limitations and Future Research Directions

Notwithstanding the contributions outlined above, this study acknowledges several limitations that point out direction for future research. The first limitation is related to the selection of empirical settings. This study focuses on how the subnation-level institutional contingencies influence the relationship between MPSA and SME innovation orientation and performance. Indeed, the context of China provides a sound basis for exploring the impact of subnation-level institutional disparities on firm-level activities due to China's vast geographical expanse and its uneven within-country development of market-oriented systems and government regulations (Xie, 2017; Hutzschenreuter *et al.*, 2020). However, the unique characteristics of the marketisation process and regimes of China may limit the explanatory

scope and generalisability of the research findings (Wang *et al.*, 2012). Therefore, future research could advance this area of inquiry by replicating the theoretical framework and examining the research model of this study in other EEs, such as Brazil and India, where significant variations of cultural norms, economic development, and institutional infrastructures are present (Hutzschenreuter *et al.*, 2020; Hermans and Borda Reyes, 2020). For instance, future researchers could further explore the extent to which social anomie discourages firm-level positively deviant behaviours, such as innovation and opportunity entrepreneurship in other geographical locations. Comparative research could also be conducted to unravel how the relationships would vary across developed and developing countries. This line of research could offer deeper insights into how the variations in cultural norms and market development at the national or subnational level could influence firms' responses and perceptions of the state of social anomie, and how these factors could shape the occurrence and strength of deviant behaviours. Moreover, this study identifies MPSA as a barrier to SME innovation orientation and performance. However, the conditions under which firms respond to the state of social anomie with positively deviant adaptation (i.e. innovation) remain unaddressed.

Second, this study has provided empirical evidence to demonstrate the association between MPSA and SME innovation orientation and performance in the context of China.

Nonetheless, the reliance on surveys and quantitative analysis in this research is not adequate to fully capture the causal mechanisms of how SME owner-managers internalise and interpret the pressure resulting from social anomie. In other words, the variable-based approach adopted in this study, albeit powerful in examining correlations, may fall short of providing a contextualised explanation for the detailed mechanisms of how the experience of anomic state among SME owner-managers disincentivises their innovation decision-making logics (Filatotchev *et al.*, 2022; Welch *et al.*, 2020). These limitations suggest that future research should consider employing qualitative or mixed-method approaches to gain deeper insights into the cognitive and emotional processes that SME owner-managers go through when confronting the challenges associated with social anomie. This way of deeper exploration could provider context-specific explanations of how firms navigate anomic pressures and identify the enablers that foster positively adaptive behaviours among firms, such as innovation. For instance, future research could investigate how firm-specific characteristics and traits, such as firm resilience and leadership styles (Iftikhar *et al.*, 2021; Chiaburu *et al.*, 2014), may play a critical role in translating the state of social anomie into positively deviant adaptation.

Third, while the employment of averaged item scores in the regression analysis provides parsimonious indicators of the anomie construct, it may introduce measurement error (Bollen,

1989). Future research could adopt structural equation modelling to minimise the error and disaggregate the conceptual dimensions of the anomie construct to investigate their distinct impacts on firm-level strategic outcomes in greater depth (Rosenbaum and Kuntze, 2003).

6.5. Conclusion

Anomie is an important concept for understanding social and business environments due to its substantial impact on actors' behavioural adaptation to evolving market conditions (Messner *et al.*, 2008). This area of knowledge merits deeper exploration in innovation and management studies, particularly given that firms operate as embedded actors within the market society (Adelstein, 2010). The state of anomie often arises amidst rapid changes in social and market development – conditions that are particularly evident in EEs such as China. In such contexts, the sweeping changes in market structures, legal frameworks, and social norms have generated complex institutional environments that may amplify the experience and consequences of anomie for firm-level outcomes (Puffer *et al.*, 2010; Hitt and Xu, 2016; Cheng and Yiu, 2016; Cheng *et al.*, 2022). The coexistence of rapid market development alongside asymmetrical institutional development within China creates a fertile ground for social anomie (Luo, 2008b; Zeng *et al.*, 2024). Despite its significance, existing research has not adequately examined how the state of anomie is perceived by the key actors

of firms, and how such perceptions influence firm-level innovation outcomes (Messner, 2022; Cheng *et al.*, 2022).

Building on the integrative and interdisciplinary perspective of IBV and IAT, this study reveals that MPSA significantly hinders SME innovation performance through undermining their strategic posture towards innovation. Such relationships are contingent upon the intensity of competitive dynamics, the subnation-level IDPM, and the cultural prevalence of UA. To the best of the author's knowledge, this study is the first to explore the interplay of anomie, institutional imbalance, competitive dynamics, and firm-level innovation outcomes in EEs. In addition, this study highlights the importance of understanding how societal forces, such as anomie, can either promote or inhibit firm-level innovation, thereby advancing the application of anomie theory in innovation and management studies.

In summary, this research lays the groundwork for future research on the confluence of social anomie, institutional environment, market conditions, and diverse forms of firm-level deviant behaviours, including innovation and beyond. As global markets and societal structures continue to evolve, this strand of research merits sustained scholarly conversation and refinement (Chen *et al.*, 2021a; Sánchez-Medina *et al.*, 2024). Moving forward, future studies should integrate various theoretical perspectives and methodological approaches to explore

this phenomenon in greater depth. This will not only contribute to the richness of institutional theory and anomie theory, but also provide practical insights for developing resilient and sustainable strategies and institutions in the face of social anomie. Advancing this line of research is consonant with SDG 16, which advocates for the promotion of robust and resilient institutions to effectively address the grand challenges of societal disintegration and economic instability associated with social anomie (Atteslander, 2019; Fernhaber and Zou, 2022).

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Appendix 1: Research Questionnaire (in English)

Questionnaire of SME Innovation Activities (In English)

Section A: General Information

1. Your position _____
2. Year of business establishment (e.g. 2014) _____
3. Total number of full-time employees _____
4. Main product(s) of your company _____

Section B: Business Innovation Activities

	To what extent does the respondent agree with the items (1 = strongly disagree, 7 = strongly agree)?						
	1	**2**	**3**	**4**	**5**	**6**	**7**
5. Our company pays close attention to innovation.	☐	☐	☐	☐	☐	☐	☐
6. Our company emphasizes the need for innovation for development.	☐	☐	☐	☐	☐	☐	☐
7. Our company promotes the need for development and utilisation of new resources.	☐	☐	☐	☐	☐	☐	☐

8. The annual revenue of your company in 2021 (X=annual revenue, in Chinese Yuan) : _____ (in 2022); _____ (in 2019/ pre-covid)
   A. 20m ≤ X < 400m **B.** 3m ≤ X < 20m **C.** X < 3m **D.** X > 400m
9. The percentage of export sales to the total sales of your company: _____ (in 2022); _____ (in 2019/ pre-covid)
10. The percentage of R&D spending to the annual revenue of your company in: _____ (in 2022); _____ (in 2019/ pre-covid)

During the period of 1st January 2017 to 31st December 2019 (before Covid), did this business introduce:

11. ☐ new or significantly improved goods?
12. ☐ new or significantly improved services?

Include: all new significantly improved goods (services). For example, improvement in quality, material, components or distinct user benefits.
Exclude: the simple resale of goods purchased from other businesses and changes of a solely aesthetic nature.

	How would you assess the intensity of competition in your (Chinese) local market regarding the following aspects? (1 = strongly disagree, 7 = strongly agree)						
	1	**2**	**3**	**4**	**5**	**6**	**7**
13. Extremely aggressive competition	☐	☐	☐	☐	☐	☐	☐
14. Intense price competition	☐	☐	☐	☐	☐	☐	☐
15. Strong competitor sales, promotion and distribution systems	☐	☐	☐	☐	☐	☐	☐
16. Very similar competitor product offerings	☐	☐	☐	☐	☐	☐	☐

17. **During the period of 1st January 2017 to 31st December 2019 (before Covid), what was the estimated percentage of new product sales in total sales? ( ) %**

During the period of 1st January 2017 to 31st December 2019 (before Covid), did this business make major changes in the following areas:

18. ☐ New methods for producing goods or providing services.
19. ☐ New **business practices** for organising procedures (e.g. supply chain management, business re-engineering, knowledge management, lean production, quality management, etc)
20. ☐ New methods of **organising work responsibilities and decision making** (e.g. first use of a new system of employee responsibilities, teamwork, decentralisation, integration or de-integration of departments, education/ training systems etc.)
21. ☐ New methods of **organising external relationships** with other firms or public institutions (e.g. first use of alliances, partnerships, outsourcing or sub-contracting, etc.)
22. ☐ Implementation of changes to **marketing concepts or strategies**.
23. ☐ New **logistics, delivery or distribution methods**.
24. ☐ New methods for **information processing or communication**.
25. ☐ New methods for **accounting** or other **administrative operations**.

During the period of 1st January 2017 to 31st December 2019 (before Covid), did this business:

26. ☐ Apply for a patent (encompassing patents of invention, utility model and design)
27. ( ) If yes, please indicate the number of **invention patent applications.**
28. ☐ Register a trademark.
29. ☐ Claim a copyright.

Section C: About the company's key decision maker(s)

	To what extent does the respondent agree with the items (1 = strongly disagree, 7 = strongly agree)?						
	1	**2**	**3**	**4**	**5**	**6**	**7**
30. Nowadays a person has to live pretty much for today and let tomorrow take care of itself.	☐	☐	☐	☐	☐	☐	☐
31. You sometimes can't help wondering whether anything is worthwhile.	☐	☐	☐	☐	☐	☐	☐
32. These days a person doesn't really know whom he (or she) can count on.	☐	☐	☐	☐	☐	☐	☐
33. It's hardly fair to bring children into the world with the way things look for the future.	☐	☐	☐	☐	☐	☐	☐
34. To make money there are no right and wrong ways anymore, only easy and hard ways.	☐	☐	☐	☐	☐	☐	☐
35. In spite of what some people say, the lot of the average person is getting worse, not better.	☐	☐	☐	☐	☐	☐	☐
36. Most people really don't care what happens to others.	☐	☐	☐	☐	☐	☐	☐
37. Most public officials are not really interested in the problems of the average man.	☐	☐	☐	☐	☐	☐	☐
38. Next to health, money is the most important thing in life.							

Appendix 2: Research Questionnaire (in Chinese)

中小企业创新活动问卷

一、基本信息

1. 您的工作职位:
2. 贵公司成立年份 (例：2014):
3. 贵公司员工人数:
4. 贵公司主要产品:

二、企业创新活动情况

	在尺度 1"非常不同意"至 7 "非常同意"之间，请勾选相应尺度以代表贵企业对以下说法的赞成程度。
5. 我们公司非常注重创新。 6. 我们公司认可并强调发展需要创新。 7. 我们公司重视开发与利用新资源的需要。	**1 2 3 4 5 6 7** ☐
8. 贵公司的**主营业务收入** （人民币 CNY¥，万元）： _____（2019 年/ 新冠疫情前）；_____ （2022 年） **A.** X ≥ 40000 **B.** 2000 ≤ X < 40000 **C.** 300 ≤ X < 2000 **D.** X < 300 9. 贵公司的**出口业务收入**占主营业务收入的份额： _____ %（2019 年/ 新冠疫情前）；_____%（2022 年） 10. 贵公司的**研发支出**占主营业务收入的份额： _____%（2019 年/ 新冠疫情前）；_____%（2022 年）	
在 **2017 年 1 月 1 日至 2019 年 12 月 31 日 （新冠疫情前）**里，贵公司是否 （可多选）： 11. ☐ 向市场推出了全新或具有重大改进的**产品** 12. ☐ 向市场推出了全新的或具有重大改进的功能或特性的**服务**	
注： 产品(服务)创新的"新"要体现在服务或产品的功能或特性上，包括在技术规范、材料、组件、用户友好性等方面的重大改进。不包括仅有微小改变的情况，也不包括直接转销。	
	从以下几个方面来看，贵公司如何评估**本地市场（中国）的竞争激烈程度**? (1 =非常不同意，7 =非常同意)
13. 极其激烈的竞争 14. 激烈的价格竞争 15. 强大的竞争对手销售、促销和分销系统 16. 竞争对手提供的产品非常相似	**1 2 3 4 5 6 7** ☐
17. 如贵企业 在 **2017 年 1 月 1 日至 2019 年 12 月 31 日（新冠疫情前）**有新产品销售收入，请大致估算**新产品销售收入在总营业收入**中所占的份额： （ ）%	
在 **2017 年 1 月 1 日至 2019 年 12 月 31 日（新冠疫情前）**中，贵公司是否在以下领域进行了重大改进 （可多选）： 18. ☐ 新的或重大改进的**生产工艺或服务提供** 19. ☐ 在**经营模式**方面，新的组织管理方式 (如供应链管理、质量管理、知识管理、信息共享制度等方式的首次使用) 20. ☐ 在**组织结构**方面，新的组织管理方式 (如机构设置、职责划分、权限管理、决策方式等方式的首次使用) 21. ☐ 在处理与其他企业或公共机构的**外部关系**上，采用了新的方式 (如商业联盟、新式合作、外包或分包等方式的首次使用) 22. ☐ 新的营销概念或策略 （主要涉及产品设计或包装、产品推广、产品销售渠道、产品定价等方面。不包括季节性、周期性变化和其他常规的营销方式变化） 23. ☐ 新的物流、运输或配送方式 24. ☐ 新的信息处理或通讯方式 25. ☐ 新的财务会计处理或其他行政业务方式	
在 **2017 年 1 月 1 日至 2019 年 12 月 31 日（新冠疫情前）**中，贵公司是否: 26. ☐ 申请了专利 （含：发明专利，实用新型专利，及外观设计专利） 27. **如有**，贵公司申请**发明专利**数量为：_____（件） 28. ☐ 申请了注册商标 29. ☐ 申请了版权登记	

三、关于贵公司的关键决策者

	在尺度 1"非常不同意"至 7 "非常同意"之间，请勾选相应尺度以代表您对以下说法的赞成程度。
30. 现在，一个人必须为今天而活，而管不上明天发生什么。 31. 有时你会不禁疑惑是否有什么事情是值得努力去做的。 32. 如今，一个人不知道他(或她)能指望谁。 33. 从未来的情况来看，让孩子降生到这个世界上，这将对父母来说变成一件更困难的事。 34. 赚钱没有对或错的方式，只有容易和困难的方式。 35. 尽管有些人看法不同，但大多数普通百姓的生活都在变得更不理想，而不是更好。 36. 大多数人其实不关心其他人发生了什么。 37. 从全球来看，普通人的问题很难被大多数公共机构人员所真正关心。 38. 除了健康，金钱是生活中最重要的事情。	**1 2 3 4 5 6 7** ☐

Appendix 3: Research Ethics Review

University of Glasgow

College of Social Sciences

01 September 2022

Dear Jinbang Zhao

College of Social Sciences Research Ethics Committee

Project Title: Institutional Determinants, Positive Deviance and SME Innovation: Evidence from the Subnational Level in China

Application No: 400220005

The College Research Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Start date of ethical approval: 01/09/2022
- Project end date: 31/12/2024
- Any outstanding permissions needed from third parties in order to recruit research participants or to access facilities or venues for research purposes must be obtained in writing and submitted to the CoSS Research Ethics Administrator before research commences: socsci-ethics@glasgow.ac.uk
- The research should be carried out only on the sites, and/or with the groups and using the methods defined in the application.
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research: (https://www.gla.ac.uk/media/media_490311_en.pdf)
- Any proposed changes in the protocol should be submitted for reassessment as an amendment to the original application. The **Request for Amendments to an Approved Application** form should be used: https://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/staffandpostgraduateresearchstudents/

Yours sincerely,

Dr Susan A. Batchelor
College Ethics Lead

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Appendix 4: Plain Statements for the Research Questionnaire (in English)

About the Survey

This research aims to investigate the impact of subnational institutions on small-and medium-sized enterprises' (SMEs) innovation orientation and activities in China. This survey will collect data about the *degree* of SME innovation orientation and activities.

You are invited to take part in this survey because you are the key decision-maker of your company and have the relevant information and knowledge for this research. Participation in this study is **entirely voluntary** and it is up to you to decide whether to take part or not.

The questionnaire will take approximately **15-20 minutes**. Your participation will make a vital contribution to the research findings, which will advance understanding of this topic, and inform related business strategies as well as policymaking in relation to supporting institutional framework for innovation.

Please note that this is **an anonymous survey** and NO real names and personally identifying information will be collected.

THANK YOU VERY MUCH FOR YOUR TIME AND PARTICIPATION.

Appendix 5: Plain Statements for the Research Questionnaire (in Chinese)

尊敬的先生或女士：

感谢您百忙之中参与我们的研究课题。此项目问卷以**匿名方式**进行，不会收集真实姓名和个人身份信息，调查结果仅用于学术研究。我们将遵守研究者的职业道德，对您的回答绝对保密。

本研究旨在探讨地方制度环境对中国中小企业创新导向与创新活动的影响。问卷调查大约需要 **15-20 分钟**。

再次对您参与本研究表示衷心感谢!

研究项目联系人：赵晋邦

(email: J.zhao.4@research.gla.ac.uk，微信号&电话：[redacted])