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University
of Glasgow

Caste and Digital: A Study on the Reproduction of
Educational Inequalities in the Era of Technology
Enabled Learning in Kerala, India

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Submitted in fulfilment of the requirements for the Degree of Doctor
of Philosophy (PhD)

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Abstract

This research is specifically targeted at understanding the disparity in the personal use of technology for education among higher secondary students in India, as these are the most competitive years in Indian schooling (Mann et al., 2021). Employing a digital sociological framework, this study particularly explored the role of the caste system, a religiously endorsed social hierarchy, on students' access to, usage of, and attitudes towards digital technology in the context of education.

Semi-structured interviews were applied to collect data from 45 higher secondary students hailing from three different caste groups and four distinct categories of schools in the state of Kerala, India. Kerala was an important sociopolitical and cultural setting for this inquiry. The relationship between caste and digital in the socially, educationally (Singh, 2011), and digitally (Moinuddin, 2019) most progressed region in the country provided important insights.

This research is based on Bourdieu's concepts of capital and habitus, contextualised within the digital milieu, featuring the concepts of digital capital and digital habitus. By intertwining these notions with the caste structure, this study identifies the intricate relationship between capital, habitus, and caste in the digital domain. Through this conceptual lens, the researcher elucidates how the caste backgrounds of students impact their interaction with technology, thereby contributing to the reproduction and intensification of disparity in economic, social, and cultural capital in the digital domain, coupled with the distinction in digital habitus between different caste groups.

The difference in access to material and non-material digital resources, digital skills and usage, and the motivation to use technology for building the future, between different caste groups were discovered. This research not only revealed the digital-educational inequalities but also identified the reasons for its perpetuation. The study recognises the influence exerted by pre-existing sociocultural, economic, and technological factors including caste, family, neighbourhood, schools, and digital spaces in reinforcing the digital and educational inequalities. Furthermore, research widened the scope of Indian digital sociological research and policymaking by reconceptualising digital inequality, digital capital, and digital habitus in Indian context.

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Amma and Oppol- Thank you for teaching me that it is okay to experience loss sometimes, and that the most important thing is to always give it your all.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, 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.

Printed Name: Mayukh Devadas

Signature:

Chapter 1: Introduction

The advent of digital technologies has instigated significant changes in India's educational environment and wider society. This research focuses on the impact on education and society from that widespread adoption and usage of digital technologies at the personal level. Specifically, the study is invested in the understanding the role of caste in impacting the technology usage by a group of higher secondary pupils, especially when it is applied for educational purposes. Through analysing the disparity in the digital domain between different castes, the study examines the implications of digital inequality on the reproduction of educational and social inequality and vice versa. I gathered empirical evidence from 45 higher secondary students (Science Group) belonging to three different caste groups and four types of school in the state of Kerala, India.

The research engages with the theoretical concepts of Bourdieu such as capital and habitus in the digital context. By utilising this digital sociological theoretical framework, I conducted a detailed analysis of the impacts of digital technologies on Indian society and education, with a special attention to its role within India's hierarchical caste structure.

This Introduction chapter outlines this thesis's overall structure along with the motivation, aim, theoretical framework, and concept of caste, which are applied in this research. This ensures a comprehensive understanding of this research which explores the multifaceted aspects of digital technology usage for education within the sociocultural and economic context of India.

1.1 Background

The usage of the internet and digital devices has drastically increased in India in the last decade. After the advent of high-speed internet at a very low cost, the penetration of telephone and internet has increased exponentially (Agrawal, 2021). The application of technology in learning has also increased accordingly. However, according to the Indian Human Development Survey 2011-12, the disparity in both access and utilisation of technology among different social groups persists in India (Tewathia, Kamath, and Ilavarasan, 2020). The digital inequality

issues in India and its interconnection with caste are documented in earlier research (Fernandez, 2017; Raghunath, 2010). The scholarships during the pandemic period have exposed the existing digital inequalities in Indian society (Jafar, Ananthapur, and Venketachalam, 2023). The role of technology at home and its influence in shaping educational access was also an important area of discussion in Indian digital sociological research (Sreenivasan, Jishnu, and Shamala, 2021).

Learning through digital technologies and its immense potential to solve educational issues in India is widely discussed and incorporated into educational policies. The latest ASER (Annual Survey of Educational Research) report 2023 explains the widespread penetration of digital technology in Indian society and its usage, particularly among teenagers. According to this survey, 89 % of the individuals between the age group 14-18 have access to smartphones and 92% of them have knowledge of how to handle this device. Also, the same report claims that two-thirds of the youth who know how to use a smartphone use it for educational purposes. Hence, this report recommends utilising this widespread diffusion of technology to improve educational reach and development (ASER, 2023). The National Educational Policy (2020) also discusses the capability of digital technology to narrow the educational gap in Indian society. The policy envisions incorporating new technologies into the learning platform and thus transforming the domain of education and learning practices. The policy document highlights the advent of new digital entities as disruptive technology that can alter the traditional way of learning.

Such techno-optimistic policy documents emphasise a reductionist approach to understanding the role of technology in plugging the loopholes in Indian education system. The academic literature in understanding the digital inequality situation in India is taking a myopic binary approach of an exclusive digital access issue or the first level of digital divide (Rajam, Reddy, and Banarjee, 2021). The caste based digital inequality studies are also largely fixated on the haves and have-nots of digital access dichotomy rather than simultaneously analysing the second (skills and usage) and third level (empowerment) of digital divides. These studies also failed to provide enough attention to the sociocultural aspects of technology usage in education and learning practices (Tewathia, Kamath and Ilavarasan, 2020).

Also, an in-depth analysis regarding the relationship between technology possession at individual level and the educational outcome in India is still sparsely available. Despite being an expanding market for educational technologies, the studies that engage in discussions of digital technology and educational inequalities are also scarce.

The limited studies conducted in this aspect by Kamath (2018) and Tewathia et al., (2020) identified that there is a considerable disparity between the upper castes and lower castes in the digital sphere both in terms of material - such as access to technology, internet, - and the embodied form - such as quality of access, skill to use and the utilisation of the potential of the technology. Also, the background studies during the pandemic period have proven that there is a huge disparity between different caste groups in the usage of technology for educational purposes in Kerala. For example, the studies conducted by the organisation of Kerala Sastra Sahithya Parishad¹ during the covid period have claimed that there is a significant gulf in both access and usage between different caste groups in utilising digital technologies for education (KSSP, 2020). Also, 43% of the students who failed the first public examination in Kerala after the entire academic year education through online classes, were from the Dalit groups, which are only 16% of the population in the state (Nazar, 2022). Although these studies exhibited the glaring digital inequality between different caste groups, an in-depth investigation regarding the source of such inequality and the reasons for the perpetuation of digital inequality was largely missing. Hence, research that investigates the digital inequality issues in Kerala from a caste angle and its implications on education was necessary.

The digital engagement or usage of technology in the context of this research means the usage of digital technology such as smartphones, computers, other technological devices, and the internet by students in their daily lives. The application of digital technologies for education by students is the subset of their total digital usage. The part of total digital engagement in daily life that forms the utilisation of technology for education is a crucial aspect of the study. Since most of the students engage with digital technologies, the difference in the usage

¹ A progressive science and literature organisation established in 1962.

of technology for learning, which comes under the total digital usage is where the research is focussed. Through analysing the studies such as Ignatow and Robinson (2017), Brown and Czerniewicz (2010), and Selwyn (2016) on the topic of digital inequality, I identified that the disparity in access and usage in the application of digital technologies will be ramified into educational and social inequalities. To apply the concept of digital inequality and education in the Indian context, the theories should be interlaced with the system of caste which is the epicentre of the Indian social structure. Hence, this research incorporated the theoretical concepts of Bourdieu in the digital sociological framework and then it was applied to the context of caste to understand educational inequality in India.

1.2 Motivation for the Research

There are several important studies that analyse the role of caste in determining technology usage and how it reproduces the existing socio-economic structure in India. While the second and third levels of digital inequality are discussed in certain academic studies, a comprehensive study covering various aspects of digital inequality and the reasons for the perpetuation of digital and educational inequalities from a socio-cultural perspective remains crucial.

This research aims to understand the perpetuation of educational inequality in India through the lens of digital inequality. This includes aspects such as the quality and quantity of access, motivations and reasons for usage stemming from socio-cultural factors, and the impacts of usage and its close interlinkage with the individual's social and educational outcomes. Ultimately, the intention is contributing to the understanding of the contemporary structure of social and educational systems in India.

The utilisation of digital technology for strategic advancement in education has exponentially increased in India. Critical studies that engage with caste-based digital usage and their impact on education are essential in contemporary academia. The available studies in this context mostly focus on the access or availability of the internet and digital devices. Hence, studies that focus on the second (Utilisation) and third (Empowerment) stages of the digital divide are necessary to understand the reproduction of caste-based educational inequality

in India in the 21st century (Rajam, Reddy and Banarjee, 2021). Following these literatures, I establish an extensive digital inequality framework that covers various aspects of digital access, usage and application. This framework can be utilised to decipher the educational inequalities in the contemporary India.

Current scholarships, which focus on educational inequality and opportunities based on the structural issue of caste, should consider other socio-cultural and economic factors such as digital access, location, culture, economy, family, and environment, etc., in this technological era to develop a comprehensive understanding of educational development and inequality. This study encapsulates those socio-cultural and economic factors at a deeper level to develop a palpable understanding regarding the role of digital technology in perpetuating and reinforcing educational inequalities. To elaborate, this research not only investigates deeper into the material aspects of digital inequality and its interlink with caste, but also probes into the socio-cultural factors that determine the disparity in usage of technology despite having access to it.

1.3 Aim of the Research and Questions

The research's main aim is to understand the nature of digital inequalities in Kerala and their impact on education. The aim of the research also extended to comprehend the manifestations of interpretations regarding the technology among different social groups in Kerala. This means to understand the role of sociocultural and economic background in determining the access to, usage of and dispositions regarding the technology and its application for educational purposes. These scholarly curiosities and intentions led the following research questions

1.3.1 Research Questions

- 1) How do digital access, skills, usage and attitudes vary across different social groups of higher secondary science students in Kerala?
- 2) How does the caste system influence the disparity in the access and utilisation of digital technologies for learning?

3) What is the role of digital capital and digital habitus in the reproduction of digital inequalities, especially in the context of education in Kerala?

1.4 Theoretical Framework

The theoretical framework of this research is grounded on the key concepts of Bourdieu including capital and habitus applied in the digital context. The research adopted a digital sociological framework to analyse the educational and social structure in India when technology is adopted for learning practices. To encapsulate the Indian sociocultural and economic situation, the phenomenon of caste is utilised. Hence, to comprehend the contemporary social and educational situation in India, the penetration, application and interpretation of technology is analysed through the theoretical lens of digital capital and digital habitus by interlacing it with the phenomenon of caste. Since caste significantly influences the digital capital and digital habitus, especially in the field of education, these concepts are extended to caste digital capital and caste digital habitus in Indian context.

The reason for choosing this theoretical lens is that it allows for a comprehensive analysis of the various aspects of digital inequality and the mechanisms through which this inequality is reproduced. The existence of multi-dimensional digital inequality was explored through the conceptual prism of digital economic -access to tangible and intangible resources; cultural- digital skills, support from the family, and knowledge; and social-communication in digital space, capitals. Through the application of the concepts of capitals in digital domain, the reductionism of technology as a tangible physical entity was resolved and was able to extent it as a part of the social. Therefore, it was possible to encapsulate the material, symbolic and social characteristics of the digital inequality. This enabled the study to construct an overarching digital inequality structure of the Indian society. Furthermore, the concept of digital habitus helped to decipher the role of social environment in shaping digital usage. The socioeconomic and cultural factors that reinforce the existing hierarchical socio-digital and educational structure of the society was clearly observed with the help of digital habitus. Furthermore, the technology mediated reinforcing of digital inequality was able to analyse using the digital habitus concept. Hence, it was able to understand a

comprehensive picture of the existence and reproduction of digital inequality in Indian society through the theoretical lens of digital capital and digital habitus. Since the central focus of the study is to deduce the educational inequalities when digital technology is utilised for learning, these theoretical concepts were appropriate.

1.4.1 Digital Capital

Capital is a resource that could be both internal or external, those are highly rare and valued in society. It could be skills, ability and aptitude that are internalised by an individual or other tangible resources. Also, these capitals could be converted, and accumulated for profit (Ignatow and Robinson, 2017). The ability to accumulate and reinvest capital by a certain class lead to the reproduction of existing social structure (Bourdieu, 1977a). Similarly, digital capital is the combination of tangible and intangible digital resources, and the internalised digital skills, aptitude and knowledge possessed by an individual (Park, 2017). Similar to other forms of resources, the accumulation and reinvestment of digital capital transforms to social inequality (Ragnedda, 2018).

Digital capital encompasses the technological variations of social, economic, and cultural capital (Selwyn, 2004). In other words, digital capital is not a distinct system from the primary capitals. It is intermingled with the social, cultural, and economic capitals (Park, 2017). This research treats digital capital as the digitised version of the primary capitals. This means, digital capital is not treated as a separate capital but a combination of primary capitals in the digital field. Hence, the interpretation of primary capitals while they are in digital field is considered as digital capital. It involves economic digital capital which includes - ownership and access to material and immaterial digital resources such as devices, Wi-Fi, paid online resources etc.; social digital capital - online interactions and communications, and other social networks that foster digital benefits; digital cultural capital - digital skills, knowledge, aptitude etc.

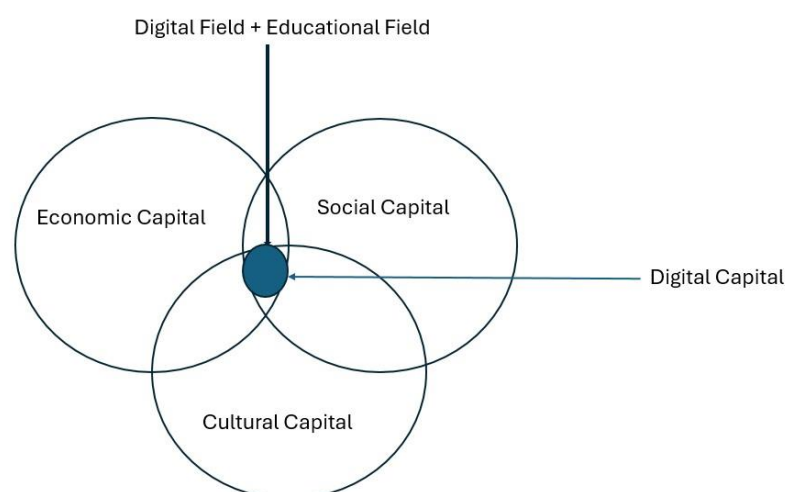


Figure 1: Digital Capital

1.4.2 Digital Habitus

This research utilises two notions of digital habitus to develop a comprehensive understanding of digital dispositions, attitude and usage. This means the digital attitudes and dispositions shaped by the personal habitus as well as the construction of an individualised digital space, are both taken into account in this research. The research also recognise that both parts of these digital habitus influence each other.

According to Bourdieu habitus is a set of internalised preconceptions, an apparatus of long lasting and transformable dispositions (Bourdieu, 1999). It is the product of his critique of the conceptualisation human practice situated in consistency and predictability without compromising on negotiation and strategy (Crossley, 2001). Habitus is structured by an individuals' history and present including family and educational environment. It is also continuously structuring to mould the individual's future actions (Maton, 2008).

While amalgamating habitus into the digital field, there are two set of understanding for digital habitus. Firstly, it is understood as a set of dispositions, attitudes and usage of digital technologies, which is fashioned by their personal habitus (Blume, 2020). This conceptual notion is utilised to understand how

individuals accustom, negotiate and utilise technology in their life (Richardson, 2015). Followingly, there is another conceptualisation of digital habitus. In this understanding, the cultivation of a digital self in digital spaces and its reinforcement through technological applications is considered as digital habitus of an individual (Romele, 2024; Airoidi, 2021).

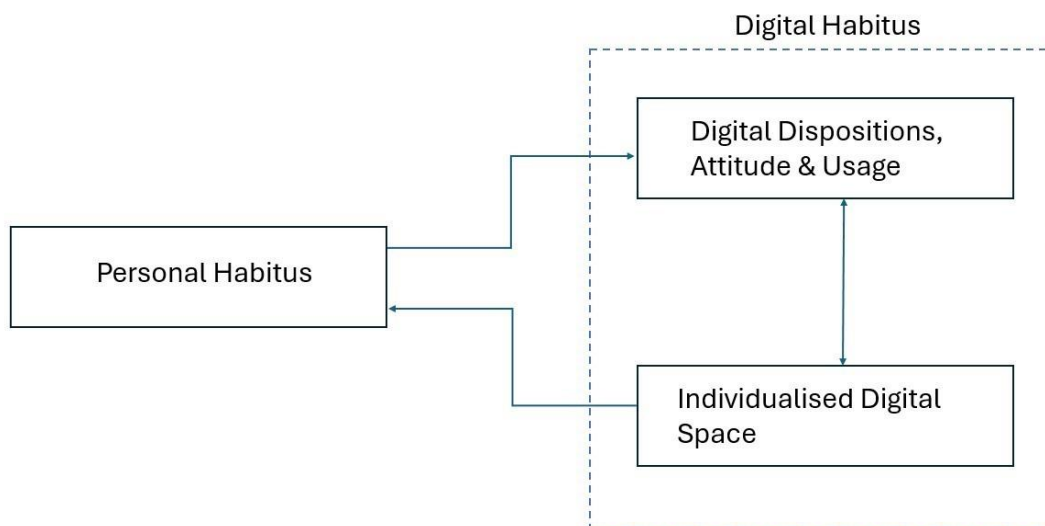


Figure 2: Digital Habitus

These digital capital and digital habitus are interlaced with caste to form the final structure of the theoretical framework in this research.

1.5 Understanding Caste

Caste is an integral part of this research. The digital Bourdieusian theoretical concepts mentioned in the above section are applied in the caste context to deduce the contemporary Indian digital and digital-enabled educational structure. This is because of the influence of caste in shaping the socioeconomic structure in contemporary India (Bapuji and Chrispal, 2020). The distribution of both tangible and intangible resources was unequal in Indian society, with Dalits and tribes possessing the least amount of wealth, a situation which has only worsened over time (Zacharias and Vakulabharanam, 2011). This inequality in difference in the

possession of capitals between different caste groups is reflected in the digital domain as well (Rajam, Reddy and Banerjee, 2021).

This means a proper clarity and fundamental knowledge regarding the caste system are necessary to have a comprehensive understanding of the digital and educational situation in India. To comprehend caste, a clear understanding regarding its terminologies, conceptualisation, and operationalisation is necessary. This is discussed in conceptual chapter.

Dirks (2002 p.3) famously quoted, ‘When we think of India, it is hard not to think of caste’. The caste system’s astonishing capacity to penetrate every aspect of social life in India is well established. Guru and Sarukkai (2022) convincingly explain the ubiquitous nature of caste and how it is stemming from the everyday sensorial experiences of sight, smell, touch and taste. No historical comparison exists for this social phenomenon’s unique ability to survive across centuries (Natrajan, 2011) and borders (Reddy, 2005).

Caste is generally considered a closed social system with a hierarchical order sustained through endogamy. An individual is tethered to this social group based on their birth, with limited agency for occupation, marriage, and mobility (Jodhka and Naudet, 2023, p.1). It is also viewed as a hereditary endogamous subdivision of ethnic units, occupying higher or lower positions in the social hierarchy compared to other units (Desai and Dubey, 2012). Certain sociologists contest the classification of caste as an ethnic unit, a debate that will be discussed later in the conceptual chapter.

1.6 Structure of Thesis

This thesis is divided into six chapters. The first chapter is the introduction of the thesis which the reader just came across. The first chapter introduces key concepts such as caste, digital capital, and digital habitus, which are essential for engaging with the literature and analysing the current digital landscape in India through the lens of caste-based digital capital and habitus in the subsequent chapters. The definitions of digital capital and habitus introduced in this chapter are the operationalised concepts used in this research. The various conceptual

understandings of digital capital are discussed in detail in the conceptual chapter. Similarly, only a basic understanding of caste is presented here, while a more thorough conceptual unpacking of caste is provided in chapter three.

The second chapter outlines the existing scholarly perspectives on the domains addressed by this research, helping the researcher identify gaps in both empirical and theoretical knowledge. This chapter focuses on contemporary studies that deal with ed-tech, digital inequality stemming from socioeconomic factors, and the interlinkage of technology usage in education and social inequalities. This provides the current scholarly outlook on the relationship between technology, education, and society. Additionally, the chapter explains the contemporary situation of caste and the role of caste in shaping educational and digital inequalities in the Indian context through the lens of digital capital and digital habitus. Although the deeper theoretical engagements with digital capital and habitus appear in the following chapter, the first chapter provides the foundational premise for readers to engage with these concepts. Since Kerala is the field of study, this chapter also addresses the existing caste issues in the present society of Kerala and how they shape the social and economic structure. This chapter provides an overview of the current situation of digital technology and its impacts on education, society, and the reproduction of social and educational structures, as well as the existing social, educational, and digital inequalities in India based on caste. Therefore, the lack of empirical data regarding the existence and perpetuation of digital inequalities between different caste groups and their impact on educational inequalities was made clear in this chapter.

The third chapter deals with the explanations and definitions of the theoretical and other conceptualisations applied in this research. It provides conceptual clarity to critically engage with the findings and discussion of the research. This chapter covers the conceptual explanation of caste, its history, formation, and genesis. It also explains the theoretical concepts used in this research, such as Bourdieu's capital, habitus, and field. Furthermore, key theoretical concepts such as digital capital and digital habitus are explained in detail to provide an overarching lens to understand this research.

Chapter 2: Review of Literature: The second chapter discusses the existing literature, ideas and viewpoints regarding the integration of digital technology into society, education, and its ramifications. Furthermore, this chapter analyses the contemporary caste based digital scenario in India through the lens of digital capital and digital habitus. Also, the caste scenario in Kerala, the field of research is also discussed. Finally in the last part the gaps in the existing literature and the scope of this research are discussed.

Chapter 3: Conceptual Frames: This chapter deals with the concepts of caste, theories regarding its origin, phenomena of varna and jati, and the official categorisation of caste in the contemporary India. Furthermore, the key concepts of Bourdieu such as capital and habitus and its application in digital context are discussed in this chapter.

Chapter 4: Methodology: This next chapter explains the methodology of the research. A qualitative method is chosen for this study, and the reasons for this choice are substantiated in this section. To provide clarity on the researcher's stance and the research design, the philosophical positionality including ontological and epistemological stances is explained in the subsections of this part. Following this, the method of data collection and data analysis are described in detail.

Chapter 5: Findings: This chapter discusses the major and minor themes emerging from the transcripts. There are four major themes and twelve sub-themes in the findings. The caste-based disparities in digital economic, cultural and social capitals are described in this chapter. Also, the distinction in digital habitus based on caste is also discussed here.

Chapter 6: Discussion: The findings are discussed in the light of theoretical frameworks and previous literature in the discussion chapter. This chapter is structured around four main topics and seven sub-topics. The reconceptualisation of digital inequality, digital habitus, and digital capital in Indian context is discussed in this chapter. Also, the contemporary caste and class dynamics of the Kerala society are analysed in the final part.

Chapter 7: Conclusion: This is the final chapter in the thesis, and it is divided into four important topics. In this chapter, the key takeaway of the research is reiterated. Also, the limitations and recommendations for future research are specified.

1.7 Contribution of the Research

The research makes conceptual, theoretical, methodological, and empirical contributions to the scholarship of digital sociology, particularly within the context of Indian sociology. This study illustrates how students from different caste groups engage with technology for learning purposes and competitive advantage. Hence, the study not only exemplifies the caste based disparity in technology access, but also the distinction in the utilisation and attitude towards technology, and how it ramifies in educational inequalities. It integrates two important strands of knowledge, such as digital and educational sociologies, offering a new perspective on social and educational inequalities. The research demonstrates that digital inequality and socio-educational inequalities are intertwined and can be analysed through a digital sociological lens.

Conceptual Contributions: This research establishes the importance of caste in shaping digital inequality in India. It emphasises the existence of caste-based digital divides at all three stages, including access, usage, and empowerment, even in digitally well-connected locations. The study highlights the need to reconceptualize digital inequality beyond the simple dichotomy of having and not having access. It suggests broadening the concept of access to include both quantity and quality of digital technology. The research suggests that Indian digital sociology and ed-tech studies move beyond traditional aspects of the digital divide, such as rural-urban disparities, digital literacy, token access to public content, and basic smart classrooms. It exposes emerging aspects of digital inequality in the Indian context, such as neighbourhood, digital skills and motivation, paid subscriptions to educational content, hi-tech classrooms, and the role of caste in shaping these divides.

Theoretical Contributions: This study makes significant contributions to digital sociology and the application of Western digital theories in the Indian context. It

revises the theoretical frameworks of digital capital and digital habitus. The study suggests that digital capital in India should not be treated as a separate capital but as a form of primary capital. This means, digital capital should be considered as a part of Bourdieu's (1986) economic, social, and cultural capital. Similarly, the concept of digital habitus is reframed to include physical habitus, which is the understanding of technology that is being embodied from the environment of the individual, and technology-reinforced machine habitus. The role of digital agency is emphasised in structuring digital habitus. Importantly, the phenomenon of caste is interwoven with both digital capital and digital habitus to better understand the Indian scenario.

Methodological Contributions: The research illustrates the importance of qualitative tools over the prevalent quantitative research tools for understanding digital and social inequality. Contemporary digital and ed-tech sociological research often relies on quantitative methods to understand material and non-material aspects of inequality. This study demonstrates the effectiveness of qualitative research in not only identifying the existence of inequality but also understanding the reasons for the perpetuation and reproduction of digital, social, and educational inequalities.

Empirical Contributions: The research provides important empirical data on the existence of caste, educational, and digital inequalities in Kerala, a state that is a frontrunner in these aspects. While Kerala is theoretically a state of complete literacy, fully digitally connected, and with minimal caste prejudices, this research highlights the limitations of existing data. It paves the way for more studies to explore the deep qualitative aspects of these indicators rather than limiting themselves to peripheral quantitative figures.

Chapter 2: Review of Literature

The aim of this chapter is to understand the existing evidence from academic and policy studies regarding the relationship between digital technology, education and equity, particularly in the context of caste. Also, the chapter deeply examines the contemporary scholarships of caste and caste-based digital inequality in India and Kerala.

This chapter is divided into four main sections. This includes the relationship between digital technology and education, the role of socioeconomic background in shaping digital inequality, the existence of caste in contemporary India and Kerala, and finally, the gap in existing literature. Initially, this chapter discusses the contemporary scholarship on digital technology's dissemination into the educational domain and its different viewpoints. Different concepts regarding the usage of technology in education and the emerging trends in digital-educational synthesis and different perceptions regarding such integrations are examined in the first part.

Followingly, recent studies regarding the role of socioeconomic background in influencing access to, usage and skills of using digital technology are meticulously analysed. As the socioeconomic background of the individuals is an important factor in shaping the digital usage, different literature that analyse the interlinkage of these two factors are explored in this part. Furthermore, the connection between socioeconomic background in determining the application of digital technologies for educational purposes is examined separately.

In the third section, the contemporary caste situation in India is examined. Furthermore, the digital scenario of the Indian society is explained through the theoretical lens of digital capital and digital habitus by intermingling it with caste. The existing digital disparity in India is explored through this theoretical prism. Followingly, the studies regarding the existence of caste in Kerala is separately examined. The state of the first democratically elected communist government in the world, and currently the only left-ruled state in the country, presents a peculiar scenario that necessitates a rigorous analysis of the literature discussing the caste dynamics.

Finally, the critical gap in the existing literature is identified and explained in the fourth and last section of this chapter.

2.1 Relationship Between Digital Technology and Education

Defining educational technology in both theory and practice is a challenging task due to various reasons. Primarily, it is because of the inability to ground it into one particular knowledge base. The definitions regarding the exercise of learning with technological devices have drawn attention to different subject areas including psychology, communication, sociology and education (Sangrà, Vlachopoulos and Cabrera, 2012). The swiftly expanding dynamic state of the technological domain makes it difficult to create a viable and stable definition (Luppardini, 2005). Additionally, the need for a comprehensive understanding regarding the intricate relationships of technology with the process of education makes the theorisation process of educational technology a highly complex task (Mishra and Koehler, 2006).

There are other definitional challenges, such as whether to treat educational technology as a part of the learning process or a material entity. The approach to defining educational technology as a process contradicts the notion of perceiving technology as a sophisticated and advanced entity. Hence, it is considered as a domain which is focused on the planning, creation, application, operation and analysis of the methods and resources for education (Luppardini, 2005). Also, by separately treating educational aspects of digital technology as educational technology, it can be defined as the application and utilisation of the most suitable technological processes and resources for enhancing the ethical practice of learning (Januszewski and Molenda, 2008). Aldrich (2005) overcame this process-entity dilemma by comprehensively covering both aspects to describe learning through technology. He stated that it is the coalescence of educational process, resources and technological structures to apply devices and networks to improve educational outcomes.

A similar claim is that educational technology should not be considered as a single unit of a digital entity. It encapsulates all the digitally connected computing

devices that can access the internet, such as smartphones, computers, and tablets, and the institutional level application of these devices (Selwyn and Facer, 2014). Whereas there are studies which treat educational technologies as physical entities. For example, Ng (2015) describes digital education as electronic technology that includes both software and hardware used for learning, communication and leisure. He categorised digital technologies for education or educational technologies into seven types- desktops; mobile technologies such as smartphones and laptops; digital recording tools; data logging devices and their auxiliary tools; smartboards; interactive digital spaces, online resources or Web 2.0; and educational software (Ng, 2015).

Notably, some scholars use the term technology-enabled learning (TEL) to define educational technologies as a digital extension of the learning process. For them technology-enabled learning is the process of employing digital technology to learn or teach in an educational setting (Kirkwood and Price, 2016). This environment or setting does not necessarily have to be a formal educational environment like school or university, it could be an informal environment or personal space. Generally, TEL is considered as the interaction between an individual and technology with the objective of learning (Kirkwood and Price, 2016).

There are efforts among educationists to interlace education through technology to the theories of learning. In one of the most comprehensive and successful of such attempts, Siemens (2004) postulated the learning theory of connectivism, which, in his terms, is the most appropriate learning theory in the digital era that replaces behaviourism, constructivism and cognitivism. According to Siemens, an important limitation of earlier learning theories is that they consider learning as an internal process which occurs inside the individual and focuses on the centrality of the individual to the learning process. They disregard the learning happening outside the individual such as information stored and utilised by technology (Bell, 2011). Accordingly, the principles of connectivist learning theory that can integrate digital technology into the learning process are - knowledge and learning are rooted in the diversity of perspectives; learning is the process of interlinking sources of information; learning could happen in non-human entities; ability to learn more is more crucial than what is already learned; fostering and sustaining

networks is vital for continuous learning; capacity to perceive the links between fields, innovative thoughts and concepts is a fundamental skill; contemporaries or having up-to-date information is a basic purpose of learning; the decision to choose what to learn and how to interpret the information is based on the reality of that particular time, which might shift with time (Siemens, 2004).

Similar to different definitions regarding the conceptualisation of digital education, there are various paradigms of research that deal with different aspects of digital education. This includes studies focussing on transformation in learning and pedagogical processes due to digital interventions (Mishra and Koehler, 2006), sociological and cultural impacts of technological integration in education (Robinson, 2009), transition due to the advent of techno-capitalism in education (Williamson, 2021; Knox, 2019), and many more. The focus of this research is centred on the sociological aspects of digital technological intervention into the domain of education.

Nonetheless, similar to other domains in society, the presence and influence of digital technology in education is an undeniable fact. By systemically reviewing the literature on digital technologies and education, Qureshi et. al (2021) concludes that the attention of future education is towards digital technologies, and the traditional form of learning will be entirely supplanted by the digitalised educational process. Also, the digital dependent knowledge economy and education are tightly interlaced. The knowledge economy requires a digitally skilled workforce, and education is essential for that (Dale, 2005). It can be claimed that digital technology has transformed the educational sector in the last decade (Qureshi et al., 2021). It has altered the structure and scope of education and pushed educational systems across the globe to adopt strategies to integrate technology into learning practices (Timotheou et al., 2022).

The techno-optimistic perceptions regarding digital education are prevalent among the mainstream literature. Scholars argue that technologies have transformed learning into a more easy and comfortable process for the students. The replacement of traditional learning tools with digital technologies and the swift knowledge gaining process instead of mundane, taxing and time-consuming traditional processes have made positive impacts on the lives of students (Haleem

et.al, 2022). Information and Communication Technologies (ICT) can aid the learning process in various ways. It provides greater access to education for differentially abled students, presents the opportunity for higher exposure to information, and renders a general encouragement for the students to learn (Selinger, 2000). Such scholars showcase beneficial effects on society and education by employing digital technology for the learning process. They emphasise that the application of technology in the educational sphere has brought positive impacts on educational access (Tiwana, 2014), learning process (Bennet and Bennet, 2008), outcome (Lin et.al, 2017) and equity (Rose, 2014). Many scholars argue that digital technology could positively transform traditional education in developing countries (Kalolo, 2019).

The major changes in the technological era in the sphere of education are associated with time-space and individualisation. The rigidity in time-space and the teacher centric pedagogical process of the traditional learning mechanism has been largely altered by the advent of technology. There are some important concepts associated with this transformation that occurred through the integration of technology into educational practice.

Flipped classroom or inverted classroom is such a concept which is gaining traction among educationists (Bishop and Verleger, 2013). Flipped or inverted classroom means that the activities that used to happen inside the classroom are now occurring outside the classroom. Also, the learning activities that traditionally occur outside the classroom are shifted to classrooms (Bergmann and Sams, 2014). For instance, the students learn at home through recorded or streaming lectures rather than receiving coaching in a time-bound space-bound classroom, and the homework or extra learning activities are performed in the classroom (Bates and Galloway, 2012). This means students are responsible for their education and they can determine their learning speed and process. Teachers' role is transformed into information providers and facilitators rather than educators (Lai and Hwang, 2016).

The higher agency for the learner is highlighted as the key success of the flipped classroom. Green (2015) postulates that personalisation of education or placing individual at the centre of the learning process is arguably one of the most

important contributions of digital technology in education. Through leveraging the potential of technologies, it is possible to enable students to make informed decisions regarding their learning choices; to understand and appreciate different and diversified skills and knowledge; the cultivation of a diversified learning environment; and the formation of a student-centric assessments and feedback (Green, 2015). This resonated in the study of Betihavas et al., (2015), which claimed that flipped classroom facilitates a student-centred approach to the educational process. Similarly, after conducting a systemic review of the literature regarding the flipped classroom Akçayır and Akçayır (2018) concluded that the flipped classroom education model renders better academic outcomes. They pointed out the advantages including enhanced motivation for learning and positive attitudes of students towards the learning process.

However, according to some scholars, a flipped classroom does not provide better learning outcomes or cultivate a positive attitude towards learning. Rather, the positive learning outcomes in flipped classrooms is similar to those in non-flipped classrooms when an active-learning type of instruction is adopted (Jenson, Kummer and Godoy, 2015). Scholars also argue that the utilisation of technology for educational purposes is interlinked with the socioeconomic status of the students (Harris, Straker and Pollock, 2017), and a radical shift in teaching by integrating technology will increase educational inequality (Van De Werfhorst, Kessenich and Geven, 2020). This is an important aspect of this research and is discussed in more detail in later sections.

Another important development in educational technologies is the application of interactive digital platforms such as social media and digital ed-tech platforms in education. It is argued that social media platforms significantly impact the behaviour of the student, pedagogical practices, and the structure and functioning of both schools and higher educational institutions (van Dijk and Poell, 2018). There are two different perspectives among researchers regarding the integration of social media into learning practices.

One group of scholars claim that integrating such digital platforms in education might stimulate involvement, interaction, cognitive reflections and coordinated learning in different educational settings (Gao, Luo and Zhang, 2012). Through

analysing six different applications in Australian higher education, (Bennett et.al, 2012) identifies the potential benefits of Web 2.0 in learning, particularly in the creation and dissemination of educational content among students. Similarly, by interlacing social constructivist and connectivist theories, it is claimed that social media renders unexpected positive network effects for students and enables them to consolidate formal and informal learning practices (Greenhow and Lewin, 2021). Furthermore, higher student-teacher engagement and improvement in students' educational interaction and creativity are showcased as the potential benefits of incorporating social media in educational activities (Faizi, Afia, and Chiheb, 2013).

Other researchers treat the integration of social media and other interactive technologies more cautiously. They argue that the existing scholarship regarding the application and efficacy of social media in education lacks enough empirical evidence. Most of such optimistic studies are confined to self-disclosures such as surveys and content analyses (Tess, 2013). Therefore, it is important to investigate the impact of digital technologies in education and society beyond the micro or individual level before implementing it in a wider scale. Selwyn (2009) contends that it is imperative to analyse educational technologies including interactive platforms from a macro societal perspective. The scope of examining such technologies should be broadened further to consider the larger social context from the limited individualistic perspective and their immediate educational context (Selwyn, 2009), which the educational technology optimists are focused on.

Moreover, such a significant and radical impact of digital technology in education have been rejected by other scholars. They are critical and even doubtful regarding the claimed profound impact of digital technologies upon education and learning practices. They argue that such technological deterministic claims regarding the significant impact of technology in transforming education have scant evidential backups (Selwyn, 2014). Similarly, Ames (2019) has clearly articulated the issues in implementing easy technological solutions for educational developmental issues. 'Charismatic technologies', as Ames describes them, tend to prioritise innovation over experience, and require huge investments and result in failure due to a lesser understanding of the context of implementation, where

lesser advanced and low-cost interventions could have better outcomes. Also, a study by Higgins, Xiao and Katsipataki (2012) claims that although there are consistent and positive outcomes in learning through the incorporation of technology, it is not significant. Furthermore, the improvement from technological integration is lower to a certain degree compared to other educational interventions such as peer tutoring and regular feedback. According to Latchem (2014), the revolution is always around the corner but yet to happen in digital education. On a similar note, Schumpeter (2024) claims that education still remains a digital laggard. He asserts that although students embrace digital technology, it still does not create a disruption in the sector. Hence, it can be said that there are different viewpoints among scholars regarding the impact of technology on education. Likewise, the technology's ability to bring educational equity is also contested.

2.1.1 Impacts of Digital Technology on Educational Equity

Scholarships in the application of digital technology and its impact on equality in education have evolved into different paradigms with contradictory positions. While one group of scholars argue that digital technology is the swiftest and most plausible solution for educational access and inequality issues (Gottschalk and Weise, 2023; Brussino, 2021), other group argues that digital technology will exacerbate the existing educational inequalities (Robinson et al, 2015). This is a crucial aspect for this research. The impacts on educational and social equity after the digitalisation of learning process is one of the key enquiries of this study.

The improvement in the quality of learning is a common point raised by the researchers who support the technology-enhanced learning. Evans (2019) posits the crucial role of technology to provide equity in educational access and to ensure high quality learning environments. The pro- educational technology usage claim of Evans (2019) is supported by the evidence of endorsement from parents, teachers, and school administrators regarding the usage of digital technology to provide equity across schools, classrooms and district, and to equip students with necessary knowledge and skillset for future jobs and higher education. Based on new evidence it could be claimed that education can be made more inclusive and equally accessible through the application of digital technologies (Gottschalk and

Weise, 2023). Hence, there is a significant increase in attention towards the educational applications of technology among the policy makers, and many countries have developed a particular strategy for the integration of digital technology into education (van der Vlies, 2020).

The outbreak of Covid-19 and the following lockdown has further motivated the digital enthusiast educationists. They called online or technology-blended learning as the 'new normal' (Xiao, 2021). They also argued that education provided through digital platforms transformed the educational sector and it would be difficult to even imagine education without technology (Xiao, 2021). Furthermore, it is argued that technology has always enhanced equality in education, beginning from paper and printing press, and digital technology will also become essential to education when the latter is normalised in society (Chambers and Bax, 2006). Normalisation is the process of an entity becoming unnoticed or not getting recognised as a technological system because of its ubiquitous presence in everyday life (Bax, 2003).

Some scholars claim that pandemic has prompted families and educational institutions to reconsider the role of technology in education. It is not only as a precaution for future lockdowns but also because of the realisation of the potential of technologies in transforming education (Quilter-Pinner and Ambrose, 2020). On a similar note, Gonzalez-Betancor et al., (2021) posits that technological integration at schools will be an effective method to countervail the social inequalities at the home of students. Also, it will result in the reduction of digital inequalities between students.

Whereas there are studies which show ambiguous or mixed results in the usage of educational technology. It is claimed that while technology is efficient for educational purposes in some schools, other schools exhibited counterproductive results. Similarly, while technology was effective for some students for learning purposes, it was distracting for others (Bulman and Fairlie, 2016). Technology is incorporated into education at various levels, and it demands different types of interactions and results in different outcomes. This impact, result, and ramifications of the technology use in education should be properly analysed (Selwyn, 2010). Based on evidence from different empirical studies, Selwyn (2010)

claims that ICT remains a persistent and significant driver of inequality among students in higher education. Therefore, the educational and related outcomes while using technology is not uniform across the society. The results or improvement in learning cannot be termed as a single variable or exclusively technology dependant.

Correspondingly, a study that investigated the impacts of forced and swift transformation of education from physical space to digital space during the pandemic found that, the socioeconomic background impacts the digital skills of the students (van de Werfhorst, Kessenich and Geven, 2022). It was also discovered that the digital inequalities between the students are more influenced by the existing digital skills of the students rather than digital infrastructure and digital readiness of the schools (van de Werfhorst, Kessenich and Geven, 2022). On a similar note, Eynon and Malmberg (2021) postulate that both structural and agentic factors determine the use of technology for learning. To elaborate, the social structures and the individual agentic factors such as digital skills and digital engagement significantly influence the outcomes of digital learning (Eynon and Malmberg, 2021). This means that the Matthew Effect, where students with higher foundational skills continue to excel while students with weaker skill lag further behind, is increasing in education after the advent of digital technologies into the learning process (Saleh and Sanders, 2014). Hence, technological interventions in education cannot be treated in silos with the personal environment of the students. It is still influenced and shaped by the social and family environment of the students.

There are studies which show that online learning experiences are distinct for students from different socioeconomic backgrounds (Bonal and González, 2020). Students with better technological skills, experience, and a better grasp on academic subjects, and higher motivation to self-learn, are better equipped to utilise the potential of digital learning to the fullest. On the contrary, students from challenging situations encounter difficulties in leveraging the benefits of online learning (Protopsaltis and Baum, 2019). Hence the socioeconomic background of the individuals has a considerable role in determining digital access, skills and motivations to use technology (Raganneda, 2018). This is one of the main elements that drives my research and research questions. Therefore, the

academic literature that discusses the role of socioeconomic background in shaping the digital inequality and, consequently, the educational inequality requires special attention.

2.2 Relationship Between Socioeconomic Background and Digital Inequality

The role of socioeconomic background in determining digital access and shaping digital attitudes, skills and utilisation for empowerment is widely accepted among scholars. Robinson et al. (2020) coined the term ‘digital inequality stack’ to describe the multilayered, multidimensional issues of digital inequality. This means digital inequality at different levels such as access, skills and usage is influenced by socioeconomic factors including economic class, educational level, gender, and race and ethnicity (Robinson et al., 2020). So, it is argued that digital inequality should be examined through different vantage points other than access (Hargittai, 2002). Although digital access is an important aspect of digital inclusion and exclusion, other factors such as socioeconomic status should also be included in understanding digital inequality (DiMaggio et al., 2004).

Some studies point out that digital inequality and socioeconomic status form a hermeneutic pattern that influences each other (Ragnedda, 2018). This implies that digital inequality is a type of social inequality that influences the socioeconomic status of an individual. This is because the difference in digital access and usage can shape and determine the real-life opportunities of an individual (Zillien and Hargittai, 2009). Similarly, the socioeconomic status of an individual can shape the digital access, skills and usage of an individual (van Duerson and van Dijk, 2014a).

It is evident that people with greater socioeconomic status have better access to digital technology in terms of quantity (Marler, 2018) and quality (DiMaggio et al., 2004). However, the key point is, despite the unprecedented diffusion of digital technologies into the wider society, the disparity in material digital access interlinked to the socioeconomic status is still a pertaining issue (Gonzales et al., 2021). Notably, people from better socioeconomic backgrounds who possess better technological apparatus, have better digital and internet skills (Hargittai,

2011). Thus, when the access issue is expanded to include the attributes of material access such as quality of device, performance, opportunities based on device, and maintenance of hardware and software, it was found that these factors clearly influence the digital usage, skills, and outcome (van Deursen and van Dijk, 2015). This means that in compliance with the popular notion, although sparsely studied, access to superior quality technology facilitates better use, skills and efficiency in engaging with digital technology (Facer and Furlong, 2001). Furthermore, the socioeconomic disparity in the first level of the digital divide (digital access divide) and the resultant digital inequality in usage and outcome still exist even in one of the most developed and highly digitally connected parts of the globe like Netherlands (van Deursen and van Dijk, 2015).

According to ITU (International Telecommunication Union) data, 63% of the global population above 15 years old are using the internet and digital technologies and a major part of them are connected through mobile phones (Kende et al., 2022). The optimistic data regarding digital inclusion and digital connectivity (India Report on Digital Education, 2021) are relying on smartphone connectivity and cellular data packages. However, the studies that investigated the usage of mobile phones among lower socioeconomic status groups have identified significant disparity in their capital-enhancing activities compared to the digital engagements of higher socioeconomic groups (Hargittai, 2002; Pearce and Rice, 2013).

Although smartphones have brought access to a historically higher level, access-based inequalities persist in the world (Donner, 2015). The lower socioeconomic groups those who are digitally connected through smartphones, are involved in less productive activities and this reinforces the existing social inequalities that lead to an ineradicable digital divide between the lesser privileged and the privileged (Helsper, 2012). Furthermore, digital or internet access through mobile phones is observed to be inferior due to its challenges in the availability of content, speed, performance, and lower functionality of interface and memory, compared to a personal computer (Napoli and Obar, 2014). This limits the possibilities for active social and political engagement for those who are digitally connected exclusively through mobile phones, and they are considered to be 'second-class citizens online' (Napoli and Obar, 2014 P.330). This means that

researchers should ponder not only ‘are they connected?’ but also ‘how are they connected?’.

Apart from access, digital inequality issues are entrenched in various domains of digital engagement. Previous studies have established that the second stage of the digital divide or digital skill and usage (Hargittai, 2002) significantly varies between different socioeconomic groups (Ragnedda, 2018). Evidently, those digital inequalities other than access are also interlinked with socioeconomic status. DiMaggio et al. (2004) postulate that internet access does not necessarily ensure the efficient utilisation of that technology. There should be an important focus on the context of usage by the individuals. In their study, Zillien and Hargittai (2009) found that the social status of individuals has a considerable correlation with performing capital-enhancing activities on the internet. They claim that individuals from better socioeconomic backgrounds are cultivating higher benefits in their online engagement than individuals from lower socioeconomic situations.

Thus, similar to earlier technologies, the incorporation of digital technologies into the lives of people is not an isolated phenomenon without any influence from their existing socioeconomic circumstances rather it is also one part of their lives that intertwines with various other socioeconomic factors (Zillien and Hargittai, 2009). Similarly, through the resources and appropriation theory, it is argued that categorical inequalities existing in the society lead to disparities in the allocation of resources and that translates into inequality in access to internet (Van Deursen, Courtois, and van Dijk, 2014). According to this theory, access to technology like internet is considered as an appropriation process that begins with a perception towards internet technology and then gaining access to it. The appropriation process is shaped by the social and technological circumstances of internet usage. The social context involves personal inequalities, such as age and gender, and positional inequalities, such as educational level and size of the household, that generate differences in resources. Therefore, the disparity in internet access that stems from the difference in resources, amplifies the inequalities in societal participation and this further transforms into larger disparities between individuals and resources (van Deursen and van Dijk, 2019).

It should be noted that the digital skills and usage disparities connected to socioeconomic status are prevalent among both teenagers (Micheli, 2016) and older adults (Hargittai, Piper and Morris, 2019). It was found that social factors such as education and employment influence the nature of internet usage among the population (Van Duerson and Van Dijk, 2014b). The lower-educated and unemployed groups tend to spend more time in online spaces. Still, their usage is more dedicated to entertainment and online interaction compared to higher educated and employed groups. On the other hand, better-educated and employed people engage in information-seeking and personal development activities more than their lower-educated and unemployed counterparts (Van Duerson and Van Dijk, 2014). Likewise, Jenkins (2007) noted the 'participation gap' between the working class and other sections despite having access to digital media. Participation in digital media means engaging in creative aspects, problem-solving, group interactions and circulating content. It was argued that the participation gap is driven by social factors such as income and occupation. This leads to inequality in exposure to digital experience and digital literacy in different sections of society (Jenkins, 2007).

Correspondingly, through studying the online engagement of young adults, Hargittai and Walejko (2008) have shown that digital content creation activities are not randomly distributed across social groups. It is unevenly distributed among different groups and is closely associated with the Individual's socioeconomic status. Students with either one or both parents with a graduate degree are more likely to engage in creative activities in both online and offline spaces. Hence, the participation gap based on socioeconomic background is reaffirmed based on the online activities of students (Hargittai and Walejko, 2008). This was further confirmed by Blank (2013), who argued that there is a correlation between the socioeconomic status of creators and the nature of the content being created in the digital space.

In contrast, the study by Livingston and Helsper (2010) conducted among teenagers claims that the interlink between socioeconomic status and digital skills is indirect. This means the disparity in digital skills is grounded in the access issue, which is influenced by socioeconomic status. Meanwhile teenagers from different

socioeconomic status groups but with similar levels of access exhibited the same level of digital skills in this study.

Apart from access, skills and usage, there is a new section of literature that discusses a third level of digital inequality or divide. Accordingly, it focusses on the beneficial outcomes of technology in lives of the individuals who use it (Ragnedda, 2017). To elaborate, the inequality in the ability to convert digital usage into real-life opportunities is considered a critical aspect of digital inequality in the contemporary period (Van Duerson et al., 2016). Therefore, digital inequality is a continuously evolving strand of scholarship that covers an array of factors that predominantly come under access, skills and usage, and benefits of technology usage (Lythreatis, Singh and Kassar, 2022).

Therefore, while technology from a resource perspective tends to bring equalising effects to society, the usage of technology is based on the dispositions of the individual. The user of the technology or artefact is as important as the artefact (Schulz-Schaeffer, 2021). In a similar vein, Orlikowski (2000) developed the idea of 'technology-in-practice'. She claimed that technology has two aspects; the first one is to perceive technology merely as an entity or a 'technological artifact'. The other aspect is the use of this artifact, which involves a recurrent and repeated usage of personally structured technology, which is termed 'technology-in-practice'. Thus, she proposed a new technological structure, which is not preset or embodied in the technology as an entity but through repeated social practice and dispositions regarding technology usage (Orlikowski, 2000). Hence, by using this concept, it could be stated that social class or community of the users is an important aspect of technological usage, and it can structure the interactions with technology. This could develop distinctions among different groups based on how technology is being incorporated and utilised in daily life.

This resonates with Airoldi's (2021) concept of machine habitus. He claimed that machine learning algorithms and the endless feedback loops have significantly altered the relationship between technology and society. The central argument of Airoldi (2021) is that society and technology are interlinked and are continuously influencing and shaping each other. The unbiased or objective usage of technology in this era of machine learning and myriad feedback loops is logically impossible.

The recommendation-giving algorithms, operating through intricate feedback loops between the user and self-evolving code, identify, magnify and reinforce the patterns in data, thereby fostering the formation of echo chambers (Jiang et al., 2021). This means that the contemporary digital domain that largely depends on feedback loops tends to increase or reduce the exposure to certain contents derived from the earlier digital behaviour of the user (Bucher, 2019). This ramifies the cultivation or reinforcement of a digital habitus among the end users based on their past digital usage. Hence, technology reflects and reproduces the socioeconomic and cultural position of an individual in the digital domain.

This means social structure and digital inequality are strongly associated. It can be stated that the digital domain is an important segment of modern society, and the elements of social structure inherently influence the digital sphere and vice versa. Case in point, by explicitly linking socioeconomic structure to the digital domain, Fuchs (2009) states that the structural inequalities of multifaceted class society are the underlying reason for digital inequalities in access, skills and participation. People with higher social, economic and cultural capital are more capable of better access, utilisation, accruing benefits, and higher political participation using technology than people with lower primary capital (Fuchs, 2009). Correspondingly, Lythreatis, Singh and Kassir (2022) by analysing the literature on the digital divide, concluded that digital inequality is interlinked with socioeconomic factors such as education, employment and income. Furthermore, personal factors such as attitudes and motivations are also correlated with the digital divide in numerous studies. However, the personal factors are largely confined to the second level of digital divide that includes skills and usage, and there is a dearth in scholarship that interlinks the personal aspects of the user and the third level of the digital divide (Lythreatis, Singh and Kassir, 2022). Therefore, the relationship between digital and social is established in numerous studies. The social position of an individual influences and shapes the way they access and interact with digital technology.

Many of these studies signify that the diffusion of digital technology is more advantageous for the population from higher socioeconomic status than those from lower socioeconomic status. The Matthew effect of amplifying social inequality or widening the existing wedge between different socioeconomic groups due to the

digital divide (Norris, 2002) has been meticulously established in various studies (Mingo and Bracciale, 2018). Digital inequality that is rooted in differences in socioeconomic status broadens the gap in various domains of society, including health (Neter and Brainin, 2012), income generation (Bauer, 2018), access to knowledge and information (van Duersen and van Dijk, 2011); political participation (DiMaggio et al., 2001) and education (Saleh and Sanders, 2014; Selwyn, 2010).

Apparently, education is an important sector that is being transformed by the advent of digital technologies. While digital access, skills, usage, motivation to use technology and the benefits gains from technology usage is argued to be influenced by the socioeconomic background of the individual, the education in the era of technology enabled learning is also supposed to be significantly influenced by the socioeconomic background of the learner. Also, the interlinkage between socioeconomic background, digital technology and education is a focal point of this research.

The socioeconomic background of students is an important factor that influences their digital access and usage, particularly for education. This was evident during the pandemic period when education was provided exclusively through digital media. For instance, in a study comparing the digital education situation in the USA and the UK during COVID-19, Greenhow, Lewin and Willet (2020) found that digital access inequalities persisted in both countries, troubling the education of students from lower socioeconomic backgrounds. Other studies have shown that the existing structural, economic, cultural and digital inequalities influenced the mentality of the parents and children, and it widened the educational gap during the period of learning through digital media (Goudeau et al., 2021). Also, by focussing on the learning time of students in the UK during the lockdown period, it was concluded that the learning gap between the richer and poorer primary students increased during the digital learning period, which was not a considerable issue before (Andrew et al., 2020). Meanwhile, the same study identified that learning gap between poor and rich secondary students persisted during this period. This was due to disparity in technology access, a dedicated space for learning at home and support from schools (Andrew et al., 2020).

Alternatively, literature discussing the equalising effect of technologies among students from different social groups is also available. For example, a study conducted in Spanish schools found that access to personal computers narrowed the gap in the socio-educational inequalities between students in cases of gender, birthplace and mother's educational qualifications (Ferrer, Belvís and Pàmies, 2011). Furthermore, students from lower socioeconomic backgrounds, disadvantaged cultural environments and students with low academic performances are benefitted more with the integration of technology (Ferrer, Belvís and Pàmies, 2011). At the same time, the arguments of closing the gap and bringing equality to education through technologies is vehemently rejected as 'cruel optimism' by scholars like Macgilchrist (2019). Moreover, they criticise the myopic outlook on educational technologies and the false expectations regarding its ability to solve the complex problems in education as wastage of public resources (Sancho-Gil et al., 2020).

The social background, especially the family or parents, is crucial in shaping the digital usage of students. By applying a Bourdieusian theoretical framework of capital and habitus, Hollingworth et al., (2011) identified that parents with higher economic and cultural capital are digitally literate and are more confident regarding the advantages of technology and willing to pursue the risk of children using technology. On the other hand, working-class parents with lower capital are concerned about the usage of technology and its concomitant negative effects on children. Similarly, middle-class parents and working-class parents exhibited a very distinct digital habitus in this research. Middle-class parents who had exposure some technology consider access to technology for their children as a learning experience. Whereas working-class parents consider technology as a tool that brings detrimental impacts on their children's learning and intellectual capacity (Hollingworth et al., 2011). Hence, the sociocultural and family background of the students has considerable effects on the support for using technology for learning purposes. Such influence of the socioeconomic background in determining the application of technology for learning purposes is replicated in other studies. For example, Zang (2015) found that students from disadvantaged sections are more inclined to use technology for entertainment purposes. Through analysing the engagement of students in Khan Academy (educational platform) and Cartoon Network (entertainment platform), Zhang

(2015) identified that high academic performance has a positive correlation with Khan Academy use and low academic with Cartoon Network. He also suggested a correlation between the socioeconomic background and the digital preferences of the students.

This means the tendency to use technology varies among students from different socioeconomic groups. Sociologists claim that low-income students are more inclined to use technology for entertainment purposes than academic purposes, in contrast to high-income group students in their home environment (Du et al., 2004). Typically, the young people who are more familiar with the digital space are dominated in the academic use of computers, often overshadowing the less tech-savvy classmates. However, it would be erroneous to view this situation as a linear, unidimensional issue of young students with technological access and not having access (Jenkins, 2013). Hence, the digital divide is transitioning from 'haves' and 'have-nots' to 'cans' and 'cannots' (Dolan, 2016). This implies that despite having access issues, the multidimensional digital inequality among students extends to the issues of the digital capability to utilise the technology within their possession. This is ultimately rooted in the socioeconomic background of the student (Dolan, 2016).

It has to be noted that the distinction in digital preferences of students from different socioeconomic backgrounds is shaped and structured over a period due to the difference in their circumstances. Robinson (2009) has demonstrated that the lack of personal internet access shapes the digital dispositions and tastes of students from lower socioeconomic backgrounds differently from their counterparts who have access to internet at their home. The students who relied on the public internet developed a taste for the necessary, and they engaged in limited ways with the technology. Whereas the students with private access to the internet engage in 'studious leisure'. This results in different digital tastes and digital habitus among students from different socioeconomic groups (Robinson, 2009). On a similar note, the research conducted regarding the internet usage of students at their home found that students who engaged with the computer more as a 'play tool' tended to develop more digital skills than others (Jackson et al., 2005). Also, the career aspirations of students considerably influence their internet usage and choices (Jackson et al., 2005), which is significantly shaped by

the social and family background of the students (Ahearn, 2021; Kim, 2014). This could be correlated with Goode's (2010) approach of technology identity. According to this approach, the technological identity of a student is constructed through the attitude towards technology, the ability to use technology and the motivation to gain more knowledge regarding technological usage, all which are shaped by their sociocultural background. Despite attending the same higher educational institutions, the technology identity of the students was different due to their different socioeconomic and cultural backgrounds (Goode, 2010).

Many scholars claim that access to technology is not the central concern, but the way of utilising it (Warschauer, 2003). The social aspect of the use of technology cannot be neglected. It is to be noted that the digital interaction, disposition and knowledge of digital usage of the students are shaped by their social setting (Selwyn, 2010). It was found that despite having access to digital technology, students from lower socioeconomic backgrounds are unable to completely utilise the opportunities offered by technology and the internet due to their insufficient digital skills (Livingstone and Helsper, 2007).

Therefore, digital technology has profound impacts in the social, economic, cultural and educational spheres all around the world. To clearly understand the situation of digital inequality in a country like India, it should be juxtaposed with the social system of caste (Rajam, Reddy and Banerjee, 2021). Hence, the next section elucidates the contemporary situation of caste by expounding different terms and theoretical constructs associated with its interpretation.

2.3 Caste in Contemporary India

Caste is a rigid system of social hierarchy in India, in which membership is assigned through birth and perpetuated through endogamy, with a strict division of labour (Gorringe and Rafanell, 2007). Although labour division in India is not based on caste identity anymore, the social position and opportunities in India are still determined by their birth than individual's skills and capabilities (Bapuji and Chrispal, 2020). Officially, castes in India are divided into three large groups- General or upper castes, Other Backward Classes (OBC) or backward castes (effectively middle castes), and Scheduled Castes (SC) or Dalits (untouchable

castes). This legal segregation of castes into different groups is discussed in detail in the conceptual frames chapter.

The classification of caste strictly within the bounds of religion, culture and tradition was prevalent in scholarly pursuits. Associating caste with tradition and culture and dissociating and distancing it from capital was a widespread practice among both Western and Indian scholars. Hence, the disappearance of caste with the advent of modernity was an expected outcome for these scholars. However, the analysis of the latest census data has revealed the influence of caste in determining the disparities in education, income and social connections (Desai and Dubey, 2012). Hence, it could be asserted that the social system of caste that originated during the ancient period still persists in Indian society and determines the social, economic and cultural capital an individual possesses.

Caste influences every part of an individual's economic life, such as school, higher education, employment, and access to public and private resources in India (Munshi, 2019). It is one of the oldest social systems in the globe that still continues (Dirks, 2002). The system of caste is capable of arranging and systemising the Indian social structure through the unbalanced distribution of different capitals and social status (Hoff, 2016). Officially, castes are divided into three groups, namely general, OBC (Other Backward Class) and SC (Scheduled Caste).

The influence of caste is ubiquitous in the social and cultural space of Indian society, especially in the sphere of education. The inequality in the possession of capital and the existence of social discrimination and marginalisation have resulted in the disparities in educational access, attitudes, possession of resources, and outcomes between different caste groups.

For instance, numerous researchers have established a correlation between educational access and outcome, and the caste of students in India (Borooah, 2012; Thorat and Khan, 2023; Kingdon, 2007). Various studies (Zacharias and Vakulabharanam, 2011; Deshpande, 2011) and surveys (UNICEF, 2014) have interlinked low economic capital of the marginalised class (Scheduled Caste and Backward Caste) with their relative caste position and the concomitant low

educational outcome and increased school dropout rates. Henceforth, the educational achievements of children from different castes can vary due to the disparity in possession of their economic capital because it leads to uneven access to productive resources and opportunities for education (Bapuji and Chrispal, 2020). Moreover, besides the income, the nature of occupations of the family (Chandrasekhar and Mitra, 2018; Borooah and Iyer, 2007) and access to material resources (Rajam, Reddy and Banerjee, 2021), even the availability of nutrition (Rawat and Unisa, 2021) can be interlinked with the caste and educational performance of the children in India. Therefore, the lower caste, especially Dalits, who are in a disadvantageous position in terms of income, educational access, occupational category and other material resources are unable to reap the benefits of education as effectively as their upper caste counterparts.

Apart from the material aspects, the social, cultural and other symbolic capitals are also distributed in favour of the upper caste in India. This significantly impacts the educational performance of the lower caste students. Borooah (2012) have found that students from the upper caste have a significant advantage over the students from lower caste in the areas of learning and reading ability, and arithmetic skills. The reasons for such disparity were observed as the difference in parental education, the difference in the quality of schools and access to the learning environment. Since the educational and occupational status and the knowledge and career aspirations of the parent play a key role in the reproduction and transfer of cultural capital to the children, there is a considerable disparity between upper caste and lower caste, especially Dalit students, in terms of future aspirations, reading habits, cognitive skills, usage of English language etc. which are developed and shaped from parent-child interactions (Roy, 2018). The slow rate of social and career mobility among Dalits (Vaid and Heath, 2010) results in disparity in career and educational aspirations compared to upper caste. It was found that caste plays a major role in parental decisions like the selection of schools (Bhattacharya et al., 2021) and planning the careers for their children (Roy, 2018).

More importantly, proficiency in the English language is considered synonymous with cognitive ability, social status, privilege and power in Indian society and educational institutions (Ramanathan, 1999). Scholars like Chakraborty (2022) claim that the ability to communicate in English can accrue a huge amount of

cultural capital and even restructure and supplant the caste hierarchy in post-colonial India. However, the English language proficiency is least among the Dalits and highest among the upper caste, thus reproducing and perpetuating the cultural capital and structural caste hierarchy in the Indian educational institutions (Azam, Chin and Prakash, 2013). Also, the dearth of linguistic capital of English among the lower castes is affecting their position in digital education. The research in the four central states of India has proven that proficiency in English is one of the most important factors in the usage of digital devices for learning and development (Singh, 2010).

Furthermore, the caste dispositions and attitudes among the upper caste teachers lead to the oppression of lower caste students in classrooms. The ill-treatment of higher caste teachers towards the lower caste students, such as name-calling, forcing them to sit in the back rows are reinforcing their caste consciousness and identity (Nayak, 2023), and resulting in higher drop out among Dalit students (UNICEF Report, 2014). Mohite (2014) argues that the lack of critical pedagogical training on social issues exacerbates caste consciousness and prejudices. Such prejudices and consciousness develop dispositions among students regarding the intellectual ability (e.g. upper caste is good in studies), and cleanliness (e.g. SC students are dirty) of their colleagues, and influence their choice of friendships and social interactions (Mohite, 2014). Therefore, in the upper caste dominated educational institutions, the lower caste experiences a sense of non-belongingness due to their caste identity. The lower caste tends to believe that they reach that institution due to reservation (affirmative action) and feel culturally and socially inferior in those institutions (Malish and Ilavarasan, 2016).

Correspondingly, Nambissan (2020) have documented the discrimination faced by Dalit students in co-curricular exclusions, exclusion from responsibilities and tasks in schools, segregation and silencing in classrooms and minimal pedagogical interactions and support. Also, the Dalit students face humiliation in various forms, such as being excluded from writing on blackboards, teachers addressing them with derogatory caste synonyms, and being subjected to punishments. Such punishments include using derogatory caste terms while punishing, equating their learning mistakes to their cognitive inability and to their caste identity, and assigning manual labour exclusively to lower caste students. These actions

negatively impact their ambitions and reinforce the caste-based identity among the Dalit students (Ramachandran, 2018). This social, physical and psychological discrimination faced by lower caste students, where they are projected as inferior to their upper caste peers, creates a 'stereotype threat' (Hoff, 2016). This means the revelation of the caste identity negatively affects the cognitive and academic performance of lower caste students as they feel inferior to upper caste students (Hoff and Panday, 2006). As the above studies indicate, the school system in India not only fails to challenge these stereotypes but often reinforces them.

Another crucial aspect of caste discrimination in Indian education is the negligence in the policy and academic circles towards the issue. Casteism in Indian schools is largely unacknowledged and let to prevail in a tacit manner (Sedwal and Kamat, 2008). There is only a few considerable educational research into the Dalit responses towards the caste violence existing in Indian education system (Nambissan and Rao, 2013). Sarohe (2018) and Batra (2005) have articulated the lack of any core or optional course in the teacher's curriculum and National Curriculum Framework to understand the caste issue in the contemporary Indian education system. Hence, they indicate the inability of teachers to critical self-reflection on their caste consciousness, and this concomitantly perpetuates the symbolic violence.

Therefore, caste fundamentally shapes the educational system in India. The caste identity of an individual determines his educational access, attitude, outcome and to an extent how they are treated within the system. The question of caste cannot be divorced while pondering about the socio-cultural situation of Indian society and education. It is a fundamental element of Indian society and culture. The role of caste is still dominant in shaping the social structure and determining social relations and opportunities in India (Zacharias and Vakhulabharanam, 2011). It is therefore unsurprising that the caste system, with its domination by the upper castes and the marginalisation and inequalities faced by the Dalits, has also penetrated the digital realm. The effect of the caste system is reflected in the digital sphere as well. As the socio-cultural impacts of the caste have permeated into the digital space, the discrimination and inequality of the caste system are reflected in that domain, too. The concepts of Bourdieu in the digital contexts could be utilised to understand it comprehensively.

2.3.1 Digitalising Caste: Applying Digital Capital and Digital Habitus in Indian Caste Context

Through deciphering the key concepts of Bourdieu such as capital and habitus in the digital realm, it is easier to understand the digital inequality issues and the social and cultural impacts associated with it. Hence, integrating caste system to this digital sociological framework could be helpful in deciphering the nuanced socio-cultural structure of Indian society and education in the technological era.

Numerous scholars (Gilbert, 2010; Park, 2017) consider digital capital as a form of Bourdeausian capital since it encompasses all the necessary features of the Bourdieusian capital and could be an effective tool to define inequality and the contemporary social structure. Also, the three forms of primary capitals (economic, social and cultural) which Bourdieu (1986) described could be converted and transfused into digital capital, and subsequent reconversion is also possible (Ragnedda, 2018). Followingly, digital inequality and social inequality are used interchangeably since the lack of digital capital tends to create a social disadvantage (Calderon Gomez, 2021).

Similarly, habitus is the embodiment of all the circumstances and history of an individual, which turns into certain dispositions, nature of being, cultivated behaviour and the method of perceiving the social world (Swartz, 2012). Bourdieu conceptualised habitus of an individual as 'history turned into nature' (Bourdieu, 1977b p.78). The understanding of habitus is applied in the digital spaces by the sociologists to learn the gravity of the technological realm in the production and reproduction of social structure and cultural dispositions of the society. There is a significant influence of technology or digital space in shaping the habitus of an individual. These concepts are applied in the context of caste to deduce the digital social situation in India. The concepts of digital capital and digital habitus are described and elaborately discussed in the next chapter.

2.3.1.1 Caste and Digital Capital

The caste-based observation in the possession and inequality issues of digital capital draws interesting results in the Indian scenario. The possession of digital

capital both in terms of material - such as access to technology, the internet and the embodied form such as quality of access, skill to use - and the utilisation of the potential of the technology etc. have a considerable disparity between the upper castes and Dalits. This means that a multidimensional digital capital disparity exists along the caste lines in India.

A few studies are available interlinking digital access issues and caste. According to the Indian Human Development Survey (2011-12), there is a caste-based inequality pattern in the materialised form of digital capital that is the access to ICTs (Agrawal and Asrani, 2018). Rajam, Reddy and Banerjee (2021) utilised the national level data to understand the role of caste in the digital divide in India. They claim it to be one of the rare pan-Indian studies that analyse the digital divide through the lens of caste. They analysed the first and second level digital divide using four indicators- computer ownership, internet access, computer literacy and internet use. They established caste based digital divide in both the first and second stages between the scheduled castes or Dalits and others. They found that when 41.1% of the other castes have access to internet, only 14.1% Dalits have access to it. Similarly, while only 13.5% of Dalits know how to use a computer, 31.2% of others and 18.9% of OBCs understand how to use a computer. Since access and ability to use technology are interlinked with socioeconomic factors (Ragnedda, 2017) and location (Park, 2017), their finding of 19.7% of Dalits and 5.8% of others involved in casual agricultural labour in rural parts is an important indicator of the digital inequality between Dalits and others in India.

In addition, the capital such as understanding of parents about technology and education, their occupation, economic background and neighbourhood will significantly impact the utilisation of technology for education by the students (Beckman, Bennett and Lockyer, 2014). The lower caste students who lack on all these fronts (Rajam, Reddy and Banarjee, 2021) are susceptible to a significant disadvantage in the sphere of digital education. They claim that two-thirds of the digital divide between different castes could be the result of the disparity in socioeconomic situations between them. This is an important claim that interconnects capital, digital inequality and caste. However, an important limitation of this study is that it treated both access and skills of usage as dichotomous factors. For instance, they failed to analyse the quality of access,

the nature of skills and how they utilise the skill to improve their lives etc., which would have been a more rigorous analysis of caste based digital divide.

According to the Household Social Consumption: Education Survey 2017-18, there is a significant relationship between caste group disparities and the digital gap in India. Especially, the digital divide between the other groups and, STs (Scheduled Tribes) and Scheduled Castes is significant. For instance, only 6% of SC and ST have access to computer at home compared to 20% of other groups. Quality and quantity (speed and data limit) of the internet is also an important digital capital that is disproportionately available for different caste groups. Based on the report of Telecom Regulatory Authority of India (TRAI), the rural penetration of broadband connectivity is 29.3 percent compared to 51 percent of urban areas. Since the majority of the lower caste groups reside in rural areas (Balasubramaniam, Kumar and Loungani, 2021), they face a significant disadvantage in possession of digital capital.

The reflection of the organisation of digital capital in Indian society could be observed in the Information and Technology (IT) labour market. The lower castes with comparatively lower digital capital are sparsely represented in the IT sector (Shakti, 2023). The lower representation of Dalits in the IT sector is rooted in their historically deprived possession of various capitals. These include the disparity in cultural capitals, such as educational background of the family, lower performance in schooling compared to their counterparts, the geographical positioning in rural areas and difficulty of access to the peri-urban cities where IT industries are located, and lack of proficiency in the English language that acts as a hinderance in campus interviews (Ilavarasan, 2013).

To elaborate on this, Tewathia, Kamath and Ilavarsan (2020), conducted a study over the internet based on the Marxian and Weberian approaches to examine the interlinkage between caste and the digital divide. They found that there is an explicit pattern of caste inequality in ICT access and skills. They argue the existence of a Matthew effect among the Indian caste groups in the digital sphere. This means that the upper caste groups who have an advantage in digital capital over the marginalised caste are gaining more advantage, cornering the benefits, and pushing the marginalised castes to a more disadvantaged position. They

interconnected ICT access and skills with the pre-existing socioeconomic and cultural advantages of various castes. This can be associated with the digital capital concept. For instance, they claimed that the disparity in ICT skills and usage between the upper caste and lower caste stems from different factors including education of the family, English language proficiency and occupational status. In all these fronts upper caste is discernibly well positioned compared to lower castes and these capitals are translated into higher digital capital for the upper caste (Tewathia, Kamath and Ilavarasan, 2020).

Furthermore, Tewathia, Kamath and Ilavarasan (2020) applied the concept of network effect theory to articulate the exacerbation of the digital divide in Indian society. Network theory claims that the value of a product or entity will increase if more people in a network are using it (Castells, 2011). They postulate that the lower castes are restricted to their own networks in which the technology access and usage are lower, and it ramifies a negative network effect. Whereas the upper caste, which is in a group with higher technology usage and skills, experiences a positive network effect and a corresponding positive Matthew effect. Hence, the social capital of caste can be incorporated into the framework that analyses the digital divide between upper and lower castes in India. Similarly, Vaghela et al. (2021), by analysing the retweets of the Members of the Parliament (MPs) in India, found that the upper caste MPs tweets are retweeted higher than the scheduled caste MPs. Also, the tweets of upper caste MPs are largely tweeted by their upper caste cohorts, and it is the same for the lower caste MP tweets. Irrespective of being the members of main ruling or opposition parties, the upper caste MPs are attaining higher retweets than the SC MPs. Hence, it could be claimed that the online behaviour of individuals is critically influenced by their social, political and cultural milieu (Ragnedda, 2019). This indicates that caste plays a critical role in shaping the social network and social capital in the digital domain.

Correspondingly, the studies that analyse data from online platforms have identified caste-based clustering and the assertion of caste identities in the digital domain (Ramanathan et., al, 2023). Shubham (2021) analysed the upper caste groups in the digital platforms such as Facebook, Twitter, Instagram and YouTube, and argued that those spaces that admit individuals exclusively based on their caste identity, perpetuate and propagate caste ideologies, try to strengthen the

caste ties and also spread hatred against the lower castes and tries to maintain the social hierarchy.

During the pandemic, education completely relied on digital technology, and the role of caste in shaping educational access and outcomes was studied by several scholars. The studies during the pandemic period have proven that there is a huge disparity between different caste groups in the usage of technology for educational purposes. The studies conducted by Kerala Sastra Sahithya Parishad during the covid period have showcased that there is a significant gulf in both access and usage between different caste groups in the utilisation of digital technologies for education in Kerala (KSSP, 2020), one of the most digitally progressed States in India. According to the performance grading index prepared by the Kerala State government, the quality of education has improved during the covid period. As a result, the tenth standard examination had a 99.5 pass percentage after the pandemic year. Even then, 43 percent of the students who failed in that examination were from the Dalit or lower caste category, who are only 16% of the population (Nazar, 2022). This has exposed the incapacity of the students from those caste groups to adapt to digital education despite the claimed holistic improvement in access and quality education. The drastic change in educational circumstances during pandemic demanded the need for capital to adapt to the changes in the field of education. Whereas many students from the Dalit castes who significantly lack social, economic and cultural capital lagged behind their upper caste counterparts because of their inability to leverage different capitals in the digital domain (Roy and Mishra, 2022). This means the hysteresis effect, which is the wedge between the demands of the structure and the capability of the individual to respond to the changes in circumstances (Yang, 2013), due to the paradigm shift of education from physical to online classes was mainly experienced by the Dalits due to their lack of digital capital. As a result, the school dropout and the increase in child labour were mainly from the Dalit sections during this period (Bora, 2021).

Therefore, it can be stated that the challenges of 'digidemic' or digital pandemic, which are the hurdles and interruptions faced by students in online learning during the pandemic (Alam and Hoon, 2021), were most encountered by the Dalit students compared to the students from other castes. This is also evident in the

school enrolment rates during the pandemic period. According to ASER (Annual Status of Education Report 2020), the enrolment pattern of children was changed during the digital learning year. Among the age group 6-10, the non-enrolment rate has increased from 1.8% in 2018 to 5.3% in 2020 and this mainly is from the Dalit groups. As per the report, this is due to the lack of digital capital, such as digital devices, the internet, a dedicated learning space etc., among the disadvantaged sections.

2.3.1.2 Caste and Digital Habitus

By applying the concept of the habitus in the Indian context it can be argued that the caste of an individual can shape their habitus. The values, norms, beliefs and practices associated with the institution of caste (Chrispal, Bapuji, Ziestma, 2021) can shape the socio-cultural perspective of an individual in India. This habitus of caste will correspond to the internalisation of distinct embodied features, which establishes boundaries and a hierarchical structure in relation to other castes (Gorringe and Rafanell, 2007).

The memory of the past, tradition, norms and practices in society are shaping their habitus. In the Indian context, the cultural and social perspectives, societal status, social networks, and norms and practices are critically influenced by caste (Deshpande, 2010). Hence, it can be said that the habitus and caste are closely intertwined in the Indian context. The habitus of caste along with the disproportionate distribution of capital between different caste groups reinforce the hierarchical caste structure of the Indian society. The studies which ponder the nature of technology usage based on caste and the scholarships that investigate digital dispositions, attitudes and consumption through the lens of caste are very limited.

Digital habitus of an individual in the Indian society and in the field of education is largely structured by their caste identity. The disposition towards technology based on the past and present experience of technology, the skill and nature of usage of technology and the aspirations to utilise the potentiality of technology for advancement etc. are largely influenced by the caste of an individual (Kamath, 2018).

Also, the interpretation and usage of a particular technology are not homogenous across society. This means, how a technology is comprehended and used is not an objective understanding but a social construct that is established by different social groups. This will differ from community to community in the urban spaces of India (Rashmi, 2017). Hence, the social construct regarding technology is derived from the socially accepted use and requirements of that particular technology, and caste plays a crucial role in this process in urban cities like Bangalore. To reiterate, there is a caste-based social construction in understanding the purpose of technology usage (Kamath, 2014).

The influence of caste in shaping the digital technology usage and attitudes towards technology is discussed by Kamath and Cowan (2015) using the domestication model of technology. Silverstone and Haddon (1996) explain four phases of the domestication of technology: appropriation, objectification, incorporation and conversion. Appropriation occurs when a family purchases the technology. In the objectification phase, the family exhibits their position in society and their identity through the possession of the material or technology. Incorporation is the phase in which the technology is applied and integrated into the daily life of the family. In the final phase of conversion, technology is used to shape the relationship of the family with the rest of society. When appropriation and objectification can be common for all social groups, the incorporation and conversion are heavily influenced by the social and cultural settings to which the household belongs to. By applying this model in his study, Kamath and Cowan (2015) argued that the access and nature of consumption of technology will be influenced by the sociocultural background of the family, which is closely interlinked with the caste. Hence, the habitus of the individual, which is critically shaped by their caste, determines the nature of access and consumption of technology. Thus, differences in caste based digital habitus concomitantly result in the widening of the gulf between the lower caste and upper caste in the usage of digital technology.

Followingly, in a different study, Kamath (2018) analysed the caste-based cell phone usage in the city of Bengaluru (IT capital of India) and found new methods of caste exclusions and inequalities in the technological sphere. Although access

to technology is not a concern in this urban area, the consumption of technology, perspective towards the ICTs and pattern of usage varies considerably among different caste groups. While the lower caste groups confine the understanding of technological applications to communication and entertainment, the upper caste groups perceive it as an inevitable channel for involving in economic activities, educational development, and exploration and exploiting the possibilities of advancement (Kamath, 2018). Hence, caste plays a crucial role in the structuring of the digital habitus in India. On a similar note, Upadya's study (2007) which is based on the application of digital technology for professional development and employment after education, has identified that, the upper caste individuals who mainly come from the upper- and middle-class families, in which they are exposed to the utilisation of technology for professional applications during their primary socialisation, are more likely to use digital technologies for development purposes. Whereas the lower caste individuals are less likely to apply digital devices for such empowerment functions (Upadya, 2007). Hence, the past experience of the technology that cultivates the digital habitus of the individuals is a product of their caste identity in India.

Therefore, the existence of caste-based disparities in educational and digital domain are indicated in academic literature. However, there is a different perception regarding the caste situation in Kerala, a state located in the southwest part of India. This needs to be discussed as Kerala is the field of this research.

2.3.2 Caste in Kerala

Caste has various theoretical and legal manifestations in India. The theoretical and conceptual aspects, and the official categorisation of caste are discussed in the next chapter in this thesis. When considering the legal definition of caste, the Constitution of India is the most authentic source. Caste appears in Part III of the Constitution, which deals with fundamental rights (Laxmikant, 2019). Articles 15, 16, 17, 23, and 29 of the Constitution ensure equality and protection against discrimination based on caste. In these aspects, caste is treated as an attribute similar to sex, religion, and language (Bhatia, 2021). However, the provisions for positive discrimination in Articles 15 and 16, along with Supreme Court verdicts

regarding reservation policies, maintain the understanding of caste as a root cause of economic and social inequality in India (Sitapati, 2016).

While caste was always considered a fundamental social inequality issue by religious reformers such as Ayyankali, Poykayil Appachan, and Narayana Guru in Kerala (Madhavan and Komath, 2023), the Marxist discourse in Kerala regarding caste has undergone significant transformations. Earlier communist leaders viewed addressing caste issues and even untouchability as ‘insincere’ towards the class movement (Telthumbde, 2017). They considered economic or class inequality as the fundamental problem in Kerala society. For instance, the first administrative reforms commission report under the first communist government in Kerala explicitly mentioned that economic backwardness should be the condition for reservation in employment (First ARC Report, 1957). However, the communist stance on caste has changed over the years. Prominent thinkers in the Indian left, such as Namboodiripad (1977) and Ranadive (1979), studied and analysed caste effectively and integrated it into the political and intellectual discourse of the left movement. Nevertheless, the political and social imaginaries of left-dominant Kerala failed to effectively engage with caste issues (Devika, 2010). The social and educational changes in Kerala, especially the decline of feudal castes and the rise of backward castes (Jeffrey, 1976), reinforced the perception of caste as a phenomenon of the past in Kerala.

Despite caste being a pan-Indian phenomenon, based on the social and human development indices (Das, Das and Basu, 2022; Kumar and Rani, 2019) and the surveys of caste inequality and untouchability (Chathukulam and Tharamangalam, 2021), there was a different perception regarding the caste hierarchy and inequality in Kerala. The matrilineal social system in Kerala, along with radical developmental policies such as land reformation, have been widely acclaimed. These policies, particularly those implemented by left governments, continue to shape the dominant narrative highlighting the progressiveness of the region (Devika, 2010).

The indicators of social educational health development situates Kerala as the most progressive state in the country. For instance, according to the latest

indicators published by Global Data Lab, Kerala is the lead performer in the following indicators.

Indicator	Kerala	National Average	Least Performing State/Union Territory
Toal Health Index	.822	.735	Uttar Pradesh(UP)- .699
Life Expectancy of Women	76.2	69.38	UP- 66.32
Life Expectancy of Men	71.58	66.26	Bihar- 64.24
Expected Years of Schooling - Girls	15.59	12.61	Dadra Nagar haveli- 11.55
Expected Years of Schooling- Boys	14.52	12.56	Dadra Nagar Haveli- 10.61

Table 5: Performance of Kerala: Data Lab, Institute of Management Research, Radboud University

Therefore, the social development indices of Kerala continue to produce better results than the rest of the country. Such performance of Kerala in the spheres of social and human development made it the ‘gold star of development literature’ (Nussbaum, 2011). According to a survey conducted by Indian Human Development Survey regarding caste inequality and untouchability, Kerala ranked as one of the least casteist state in the country (Indian Express, 2014). Other studies position Kerala as the top performer in equality in educational opportunity (Asadullah and Yalonetzky, 2012), gender equality (Ban and Rao, 2008), and health (Navaneethan and Tharamangalam, 2002).

Moreover, Kerala is a leading performer in digital aspects. It is considered a progressive region in digital connectivity (Moinuddin, 2019) and claims to be the first fully digitally connected state in India (Hindu, 2016). Therefore, the social

field in Kerala is an ideal platform to understand whether caste positionality is important in shaping social and educational mobility when digital technology is highly diffused in what is considered the most egalitarian class society in India.

Earlier scholarly studies by the Centre for Development Studies (CDS) have asserted that Kerala is in a more favourable condition compared to the rest of the country. This assertion is supported by evidence of the highest literacy rates, the lowest infant mortality rates, and one of the most egalitarian land-owning patterns in the developing parts of the world (Herring, 1980). As Jeffrey (2016) has noted, the decline in birth rates prior to the family planning initiatives of the central government was projected as another important evidence of the comprehensive development in health and education sectors. The control of epidemics, educational empowerment, an increase in women's education and the age of marriage were noted as the main drivers of birth control in Kerala. The democratic struggles between the left and centrist parties to attain power from a highly literate electorate necessitated consecutive governments in Kerala to plan and implement social development policies and the distribution of resources. The notion of the 'Kerala Model' which is rooted in equitable growth and development, far-reaching every caste and community became a dominant discourse. It has been an integral part of the public consciousness of Kerala society since the 1970s.

However, there are scholars who argue that hierarchical positioning, with upper castes at the top and Dalits or untouchables at the bottom of the social ladder, remains prevalent in Kerala, similar to the rest of the country. They claim that Kerala's development and progress in the spheres of health and education is not an indication of the absence of caste and religious fragmentation (Singh, 2011). The argument of scholars such as Devika (2010), who criticised the political and legislative policies that failed to address the caste system or to an extent reinforced the hierarchy can find merit in this context. She argues that the extinction of the landlord class and the diminishing of traditional caste practices cannot be misread as the annihilation of the caste system. Rather, the left ideological, social and political movements against the caste injustices grounded in the agency of the upper caste led to the development of a 'secularized casteism' in Kerala (Devika, 2010). The existence of caste inequality and the sluggish social mobility of the Dalits due to limited political and economic

opportunities in Kerala were reiterated by studies in different time periods (Sivanandan, 1976; Deshpande, 2000; Thiranagama, 2022).

The caste system and the concomitant inequality in capital and opportunities have penetrated the tertiary sector, especially the IT (Information Technology) occupations and digital sector in Kerala (Saritha and Manoj, 2023). Interestingly, the superior educational outcomes and higher adult literacy rate (more than some developed countries) should have played a key role in reducing the caste inequalities in the socioeconomic, cultural, and political domain of Kerala. Rathore and Das (2019) attributed these admirable educational achievements to the historical educational and social policies of the princely states of Travancore and Cochin in Kerala and the state activism after the 1950s. However, this phenomenal educational outcome failed to translate into reducing the social inequalities based on caste, as it did not enhance the educational or social metrics of the Dalits (Rathore and Das, 2019). Therefore, the acclaimed public education system in Kerala played a key role in reproducing the existing social disparities and widening the gap between the untouchables and upper castes in the state.

Revisiting the failures of social and administrative policies to provide an economic or social upliftment for the untouchable castes in Kerala could explain the perpetuation of caste inequality in the state. Although the Land Reformation Act of Kerala in 1962 was considered a successful legislation (Radhakrishnan, 1989; Oommen, 2004) which provided small tracts of landownership and empowerment to the Dalits, it failed to convert the land into a productive economic resource for them (Devika, 2010). Under the land reformation act, the rights over agricultural lands were handed over to the tenants, comprised of mostly Ezhavas of OBC (Other Backward Class) and upper castes rather than agricultural labourers or tillers who belong to the untouchable castes. Thus, traditional landlords were supplanted by a legalised land-owning class who continued to use Dalits for agricultural labour (Oommen, 2014). The continuing disproportion in the ownership of land resources is evident from the latest census data of 2011. The SC population which belongs to 9.09 percent of the total population in Kerala has a landholding of only 2.88 percent.

Similar to the primary sector, Dalits were marginalised in other avenues of economic and social mobility. The migration to the Arab nations and to the West largely contributed to the economic development of the state of Kerala after the 1970s (Zachariah, Mathew, and Rajan, 2003). The migrant surveys have shown that the proportion of Dalit migration for better economic prospects is much lower compared to the already wealthy and educated sections of the society. The migrants invested their income in the education and health of their children, and it resulted in the widening of the economic and social inequality in Kerala (Zachariah and Rajan, 2012). Hence, Dalits were unable to utilise the opportunity of economic migration due to lack of social, economic and cultural capital. The Dalits were largely excluded from the opportunities along with few other social groups in Kerala. As Oommen (2014) has rightly pointed out “The Dalits, tribals and fisherfolk remained separate from the mainstream physically, socially and intellectually” (Oommen, 2014 p.22).

2.4 The Gap in Existing Literature

The analysis of existing studies indicates gaps in different areas of academic literature. There is a critical requirement of empirical studies in the areas of digital sociology and digital inequality, inequalities in education when technology is accessible to larger society, and the reproduction of social inequalities through technology. Also, there is a dearth of literature in these aspects in the Indian context, especially through the lens of caste.

Digital inequality scholarship and digital sociology are continuously evolving strands of research and knowledge. However, there is a critical lack of evidence in global and Indian digital sociology regarding the different types and manifestations of digital inequality. For instance, the impact of the possession of more than one personal devices, the screen and visual quality of devices, the effect of quantity and quality of internet, access to paid online resources are critically understudied. Furthermore, other than notifying disparity in usage, the reasons for that difference in usage, the source of difference in dispositions, attitude and usage are also often missing in the current digital inequality scholarship. This implies the necessity of a comprehensive approach to understand

the state of existing digital divide and the reasons behind the reproduction of digital inequality.

Other than this, the digital sociological literature regarding the theoretical framework of digital capital and digital habitus also requires reconceptualisation. The scope of digital capital needs to be reanalysed to investigate whether capitals in a South Asian setting, such as proficiency in English language, access to international schools, and caste is shaping the digital capital in that context. A universal conceptualisation of digital capital might be incapable to capture the socioeconomic role of digital technology in India. There is a requirement of more contextualised analysis to determine whether digital capital should be treated as a separate capital. The literature in this aspect is largely missing. Also, the digital habitus concept that assimilate the physical habitus and the habitus in the digital space is also unavailable. The scope of this aspect needs to be carefully studied. As the digital and physical spaces are largely overlapping and continuously influencing each other such an analysis is imperative.

Specifically in the Indian digital sociology, caste-based digital inequality, particularly at the first, second, and third levels of digital divides (which refer to access, usage, and benefits respectively) there is a significant gap of in-depth studies. The impact of these divides on education is another significant research field that is currently hampered by a dearth of data. It is crucial to investigate the motivations of different castes to use technology, their perceptions of technology, and the ways technology has shaped their lives. With the widespread diffusion of technology in Indian society and increased access among teenagers, it is important to critically analyse the educational usage of technology among different caste groups. Notably, the pro-technological educational surveys and reports, such as the Annual Status of Education Report (ASER) in 2023, did not examine the differences in digital usage between students from different castes and classes, which is a significant oversight.

More importantly, the dynamics of class and caste, and their intersections in digital sphere are not properly analysed in the existing scholarship. Whether the role of class is more significant than caste in determining the digital access, usage and attitude should be properly investigated. The digital education scenario in

India should be deciphered using this combined lens of class and caste. For this purpose, the digital interactions of students from different caste and class groups should be analysed.

Additionally, the digital landscape in Kerala, a state with one of the best digital connectivity in the country (Moinuddin, 2019), requires a comprehensive analysis. In particular, the caste-based digital disparities in this state, which is emphasised as one of the best human developments performing state in the country (NITI Aayog, 2020), remain critically understudied. Our understanding of the digital educational inequality situation in Kerala is currently limited to data on token connectivity collected during the Covid period (KSSP, 2020). While there are reports on digital connectivity in Kerala, information on the application of technology among different caste groups, particularly in terms of device quality and usage quality, is not available.

Furthermore, the situation of digital caste inequality in India, particularly in Kerala, has not been effectively analysed through the lens of digital capital and digital habitus. Research that could provide a comprehensive understanding of the digital landscape among different caste groups is critically lacking in India. In particular, an effective application of the digital capital and digital habitus framework could shed light on the quality and quantity of digital access, the social and cultural factors influencing usage, attitudes and dispositions towards digital technology, and the role of technology in shaping digital usage among different caste groups. Of significant importance is the potential role of technology as either an equalizer or an exacerbator of educational inequality among different caste groups, which could be deduced if technological access is provided and analysed using the Bourdieusian digital theoretical framework.

Moreover, the digital educational inequality research in India is confined to a few major structural factors such as binary of access and not having access, rural-urban divide, class and caste categories and educational level. The in-depth research into the quality of usage, the disparity in higher digital skills, the role of extended family and neighbourhood, the role of social media, and the role of new technological advancements such as algorithmic suggestions and feedback loops are largely absent in the literature. Therefore, this research could broaden the

understanding in the areas of digital sociology, digital and educational inequalities, with a particular focus on the Indian context. For this purpose, caste is used as an analytical tool by interlacing it with Bourdieu's concepts of capital and habitus within the digital sphere.

Chapter 3: Conceptual Frames

This chapter reviews the central concepts of the research, providing conceptual clarity for all key elements of the theoretical framework. This chapter is divided into three parts:

The first part explains the phenomenon of caste, including the distinction between varna and jati, terms often used synonymously with caste. This section also covers various conceptual frames of caste, its historical formation, and its contemporary existence in India and Kerala. Understanding the system of caste, its genesis, transformation, and operationalisation is imperative for grasping the context of this research.

The second part explains Bourdieu's concepts of capital and habitus, which form the foundation of this research's theoretical framework. This section is essential for comprehending these key concepts before interlacing them with digitality.

The third section conceptualises capital and habitus in the digital context, utilising a digital sociological perspective. This part explains digital capital and digital habitus, forming the final level of the theoretical framework.

3.1 Manifestations of Caste

To develop a conceptual clarity regarding caste, an understanding regarding its origin, the difference between the terms such as varna and jati, and an outlook on its legal categorisation would be necessary. This section of the chapter is dedicated to explaining these aspects one after another. Hence, this section elucidates the concept of caste by expounding different terms and theoretical constructs associated with its interpretation.

3.1.1 Concepts of Caste

Western scholars have also thought and discussed the caste system. Weber argued that the caste and its rigid structure based on traditional occupation is a serious hindrance to the growth of capitalism or industrialisation in India (Thapar, 2018).

Marx also observed that the arrival of colonial capitalism could disintegrate the traditional and ancient structure of caste. He recognised land ownership and labour allocation in India as a hereditary privilege and considered caste as a specific manifestation of the class system (Naudet, 2023). Considering caste as a peculiar and reified manifestation of class is an orthodox Marxist paradigm. The dominant left intellectual sphere in India has traditionally considered caste as a superstructure, not as a base of Indian society (Jodhka, 2016). This perspective views caste as a traditional shell that conceals the underlying class dynamics. Consequently, the Indian left intelligentsia has held the belief that the modernisation of the Indian economy and society would cause the caste consciousness to wither away, allowing real class issues to emerge (Guru, 2016). The orthodox Marxist fallacy of misreading caste as a traditional and feudal institution was disproven by the ground realities caste-based disparities (Thorat, 2017) and discrimination (Yengde, 2020; Teltumbde, 2020) even after the advent of modernity and globalisation in Indian society and economy respectively.

Although the existence of caste is accepted, there are different perceptions regarding the perpetuation of caste. The scholars have observed the changes in casteism through the absence of some of its essential aspects such as occupational hereditary and ritual hierarchy. Many traditional occupations interlinked with caste have disappeared. Also, the globally and nationally connected rural agriculture sector has significantly altered the traditional economic and social reproduction pattern of the isolated village system (Jodhka, 2016), which was the backbone of traditional caste system. Eventually, the ritual hierarchy is replaced with another set of divisions and hierarchies that derive from education and capital (Desai, 2005). As Ambedkar (1916) have argued, endogamous marriages within the same jatis became the sole reason for the perpetuation of caste system in India. Unsurprisingly, caste continues to remain as the single most important factor in determining matrimonial alliances in India in the modern era (Banerjee et al., 2013). The proliferation of caste-based matrimonial websites for finding suitable partners from the same caste groups (Sahoo, 2017), reassert their findings.

There is an attempt in mainstream politics and society to portray caste as a cultural entity. Thus, caste is understood, articulated, embodied and camouflaged

as a cultural identity or distinction (Valliammai, 2020). This narrative is obscuring the sociocultural and economic reality of caste- a system marked by inequality, marginalisation and domination. Natrajan (2011) argues that the 'culturalization of caste' is an attempt by the elite caste groups to reconstruct and represent the caste as an exclusive cultural entity in the contemporary period.

Similarly, 'ethnicization of caste' (Fuller, 1996) articulated the transformation of caste as a distinct ethnic identity with strong communal ties and cultural uniformity in the post-independence era. Jaffrelot (2000) supported this idea by claiming that in Northern parts of India, castes acquired the features of ethnic groups. Fuller's ethnicization of caste is diametrically opposite to the transformation of caste put forth by Weber (Natrajan, 2011). Weber proposed the transformation of status groups into ethnic groups and then eventually into caste. However, Natrajan criticised this understanding of caste as ethnic groups by claiming it as the depoliticisation of caste struggles. He argues that reducing caste into a cultural entity or ethnic group would legitimise the perpetuation of caste and its inequalities. Mosse (2018) presents a similar argument based on observations of social policies in India, asserting that caste is often overlooked as a structural determinant of inequality in contemporary India. Instead, it is viewed as an erasable remnant of old cultural traditions and practices that can be addressed through development. The purposeful omission of caste as a category in post-independence censuses exemplifies the state's reluctance to acknowledge it as a determinant of inequality and poverty (Mosse, 2018). This approach treats caste as a 'static residual' issue that can be managed through corrective measures, thereby overlooking the possibility of caste being a 'dynamic relational' issue connected to relationships that should fall under the state's obligation to tackle inequality and discrimination in the economy and society (Mosse, 2018, p. 424).

The secularisation of caste is another important theory that explains the transformation of caste in the modern era. It can be identified as the transformation of the traditional hierarchical caste system into a modern but (still) rigid structure of socioeconomic and political inequality. This transformation occurred due to the de-ritualisation, the disappearance of traditional rituals and association of caste with traditional occupations, and the politicisation of caste.

Hence, caste ceased to exist as a ritualistic social hierarchy but continues to be sustained as an endogamous cultural unit with strong socioeconomic-political ties (Sheth, 1999). Nevertheless, most scholars agree that rather than diminishing in modern society, caste identities have strengthened due to the intervention of electoral politics. Caste groups have transformed into vote banks, and even political parties have contributed to the reinforcement of caste consciousness (Jaffrelot, 2003).

Affirmative action also became a key factor in revitalising and politicising the caste identity. The middle class with common interests, utilising their caste identities collectively consolidated their electoral votes and emerged into political factions (Fernandes and Heller, 2006). The reaction of the upper caste against the reservation policies obliged the lower caste groups to cultivate caste consciousness for a counter-reaction to protect their advantages. This catalysed the politicisation and strengthening of the caste identity of the lower caste groups (Jaffrelot, 2003).

Historically, the structure of caste involves two sets of bifurcations: pure and impure castes, as well as upper and lower castes (Gurukkal, 2015). The subjective position of each caste is determined by considering both factors. The answers to questions such as whether a particular caste is pure or impure, and whether it is higher or lower compared to another, determine each caste's social positioning. Another group of scholars claims that three factors signify the caste system: the hierarchy of ritual status, hereditary occupational specialisation, and the repulsion or mutual separation of social groups from each other through various restrictions (Bouglé, 1971).

The orientalist perception regarding caste was developed from the textual interpretation of sastras and other orthodox Hindu scripts. Based on this textual analysis they developed a rather reductionist understanding of caste. They conceptualised it as a hierarchical division on the basis of varna system. They held it as a four-fold system with Brahmins at the top and Shudras at the bottom, and untouchables outside the varna (Jodhka, 2013).

In his influential work, *Homo Hierarchicus*, Dumont presented one of the most coherent and debated models of the caste system (Lardinois, 2017). According to Dumont, caste is a grouping of interdependent groups categorised under each varna. Rather than viewing castes as separate social entities, Dumont's analysis emphasised the hierarchical nature of their ritual status. He posited that other aspects of caste were subsumed under this central tenet (Jaiswal, 1997). He further claimed that hierarchy is determined by ritualistic status and the observance of purity. This rigid ritual hierarchical structure (Appadurai, 1996) and the failure to incorporate power within the context of purity (Fuchs, 2021) were identified as significant shortcomings in Dumont's analysis. However, despite not fully endorsing Dumont's formulation of caste, many social anthropologists tended to accept the premise that caste served as a widely recognised structure of social organisation across various groups within the hierarchical framework of Indian society (Jodhka, 2014).

Another important work on caste is conducted by Srinivas. The varna theory was critically analysed by Srinivas (1964) to understand the caste system. He argued that the varna system provided the ground for the castes of lower varnas to imitate the norms and practices of upper varnas, a process he termed Sanskritization. This provided mobility for the lower caste groups to move from lower to higher. Srinivas analysed this process of social transformation at the empirical level, which he termed as 'field-view' unlike the theoretical level analysis of Dumont, which he criticised as 'book view' (Beteille, 1996). According to Srinivas (2002) varna understanding of caste has led to misinterpretation of the caste system.

Both Srinivas and Dumont neglected Ambedkar's critical analysis of the caste system. Ambedkar articulated that the caste system is a division of labourers rather than a division of labour, based on an earlier established ritualistic hierarchy, which he termed as graded inequality. He observed the absence of a completely underprivileged class within the caste system, noting that each caste is privileged in certain ways, leading every caste to perpetuate the system (Lardinois, 2021). Also, by applying Dewey's concept of the habitual dimension, Ambedkar explained how marginalising and belittling attitudes are embedded in the behaviours and actions of social actors based on their caste (Fuchs, 2021).

Hence, Ambedkar carefully sketched the functioning of a caste society and its consequences.

Furthermore, scholars like Kosambi (2002) correlated caste with class, claiming that caste can be seen as an early form of class structure, where religious practices shape societal awareness, enabling the main producers to be stripped of their excess resources with minimal effort. Kosambi also argued that the Asiatic mode of production existed in India at low levels. Marx introduced the Asiatic mode of production to explain Eastern relations of production, characterised by a form of exploitation termed 'general slavery' that excludes personal liberty, distinct from Greco-Roman individual slavery. In this mode, exploitation occurs at the community level, with one community directly exploiting another (Godelier, 1965).

Kosambi, supported by Habib (2007), contended that the foundation of the caste system and practices such as endogamy were already part of tribal society in India and became general practices when these tribes were subsumed into broader society. As many tribes were mostly endogamous communities, there is a possibility for the continuation of this practise while they were integrated into the larger society, as Kosambi (1956) postulates. However, the integration of tribes into society means the domination of peasant communities over the hunter, food-gatherer tribes (Habib, 2007). The groups performed such subsistence occupations were relegated to the lower jatis or untouchables and positioned outside the varna system. Since the occupations of these groups were mostly mere subsistence providing and seasonal, they became a large supply of low-cost, landless tillers for the peasant communities and landlords. Therefore, the notion of pure, impure and pollution between castes was actually the consolidation of economic relations of the Indian society (Habib, 2007).

3.1.2 Origin of Caste

There are different paradigms that explain the origin, genesis and perpetuation of caste system in India. Although these paradigms are often contradictory and take opposing stances in many aspects of caste origin theory, the majority of them have developed a broad consensus regarding the idea that the caste system

evolved from the varna system, and it became more structured between 200 and 600 BC (Teltumbde, 2018).

There are different theories regarding the origin of caste system in India. Teltumbde (2020) postulates that there are nine segments of theories regarding the origin of caste. These are - traditional; racial; political; religious; occupational; functional; guild; mana; and evolution or multi-factor theory. The traditional, also known as Indological theory, states that caste is of divine origin, and it supports the claim of the Purushasukta in Rig Veda, an orthodox Hindu scripture. Although easy to disprove, it explicates the expansion and perpetuation among the orthodox Hindus. The racial theory of caste claims that the racial difference between Aryans and non-Aryans led to the development of caste system. The historians who support political theory argues that caste system was crafted by Brahmins to control and maintain their political power and superior social positioning. The occupational theorists held that the difference in occupational status eventually developed the caste system. Religious theory states that the ritual hierarchy with the King at the locus later developed into a caste system. The functional theory takes a different stance by claiming that to keep the secrets of traditional occupations, races transformed themselves into endogamous castes. Guild theory postulates that caste is formed from guilds. The multi-factor theorists claim that the caste system could not be explained by using a single factor. It is the product of a plethora of factors and that is what makes it complex and intriguing. It involves factors from metaphysical conceptualisations to race and geographical locations.

Ambedkar, a pivotal figure in modern Indian caste studies and movements, made notable observations regarding the formation of caste. Ambedkar (1916) argued that early Indian society was class-based, allowing for social mobility. However, the later development of the caste system created a self-enclosed social structure that halted such mobility. He identified endogamy as the core of the caste system, asserting that the formation of endogamous units marked the birth of caste. Applying Bagehot's imitation psychology, which suggests that lower groups mimic the practices of higher groups, Ambedkar explained that as upper castes became endogamous, lower castes followed suit. He famously stated, "Some closed the door: others found it closed against them" (p. 24). Thus, endogamy became

widespread, leading to rigid social clustering. Ambedkar extended his argument, claiming that practices such as sati, permanent widowhood, and child marriage arose from endogamy. Although contemporary sociologists have rejected some of Ambedkar's claims, his work remains one of the earliest and most compelling sociological attempts to define the caste system (Teltumbde, 2017).

Another important and logically sound hypothesis regarding the origin of caste is the materialistic perspective regarding the formation of caste. Many historians argue that the formation and proliferation of caste is analogous to the development of agriculture in delta regions. The increased productivity resulted in surplus production and the appropriation of this surplus led to the institutional consolidation of its productive relations (Gurukkal, 2015). The formation of this rigid hierarchical structure of productive relations is coterminous with the requirement of specialised occupations in the economy. Hence, occupational identity became the identity of those groups who practiced it and later evolved into a hereditary caste identity. This institutionalisation of labour closely interlinked with the religious and social systems is one of the significant aspects of caste. The institution provided stability to both the economy and the individual, but it deprived the chances for social mobility and occupational choices of the latter.

The formation of the caste system in southern India did not occur simultaneously with its formation in the northern regions. Evidence suggests that caste formation in the Deccan during the Common Era (CE) and after the 6th century CE in Kerala coincided with the introduction of agricultural practices in the deltas. This supports the notion that caste formation is linked to surplus agricultural production. Gurukkal (2015) argues that the relations of production, which explain the formation of social groups and historical social processes, can be used to establish a framework illustrating the phenomenon of caste. This historical materialist hypothesis is also supported by other historians (Habib, 2010; Kosambi, 2008). However, Jaiswal (1997) criticises this argument for reducing caste to economic determinism, noting that in Northeast India, surplus agricultural production and wetland cultivation were prevalent, yet caste hierarchy emerged only after Brahmanical ideological intervention.

Therefore, following Gurukkal's (2015) observation, it can be stated that while the formation of caste may be a product of material relations, the consolidation of caste hierarchies is a result of orthodox Brahmanical norms and practices. The key element of caste, the notion of purity and pollution (Beteille, 1995), is imposed by Brahmanical supremacy through orthodox Hindu scriptures. This discourse permanently attached groups to specific crafts and labour, rendering their servitude tantamount to slavery (Dirks, 2002).

The complexity of caste arises from the fundamental terms *varna* and *jati*, which are often used synonymously with caste. A conceptual understanding of caste necessitates an in-depth analysis of these terms and their application in Indian society.

3.1.3 Varna and Jati

The popular understanding of caste is structured around the terms *varna* and *jati*. According to orthodox Hindu texts such as *Manusmriti*, the *Mahabharata*, and *Jati Viveka*, *varna* is a four-fold hierarchical system that categorises people into four groups: Brahmins (priests) at the top, followed by Kshatriyas (warriors), Vaishyas (merchants), and Shudras (servants) (Wilson, 1877). The first three groups in the *varna* system, considered upper *varnas*, undergo *upanayana* (the sacred thread ceremony), marking a formal entry into learning practices. Shudras, positioned at the lowest rung of the *varna* hierarchy, are excluded from this rite. Untouchable castes, referred to as *Avarnas* (colourless), are situated outside this *varna* system. Whereas *jati*, a sub-unit of *varna*, represents rigid social clusters based on occupational status norms, perpetuated through strict endogamous marriage practices (Jodhka, 2014).

Many scholars claim that an exact translation for the word caste is absent in Indian languages (Klass, 1980). The word caste originates from the Portuguese word 'casta' which means pure or chaste. Hence, it is more interlinked with the Portuguese understanding of race or lineage, which is significantly different from the complex Indian phenomenon (Dirks, 2002). Hence, certain scholars prefer the word 'jati' which truly encapsulates the peculiar features of this South Asian social system (Gurukkal, 2015).

The empirical reality of jati is different and more complex than the straightforward textual understanding of varna. The existence of multiple castes and sub-castes, with status variations from region to region, is difficult to grasp with a simplistic four-fold varna system. For instance, Parry (1980) showcased the treatment of certain Brahmins (highest level according to their varna) as untouchables because they perform funeral rituals. Additionally, the dominance of Nairs (Shudras according to varna) in Kerala (Jeffrey, 1976) and Gujjars (non-Brahmin) in certain pockets of North India, both materially and ritually (Raheja, 1988), is well documented.

Varna and jati are often erroneously used interchangeably by scholars. Although there exists a certain degree of osmosis between these two systems, varna and jati are inherently different. Sociologists generally distinguish between these two systems based on three factors: 1) varna is a broad category, while jati determines the actual social groups. 2) Varna is limited to four groups, but jati encompasses thousands of groups, with the number not being fixed. 3) The hierarchy of varna is clearly defined, whereas the hierarchy of jati is ambiguous (Jaiswal, 1997). Furthermore, while the varna system is mostly confined to the Hindu religion, jati is present across all religions in India, including Christianity and Islam, and among Indians abroad, outside the framework of varna (Jodhka and Shah, 2010). Additionally, sub-caste groups, which are similar to jati segregations, are observed within jatis (Beteille, 1964) but not among varnas.

In a historical sense, Beteille (1996) argues that within classical Indian literature and academic scholarship, caste was initially represented as varna, and later came to represent as jati. According to him, this paradigm shift in the meaning of caste is more than a linguistic transformation; it reflects a change in the perception of caste. This shift highlights the transition from the depiction of caste as a theoretical or textual social system described in orthodox Hindu scriptures to the reality of social life in which individuals are engaged. While varna is an exclusive and exhaustive hierarchical system, jati often represents communities. Jati captures the complex reality of the social system more comprehensively than the universalistic representation of varna with its definite four-fold structure. Jati is not exhaustive, as new jatis can emerge based on changes in social and economic

conditions (Beteille, 1996). The association of different varnas gave birth to new jatis. For instance, the Brahmana-Shudra castes, such as Kayasthas of Northern India and Shrotriya Brahmanas of Hyderabad, who were restricted from conducting rituals, illustrate the elasticity and social reality of jati over varna. This is an aspect that orientalist scholars and even Weber failed to recognise (Thapar, 2018).

According to Marxist historians like Gupta (1996), the varna system and the later development of a complex jati system are products of the socioeconomic systems of their respective periods. The varna system emerged during a pre-iron agricultural era characterised by surplus production and a limited need for specialised occupations. This surplus was appropriated by the Brahmana-Kshatriya coccus, with the Vedas, the main orthodox texts of the period, religiously sanctioning this appropriation or exploitation (Thapar, 2012). The introduction of iron led to the formation of large empires, which later fragmented into feudal landlordism. Land became the primary indicator of status and wealth, while those unable to acquire land became artisans and craftsmen. These groups were ranked based on factors such as their remuneration, patrons, and customers. The evolution of this economic system, rooted in localised exploitation within village networks, led to the crystallisation of the jati system (Gupta, 1996).

Therefore, in the modern period jati is considered as the caste identity of an individual. The jati of an individual is applied for social categorisation in India. Officially, castes are divided into three different sections, and it includes General, Other Backward Classes and Scheduled Castes. It is described in detail in the following section.

3.1.4 Official Categorisation of Caste

The political demand under the leadership of Ambedkar to uplift the socially and economically discriminated castes and communities led to the categorisation of untouchables as Scheduled Castes and affirmative action policies for them (Lardinois, 2021). In post-independent India, reservation or affirmative action was legalised for Scheduled Castes and Tribes, and later extended to other socially and educationally deprived castes and communities (Jaffrelot, 2010).

There were two Backward Class Commissions appointed by the Government of India in 1953 (Kalelkar Commission) and 1978 (Mandal Commission) respectively to study the requirement of reservation for backward non-scheduled castes. The first commission identified 2399 caste and community groups, which was nearly 32% of the population, as backward (Laxmikant, 2019). The commission identified and understood backwardness in terms of social positioning based on caste. This was rejected by the government as it was defining backwardness in terms of communal understanding. The government considered this categorisation would distort the secular identity of India, and it would also impede the propagation towards a casteless, classless society (Deshpande, 2021).

However, the continuing political and social pressure led to the formation of the second Backward Class Commission or Mandal Commission. The Mandal Commission identified 3743 castes and communities as backward, which formed 52% of the population. Based on this report, the affirmative actions or reservations were extended to these castes as well (Deshpande, 2021).

Subsequently, in 1993, the National Commission for Backward Classes Act was passed by the Indian parliament and the National Commission for Backward Classes was set up. The NCBC formed a list of social, economic and educational parameters to identify the backwardness of a Caste or community. This includes (a) Caste or communities who performed hereditary occupation or trade that was considered undignified; (b) Caste or communities who performed hereditary trade or occupation that was considered as polluting or stigmatic; (c) Caste and communities who were nomadic or semi-nomadic; (d) Caste and communities those who were considered as criminal tribes (Laxmikant, 2019).

Hence, according to Lardinois (2021), categorisation of castes in legal terms became-Scheduled Castes, Other Backward Classes and General. Scheduled Castes were the untouchables, General were mainly the castes within the higher varnas (Brahmin, Kshatriya and Vaishyas), and the Other Backward Classes were mostly Shudras and the avarnas or untouchables forms the Scheduled Castes.

However, this is not applicable throughout the country. The legal categorisation of caste groups based on the varna understanding is erroneous. For instance, In the Northern part, most of the General or dominant castes are from the top three varnas. Whereas in Southern India 85% of the dominant caste or general category are Shudras. Similarly, OBCs in Southern India are not mainly Shudras but avarnas or untouchables (Jaffrelot, 2010). Therefore, it is difficult to interlink caste category and varna system. However, based on the OBC and SC lists published by the government of Kerala, it can be concluded that the dominant castes are categorised as the general category, backward or middle castes belong to the OBC and the most marginalised caste groups belong to the scheduled caste or SC (Syamprasad, 2019).

The Dalits or SCs are socially, culturally and economically in a disadvantageous position compared to upper castes. This sociocultural, educational and cultural inequality in Indian society could be effectively analysed using the concepts of Bourdieu. The concepts of capital and habitus will be an appropriate theoretical tool to dissect the phenomenon of caste.

3.1.5 The Debate of Caste v Class In India

The relationship between social mobility and caste and class is widely contested in the Indian context. Three major paradigms have attempted to decipher the matrix of social structures in India through the lenses of class and caste.

Classical Marxists argue that the social and educational mobility of a group is deeply rooted in their class positionality. Considering caste as a peculiar and reified manifestation of class is an orthodox Marxist paradigm. The dominant left intellectual sphere in India has traditionally considered caste as a superstructure, not as a base of Indian society (Jodhka, 2016). This perspective views caste as a traditional shell that conceals the underlying class dynamics. Consequently, the Indian left intelligentsia has held the belief that the modernisation of the Indian economy and society would cause the caste consciousness to wither away, allowing the real class issues to emerge (Guru, 2016). Hence, they attest that economic upliftment of the social groups could render social mobilisation and reduce the perpetuation of inequality. The materialist hypothesis regarding the

origin and transition of caste from the varna system by exploring certain peculiar features of South Asian history buttressed the orthodox Marxist paradigm (Gupta, 1980). However, the orthodox Marxist fallacy of misreading caste as a traditional and feudal institution seems to be erroneous since the caste system and its material, social and cultural discrimination are still prevalent even after the capitalisation and modernisation of Indian economy (Teltumbde, 2017).

The neo-orientalist approach of Dumont (1980), on the other hand, situates caste at the core of Indian social structure. They posited that other aspects of caste were subsumed under this central tenet (Jaiswal, 1997). They further claimed that hierarchy is determined by ritualistic status and the observance of purity (Lardinois, 2017). This rigid ritual hierarchical structure (Appadurai, 1996) and the failure to incorporate power within the context of purity (Fuchs, 2021) were identified as significant shortcomings in neo-orientalist analysis. This paradigm faces challenges as the secularisation of institutions and the economy makes it difficult to explain contemporary social relations solely through religious ritualistic hierarchy (Vaid, 2014). Although Srinivas (2002) managed to explain class upliftment without conceptually divorcing it from caste dynamics through the process of Sanskritization, its applicability across Indian society remains debatable (Abraham, 2023).

To overcome the conceptual confusion regarding the foundational structure of Indian society, contemporary sociological arguments suggest considering both caste and class, and identifying how these co-exist and interact to facilitate social mobility (Naudet, 2021). Given the prevalence of intersectional identities, caste cannot be treated in isolation when deciphering the persistence of poverty and the social structure of India (Mosse, 2018).

Although scholars acknowledge the congruence of class and caste and the overlap of these two dimensions to a certain degree, the predominance of caste or class over the other remains contested. For example, Vaid (2018) argues that while both caste and class are important in shaping social mobility, individuals' class destinations are more influenced by their class origin rather than caste. Conversely, other scholars postulate that among groups with minimal cultural and economic capital, caste has a significant impact, even more than social class and

education (Ferry, Naudet, and Roueff, 2018). This indicates that more intensive research on the interaction between caste and class is required to develop a comprehensive understanding of social mobility in the Indian context.

It is important to note that class and caste in India can often be used interchangeably. The official categorisation of caste, as explained in the earlier section, highlights the overlap between caste and class. Caste is identified as the basis of social structure and the root cause of marginalisation in India (Deshpande, 2012). This is why caste is used as the basis for reservation or affirmative action in India. However, despite social and cultural inequalities and oppressions being the underlying reasons for these upliftment efforts, data regarding caste inequalities are largely quantitative or class-related. This means that caste inequality in India is expressed through quantitative data or class positionality, such as wealth possession, education, and employment (Siddique, 2009). Recent studies indicate that lower caste Indians are still the lower class in India, while the upper caste holds the majority of material and immaterial possessions (Telthumbde, 2018). Thus, the class situation and social reproduction in India can still be explained through the lens of caste.

For instance, the State of India Working Report (2023) regarding the labour market and social identity indicates that social mobility in India is still primarily an upper caste phenomenon. While the percentage of children of non-SC/ST casual wage workers who are expected to perform the same occupation as their parents fell from 83% to 57% in the last two decades due to mobility to better and more stable salaried jobs, the percentage for children of SC/ST casual labourers fell only from 86% to 76%. This means the younger generation of marginalised caste groups still faces higher social stagnation than their upper caste counterparts. Hence, the social class situation in India can be clearly explained using the phenomenon of caste. Moreover, there are only two detailed studies that have examined the qualitative aspects of caste, such as different facets of untouchability and marginalisation. Both of these studies, the Indian Human Development Survey (2011-12) and Social Attitude Research in India (2016), are also limited to the physical manifestations of caste prejudices and practices.

Therefore, symbolic aspects of caste, such as symbolic capital and symbolic violence stemming from caste identity, need to be thoroughly discussed to understand how caste perpetuates in the 21st century (Kumar, 2014). This is why Bourdieu is important for analysing caste issues in Indian society. As explained in the literature chapter, the disparity in the symbolic aspects of capital in the digital domain can be effectively analysed through a digital Bourdieusian lens. Caste inequality in both material and immaterial aspects, such as digital access and digital skills and knowledge, can be explained through digital capital. Furthermore, the role of cultural and social capital sourced from caste in increasing disparity in the digital domain can also elucidate the caste structure in India's digital sphere. More importantly, the role of caste in shaping dispositions, attitudes, and the concomitant utilisation of technology can be effectively explained using digital habitus. Therefore, Bourdieu's theories are ideal theoretical tools for engaging with both material and non-material aspects of caste, particularly in the digital realm.

The concepts of Bourdieu which is used in this research are systematically unpacked in the following sections

3.2 Theoretical Foundation: Key Concepts of Bourdieu

The theoretical concepts of Bourdieu are applied to understand the structure and functioning of society, the socio-cultural framework, and the inequality of education in various parts of the globe. There is a plethora of studies which attempt to exercise the Bourdieusian theories to decipher the educational inequalities in the societies outside Europe -for instance in China (Mu, 2020; Huang, 2019; Wu, Zhang and Waley, 2016), Latin America (Baranger, 2008; Saracostti, 2007), Africa (Botsis, 2017; Fine, 2002), or the United Kingdom (Thomson, 2016; Calhoun, 2006) and India (Sah, 2022; Forsberg, 2017; Pathania and Tierney, 2018).

This section discusses some of these key concepts of Bourdieu, which will be utilised in the theoretical framework of this research and incorporated into the digital domain in the second part. This part will provide clarity for the concepts of capital and habitus, which are integral to this research's theoretical framework.

3.2.1 Capital

Bourdieu in his essay 'Forms of Capital', states that capital is labour that has been accumulated in material or embodied form. When this capital is appropriated privately, it enables the agents or a group of agents to harness the social energy in tangible or active labour forms. Bourdieu further states that it is not feasible to comprehend the framework and functioning of the society, without acknowledging all forms of capital. The economic theory's conventional understanding of capital narrows down the exchanges to only material exchanges and is solely directed towards the maximisation of profit. This in turn claims the profit-oriented mercantile exchange as 'self-interested' and reduce all other exchanges as 'disinterested' (Bourdieu, 1986, p.241).

Hence, Bourdieu attempted to broaden the definition of capital by applying it to an extensive system of exchanges in which different types of assets are transacted within complex and intricate networks or circuits across diverse fields. He attempts to shift the understanding of commercial exchange from the confines of the economic field to an extensive realm of cultural and social values and exchanges. Among the whole set of valuations and exchanges, despite being the fundamental aspect, economic is one among many (Moore, 2014).

Many theorists consider Bourdieu's conceptualisation of capital as an extension of the Marxist understanding, broadening the scope of analysis from economic to cultural and symbolic capital (Desan, 2013). While one group of scholars claims that Bourdieu's theoretical frameworks suggest a distancing from the Marxist tradition (DiMaggio, 1979; Brubaker, 1985), others argue that Bourdieu was attempting to integrate his idea of symbolic power into central Marxist concepts like historical materialism, rather than rejecting them (Fowler, 2011).

According to Bourdieu, one important feature of these new forms of capital is transubstantiation. This concept suggests that material or tangible capital (economic) can manifest as intangible forms of capital (cultural or social) and vice versa. Bourdieu convincingly propounded the interchangeability between these forms of capital through the conversion hypothesis (Lizardo, 2006).

Based on the field of operation and subject to varying costs of transformation according to its effectiveness in the respective field, capital can appear in three fundamental forms: economic, cultural, and social (Bourdieu, 1986, p. 242). Scholars have categorised these forms of capital into tangible or economic and symbolic (Pret, Shaw and Dodd, 2016; Hout, 2016; Miller, 2014; Flint and Rowlands, 2003) based on Bourdieu's analysis of the nature of exchange. While the mercantile exchange of economic capital is transparent and lacks intrinsic value, symbolic capital claims intrinsic worth (Moore, 2014). Symbolic capital refers to any form of capital that is perceived and understood symbolically within a knowledge-based relationship, in the context of recognition and misrecognition. This perception and recognition of symbolic capital are mediated by the habitus of individuals, which is developed through socialisation and experiences (Bourdieu, 1986).

The three forms of capital discussed by Bourdieu will be disentangled here, as they form an integral part of the conceptual framework of this research. Economic capital, being the most prevalent and tangible form, requires little elaboration. However, the other two forms, cultural and social capital, will be discussed in greater detail.

3.2.1.1 Cultural Capital

The cultural capital is observed in three forms. Firstly, the embodied form which the people attain from the prolonged interactions and experiences with the social environment (school, family, community etc.). Secondly, the materialised form of cultural products such as books, art possessions etc. Thirdly, the institutionalised form of academic achievements and qualifications and experiences (Schirato and Roberts, 2020). This is one of the most important and widely applied concepts of Bourdieu (Moore, 2014).

Cultural capital is extensively applied in educational research to understand factors that generate intergenerational inequalities in education. In the field of education, the institutional misrecognition of cultural capital as an academic or cognitive ability has led to the conversion of cultural capital into academic success. Hence, educational institutions play a key role in the reproduction of

social inequality as they legitimise the conversion of cultural capital into educational outcomes (Andersen and Jæger, 2014). Whereas Blackledge (2001), observed the cultural capital in terms of linguistic and cultural resources possessed by minority women, and demonstrated how it is undervalued in the English-dominant middle-class education system in the UK. Lareau and Horvat (1999) made a similar observation that the resources that enable parents to be in consonance with the dominant practices of schools turn out to be the cultural capital in that particular context. This means they consider cultural capital as a contextualised concept rather than a deterministic design of social and cultural reproduction.

Correspondingly, Andersen and Jæger (2014) argue in line with Bourdieu that, the value of cultural capital can vary across different sub-fields within the educational field. This is further supported by DiMaggio's theory of cultural mobility, which suggests that the return on cultural capital is greater in lower-achieving educational institutions than in higher-achieving ones. Thus, the value of cultural capital can change according to the environment of institutions. This theory has been validated, demonstrating that cultural capital can yield higher returns in schools with lower socioeconomic status (SES) than in those with higher SES. This is because the opportunity to showcase cultural capital is significantly greater in lower-achieving institutions, which typically have a lower average possession of cultural capital, compared to higher-achieving institutions (Andersen and Jæger, 2014).

Bourdieu has proposed a threefold perspective for cultural capital, yet research comprehensively analysing all three forms is limited (Kraaykamp and Eijck, 2010). Kraaykamp and Eijck (2010) assert that sociological studies predominantly focus on the institutional (parental education) and embodied (cultural traits) forms, while the objectified form of cultural capital is often overlooked. Their findings indicate that the three states of cultural capital are closely interrelated at both intergenerational and intragenerational levels. They argue that a comprehensive analysis considering all three forms of cultural capital is advisable to understand how cultural capital is transmitted across generations. Furthermore, they suggest that embodied cultural capital is the cornerstone of cultural capital, as it shares cognitive and taste-based aspects with institutionalised and objective cultural capital, respectively. This interconnectedness strengthens its role as an indicator

of other aspects of cultural capital and provides insights into intergenerational inheritance.

According to Lareau and Weininger (2003), the central focus of the cultural capital concept is to examine the impact of highbrow cultural practices on educational outcomes. They have criticised such attempts to limit the potential of the cultural capital concept and argue that Bourdieu did not provide a detailed explanation of how 'inherited cultural capital' influences educational results. Despite this, the link between cultural capital and educational outcomes remains a significant area of scholarly investigation in the sociology of education (Lareau and Weininger, 2003 p.578). Lareau and Weininger (2003) expanded the scope of cultural capital beyond 'elite status cultures' and combined it with human capital or technical skills, which is often treated separately in most studies they analysed. Sullivan (2001) also argues that many studies only exercise a portion of the cultural capital concept and treat it as a representation of the entire concept. She suggests that Bourdieu's original cultural capital concept should be criticised for its lack of clarity on which upper-class possessions or resources are considered cultural capital and how they are transformed into educational advantages.

In contrast, by analysing the concept of cultural capital through the original works of Bourdieu such as 'Inheritors', 'Distinction' and 'Les strategies de reconversion', Lamont and Lareau (1988), identified the theoretical ambiguity and polysemy of this concept developed by Bourdieu. They redefined cultural capital by narrowing it to the fundamental and most important aspect that this concept seems to represent. They termed it as the cultural indicators of high status, such as attitudes, preferences, formal knowledge, behaviours, goods, and credentials, which are broadly recognised and used as a means of social and cultural exclusion.

Notably, cultural capital theory has been criticised by some other scholars. For instance, Sullivan (2001) contends that it is erroneous to assume that parental educational credentials necessarily demonstrate high cultural capital, since an association between two variables does not establish a causal relationship. Additionally, highbrow cultural participation does not conclusively ensure that parents provide better education to their children. She further argues that Bourdieu fails to demonstrate the intergenerational inheritance of cultural capital

and does not adequately explain the disparity in educational attainment between upper and lower-class students. Through research conducted among final-year school children, Sullivan (2001) concludes that cultural capital is indeed interlinked with social class and can be inherited from parents, serving as an important determinant of educational outcomes. However, she acknowledges that it remains only a partial explanation for social reproduction. Similarly, Kingston (2001) claims that through the lens of exclusionary class practices and dispositions, cultural capital does not fully explain the link between social advantage and educational achievements. She also argues that the uncritical use of variables labelled as cultural capital, such as hard work, possession of books and computers, and race, has created a confusing picture regarding the reasons for better educational outcomes.

The other group of scholars claim that cultural capital is an imperative concept in understanding social and educational inequalities. They argue that critics are taking a reductionist approach and not considering the immense potential of this concept, particularly when interlaced with the concepts of habitus and field (Edgerton and Roberts, 2014). Although the increase in attributes under the label of cultural capital is perplexing, as DiMaggio (1979 p.1742) has predicted, 'Bourdieu will attract a lot of American scholars, if not a cult', the nuance perceptions regarding the reproduction of social and educational inequalities have opened new paradigms for inequality research.

3.2.1.2 Social Capital

The concept of social capital is applied in various academic disciplines including economics, sociology, education, politics, anthropology, communication and business. However, it is difficult to find a universal definition for this concept as it is an intangible phenomenon with an abstract notion (van Schaik, 2002). Bourdieu (1986) defined it as the assimilation of resources sourced from long-lasting networks or institutionalised social connections. This means it is a collection of resources or credentials gained by individuals due to their membership in a particular group (Julien, 2015). Hence, it can be said that social capital enabled people to invest in social relations with the intent to accrue profits (Lin, 2002). While discussing the conceptual history and applications of social

capital, Portes (1998) mentioned that there are two important components for social capital - firstly, the access to resources due to the membership in a particular group and secondly, the quality and quantity of resources that an individual gets access to. Therefore, social capital can determine the access and the quality of access to resources for individuals by virtue of their social connections.

The way social capital acts as a resource or capital in society is an important point to discuss. Through a detailed analysis of social capital, Lin (2002) mentioned that there are four routes through which social capital operates as an important resource and as an entity that reinforces the socioeconomic structure. Primarily, it controls the flow of information. The individuals within a network or social group happen to gain the advantage of the facilitation of information. Secondly, social capital can influence the agents who could make decisions that impact the actor. Thirdly, membership in social groups could be tantamount to the social credentials of the individual. This means the individuals did not have to cultivate the recognition, it would be assigned to them by being members of a social group. Finally, these social relationships would strengthen the social identity and status of the individuals. The social recognition gained through the membership of the social groups would be reinforced due to that membership (Lin, 2002).

Social capital has gained increasing importance in the era of social media and digital networking. However, the social capital concept in the technological era is largely dominated by the communitarian understanding of social capital (Julien, 2015). This concept of social capital is propounded by scholars like Putnam, who grounded his understanding in the pluralism of society. According to Putnam, the social capital is a public resource, situated in the quality of civil society, which is determined by three components - trust, social norms and obligations, and social networks of citizens (Gelderblom, 2018). However, there critical shortcomings in Putnam's approach such as the exclusion of conflicting interests within the associations, which is resolved in the Bourdieusian social capital (Siisiäinen, 2000). Julien (2014) criticises the communitarian approach of digital social capital as they consider digital interactions as informal without any hierarchy and minimal social control. He further establishes the applicability of Bourdieu's social capital in the digital domain by placing memes as digital social capital and the internet

as the digital field. This helps to explain the formation of distinguishing digital habitus for individuals on the internet.

On the contrary, certain digital sociologists like Schwarz (2021) claims that digital technology questions Bourdieu's social capital theorisation. Apparently, Bourdieu's social capital does not remain in an objectified state unlike economic and cultural capitals. Whereas digital technology allows social capital to exist in an objectified state. For instance, the social connections in LinkedIn, the number of followers and friends in the social networking sites transform the social capital to a 'meta capital', a resource which is able to transfer across fields such as politics, journalism and marketing (Schwarz, 2021).

Educational outcomes and social capital are also closely interlinked. Through analysing the educational impacts of social capital, RogoÅ and Baranović (2016) claims that disparity in educational outcome can be attributed to the difference in social capital evolved from the familial networks and relationships of the students. To understand the inequality among students, resources owned by families, such as connections and assistance, are critical. Also, family and its networks influence and shape holiday activities, leisure and other activities of students (Mikiewicz et al., 2011). Similarly, based on the research of comprehensive analysis of national educational data, Israel et al., (2001) emphasise the importance of social capital in determining the learning outcomes. They assert that students from economically better families achieved better results by utilising the resources of their family. Furthermore, the community social capital of the students influences their aspirations and educational performance. It provides an environment that encourages educational achievements and cultivates understanding regarding proper and improper behaviours (Israel et al., 2001).

3.2.2 Habitus

The concept of habitus evolved from the need to resolve the sociological enigma of how free social agents derive their actions from the predictability of others' behaviours, thoughts, and nature (Maton, 2008). Habitus was Bourdieu's key tool for explaining the recurrences in individual behaviour based on social structure

while still acknowledging individual agency (Power, 1999). Power (1999) further elaborated that habitus is the internalisation of social structures and an individual's history. It represents the embodied array of dispositions that an individual holds, reflecting both the social structure and their understanding and behaviour within it. Thus, habitus is defined as a system of dispositions that refers to enduring ways of existing, perceiving, functioning, and thinking, or as a collection of long-lasting patterns or frameworks that shape an individual's perception, understanding, and behaviour (Bourdieu, 2005). Habitus introduces the concept of 'conductorless orchestration' to emphasise the regularity, uniformity, and systematicity of actions performed by an individual in a social context, even without any deliberate and purposeful direction (Bourdieu, 1990, p. 59).

Reay (2003) defined the conceptualisation of habitus through four aspects. Firstly, habitus as embodiment: Reay identified that Bourdieu conceptualised habitus to explain that not only is the body situated in the social world, but the social world is also situated in the body. Therefore, the body is both socialised and structured. Habitus encompasses not only the cognitive aspects of thinking, communicating, and feeling but also includes activities like eating, dressing, and other daily actions. Secondly, habitus and agency: Bourdieu viewed habitus as a broad array of possible actions that could be either transformative or restrictive. Reay explains that while Bourdieu does not specify any rules that dictate behaviour, he elucidates the exclusionary practices that arise from the operationalisation of habitus. Practices unfamiliar to an individual's cultural context are rejected, thus limiting the scope of possible actions. Thirdly, habitus as a combination of individual and collective trajectories: Reay explained that Bourdieu conceived habitus as a complex, multi-tiered concept. It consists of an individual's history and, simultaneously, the collective history of their social circles, including family and class. Finally, habitus as a complex interplay between past and present: In this aspect, Reay discusses the formation of habitus through the internalisation of an individual's history, including childhood practices and primary socialisation. However, this structure is continuously restructured through the individual's interactions with the social world. Hence, habitus can be seen as a continuum, shaped by history and reproduced through dispositions, even then capable of transformation through new encounters.

Although in one aspect it is undeniably a ‘static concept’, fixated on explicating the patterns, tendencies and reproductions in comparatively inert and stable social situations through sociological analysis (Bourdieu, 2005, p.43), it is not incapable of understanding change. In contrast to situating habitus in a dominant structural field, the ‘habitus itself is a generative dynamic structure’ that is able to adjust and assimilate itself to another structure that consists of distinct actors, behaviours and fields (Lizardo, 2004 p.376)

Habitus can be considered a consistently structuring disposition of an individual, developed from the synthesis of complex social processes (Costa and Murphy, 2015). Further, habitus plays a fundamental role in Bourdieu’s theoretical attempts to bridge the dichotomy between subjectivism and objectivism. This means he tried not to fully adhere to either of the prevailing and contradictory understandings of society—whether it is the assimilation of individual experiences and agency or the notion that individual behaviour and practices are strictly shaped by societal structures, thus rendering minimal agency to individuals (Murphy, 2022). However, Power (1999) argues that while habitus does not directly dictate individual behaviour, people are inclined to act in ways that correspond to social structures, as these structures are internalised through social interactions

There are certain scholars who criticise the habitus on the basis of its inherent deterministic nature (Reay, 2003). They argue that although Bourdieu attempted to introduce habitus as a solution between the contradiction of objectivism and subjectivism, it retreats into the fold of objectivism (King, 2002). Whereas King gives credit to the practical theory of Bourdieu for overcoming the impasse between objective and subjective, structure and agency. According to him, in practical theory, individuals are embedded in intricate, ever-evolving networks of relationships with other individuals. Rather than isolated individuals facing objective structures and rules that dictate their actions, they navigate and skillfully manipulate these relational networks (King, 2002). So, individuals do not consult a set of a priori rules to decide their actions, rather they act as per the sense of a practice which is being formulated and evaluated by other individuals in the group. Hence, the correctness of an action is decided not based on a set of

rules or an objective structure but while others consider it as acceptable and appropriate. Similarly, based on the emphasis provided for the deterministic social structures and the limited space for subjectivist social action, the habitus is criticised as sociological reductionism (Sayer, 1999).

Similar to capital, habitus is also being criticised for its over-application in academic works without much theoretical effort. Reay (2003), borrowing the term from Hey (2003), criticised this heedless application of habitus as ‘intellectual hair spray’ (p.432) in academic texts.

3.2.3 Field

Field is Bourdieu's epistemological attempt to explain social structure beyond economic terms or class. Bourdieu's approach highlights the distinct, non-economic nature of social spheres and underscores the need for a more diverse, non-linear, and complex theory to comprehend them (Alexander, 1995). According to Bourdieu, a field is a set of objective relations between positions. These positions are defined by their place within the distribution of various forms of power or capital. The power or capital one holds determines their access to specific benefits within the corresponding field (Hilgers and Mangez, 2015). Additionally, these positions are defined by their objective relationships to other positions, such as domination, subordination, or equality. Essentially, a field is a structured space where power dynamics and relationships shape the roles and opportunities of its participants (Bourdieu and Wacquant, 1992).

Bourdieu (2005) claims that, to clearly understand or analyse a social phenomenon, it is necessary to consider the social space or field in which that interaction or phenomenon is occurring. The analysis of Bourdieu's field cannot be limited to locating the object within a specific historical or social context but must examine how knowledge regarding that object is generated, who generates that knowledge, and who benefits from this practice (Thompson, 2008). In society, social space is divided into multiple, distinct, and autonomous fields that operate according to their own logic. These fields, such as the educational field, political field, and artistic field, interact with each other and make the transfer of capitals possible (Akram, 2023).

Field provides meaning for habitus and capital. It offers an understanding of how capital and habitus operate in a particular setting. It defines what resources and practices are included or excluded, how they are valued, and how actors can accrue better positionality, power, and control in that specific social setting (Grenfell, 2009). For instance, in the field of education, certain outcomes, practices, and ways of thinking are valued higher than others. Additionally, these practices and symbolic capital are dynamic and can change over space, time, and the sector of education (Bourdieu, Passeron, and de Saint Martin, 1995).

Although, this research is focused on the digital domain, the field under consideration is mainly the educational field of Kerala. The digital resources, digital practices, and dispositions regarding technology required to move forward in the field of education and society is the key focus in this study. The digital capital, both material and symbolic, and digital dispositions and practices, that is accrued for gaining a competitive edge in the educational field and the concomitant social sphere in India is analysed in this research. Hence, all kinds of digital activities such as every digital skill, higher extension of digital engagement, and all digital practices are not considered as resourceful in this field. The actions, activities, knowledge, dispositions and attitudes in digital field that overlaps with the educational field and provides a significant advantage is considered as capital in this research. The field in this research is a stable entity and therefore does not play a significant role in the analysis and discussions compared to capital and habitus. It serves as the basis or platform that elucidates digital capital and habitus, while the latter is expanded or reconceptualised.

3.3 Digitalising Bourdieu: Applying Capital and Habitus in Digital Context

The contemporary period is largely categorised as Technological era (Shannon, 1948), Information Age (Castells, 1997), New Media Age (Kress, 2003), Digital Age (Ginsberg, 2008), Age of AI (Daugherty and Wilson, 2018) and numerous others by various scholars. Although each of these terms emphasises different aspects of technological change and the concomitant societal change that everyone is

experiencing, they have a commonality. All these denotations that represent the present reflect the evolving nature of technology and the integral role of digital technology in shaping individuals' lives.

To comprehend the importance of digital technology in shaping society, an in-depth analysis of digital scholarship is necessary. Then this part explains the concepts of digital capital and digital habitus. These are the application of capital and habitus concepts of Bourdieu in digital realm.

3.3.1 The Scope of Digital Sociology

There is a broader consensus among sociologists regarding the influence of digital technology in shaping our lives and determining the larger framework of society. This facilitates us in applying important sociological theoretical lenses in the digital context to understand the social structure and inequalities in the digital era. When digital media is permeating into all aspects of social life and academic circles, there is a requirement for strong research and theorisation in the field of digital inequality (Hargittai, 2021). Hargittai (2021) also states that as the skills and usage of digital media are transforming under an evolving media environment, new theories, procedures and processes should be formulated simultaneously for the collection of new evidence. Hence, in this research, the key theoretical concepts of Pierre Bourdieu such as capital and habitus are applied in the digital context to understand the contemporary social structure after the widespread diffusion of digital technology in society. Interestingly, Bourdieusian sociology is an important theoretical lens that can be utilised to understand the social dynamics of digital inequality, a subfield of digital sociology (Ignatow and Robinson, 2017)

There are various terms that have been used to mention sociological research in digital technology and the internet, such as e-sociology, sociology of the internet, and cybersociology. However, the term 'digital sociology' is increasingly supplanting these older terms. This shift aligns with other interdisciplinary terms like digital humanities, digital anthropology, and digital media and information studies (Lupton, 2014). Digital sociology incorporates the insights of earlier concepts while expanding its scope to include new technological developments

such as smartphones, computers, and artificial intelligence (Lupton, 2013). Digital sociology is the collaborative effort of sociologists who try to interact with the social contexts that are profoundly digitised. Although, probing the impacts of technology in society is not a nuanced attempt, digital sociology provides a chance for the branch of knowledge to surpass the perspectives grounded in the period of industrial society and to analyse the conditions of post-industrial society, which is discernibly digitalised (Selwyn, 2019).

There are different and diversified aspects of digital sociology. According to Lupton (2013), there are four different aspects- (A) Professional digital practice- This is the application of digital media in sociological practices - build profiles and networks, circulate research etc. (B) Sociological analyses of digital media use- Understanding the way individuals use technology, and how digital technology is reinforcing the social structure and reproducing the social inequalities. (C) Digital data analysis- Utilisation of data from digital space for social research. (D) Critical digital sociology- Conducting a thoughtful and self-aware examination of digital technologies, guided by insights from social and cultural theories. According to Lupton's version, this particular research is situated in the sociological analysis of the usage of digital technology, the reinforcement of social structures and the reproduction of social inequalities. Similarly, Orton-Johnson and Prior (2013) mentioned five core digital sociological themes: relationships, spaces, structures, mediations and practices. Among this vast array of concepts, this research is particularly focused on the structure part of digital sociology. This means understanding the role of digital in shaping the social structure and in the perpetuation and reproduction of structural inequalities. To reiterate, the locus of the research is the part of digital sociology that explains the difference in the usage of technology and the concomitant social and digital inequality.

Digital inequality denotes the variation among people of different backgrounds in integrating internet and digital technology into their daily lives. It emphasises disparity in their digital and social environments and their digital skills and usage (Hargittai, 2021). It also explains the difference in life opportunities and outcomes stemming from varied digital access and usage (Hargittai, 2002).

Earlier, the digital divide concept was central to the digital inequality debate. It was criticised by a group of scholars who argue that the digital divide reduces the issues of digital disparity to the dichotomy of digital have and have-nots and it fails to comprehend the intricacies of the impact of digital in society (Halford and Savage, 2010), which is much complex than simple binary of having and not having access (Hargittai and Hinnant, 2008). Halford and Savage (2010) suggested using the term digital social inequality to grasp the social benefits and disbenefits arising from digital inequality. Similarly, even after coining the term second stage digital divide, Hargittai prefers to use digital inequality since the digital divide fails to provide a comprehensive understanding of the complex nature of digital inequality (Hargittai, 2021).

Even though the scope of digital inequality scholarship is becoming broader, insights into the symbiosis between digital inequality and other types of inequality are still scarcely available in studies (Robinson et.al, 2015). Despite being a recent phenomenon, digital inequality has already attained a strategic position in social life and will continue to impact various spheres of society (Robinson et.al 2015). To elaborate, more than in any previous time-period, in the age of information technology, the relative differences in digital access or information would be a key factor in determining the social positioning of an individual. Also, the dispersal of technology and society will lead to the emergence of disparities in skill and pattern of usage onto the surface (Van Dijk and Hacker, 2003). Van Dijk and Hacker (2003) rightly predicted that countering the structural inequalities in the digital domain would be a primary task of tomorrow's society.

3.3.2 Bourdieu in Digital Context

The contributions of Bourdieu to the sphere of social sciences through the conceptualisation of habitus, field and capital have restructured the understanding of equity and socio-cultural stratification. The development of digital sociology as a nuanced understanding and a state-of-the-art technique to decipher the social structure in the digital era was significantly influenced by the application of theoretical concepts of Bourdieu such as capital, habitus and field in the digital context (Ignatow and Robinson, 2017; Zillien and Marr, 2013). According to Ignatow and Robinson (2017), the concepts of Bourdieu gained

considerable traction and seem to appear as a tailor-made theoretical template in the digital sociological realm due to various reasons. Firstly, it is because of the applicability of his theories in empirical research. Secondly, the intellectual position of his concepts as a combination of realism and social constructionism, and finally, the interdisciplinary nature and borderless applicability of his concepts.

While Bourdieu's numerous concepts including hysteresis, doxa, and symbolic violence, can be reflected in the digital domain, this research is inclined towards the concepts of capital and habitus. Although these concepts are understood and applied interconnectedly as part of a consolidated sociological approach, here the researcher is following the lines of Ignatow and Robinson (2017) and reviewing the literature of each concept applied in the digital context separately for the purpose of convenience.

3.3.2.1 Digital Capital

After the advent of technological intervention into the social and cultural spaces especially from the last few decades of the 20th century, sociologists have acknowledged the imperativeness of technology and digitality in shaping the nature and structure of society. Hence, they introduced a new form of capital (digital capital) along the lines of Bourdeusian capital trinity. Similar to other forms of capital, the continuous facilitation, transmission and accumulation of this entity tend to produce inequality among society (Hargittai, 2011).

There are different explanations and measures for digital capital that have been used by numerous scholars under diverse circumstances. Ragnedda (2018), postulates that digital capital is the assimilation of digital infrastructure, technology and competencies such as gathering and refining information, creating content, problem-solving etc. in the digital arena. From a macroeconomic perspective, Bughin and Manyika (2018) define digital capital as the resources essential for creating new goods and services in the digital economy. They categorise digital capital into two types. The first type consists of resources acquired through capital spending, such as servers, online platforms, and software. The second type includes incorporeal assets, such as data analytical

capability, efficiency in data capturing, and monetisation of digital activity. They exclude individuals' digital access and capability, and its influence on society, from their conceptualisation of digital capital. Conversely, digital sociologists have developed a different perspective regarding digital capital. They place digital technology at the centre of the social system to understand its impact on shaping individual lives and social structures.

A group of scholars consider digital capital as a technological attribute of cultural capital. They prefer not to treat it as a separate capital but as an annexe of cultural capital. For instance, Morgan (2010) suggested that digital capital can be interlinked with the embodied, objectified, and institutionalised forms of cultural capital. Paino and Renzulli (2013) advocated for incorporating a technological aspect into cultural capital. Emmison and Frow (1999) presented a similar argument, viewing technological skill and capacity as traits of cultural capital and refusing to treat them as separate capital. Despite using different terms, many scholars consider digital capital a subset of cultural and social capital. To elaborate, terms such as techno-capital (Rojas et al., 2004; Straubhaar and Estrada-Ortiz, 2004), information capital (Hamelink, 2006), technocultural capital (O'Keeffe, 2009), informational capital (Prieur and Savage, 2013), and technological capital (Calderon Gomez, 2019) all refer to the technological format of cultural capital. Theorists like Van Dijk (2005) and Hamelink (2002) use the term information capital to explain the influence of digital technologies in the social realm. Furthermore, Fourcade and Healy (2017) introduced the term Ubercapital, a form of capital or social position determined by an individual's digital footprints, primarily used by data analytical firms to assess socioeconomic status.

Although, all these capitals tried to encapsulate the social advantages and disadvantages that arise from the difference in digital skills, possession and usage, an important feature of capital, i.e convertibility of capital was failed to establish by these concepts (Ragnedda, Ruiu, and Addeo, 2020). This means these concepts failed to interpret the conversion of one form of digital capital into another. Also, these capitals did not cover access to tangible digital resources such as digital devices, digital subscriptions and internet, which is a fundamental aspect of digital inequality. Hence, while these concepts largely explain the inequality and

its impacts on the skills and usage of digital resources, digital capital concept is the comprehensive approach to expounding the social, economic and cultural consequences of the usage of the internet and digital devices (Park, 2017). Carlson and Isaacs (2018) replaced the concept of the digital divide with technological capital to understand the ability of an individual to gain from the history of their technological usage and access. Their technological capital consists of four components. Those are technological access, knowledge, awareness and technological capacity of the individual's social group or circle. Hence, they expanded the scope of capital in the digital realm beyond the boundaries of cultural capital.

Another important approach in the conceptualisation of capital in the realm of digital is the 'technological capital' concept developed by Selwyn (2004). He stipulates that technological capital is closely interlinked with economic, social and cultural capital. This concept gave a better understanding regarding the operationalisation of digital attributes in the social system.

A key concern regarding the conceptualisation of digital capital is whether to treat it as a separate capital or as a combination of the three capitals. Following the argument of Selwyn (2004), digital capital could be treated as the close interaction of social, economic and cultural capital in the digital domain. Park (2017) follows the theoretical framework of Selwyn and argues that despite using a separate term to capture the multidimensionality of digital inequality and the influence of digital technology on the social structure, digital capital should be treated as a combination of the other three capitals.

Whereas other groups of scholars stipulate to deal digital capital as a separate capital along with other primary capitals (Ragnedda, 2017; Ragnedda and Ruiu, 2020). To substantiate the claim Ragnedda (2017) put forth the following arguments. Digital capital is a bridge capital that enables individuals to explore the possibilities of the digital domain. For instance, higher social capital in the physical world does not necessarily convert into higher social capital in digital space. To translate that capital into digital domain, certain digital capital is inevitable. Higher levels of other capitals do not necessarily transform into higher digital capital. He further states that it is the interaction between digital capital

and the other capitals that produce beneficial outcomes in the digital and social space, not simply the transformation. Furthermore, the argument has been made that digital capital should be considered a distinct entity because primary capital cannot fully explain certain positions in the digital realm. For example, there might be groups that have high digital capital but low other forms of capital, and the opposite could also be true, existing between the digital elite (those with high levels of all forms of capital) and the digital underclass (those with low levels of all forms of capital). Ragnedda (2018) argues that these latter positions cannot be solely attributed to primary capitals. To explain their positionality, the primary capital along with a separate digital capital is required. However, the applicability of digital capital as a separate capital in a non-Western context like India needs to be investigated. Treating digital capital as a part of the other three capitals, similar to the technological capital of Selwyn (2004), and the digital capital concept of Park (2017) could be appropriate in the Indian context.

Whereas there are contradictory positions among scholars regarding the need for another capital. Scholars like Hodgson (2014) criticised the heedless usage of the concept of capital and converting it into a 'grand word' and creating confusion in understanding what it is being measured. Hodgson in the chapter 'plethora of capitals' listed out more than twenty-three capitals including health capital, self-command capital and spiritual capital, and emphasised the difficulty of bringing various concepts under the label of capital (p.173). He argues that capital should be a tangible resource that should enable to assign a proper value of exchange.

However, Ragnedda and Ruiu (2017) counter it by stating that classical sociologists have always understood the importance of intangible forms of assets and resources in creating social advantages. They argue that Sociologists including Weber, Durkhiem, Marx and Hanifan have effectively utilised the concept of social capital in one way or another to articulate the influence of non-economic entities in shaping the social structure. Hence, the ubiquitous presence of technology in every aspect of human and social life necessitates the requirement of digital capital as a separate concept to clearly explain the contemporary social structure (Ragnedda and Ruiu, 2017). Ragnedda and Ruiu (2021) further advocate the need for the digital capital concept to elucidate digital inequality and the resultant social situation. This is because digital inequality and inclusion scholarships need

to be regularly updated and revised as the scope of technology is continuously widening. Hence, a separate entity to consolidate the ever-expanding scope of technology and society could be beneficial. Also, the complexity of digital inequality and digital inclusivity cannot be fully captured with the existing traditional capital trio. For instance, digital inequality is a multidimensional concept. The increase in one (economic) capital does not necessarily mean it is narrowing the digital inequality (ex: digital skills and knowledge). Thus, a digital capital concept that comprehensively deals with all such issues is imperative to explicate the situation (Park, 2017).

However, to treat digital capital in line with other capitals, the possession, accumulation and reproduction of digital capital that lead to social advantages must be proven. Also, digital capital should reflect the existing structure of the socioeconomic conditions. Numerous digital sociological research effectively showcased this phenomenon.

There is a clear and logical connection between digital access and the socioeconomic background of individuals. Notably, digital access remains a significant issue even in the most developed countries (Hargittai, 2011). Applying technological maintenance theory, Gonzales (2016) demonstrated the link between socioeconomic background and digital access. She extended the concept of the digital divide from mere access to sustainability, arguing that digital inequalities are rooted in the broader history of social inequalities.

Furthermore, scholars of digital inequality research argue that disparities in digital technology possession and usage generate both online and offline effects in various aspects of an individual's life, including employment and entrepreneurship, healthcare, gender relations, and social networks (Robinson et al., 2015). Likewise, Helsper (2012) developed a corresponding fields model to establish that specific physical resources and inequalities are connected to digital inequalities. Helsper postulates that digital inequalities are closely related to four domains of resources: economic, social, cultural, and personal. Due to the intertwined nature of social structure and the digital domain, Helsper prefers the term 'social-digital inequality' instead of digital inequality or digital divide (Helsper, 2012, p.2). It is argued that digital inequality creates uneven

opportunities to acquire digital skills, leading to disparities in participation in democratic processes and the labour market (Beam, Hmielowski, and Hutchens, 2005). Moreover, Van Dijk (2013) claims that structural inequalities in society lead to an unequal distribution of resources and disparity in digital access, which in turn results in inequality in societal participation, ultimately reinforcing existing structural inequalities. Similarly, Helsper (2011) has identified that non-usage or limited usage of technology exacerbates existing issues of social exclusion and inequalities.

There is the emergence of a new disadvantaged section of the population in the contemporary era, those could be termed as ‘digital underclass’ (p.41). These are the groups who encounter drawbacks because of the disparity in access and the manner of usage of digital technology, along with the inability to bypass algorithmic suggestions and software with automated decisions (Ragnedda, 2020 p.41). Golding (2022) also held that unequal access to resources would lead to digital divide in the society and this would translate into conditional citizenship.

Likewise, there are studies which delve deeper into the aspects of the nature of digital access and interlacing it with digital inequality scholarship and socioeconomic backgrounds. Case in point, the impact of digital access solely through smartphones was studied and its socioeconomic relations have been analysed by numerous scholars. It was found that quality of device can impact the digital activity of an individual (Pearce and Rice, 2013). Since connectivity exclusively through smartphones is considered as ‘under connectedness’ (Katz, 2017 p.242), higher creative and cognitive demanding digital tasks are performed through computers (Pearce and Rice, 2013; Murphy, 2016). Whereas smartphones are mostly utilised for communication and entertainment purposes (Napoli and Obar, 2014).

Therefore, digital capital can be considered as both digital competencies and the possession of digital resources. Similar to other capitals it is closely interlaced with the sociocultural and economic background of the individual (Ragnedda and Ruii, 2017). To elaborate, digital skills, access, knowledge, and usage are closely associated with and critically influenced by the socioeconomic and cultural context of the individual. For instance, studies have discovered that the activities

involving digital engagement even among the same demographic groups, including content creating, online political and economic activities, vary based on the socioeconomic status of the individual. Individuals with lower education and income engage in lower digital skill activities (Livingstone and Helsper, 2007; van Deursen and van Dijk, 2014b). Likewise, the new digital avenues have not enabled all sections of people to utilise those opportunities. Also, the creation and dissemination of contents are not uniform across the sections and different age groups, as it is linked to the socioeconomic status and parental schooling (Hargittai and Walejko, 2008). In terms of content creation, it was found that social class is an important variable in determining the nature of digital content created by an individual (Blank, 2013).

Digital sociologists have developed methodologies to measure digital capital and to use it as an explanatory mechanism to define structural inequality in society and especially in the educational sector. For instance, studies based on UK higher education have found that, despite the access to the institutions, the disabled students are facing hurdles in education due to the constraints in digital capital or the accessibility to digital resources due to lack of alternative for digital images, lack of close captioning, inability to navigate through the content etc. (Seale, Ziebland and Charteris-Black, 2006). Also, the empirical studies of Hofer and Aubert (2013) using the data from various social media have explained the interconnections of social capital and digital spaces. Their data have proven that the digital network subgroups can be used to draw a pattern in socio-economic status, cultural and network traits and preferences, and socio-cultural relationships (Lewis et al., 2008). Sutherland et.al (2003) have studied the interconnections of digital capital and cultural capital of students from low-economic status based on the computer knowledge possessed by the family. The students coming from families equipped with better computer competency tend to possess higher computer skills than their counterparts.

To develop an overall understanding of social inequality after the advent of digital technology, the application of the concept of digital habitus is also important.

3.3.2.2 Digital Habitus

Digital habitus has two sets of understandings. The first one is the disposition, attitudes and other sociocultural factors that influence digital usage and interactions (Ragnedda, 2018). The second aspect is the formation of a self in the digital domain and the manner in which it influences interactions in physical space (Romele, 2021). The combination of both of these aspects is applied in this research to understand the distinction in the digital habitus of students coming from different caste backgrounds. There are different explanations regarding digital habitus. Digital habitus could be termed as the embodiment of attitudes, dispositions towards digital technology, and practices or utilisation of technology, stemmed from the historical accumulation of their interactions with technology (Ignatow and Robinson, 2017). Such interactions are closely interlaced with the sociocultural background of the individual. Based on this line of thinking of digital habitus, scholars have interlinked the habitus (physical) of individuals with their digital habitus.

According to Beckman et al., (2018), who categorically studied the conceptualisation of technological application in school education using Bourdieu, the digital habitus of a student could be the assimilation of the circumstances and technological background of the family, disposition towards technology, experiences with technology, shared understanding, and practices associated with technology, and the possibility of advantages with the application of technology in life. As an extension of this, internet domestication involves four phases - appropriation (acquiring devices for internet access); objectification (positioning the devices at home); incorporation (usage of internet in daily life); conversion (interacting with the world outside home), are varied according to the educational and social backgrounds of the individual (Scheerder, van Duersen and van Dijk, 2019). They further stated that the reasons and motivations for internet appropriation and domestication are different for higher educated and lower educated corresponding to their habitus which is fashioned by their social and educational contexts.

Furthermore, by using the analytical framework of Bourdieu it can be claimed that the dispositions, cultural production, structural pressure and systematic actions

of individuals based on their group or class are reflected in the digital field and it could be translated into a digital habitus (Romele and Rodighiero, 2020). Similarly, by employing the habitus concept Kvasny (2005) explored the role of discourses amongst social actors regarding the digital divide in shaping the social environment. The study articulates that the perspective about Information Technology and digital divide are formed from the experiences of the social actors. The intention to utilise the IT facilities in a productive manner is significantly influenced by the sociocultural environment including families, local officials and employers.

An important understanding in this context is that despite not being widely applied as digital capital, the disparity between people in skills, usage, interaction and access in digital technology explained by scholars reflects the habitus through the distinctions in externalised and internalised possession of resources (Helsper, 2021). This means digital capital and habitus interact with one another in various fields including the field of education. For instance, accessibility and skill in the digital and technological spheres are significant in shaping the attitudes, dispositions, concerns, aspirations and social position of an individual, especially among students (Czerniewicz and Brown, 2013). The studies of Brown and Czerniewicz (2010) have utilised the concept of digital habitus to understand the aspirations and socio-cultural background of the African students. They have categorised students into digital natives and digital strangers based on the access, attitude, skills and aspirations of the students in the sphere of digital technology.

Habitus is an important concept of Bourdieu through which he attempts to overcome the dichotomy of subjectivity and objectivity. The concept of habitus can be influenced by the expansion of perspectives that are fostered by life experiences. This introduces a 'push and pull' dynamic to habitus, which coexists with its enduring or inert nature (Murphy, 2021 p.238). The reflection of this structuring structure aspect of habitus was introduced by Robinson (2009) through the concept of information habitus. She identified that students using public internet develop a 'taste for the necessary' as they have limited access to the internet. Whereas the students who resort to Wi-Fi at home are involved in 'studious leisure', which eventually shapes their digital tastes and choices. Robinson applied the concept of 'skhole' to explain the studious leisure

engagements of students who have private internet access. The internet usage is not simply a limited strategic process for them unlike the public Wi-Fi users. Hence the former happen to learn more from it and involve in a distinct way of usage and habitus compared to the latter.

Another important aspect of digital habitus is the reflection of self in the digital space through consistent interactions. Gambetti (2020) defines this as the accumulation of acquired tastes, behaviours, and tendencies through which individuals cultivate their identities by applying digital tools and devices. This process occurs within a technology-driven environment that encompasses the domain of social media. By engaging in identity construction in digital media domains, individuals situate themselves in a social space that is dynamic, persuasive, and transnational. This identity construction fosters the 'socialized subjectivity' of individuals, which, according to Bourdieu, is synonymous with habitus. This habitus eventually transforms into dispositions, tastes, choices, behaviours, and linguistic representations through social interactions. Hence, Gambetti (2020) explains how dispositions generated in the digital space eventually materialise into tastes and behaviours in the physical space through identity construction. Likewise, Micheli, Lutz and Büchi (2018) postulate that to understand the true dimension of digital inequality, the distinction in digital footprint or the interaction of individuals in the virtual space should be analysed. They argue that with the involvement of AI, feedback loops and big data analytics, the online profile of an individual accurately represents their digital engagement and the mutual dependency between social and technological domains.

On the other hand, Airoidi (2021) elucidates the close interconnection between the social and digital realms. He argues that through the habitus and cultural dispositions of programmers, as well as through feedback loops and algorithmic recommendations that influence the end consumer, culture is embedded in code and code is assimilated into the culture. Thus, Airoidi asserts that culture is not only reflected in the digital space through online interactions but is also reproduced and reinforced in an unprecedented manner via the application of artificial intelligence systems. Furthermore, the concept of social media habitus is also applied in relation to the habitus shaped in the digital domain. Social media habitus is the foundational structure that influences an individual's understanding,

skills, and experiences related to social media. This structure is developed and shaped through social interactions and guides our practices on social media. As a structuring entity, a social media habitus is not just a result of one's past experiences in the realm of social media but also an active framework that shapes practices to reproduce and strengthen the field (Hu and Cheong, 2021).

Hence, two broad understandings of digital habitus must be combined to develop a comprehensive conceptual framework. Firstly, is part of the physical habitus, which is the dispositions, attitudes and interpretation of digital technology, an embodied history of digital interactions. Also, it is the reflection of the self in the digital space, which is shaped and reinforced through technological interventions.

Chapter 4: Methodology

4.1 Background

This chapter includes the methodological choices opted for conducting this research. This encapsulates the features of the chosen research design, and substantiation of the epistemological and ontological stance in accordance with the methodological approach. Followingly, the data collection tool, field, participants and sampling techniques are comprehensively mentioned and explained. Finally, the data analysis process and the ethical issues arise during the research process and how it was addressed is explained in this chapter.

The digital engagement or usage of technology in the context of this research means the usage of digital technology such as smartphones, computers, other technological devices, and the internet by students in their daily life. The application of digital technologies for education by students is the subset of their total digital usage. The part of total digital engagement in daily life that forms the utilisation of technology for education is a crucial aspect of the study. Since most of the students engage with digital technologies, the difference in the usage of technology for learning which comes under the total digital usage is where the research is focussed. Through analysing the studies of Ignatow and Robinson (2017), Brown and Czerniewicz (2010), Selwyn (2016) etc. the researcher has identified that the disparity in access and usage in the application of digital technologies will be ramified into educational inequality. To apply the concept of digital inequality and education in the Indian context, the theories should be interlaced with the system of caste which is the epicentre of the Indian social structure. Hence, the research will incorporate the theoretical concepts of Bourdieu in the digital sociological framework and then it will be applied in the context of caste to understand the educational inequality in India.

4.2 Research Design

Qualitative research is applied to this study. It is a systematic and contextualised process to interpret the way human beings involve, interact, and perceive about

the social world (Ravitch and Carl, 2019). Qualitative research is an interpretative research method which studies individuals, groups, and phenomena in a contextualised way by understanding how people make sense of and interpret themselves, their surroundings, and society. It revolves around the context, subjectivity, and perspective of the individual (Schwandt, 2015).

An important reason for choosing qualitative research is the intention to assimilate both objective and subjective aspects of inquiry as this research is based on the Bordieuan conceptual framework. One of the methodological attempts of Bourdieu is to reconcile the dichotomy between objectivity and subjectivity (Murphy and Costa, 2015). The digital capital and digital habitus concepts demand both objective and subjective understanding of the participants' digital environment. By closely analysing the works of Bourdieu, Wacquant (1992) observes that society should be understood through a prism of dual focus that could comprehend the two-dimensional system of both subjective and objective understanding. The concepts of field and habitus developed by Bourdieu is effectively applied to interlace the objective and subjective into the research process. While the field represents a set of objective relations between caste positioning, capital and education, habitus explains the subjective dispositions of individuals embodied in them.

The caste group, the nature of digital access and the economic status of the participants are understood through objective responses, and the digital dispositions, attitudes and usage patterns can be deduced through the subjective responses of each participant. Notably, qualitative research provided the freedom for the researcher to enquire about the objective material aspects of digital capital and habitus and followed by the subjective interpretations of their digital habitus and capital formation. Hence, qualitative methods will be suitable for this study as they enabled the researcher to explore and engage with the participants in the field of phenomena with a provision for the participants to reflect, interpret and explain their perceptions and experiences (Henn, Weinstein and Foard, 2009).

It should be noted that digital sociological studies in India are primarily based on quantitative methodologies or secondary quantitative data analysis (Tewathia,

Kamath, and Ilavarsan, 2020; Rajam, Reddy, Banarjee, 2021). There are only a few studies, such as Kamath (2018), that have adopted qualitative methodologies and have been able to investigate the qualitative disparities in technology usage based on caste. Hence, this research establishes the importance of qualitative methodology in understanding not only the objective aspects of digital inequality, such as access, but also the subjective aspects, such as the ability and motivation to utilise technology among different social groups in India.

This research is theory-oriented and draws substantially from the theoretical concepts of Bourdieu such as capital and habitus applied in the digital context. In fact, I reconceptualised the theoretical understanding of digital capital and digital habitus to effectively situate it in the context of caste and the field of Indian education. This affair of interlinking theory with research was persistently followed throughout the research process. Hence, the issue of consistent disconnect of theory from research, which is one of the key factors of Bourdieu's methodological enterprise (Bourdieu, 1990), is effectively addressed in this research. According to Bourdieu, the fundamental duty of sociology is to unearth the underlying structures of different social worlds that encompass to form the social universe and the factors which cause its re(production) (Bourdieu, 1989). This research is also conducted to understand the social structures of digital technology usage for educational purposes and the factors that influenced its (re)production.

According to Ravitch and Carl (2019), there are eight components for qualitative research, which perfectly align with this research process. Primarily, qualitative research demands fieldwork and naturalistic engagement. This research was conducted among students within schools in Kerala. The participants were in their natural environment when interviews were conducted. Secondly, the research is descriptive and analytic, in which the researcher analysed the dispositions, perceptions and attitudes towards digital technology and its application in learning through the descriptions of the participants' experiences, environment and interpretations. Thirdly, the researcher continuously attempted to situate the responses of each participant in their individual context, perceptions and habitus. Fourthly, the researcher has consistently tried to maintain his positionality, subjectivity and identity not to influence the interpretation of participant

response. Furthermore, the research questions are shaped, refined and reinterpreted according to different participants rather than strictly adhering to a set of questions. Also, the meaning making of this research was a continuing process according to the new information obtained from the participants. Finally, this research was an inductive research process as the researcher built an understanding of the role of caste in digital inequality and application of technology for education, based on data and understanding that emerged from the participant interactions rather than endorsing a predisposed sociocultural situation and understanding.

In this research, the qualitative data collected is observed through the theoretical stance of the concepts of Bourdieu such as capital and habitus in the digital context. The researcher engaged with participants to gather specific information about their digital usage in the sphere of education and identified the patterns and common themes in the findings or data. Through this approach, a naturalistic form of enquiry was applied in the study which helped in providing an extensive, intimate, and comprehensive understanding of interpretations of the actions, attitudes, and perspectives of both observable and non-observable phenomena among the participants. It also helped the participants to communicate their stances and perspectives and provide insight for the research beyond the observable actions and circumstances of the participants, similar to the observations of Cohen, Manion and Morrison (2002).

4.2.1 Philosophical Positionality

The actions of a researcher guided by the reflections and perceptions regarding the social world are manifested through their ontological and epistemological positioning (Hughes and Sharrock, 2016). This positionality of a researcher is vital as it critically influences the important aspects of research such as the topic of research, the manner of conducting research, and the interpretation of the findings of the research (Kivunja and Kuyini, 2017).

4.2.1.1 Ontology of Research

Ontology is concerned with the nature of reality that the research is intended to investigate. It reflects the nature of the world, and the meanings applied by participants to develop the structure of reality that the researcher is investigating (Hammersley, 2012). In this study, the researcher will be adopting a relativist ontology to understand the digital experience of the students to explore the context of the situation. According to Guba (1992), the relativist ontological position is part of the constructivist paradigm of research. In this position, the individuals are considered anticipatory, having the ability to develop their own meanings and are capable of constructing their reality and they act based on such interpretations (Cohen, Manion and Morrison, 2002).

The relativist position provided the option to integrate Bourdieu's key conceptualisations into the research process. The relativist approach helped to amalgamate the potentialities of social constraints of technology usage such as digital access, and digital autonomy into the research questions along with the individual agency such as digital attitudes, dispositions and technology usage or engagement. Also, the Bourdieusian aspect of rejecting the dichotomy between theory and data and rather recognising their interlinkage and ontological complicity (Rawolle and Lingard, 2022) is applied in the research process. The doxa associated with both empirical data and theoretical stance is rejected and a reshaping of both in accordance with one another is performed in this research.

The construction of subjective social reality based on individual experiences is utilised in the investigation to understand the relationship between socio-economic position and digital intervention in the sphere of education. This study probed into the digital experience of the participants in order to learn the essence of their usage of digital technology for education, as it relates to the crux of the research question— The interlinkage between social position and their digital engagement in education. In this research, it was held that participants are deliberate, conscious, and original in their actions. None of the reality or truth regarding the digital experience were considered as absolute truth or false. The meaning of their reality is cultivated by the negotiations and interactions of the participants with the social context, culture, and social hierarchy. The reality of

digital technology as a strategic aid for learning was interpreted by the participants based on their social and cultural context. The meaning of technology and the interpretation of the application of technology in education was also interpreted based on the socio-cultural situations of the students such as caste, and the theoretical lens of capital and habitus were applied in the caste context to observe it. Following the observation of Bryman (2006), this research stipulated that social construct regarding the usage of technology is cultivated by the social actors through their perspectives and actions. The understanding of the social construct through the theoretical framework was the epicentre of this research process.

4.2.1.2 Epistemology of Research

Epistemology is concerned with understanding the world and providing a philosophical basis for the question of what constitutes knowledge. It renders the philosophical platform to establish which kind of knowledge is applicable to the research and how the adequacy and legitimacy of it could be validated (Crotty, 2003).

An interpretivist epistemological stance will be used in this research. Accordingly, social context and human interactions serve as the foundation for all knowledge and interpretations of reality. The data is constructed by the social situation which means it is 'context-related', 'context-dependant' and 'context-rich' (Cohen, Manion and Morrison, 2002; P: 288). To develop an understanding of the situation in which the participants are involved, the researcher requires both a holistic and specific understanding of their social and cultural context. This is because such context could impact the views and actions of the participants (Cohen, Manion and Morrison, 2002). As the process of this research is situated in the Bordieuan conceptual framework, the researcher rejected 'theoreticism', which is the construction of theories without proper empirical data, and 'atheoretical empiricism', which is the blind adherence to communications and practices of daily life and its application for representational analysis of the social situation (Rawolle and Lingard, 2022). It should be noted that Bourdieu rejected both individualism and holism in his methodological positioning and chose a relational

approach as the core of his sociological perspective (Bourdieu and Wacquant, 1992).

It is only within a proper theoretical preconception, that the empirical data collected from the field can function as evidence (Bourdieu and Wacquant, 1992). The interpretivist epistemology facilitated the researcher to observe individual dispositions, attitudes and interpretations without prejudices and reformulate the theoretical framework of digital capital and digital habitus in the context of caste. The caste habitus of participants in this research enabled them to derive each one of their individual interpretations regarding the research subject while situating the responses within the sociocultural and economic structure of caste. To elaborate, the values and perceptions of the habitus of the individual align with the epistemological sections of the field, which constitutes an array of dispositions and practices, often misinterpreted as natural (Bourdieu, 1990). Therefore, the most improbable practices will be avoided with an inclination towards what is considered as a necessity (Bourdieu, 1990). Such improbability and necessity are based on the interpretations of the participants' habitus, in this case, the caste influenced habitus.

Being mindful of the key Bordieuan epistemological concerns such as what the researcher already knows about the research topic and how the researcher claims to know that (Lingard, 2021), was a crucial aspect of epistemological positioning in this research. In this research, the caste situation in Kerala was already encountered by the researcher and was already aware of his upper caste identity from an external perspective. However, an upper caste Marxist positionality is the product of a distinct sociocultural and political environment in Kerala (Jeffrey, 1978; Menon, 1994). The researcher's primary habits are also shaped by these environments and social interactions. However, critical readings on Marxist and caste theories have greatly influenced the researcher's contemporary sociocultural and intellectual positioning. Also, I was completely unaware regarding the digital interactions of different caste groups and there were no predispositions regarding the role of caste in shaping the digital usage of a generation who are accustomed with technology from a very young age. The researcher's initial hypothesis was more inclined towards a techno optimistic stance. Through the understanding cultivated from development communication scholarships, the researcher

presupposed that technology might narrow down caste inequalities and discriminations. This reflexive positioning and acceptance of the social reality of the researcher helped to realise the epistemological stance of the researcher and to ensure a better socioanalysis (Rawolle and Lingard, 2015).

One of the tasks of this research is to interpret the perspectives of the students towards technology for education based on their social and cultural situation. Through social interaction, the research could be exposed to multiple and even contrasting interpretations of social reality and phenomena of the students regarding the application and usage of technology for education. The researcher focussed on subjective views, analysis and descriptions of the participants regarding the phenomenon and their own version of the situation. The essence of the data will be in verbal format rather than numerical. In this epistemological stance, a dynamic interaction of the researcher with the participant is crucial to comprehensively understand the contextualised and subjective perception of the participant (Leavy, 2014).

4.2.1.3 Research Approach

The phenomenological approach is selected for the research. This approach is grounded in the concept that the base of knowledge is established on experiences. The responsibility of the researcher is to collect, explain, interpret, comprehend, and analyse these experiences (Hammersley, 2012; Cohen, Manion and Morrison, 2002). The objective of the research will be to understand and explain a particular experience or phenomenon by recognising the meaning of that experience or phenomenon as perceived by the participants (Denscombe, 2014). It is defined as the 'experience of experience' (Engelland, 2020 P.11). Thus, despite being settled on existing concepts and dominant scholarly understandings, it urges to enter the field and seek truth in its naturalised setting (Engelland, 2020).

One of the important features of phenomenology is its 'transcendental reduction' (Engelland, 2020 p.13). This means it insists on shifting the focus from the content of an experience to the relational array of experiences. The key aspect is to understand the experience of experiencing rather than directly understanding the experience (Engelland, 2020). This transcends the researcher from being simply a

passive observer to a spectator who is capable of narrating the experience of the participants (Beck, 2021).

As part of this approach, a researcher should engage in critical reflections regarding the biases and opinions developed from the previous reading and sociocultural experiences before exercising the research. This enables researchers to clarify their position and to consider their knowledge regarding the subject as tentative and able to challenge their existing knowledge based on the inputs from the participants (Qutoshi, 2018).

Since the research is situated in the Bourdieusian conceptualisation, rather than explaining the sociology of digital usage in education in a systemic manner, through the phenomenological approach this research seeks to grasp the subjective understanding of individual experience (Keen, 1975). There were multiple student participants involved in the study, and I included their different viewpoints and interpretations regarding the engagement with technology based on their constructed realities and meanings. The research was aimed at explaining the phenomena of technological usage in daily life by the participants with an emphasis on educational development based on the socio-cultural context or setting. To clearly understand the perceptions and mindset of the participants, the researcher applied the bracketing process. Bracketing or phenomenological reduction is the method of researcher keeping aloof from the assumptions, biases, and expected outcomes developed as part of the researcher's everyday life (Gearing, 2004). The researcher put aside the pre-dispositions and assumptions developed from his own socio-cultural settings and took an account of how the knowledge and concepts of the participants were developed as part of their everyday interactions and negotiations with their socio-cultural environment. The researcher checked how each student perceives, preserves, and perpetuates their knowledge, attitude and understanding regarding technology and education without being influenced by the pre-conceptions of the researcher.

According to Denscombe (2014), the crux of phenomenological research is the subjective experience, attitudes, values, beliefs and actions of the agents or participating individuals. The researcher followed this distinctive feature of phenomenological research (Ary, 2002) while engaging with the participants and

focused on the subjective experience of each rather than a set of objective pre-set questions. The motive of this phenomenological research was not only to clearly articulate the subjective digital educational and other experiences of the participants but also how that experience was generated.

According to Giorgi (1975), there are certain characteristics for a phenomenological approach. These characteristics are analogous to the Bourdieusian approach of methodology and this research process. Firstly, the lived experiences and behaviours of the participants were interpreted in the research. The habitus and capital of the individuals were deduced from their lived experiences, behaviours and practices. Secondly, their practices and dispositions were perceived as the expressions of their social world. Followingly, the descriptive approach, interpretation of the situation from the subjects' viewpoint and considering their social experience as the fundamental unit of research were perfectly applicable in this research. Furthermore, the emphasis on the participant's history and background and the importance for the reflections on the researcher's predispositions also aligned with this research process and Bourdieusian research approach.

4.3 Field and Participants

According to Moustakas (1994), phenomenological research must be conducted in the location where that phenomenon is occurring. The higher secondary science students (45 students) from three different categories (General, Backward Caste and Scheduled Caste) from five different schools in the State of Kerala were chosen for the study.

- 1) Urban State Government School
- 2) Rural State Government School
- 3) CBSE School
- 4) International School
- 5) Vocational Higher Secondary School

4.3.1 Rationale of Selection

Kerala is considered one of the most egalitarian states in India and a lead performer in the social, health and educational indicators (Das, Das and Basu, 2022). According to popular understanding (Jeffrey, 2016) and human development studies, caste issues and discrimination in Kerala are comparatively lower than other states. Sen (1988) coined the term ‘Kerala model of development’, a development model which other Indian states need to follow. This development model made Kerala the star of academic literature in development studies (Nussbaum, 2011). In social development (Kumar and Rani, 2019), and human development (Chathukulam and Tharamangalam, 2021), Kerala is a better performer compared to the other states (See literature chapter). Also, it is always in the top positions in the national educational and health indicators of the Government of India. Furthermore, in terms of digital connectivity, Kerala is comparatively in the best position in India (Paul and Pillai, 2017). Kerala was performing much better than other states in providing education during the pandemic years (George, 2022). Kerala was already the state with total digital connectivity (Financial Times, 2016) and the digitally most progressed region in the country (Moinuddin, 2021). Hence, based on these circumstances, Kerala is an ideal field in India to study the impact of educational inequality based on caste after the advent of digital technologies and the internet. Also, the existing studies that investigate the caste disparity in digital technology and usage are predominantly from the Northern part of India. As caste is a pan South Asian phenomenon, a study that ponders the caste issues in the digital domain from the Southern part of India is able to provide new insights regarding different manifestations of caste.

The different schools are selected to include students from different economic backgrounds. The government schools will have students from different economic categories. As the urban government schools provide proximity to popular private coaching institutes in the city of Thrissur, the students from different caste and class joins these schools. Also, the reservation policies ensure the representation of OBC and Dalit students in these schools. However, the CBSE schools have a higher tuition fee and middle class, and upper middle class are attending those schools. Thus, students from different castes and better economic situations were

recruited from this school. The international school, which has a much higher tuition fee, was attended by students from the upper middle class and higher economic situations. It should be noted that only one student from the Dalit category was attending this school and the parents of this student were hesitant to participate in this research. Followingly, the researcher recruited students from a Social Learning Centre and students in this centre were attending a vocational higher secondary school in rural Kerala. The two rural schools' students were recruited to investigate the rural-urban divide in digital access, usage and attitude.

The higher secondary *science* students were the participants of the study. This category of students was selected because they belong to the most competitive and stressful academic years in India and devote 12-15 hours for the preparation of competitive examinations (Deb, Strodl and Sen, 2015). For instance, in 2021 there were 481,419 students who appeared for IITs preliminary, to attain admission to the most reputed engineering institutions in India and only the students who secure a rank less than 17,385 can assure a seat in IIT, which means the acceptance rate is less than 3.7% (Sankar, 2021). Due to these factors, the strategic usage of technology for educational purposes must create a significant gap. Since the researcher is investigating the disparity in the usage of technology for education, this section of students were the ideal participants. More importantly, science courses are largely preferred by parents for their children. Gupta (2020) clearly articulated this 'obsession' of middle-class parents with the science stream, as it is seen as the gateway to professional higher education courses. Higher education courses in professional streams, particularly engineering and medicine, are regarded by the middle class in Kerala as a means to achieve social mobility (Wilson, 2011).

This popular notion of the science stream as a prime driver of social mobility is one of the main reasons for choosing these participants, as many of them will be striving towards professional courses and thus preparing vigorously for competitive examinations. Competitive examinations urge students and parents to heavily invest their capital, both economic and symbolic, which reproduces social and educational inequalities (Subramaniam, 2019). Researcher focused on digital technology usage to understand the disparity between different groups of science

students because, in the contemporary period, the digital sphere reflects detailed strategies of individuals in leveraging their resources for social advancement (Ignatow and Robinson, 2017). Therefore, the distinction in the application of technology for educational and non-educational purposes is expected to widen educational inequality in the digital era.

Also, according to the existing literature, there is a considerable level of technology usage among the prescribed group (Hossien, Sharma and Girimaji, 2021). The background studies during the pandemic period conducted by Kerala Shashtra Sahitya Parishad (2021), Deshpande (2021), Navaneeth and Siddiqui (2022) have proven that there is a disparity between different social groups in the usage of technology for educational purposes. Also, the participants were more likely to possess a personal digital device or have access to digital technology. Hence, they were able to reflect upon their digital usage, their dispositions towards technology and their socio-economic and cultural backgrounds more accurately.

4.4 Sampling

A combination of cluster sampling and stratified sampling was applied in the study. The cluster sampling technique was implemented to select different categories of schools such as rural and urban State Government schools, CBSE schools and international schools. The list of all schools in the district was available from the DEO (District Education Officer) office. The schools in the urban areas were listed under the Corporation and Municipality areas and the schools in rural areas were listed under the Panchayaths. One government school, one CBSE (Central Board for Secondary Education) school, and one international school from the urban area, and one government school and one social learning centre from the rural area were selected for the study. Hence, in total five schools were selected for the study.

Three sections of cluster sampling were applied to determine the schools of study. The higher secondary students (16-17 years old) from the science group in government schools in the Corporation and Municipality areas formed the first section of clusters. The second section of clusters was the higher secondary science group students in the CBSE schools in the Corporation and Municipality.

The third section of clusters was the higher secondary science students in the panchayat areas. A number was assigned to each school and a random number generator was used to select a random sample from each section of clusters.

Mainly, there are four official social categories in India.

Caste	Official Category	Castes in Kerala (Examples)
Upper Caste	General	Namboodiri, Nair, Nambiar
Backward Caste	Other Backward Class (OBC)	Ezhavas, Thattan, Kollan
Scheduled Caste	Scheduled Class (SC)	Paraya, Mannan, Pulaya
Tribals	Scheduled Tribe (ST)	Kurichyar, Malayar

Table 2: Official Caste Categories in Kerala

These official categories are applied to by students for admission, scholarships and in every other official form. These categorisations are strictly based on caste, and it is easier to identify the caste group by enquiring about their official social category. Among the students who have submitted the consent forms a stratified random sampling was applied and four students from each category such as General, OBC (Other Backward Class) and SC (Scheduled Class) were selected. Since there is reservation for both OBC and SC students in the government schools, there was a certain number of students from these categories in these schools (based on the total capacity of the school). General or upper caste were in higher number (almost half of the total number). It is easy to enquire about the official category rather than directly asking for the caste. Since caste is implicit in the official category it did not affect the data collection.

The general category was dominant in the international and CBSE schools the reservation policy doesn't apply there. Hence, there was comparatively lower OBC and SC students in those schools. Hence, after collecting the social category details from the school office using their registry, the request for interview was directly submitted to those students. Also, there were only SC and ST students in the Social Learning Centre. Hence, the Dalit students from SLC were interviewed and all those students were attending Vocational Higher Secondary School.

Number of Interviews	Caste	Category of School	Location
4	General	State Government	Urban
4	OBC	State Government	Urban
4	SC	State Government	Urban
4	General/EWS	State Government	Rural
4	OBC	State Government	Rural
4	SC	State Government	Rural
4	General	CBSE	Urban
4	OBC	CBSE	Urban
4	SC	CBSE	Urban
3	General	International	Urban
2	OBC	International	Urban
nil	SC	International	Urban
4	SC	Vocational HSS	Rural
Total Interviews: 45			

Table 3: Interview List

4.5 Researching Habitus Through Interviews

In this research, semi-structured interviews are applied to effectively capture the habitus of the participants. This method is already known and established for effectively deducing the habitus of participants (Gupta, 2024). As this research is primarily interested in certain (digital) aspects of habitus, which are regarded as sections or crystallized parts of their whole habitus (Sterne, 2003), questions directed towards digital engagement were necessary. Moreover, the participants' interpretation of technology and technological practice was not enough to unearth the digital habitus. Information regarding their environment, familial habitus, and other sociocultural experiences and exposures was also required to develop a comprehensive picture. Hence, a flexible method that allows participants the freedom to provide their perceptions and dispositions, along with control for the researcher to direct questions to get responses regarding certain aspects, was

necessary. Semi-structured interviews were appropriate for this purpose. To test the feasibility of this tool, a pilot study was conducted.

One of the important reasons for choosing interviews as the tool for data collection is that they help to clearly understand the participants' embodied and encapsulated understanding of technology, developed through long years of digital exposure and interactions. In the context of this research, habitus is not simply a theoretical concept to decipher the reproduction of techno-social and educational structures but also a methodological choice. Although the usage of habitus is flexible in Bourdieusian writings, its primary function is as a conceptual tool that can be applied in empirical research to understand the world and its inherent structures (Reay, 2004).

As a reminder regarding the methodological attempts to capture habitus, Bourdieu (1984) cautioned that participants might adjust their details of cultural consumption in accordance with the expectations of the researcher. Similarly, Gale, Cross, and Mills (2020) argue that since habitus functions between the unconscious domain of belief and practice, traditional tools such as interviews and observations are unreliable for effectively capturing habitus. They applied stimulated recall techniques to uncover the dispositions of the teachers and principals who were their participants.

Nonetheless, biographical interview and narrative inquiry techniques have been applied and demonstrated as efficient tools to understand and analyse the habitus of participants (Costa, Burke, and Murphy, 2018). Since habitus is formed through a long process of interactions and exposures, ethnographic research is widely considered an appropriate method to unearth habitus. Notably, Bourdieu frequently highlighted his epistemological foundations grounded in ethnography (Blommaert, 2005). Similarly, visual methods have also been applied to illuminate and operationalize habitus and to understand shifts in practices and habitus (Sweetman, 2009). Hence, a diverse range of tools, from secondary survey data to narrative interviews, have been applied to capture habitus. Similarly, the dispositions captured can also vary based on how researchers approach the research topic (Costa, Burke, and Murphy, 2019). This means the reflexivity of the researcher becomes vital in the research process that identifies certain

dispositions as habitus. The role of the researcher and reflexivity is discussed in detail in the following sections.

It is important to remember that while habitus is utilised as a conceptual mechanism to understand dispositions, a longitudinal phenomenon is attempted to be unearthed through a latitudinal process due to various practical limitations (Costa, Burke, and Murphy, 2018). In this case, a fieldwork limited to six months. After all, habitus is a means to understand the structure that exists within small-scale observable interactions and practices in larger settings (Reay, 2004). Therefore, an important caveat when applying habitus is to ensure that the research method is appropriate for the topic under investigation (Costa, Burke, and Murphy, 2018).

4.6 Method of Data Collection

The researcher enquired about the access and pattern of digital engagement of the participants and then identified the interlinkage with their sociocultural and other factors.

A semi-structured interview was used to obtain data. According to Hochschild (2009), interviews could be used to explore the topics in-depth and obtain a clear understanding of the values, perspectives, opinions, and behaviour of the participants. To capture contextualised and individualised perceptions and data, a dialogical engagement such as an interview is one of the best data collection methods (Ravitch and Carl, 2019). Since the focus of the research is to comprehend the subjective realities constructed in relation to the phenomena, semi-structured interviews provide the manoeuvrability for the researcher to retrieve different aspects or viewpoints from the participants. Also, the digital experience and technological dispositions of one participant in relation to others were able to be understood from the interviews and this helped to develop a wider and better perspective about the phenomenon. In a semi-structured interview, there were pre-set themes and questions prepared for the participants; However, the sequence and usage of language were tailored to each individual participant and with proper responses which prompted them to easily communicate. The themes and questions were not in the same sequence for all participants. The

researcher engaged in questions according to the responses from the participants. Also, certain questions were more in style of conversation, which helped the researcher to engage more with the participant and retrieve much better insights.

A pilot study among four participants was conducted before the actual interviews. These interviews helped to understand the strengths and weaknesses in the interview process. It was understood that rather than asking the pre-set questions, follow-up questions along with encouraging participants to communicate more regarding their opinions would be beneficial for the data collection. After the pilot interviews, actual interviews were conducted in schools.

Initially, a set of pre-set questions were answered by the participants, and then the follow-up questions based on their answers were asked to retrieve more information regarding the digital technology usage of the participants for educational purposes. The interviews with students were utilised to extract data regarding their pattern of digital engagement and how much of that engagement is utilised for educational purposes. Their social and cultural context was also understood from these interviews.

The questions were based on five major themes which helped to analyse and answer the research questions

- 1) Socio-economic and cultural Background
- 2) Access to digital technology
- 3) The pattern of usage of technology
- 4) The attitude and dispositions towards digital technology and technology enhanced learning practices
- 5) Role of Family, Friends and Neighbourhood
- 6) Role of Institutions

The first theme helped to understand the caste and socio-cultural context of the student. The second theme was used to understand the inequality in access and possession of economic and cultural forms of digital capital by the student. The third theme helped researcher to learn about the social and cultural forms of

digital capital and how much it is impacting the technology-enhanced learning of the student. It also provided information regarding the digital engagement of the participants and the role of technology in doing so. The fourth theme helped to learn about the digital habitus of the student and its role in developing the perspective on technology and the utilisation of technology for educational purposes. It also helped to understand the source of motivation for the students to engage with technology. Also, it provided insights regarding how students interpret and perceive technology in their daily lives. The fifth and sixth themes provided information regarding the role of various social institutions and other factors that shape the digital attitude and usage of the students.

The researcher implemented a style of questioning which provided liberty for the participants to speak their minds without inhibitions. However, more directive questions were asked by the researcher if further clarity of information or more crucial information was required. The interviews were recorded using a recording device and simultaneously notes will also be taken. It has to be noted that the notes were very helpful for the researcher while translating and transcribing the interviews. The researcher conducted 45 semi-structured interviews among the selected participants. The language of the interview was Malayalam, which is the mother tongue of Keralites and later the interviews were transcribed and the passages that needed to be included in the analysis were translated into English. The average duration of the interviews was 1 hour. Certain interviews were more than 1 hour.

4.7 Role of the Researcher

Since a researcher is not a spectator but a key component in qualitative research, the role of a researcher is at the epicentre of research. The positionality and social identity of the researcher was a significant part of the research. The key features required for a researcher are - criticality, reflexivity, collaboration and rigor (Ravitch and Carl, 2019)

The positionality and social identity of the researcher who belongs to the cultural context of caste were considered while framing the research. The researcher is exposed to the cultural and social hegemony of caste, its prejudices, and the

cultural and social stereotypes. This contextual knowledge of the researcher cultivated as part of his socio-cultural interactions is utilised while framing and structuring the interview questions, engaging with the theory of caste as a capital and the role of caste in shaping habitus, selection of field and participants (Lincoln and 2019).

The social environment of Kerala has exposed the researcher to the left political theories and a peculiar upper caste Marxist dominated sociocultural and political milieu. However, the understanding of the history and sociology of caste, untouchability and inequality developed through critical readings of Ambedkar (2014), Tewathia et al., (2020), Teltumbde (2018) etc., helped the researcher to deduce the conceptualisation and operationalisation of caste in Indian society. Similarly, the critical historical readings of Menon (1994), Panikkar (2020), Gurukkal (2015) etc., facilitated the researcher to maintain a critical perspective regarding the caste and Marxist politics in Kerala and South India. These criticalities were utilised to identify the power asymmetries, hegemonic dominant discourses and narratives, social norms, social constructs, assumptions and stereotypes of caste and caste practices in Kerala. Since the researcher as an individual is part of the larger framework of social hierarchy, and structural inequality in caste and technology usage, the engagement of his self was also analysed with a critical reflexivity. The criticality was maintained through the approach that helped the researcher to witness, analyse, engage, and contextualise the understanding of technology and its application in learning for individuals and the social group they belong to.

The important role of the researcher in this study obligates him to identify his personal values, assumptions, stereotype knowledge and biases at the beginning of the study. The researcher has experience in the educational system of the field of research. The researcher believes that these experiences enhanced his awareness, knowledge, and sensitivity to the issues being addressed in this study and were an advantage while working with the participants. However, the technological application for education in school was a nuanced experience and understanding for the researcher. The researcher belonged to the traditional form of learning practices for both public and mass competitive examinations. Hence, it was possible for the researcher to collect, observe and engage with data from

an objective point of view. However, certain aspects of knowledge such as the interlinkage between the occupation of the parents, location of the neighbourhood and the socioeconomic situation of the students were derived from the local knowledge of the researcher. Also, the status of the higher educational institutions and professions that some students aim for were also interpreted by the researchers' sociocultural knowledge and understanding. However, every effort was made to ensure objectivity and to avoid the researcher's personal bias eclipsing the way he views and understands the data that was collected and interpreted.

4.8 Ethical Considerations

1) Caste is a politically sensitive topic

The issues such as untouchability, derogatory terms associated with caste and their traditional occupations (ex: manual scavenging, drainage cleaning etc.) and stereotypes regarding their physical features are considered sensitive and politically incorrect in India. However, questions regarding their official category, culture, customs, and other identities are not morally or ethically inappropriate. Revealing the caste identity is also not an ethical challenge. Since caste is part of the individual and social identity, many caste groups including the lower caste groups use it as a surname (Ex: Yadav, Chamar etc.). However, only the information on the official social category of the participants was enquired in the research to avoid any ethical issues. Also, pseudonyms were used for all participants to mask their identity. Such details were collected from the school office with the permission of the principal, and it was again communicated to the participants at the beginning of the interview to provide complete transparency. None of the participants were hesitant to share their sociocultural background informations. Also, the sensitive topics related to caste such as untouchability, marginalisation and discrimination were not part of the study. So, these ethically challenging questions were completely avoided in the interviews

2) Participants belong to the Age 16-17

Permission for the interviews was collected from the school principals. A meeting was conducted with the District Education Officer and his verbal permission to approach schools was collected before visiting the schools. Followed by that an official letter from schools to conduct research was obtained from the principal's office. A scanned copy of this letter, the ethical approval letter from the University, and the Student ID of the University were handed over to the potential participants to discuss their participation with their parents. The approval letter from both students and parents was obtained before the interview. The researcher arrived at the schools one week before the interviews began to obtain these permissions. The researcher provided participant information and plain statement forms about the research in Malayalam for participants' proper understanding. Interviews were conducted on the school premises according to the convenience of the participants. For some of the participants (SLC) according to the parents' demand, the interviews were conducted in their own homes.

3) Researcher is male, and he had to conduct interviews with female participants

Unlike in other parts of India, Kerala is a comparatively more egalitarian state with better gender parity. Even some of the prominent communities in Kerala follow matrilineal traditions. Also, the girl students were accustomed to male teachers in both schools and coaching institutes. Interviews with girl students in school premises was not a huge concern. The girl students were extremely cooperative. Also, the study didn't investigate sensitive and specific gender related questions and topics.

Also, the interviews were conducted in a room in the schools leaving the door open. A member staff or teaching faculty (female faculty in case of female participants) was to be requested to be present at the adjacent room to provide a secure feeling for the participant.

An ethical application was submitted to the University of Glasgow and approval was obtained before traveling to the field.

4.9 Data Analysis

Thematic analysis method was utilised for analysing the collected data, which involves the following procedures (Creswell and Creswell, 2017). Firstly, I went carefully through all participants' interviews and transcribed the data collected from the interviews to develop a comprehensive understanding of the knowledge that has been acquired. Both recordings and written notes were utilized to transcribe the interviews. Then it was translated from Malayalam to English.

Translating qualitative data from Malayalam to English was neither straightforward nor simple. Necessary caution was taken, as translation in a qualitative study cannot be achieved through simple language conversion. It involves constructing meaning through the discourse between texts (Temple and Young, 2004). This research required extra care as it aimed to understand the subjective experiences and dispositions of each participant regarding technology and its application in education. Following the studies of Temple and Koterba (2009), it was understood that preconceptions regarding the original data to be translated were inappropriate. Hence, the interview data was approached without any prejudices or predispositions. In fact, knowledge of the participants' language was beneficial, as they were able to share their thoughts and feelings more freely using phrases, sayings, and even puns in their native language.

The main challenges during the translations were capturing certain phrases and the inherent meanings of specific sentences. Repeatedly listening to audio clips and referring to notes taken during interviews helped overcome these issues. In some cases, the emotional responses of the students, along with their verbal responses, were given in brackets for better understanding. Additionally, the interviews were translated on the same day as the interview process to capture the essence of the responses fully. For certain phrases and usages, the English equivalent was used for better clarity. For untranslatable words, the original meaning of the word was given in brackets next to the translation. For instance, the rough translation of 'aranayude budhi' is 'intelligence of a skink,' which is a common phrase in Malayalam. This was translated as 'attention span of a skink (goldfish),' which carries the same meaning in that context but is understandable for an English reader.

Word-for-word translation was quite difficult because the noun, adjective, and verb order in Malayalam and English are completely different. Hence, the sentences were carefully translated without losing the essence. Re-reading paragraphs of each response and comparing them with the original answers given by the participants was done after translations. This technique was consistently followed throughout the translation process to ensure nothing important was lost in translation.

The translations were performed manually, so do the transcription and analysis of the interview data. Since the language of the interviews was Malayalam, the translation of certain words and sentences with inherent meaning was important. Although it was attempted to codify the responses into common phrases and terms, both inclusion and exclusion errors were observed while performing the analysis. It was more comfortable to identify the sections which discuss a common idea or topic. Hence, rather than common terms and phrases, common thoughts and opinions regarding technology usage and attitude were highlighted in the interviews. Since it was difficult to identify certain terminologies or words, the viewpoints, impressions and notions of the participants were considered for data analysis. A couple of sentences or in some cases an entire response was required to clearly mention what the participant intended to narrate. Hence, manual data analysis was preferred for this research.

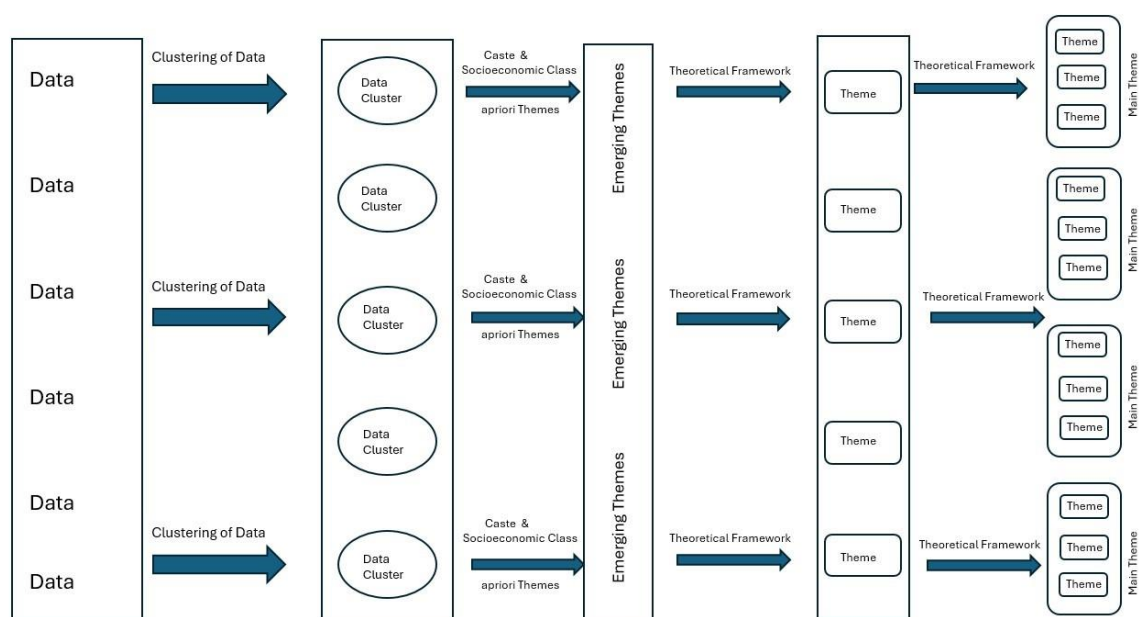


Figure 3: Flowchart of Data Analysis

4.9.1 Familiarisation and Clustering of Data

The responses that were considered important were highlighted in the first couple of readings of the transcripts. Then, significant statements and phrases pertaining to the topic such as caste, digital capital, digital habitus, technology, sociocultural and economic background, and education were extracted from each transcript. The transcripts were trawled again to check whether any important part was missed out. From these statements, meanings were carefully formulated. The meanings include the statements they mentioned regarding the access to devices, quality and quantity of technology they possess, the attitude towards technology, how they utilise the technology, how and when they apply it for educational purposes, the motivation for using technology, the motivation and hinderance from family to use technology, how the environment influence their usage and the role of school and friends in shaping their digital usage. These meaningful statements were highlighted in each transcript. Then these statements in each transcript were separated using different fonts and colours to identify the sections of responses that discusses a similar idea or topic. All the responses regarding a similar topic in all the transcripts was given either a common colour or font. After a couple of trawling and analysis through these colour/font coded responses, the first set of initial clusters of data were identified. A table with the list of all participants from four different schools and three caste groups with the indication of the socioeconomic class of each participant was also simultaneously created. It was an ongoing process with structuring and restructuring. The final set of data clusters included more than 30 categories (appendix 3)

4.9.2 Initial Analysis

The clusters of data were filtered through a set of a priori thematic prism. This a priori themes were developed using the theoretical framework of the research. These include four main themes such as digital economic capital, digital social capital, digital cultural capital and digital habitus. Only the statements that fit into this broad framework were selected for further analysis. The data clusters that pass through these filters were the only ones selected for further analysis.

Along with this process, the selected data clusters were analysed along with the socioeconomic class and caste of the students to make it meaningful.

The a priori thematic filter passed data clusters that could fit into the theoretical structure of this research were analysed along with caste and socioeconomic class. The outcome of this analysis led to the formation of emerging themes.

Emerging themes provided a broad understanding regarding the relationship between digital capital and habitus with the caste and socioeconomic class of the participants. To elaborate, the students from different caste and class groups was compared with the insights from the selected data clusters to analyse the relationship between caste, socioeconomic background, technology-enhanced learning, digital inequality, disparity in digital usage, attitude and skills, digital empowerment, digital learning tools, attitude towards physical classroom learning, motivation from parents, attitude of teachers and more.

4.9.3 Secondary Analysis

Further analysis of emerging themes through the prism of the theoretical framework provided the final themes of the research. Initially, only nine major emerging themes were identified. The analysis and reanalysis of the data clusters and the emerging themes that developed from the data clusters were then aligned under the framework of caste, digital capital and digital habitus to develop a structure for the findings chapter that bode well with the theoretical framework. Hence, in light of this secondary analysis of the emerging themes juxtaposed with the theoretical framework of the digital capital and digital habitus, themes that fit into theoretical framework were developed. There were twelve themes that was formed after this analysis. In the final stage of the data analysis, the twelve themes were categorised into four groups based on the theoretical framework. The themes were set and aligned as sub-themes under the main themes of digital economic capital and caste; digital social capital and caste; digital cultural capital and caste; and digital habitus and caste.

While categorising into sub-themes, certain clusters were merged, and inputs from different clusters were combined to develop a better structure. For instance,

internet access and internet speed, personal digital devices and the number of devices at home were merged into one sub-theme of digital access. Also, the online class subscriptions, and educational use were merged to form the access to paid online resources. Similarly, online communication and social media platform are also merged to create the theme of social media communication. On the other hand, the main usage of digital technology is divided into different themes such as career aspirations and digital usage patterns. Also, the attitude of teachers, the digital facilities in schools are blended to develop institutional habitus. Furthermore, the inputs from utilisation of digital applications to learn, main usage of digital technology and future and digital technology were also taken to develop the theme digital usage pattern. The data clusters that do not fit into the theoretical framework were neglected while forming the themes. For instance, common topics such as festivals in the neighbourhood, engagement in online classes, and engagement in physical classes were either partially or completely neglected while constructing the sub-themes. Finally, 12 sub-themes were finalised that fit under the four major themes. Then, the final structure of the findings chapter was decided from the theoretical perspective of the Bordieuan concepts such as capital and habitus in the digital realm to analyse inequalities across caste groups.

Chapter 5: Findings

This chapter presents the findings from 45 semi-structured interviews conducted across four types of schools, each representing different socio-economic contexts: a Government School (Rural), a Government School (Urban), a Private CBSE School (Central Board of Secondary Education), a Private International School, and also a Social Learning Centre (SLC). The students in SLC were attending a Vocational Higher Secondary School in rural Kerala. The interviewed students in these institutions belong to three distinct caste categories: General or upper caste, Other Backward Classes or backward caste, and scheduled caste or Dalits.

These interviews focus on exploring inequality issues related to digital technology from various perspectives, with a particular emphasis on Bourdieu's concepts of habitus and the capital trio, comprising economic capital, cultural capital, and social capital within the digital realm. This is done by examining several facets of digital technology access and usage encompassing material dimensions such as access to personal devices, the quantity and quality of internet availability, access to paid educational subscriptions etc. Additionally, it also investigates socio-cultural aspects, like perspectives on technology, the utilisation of technology for learning, parental influence, and neighbourhood. These findings suggest that the persistent digital inequality in the Indian education system can be explained through the digital capital and digital habitus of the students, both of which are closely intertwined with their caste and class.

This chapter includes an important caveat that explains the peculiar situation of the OBCs (Other Backward Classes). OBC students had provided rather mixed responses compared to the upper caste and Dalit students. The OBC students from middle and upper middle-class groups were responding more akin to upper caste groups from the same class groups. On the other hand, the OBC students from lower-middle class and below families behaved like their Dalit counterparts. Hence, when the researcher mentions lower caste, it is mostly the whole Dalit students and the OBC students from lower economic situations. Similarly, the upper caste students and OBC students from upper middle class and higher economic groups exhibited attitudes, dispositions, and perspectives, and exercised digital agency in an almost identical manner. Hence, their case will be

discussed together, despite specifically mentioning the caste and class category. The findings of this chapter are centred around four major themes and 12 sub-themes which align with the theoretical framework. These findings help to develop a thorough understanding of how caste based digital inequality is involved in the reproduction of educational inequalities in Indian society. Also detailed in the chapter are various manifestations of digital inequalities and their association with the caste and socioeconomic and cultural milieu of the students. The following table gives the main and sub-themes of the findings.

The findings of this research introduce unique aspects of digital and educational inequalities through a broadened framework of digital capital and digital habitus. The fundamental aspects of digital economic, social, and cultural capitals are extended through various sub-themes. The close interconnection between the sociocultural and economic aspects, particularly the caste of the students, is established in this findings chapter. The findings provide a better understanding of existing digital inequalities and how they impact the learning practices of students from different caste groups. Moreover, they also explicate how and why such digital and educational inequalities persist in India.

Main Theme	Sub-Theme
Caste-Based Disparities in Digital Economic Capital	Disparity in Access to Material Digital Resources
	Disparity in Access to Paid Online Resources
Caste-Based Disparities in Digital Cultural Capital	Impacts of Caste on Digital Skill and Knowledge
	Role of Education and Profession of Parents/Family in Shaping Digital Usage
	Proficiency in English Language Impacting Digital Usage
Caste-Based Disparities in Digital Social Capital	Caste-Based Distinction in Using Social Media and Other Online Communication
	Caste-Based Distinction in Disposition Towards Technology

Relationship Between Caste-Based Digital Habitus and Digital Technology Usage	Influence and Attitude of Parents/Family in Shaping Digital Usage
	Role of Educational Institutions in Shaping Digital Habitus
	Career Aspirations Influencing the Utilisation of Digital Technology
	Neighbourhood Influencing Digital Usage and Digital Habitus
	Digital Habitus Reinforced by Digital Usage Pattern

Table 4: Themes of Findings

5.1 Caste-Based Disparities in Digital Economic Capital

Analysis of interview transcripts identifies a close interlink between digital economic capital and caste in Kerala. The caste-based inequality in terms of digital access was deduced through the participants' responses. Despite Kerala stands as the most progressed region in India in terms of Internet usage, with a 100 per cent Internet subscription rate in urban areas (Moinuddin, 2021), this study has unveiled that Kerala's society and education sector still grapple with issues of digital access. This digital access divide encompasses various types of inequality in terms of quantity and quality of digital resources.

This multi-pronged digital inequality issue can be associated with digital economic capital, or in other words, the utilisation of economic capital through various means in the digital realm. Hence, it can be mentioned that the socioeconomic background of the student is a crucial factor in determining the nature of digital usage in education. The interconnections between digital capital and the caste and socioeconomic background of the student are explained here through two sub-themes, disparity in access to material digital resources and disparity in access to paid online resources.

5.1.1 Disparity in Access to Material Digital Resources

An important aspect of digital educational inequality is access to material resources. The current research has provided empirical evidence to indicate that there is a significant disparity in the access to both technological devices as well as internet between students from higher and lower caste groups. The material access issues emphasise the difference in digital autonomy between different caste groups. The findings revealed that the digital inequality in terms of access to material digital resources is multilayered and it extends beyond the token access to a single device and limited internet connectivity. This part of the findings explores the educational impacts due to the difference in access to quantity and quality of digital devices and internet connection. The role of caste in determining digital material access is also examined along with this.

5.1.1.1 Digital Devices

All the students from higher socioeconomic groups, which is primarily upper caste, have a personal device. 67 percent of the upper caste students possess a personal secondary device, mostly a computer or tablet which is often completely dedicated to learning. Whereas 65 percent of students from the Dalit caste backgrounds completely rely on a single device such as smartphone, and 18 percent of the Dalit students from the lower economic situation are either relying on their parents' smartphones or sharing their phone with their siblings. In the case of OBCs 50 percent of the students have access to a secondary personal device. It is to be noted that all upper caste students have a personal device of their own, whereas some of the OBC and Dalit students rely on their family members' devices. This creates a disparity in the utilisation of digital technology for learning. 77.2 percent of students who own a secondary device which is dedicated to learning have pointed out that while using that device they feel more serious and invest their time in learning.

For example, Karthik is an upper caste student in the international school. His father is a software architect in a multinational corporation in Technopark. His mother is a project manager in an IT firm. He expressed his interest in pursuing education abroad. Karthik possesses a mobile phone and a laptop. He claims that

the laptop is completely dedicated to his learning activities in his higher secondary school days.

I will be studying if I am using my laptop. Then there will be minimal chances of distraction because I do not surf unnecessary things in my laptop. But you can find all those time killing apps on my phone. I even use a different Google Id for that.

This explains the importance of a secondary digital device when students are exercising technology enhanced learning practices. On the contrary, the students from lower castes in this study are unable to utilise the digital technology at their will and their usage is limited by the availability or the need of other members in the family. This reduces the extent of usage and makes them prone to utilise it for communication, entertainment, and to keep themselves updated about the popular news, more than education. Also, the lack of devices at their disposal limits the possibility to effectively plan and strategise the usage of digital technology for education or learning.

This is the case with Nayana. Nayana is an urban government school Dalit student. Both her parents are involved in low wage occupations. Nayana's father is an autorickshaw driver², and her mother is a salesperson in a textile shop. She pointed out that

I do not use it on a regular basis for education. As I said even if I want to, I cannot use phone for a long time on daily basis. We cannot afford that. So, there is no point in developing a learning pattern which is completely dependent on phone and internet.

Hence, it is not possible for students like Nayana to cultivate a learning style that involves the application of technology on a daily basis.

Although the economic class of the students plays a significant role in determining their access to secondary technological resources, the caste factor cannot be

² A three wheeler. A common taxi service in India

completely neglected. Students from upper castes and more affluent economic backgrounds tend to benefit the most from these additional technological resources. Based on the occupation of parents it can be stated that 83 percent of the students in the upper caste who participated in the interview belong to the middle class and above economic backgrounds. Whereas only 44 percent of the Dalit students belong to middle class or above economic status. At the same time, 64 percent of the OBCs belong to middle class or above. However, even among students from the scheduled caste or Dalits who come from comparatively better economic backgrounds, only three students possessed an additional personal device, or a device that can be exclusively dedicated to learning. This indicates the difference in the allocation of economic resources for learning purposes through digital media among different caste groups.

In addition to this, the *quality* of devices is also a key factor in determining the application of digital technologies for education. The evidence from interviews indicates that while the students from upper caste and higher socioeconomic classes in this study rely on high-quality devices for their educational usage, they are more confident and interested in the strategic utilisation of devices for educational purposes. Devices with higher prices have superior performance, enabling those to provide high-resolution video and audio experience which students assert as a critical factor in using technology for educational purposes. Especially, while the device needs to be utilised for longer and more mundane tasks such as hour-long online classes and revision videos, the quality of digital output is directly proportional to the extent of digital usage and resulting educational outcomes. Students from lower socioeconomic backgrounds who do not have access to such devices have explained the challenge in utilising these low-quality devices for longer hours based on their online class experience during the pandemic.

Although the quality of device was not directly deduced from the interviews, the students who exhibited difficulty in using devices for education for prolonged hours were mainly from lower caste. While eight out of twelve Dalit students in government and vocational schools expressed a concern regarding the quality of devices they use, which affected their learning, only two students each from the upper caste and OBC in government schools complained about the quality of the

devices they possess. The response from a Dalit student regarding the difficulty of using low-quality technology is as follows.

Abhirami, a Dalit student whose father is a rubber tapper and whose mother works in a bakery explained her perils of using a cheaper smartphone to attend the online classes during the pandemic.

There were daily classes, it was very regular, and teachers were trying to keep us up-to-date with the subject portions. But it was tough for me. The live-streaming classes were a bit difficult to follow as the board or chart which the teachers use to explain were quite difficult to see through my mobile. So later I had to ask my friends what was written over there. I always lost my flow during the class. Later I switched to Victors classes in TV but that was at a quite different pace. I think my education is still suffering because of the COVID years.

This explains the widening disparity between different sections of students due to the disparity in the quality of the devices they possess.

Expectedly, students from better socioeconomic situations had access to better digital technologies and experiences. They believe that higher quality output from those devices is important to keep the learning process more engaging and interesting. They mentioned the importance of animations, tutorial videos and even figures and charts in understanding a concept in a better way. Some of them have the liberty to choose between different devices for better educational experiences.

This is the case with Ronish, a student in the international school. He tries different technological devices at his home to improve his learning experiences. He has a smartphone and iPad as his personal devices and additionally, he has access to a laptop and a smart television at his home. He explains his experience of using smart tv for his learning.

I stream some of the classes in my smart tv. It is really interesting to watch the videos in high resolution and in large screen. It is very addictive. I can

still recollect the process of numerous name reactions that I have seen through the tv.

Similarly, Aansilla, explained that her access to better digital equipment makes her learning process more interesting and engaging. She is an OBC student in the CBSE school. She belongs to a better economic class background. Her father is a Design Engineer. Her mother is a lecturer in a college. She has a smartphone, and a tablet which is completely dedicated for learning. She explained why she chose an online coaching platform for her NEET preparation.

I can learn which ever topic I want on which every day. That is a huge help. Then the videos and animation in these classes are really good. Especially for biology and physics, those visuals are self-explanatory. I can clearly visualise things after watching these videos.

Comparing the case of Abhirami with Ronish and Aansilla explains an important aspect of digital inequality existing in Kerala. The quality of device plays an important role in determining the utilisation of technology. Also, the disparity in the quality of reception in devices could amplify the educational inequalities.

5.1.1.2 Internet Access

Alongside issues to do with devices, the study also found that the quality and quantity of internet access available to students play a crucial role in the application of digital technology for educational purposes. Most students from upper caste and more affluent backgrounds have access to Wi-Fi connectivity at home. According to the response from the students, 63 percent of upper caste households have Wi-Fi connectivity. In contrast, only 27 percent of the Dalits and 50 percent of OBCs have Wi-Fi connectivity. Also, none of the students from lower socioeconomic groups, predominantly lower castes, have this resource. Their internet access is limited to daily mobile data packages, typically capped at 1 GB per day. This reduces their usage and confines the number and extension of online classes and other educational videos they can seamlessly attend. They also have limitations on the quality of the video they watch. If they want to watch more videos, they are obliged to reduce the quality of the videos they stream. These

constraints restrain the daily usage of technological devices for learning among students from the lower socioeconomic group, but they utilise it more during the examination period. This creates a difference in the liberty of educational planning and execution among students. This enables a group of them to reorient themselves into the centre of the learning process at least in terms of determining when to study what rather than completely depending on the physical classes.

To explicate such liberty in learning from the time-bound space-bound physical classes by effectively leveraging technology, Ardra's response is useful.

Ardra is an upper caste student from an upper middle-class background. Both parents are postgraduates, and her mother is currently pursuing PhD in Architecture. They extensively use technology for their professional purposes. Ardra's primary educational goal is to succeed in the NEET Examination and gain admission to AIIMS (All India Institute of Medical Sciences). She emphasises that she relies on digital technology and the internet for planning and executing her educational tasks on a daily basis. Ardra underscores the significance of internet availability and the flexibility it offers to enhance her learning process.

I follow Xylem and YouTube classes. There is a plethora of classes on YouTube where you can choose between one another for a better understanding of the concepts. I use it for Bio, Physics and Chemistry. The visual cues from those classes and the smart screen they use to explain are helpful. They will zoom figures, and it is immensely helpful to understand the concepts more clearly, especially in Biology. Also, the study time is very flexible according to my preference. I can learn whichever subject I want whenever I want. That is helpful. If I am in the mood to learn chemistry, I can watch chemistry classes and I can pause for a water break or whenever I feel bored. So, I don't have to sit through a boring class and lose a chance to learn a particular portion. They give multiple explanations for the concepts; they give animation and other visual explanations. That makes the class more interesting. Also, one teacher will be very efficient in one topic, and he might not be that good in another. So, we can watch the class of that expert. We are not stuck with one teacher or one platform.

In contrast, Anamika is an OBC (Other Backward Class) student attending the same school but hailing from a distinct social and economic background. Her father works as a bus driver, and her mother is a homemaker. Anamika's father completed his education up to the 10th grade, and her mother completed her education up to the higher secondary level. While Anamika has the intention of utilising technology for educational purposes, especially during examinations, her limited daily internet quota proves to be a hindrance for such activities. She is also sharing the smartphone with her brother. She is compelled to adjust her learning approach to cope with these economic disadvantages. Anamika mentions that

During the examination period the data limit will be a huge problem. There are a lot of revision classes to cover. So, I will play videos on low-quality streams so that I can at least hear the topics. But watching low-quality video on mobile for a long time is exceedingly difficult, and I will get bored. Sometimes I may purchase some extra data, but it can't be done every day. So, I keep it for Maths and Physics revision classes.

Therefore, such differences in the data availability and the freedom to use data between different groups students are influencing their digital preferences and attitudes towards technology-enhanced learning.

Despite the disparities in ownership and availability of personal devices, the quantity of usage is almost similar across all caste groups. There is no significant difference in the extent of usage. However, time restrictions in availability push some lower caste students in this study, especially Dalit students to use technology more for entertainment and communication rather than for education. They tend to use smartphones predominantly for consuming popular content compared to upper caste students. Lower caste students claim that they allocate a major portion of their usage for entertainment and communication purposes. Many lower caste students who use technology for educational purposes mostly do so during the examination period. For instance, while 73 percent of the upper caste students claimed to use technology for daily learning or knowledge enhancing activities in one way or another, only 26 percent of the Dalits and 64 percent of the OBCs claimed the same. Similarly, while 81 percent of the Dalit students and 50 percent

of the OBC students claimed to use technology more for entertainment and communication than education, only 27 percent of the upper caste students prefer to use technology in the same manner.

Another factor that does not seem to influence the usage patterns and the extension of digital technology is the geographical location. Regardless of the location of their residence or school, all students assert that they do not encounter any major problems related to either internet connectivity or speed. Notably, even students from the vocational higher secondary school, situated in proximity to tribal areas, also reported that they do not experience significant issues with their internet service.

For instance, Aromal is a Dalit student who attends the vocational higher secondary school. He faced failure in the higher secondary examination and made the decision to retake the examination in the following year. In addition to his academic pursuits, he has also planned to enrol in a skill development certification program at an Industrial Training Centre (ITC). Aromal honestly admits to being addicted to online mobile games and acknowledges that this addiction has contributed to his lack of concentration in his studies.

I mostly use phone for entertainment and communication. I play a lot of games, watch Instagram reels, watch YouTube, and communicate with my friends through WhatsApp and Insta.

This was an important point regarding the utilisation of digital technology by the lower caste students. Many Dalit students indicated their long use of technology for entertainment purposes, especially during nighttime because of higher internet speed and the chance to use the data of the next day after the midnight. To give an example, when Aromal was asked about his technology usage pattern, he explained that

I usually play games at night; more interesting participants are available at night. Also, if the game is interesting, I can play for longer hours as I can access the data of two days if I start playing at night. I have to say that I

am a bit addictive. I am going to reduce my gaming this year. It negatively impacted my studies and marks.

Therefore, internet availability is a major factor that shapes the digital usage of students, and the study indicates an existing disparity in internet availability and concomitant usage between different caste groups.

5.1.2 Disparity in Access to Paid Online Resources

Apart from this, access to online digital resources is also an important aspect of digital inequality between students from lower caste groups and higher caste groups in this study. When students from higher socioeconomic backgrounds have access to paid digital resources and online classes of coaching institutes, ed-tech firms and e-libraries of private schools, the lower caste students are more dependent on the free, non-reviewed contents on the internet which is produced and consumed by the public without any restrictions. To elaborate, only four out of fifteen upper caste students do not have access to any online resources which is not publicly available. On the other side, twelve out of sixteen Dalit students and six out of fourteen OBC students face this access issue.

Although this could be treated as a digital form of cultural capital in the objectified state (similar to books, paintings, etc.) there is a significant finding revealed from the interviews. It became evident that, more than the preferences of either parents or students, the high cost associated with these subscriptions, whether on a monthly or yearly basis, plays a crucial role in determining access to these resources. Many students from lower economic backgrounds who had initially subscribed to these resources encountered difficulties to maintain their subscriptions. These issues were mainly economical such as surging subscription charges and associated capital investments, such as broadband connections and devices, necessary to fully benefit from the resources. Also, the admission to CBSE and international schools which provide digital library and other digital resources are more related to the economic capital of the parents rather than cultural capital. Therefore, it is important to note that the paid subscriptions should be perceived through the economic aspect, rather than as a personal choice.

For instance, Devika is an OBC student in the rural government school. Her father runs a small stationary shop and mother is a homemaker. She has a personal smartphone, which she uses to access educational contents. Devika had access to the BYJU's classes during the pandemic years and she cancelled the subscription this year. When the reason for cancellation was asked, she explained about the difficulty in maintaining an online subscription along with a monthly tuition fee (offline). She also claims that it is difficult to attain the fuller experience without proper devices and internet.

I had the Byju's during the pandemic. It was good since the classes from schools were not proper. Also, the Victor's classes were also not that good. It was like a TV programme, so we don't get the feeling of a class. But now I cancelled it (Byju's)

When asked the reasons for cancellation, she explained

Because it was getting very costly. You must pay a large amount in the beginning to get a reduction in the payment. This is not possible because my father's shop has some issues. A road construction is going on through the front of the shop so vehicles can't stop in front of his shop. So, his business is largely affected. I can't ask him to pay a huge amount now. I already have a tuition and another monthly payment for an online tuition is a bit problematic. Also, you need Wi-Fi and a computer to get all the classes properly. Getting those classes through a mobile phone is a kind of waste of money.

On the contrary, students from more affluent socioeconomic backgrounds, who have access to these online classes, tend to leverage these resources to their advantage, experiencing greater flexibility and a broader range of options in their learning practices. They can position themselves at the centre of planning and executing their learning, rather than relying solely on traditional classroom instruction. They also enjoy the freedom to switch between different faculties for various topics, even within the same subject of study. Students with access to this plethora of courses and choices perceive it as a strategic resource that provides

them with a substantial edge in competitive examinations. To explicate this Janaki's response is appropriate.

Janaki, an upper caste, upper middle-class student in CBSE school want to join a top medical college, is a regular user of online classes from her coaching institute. She switched from offline classes to online classes because she believes that it serves her better.

It gives a lot of freedom me to learn. I am very stressful while I learn. While I learn Physics for an hour I will worry about Chemistry and then I need to learn Chemistry. Then I need to learn Biology otherwise I can't focus on anything else. I have this problem. In my case those recorded sessions in Brilliance and Xylem are very helpful. I can listen to all the topics whenever I want to. It is not possible in normal classes. Also, weekend offline classes are 2.5 hours long. If you worry about Biology in Physics class, you will lose both Physics and Biology. The online classes and the materials are saving me. Also, their classes are really good. We can't compare those classes with the classes here in schools. School focus on board examination. There is no competition. Everyone can get a 100 per cent. But in NEET one person can get only one rank. Those online classes are made for people like me.

Students like Janaki utilise the possibilities of online learning and keep their learning priorities on top of everything. Her ability to choose different classes is due to her subscription to the online resources provided by the coaching institute. Additionally, these classes are well-structured and aligned with her regular curriculum, unlike free online classes which are designed for mass consumption.

Furthermore, the students who have access to these resources try to overcome the geographical disadvantage associated with their locations. The students from rural regions used to travel and relocate to those cities which are considered as the hub of coaching industries to access top-notch academic resources and institutes. However, students from rural area who have access to online resources ensure that now they have the same opportunity and access like any other student in the country.

Anajana is such a student who resides in the rural area and attends a rural government school which is nearby her home. Anjana, an upper caste student coming from a middle-class background is a subscriber of Xylem online classes. Her father is a Public Works Department Engineer, and her mother works as a section officer in Cochin Devaswom Board. She believes that online subscription of Xylem classes supports her learning process, and she does not need to attend the offline coaching classes. She has decided to dedicate one year after her higher secondary exclusively to NEET examination preparation and which she is planning to do online.

It is helpful as it saves a lot of time in travelling and I can schedule my learning according to my convenience. There are a lot of students in Xylem, so the mock tests will help you to understand your position. I am very comfortable with that platform

Anjana was confident in her choice regarding the online coaching classes. She plans to use it in the upcoming year as well for her entrance exam preparation.

Next year I will join the repeaters batch in Xylem. I will do it online only. I can get all the classes, I can access it whenever I want, and I can stay at my home. My sister prepared for the entrance test in 2014, and she was staying in a hostel in Thrissur to go to Riju and PSK classes. The food was bad, and the stay was also not comfortable. She didn't have an option. I think I am really lucky. I can't stay in a hostel, share a room with 5 other students and then study well.

Alternatively, students in this study from lower caste backgrounds, particularly Dalit students and OBC students from comparatively lower economic situations, tend to use digital technology for education mostly during the examination period and they do not want to rely on technologies for daily learning. Rather than the application of technologies they are more interested in the quality of teaching that is provided in the free online classes rather than the content of the materials used in teaching. Also, the free classes available on the internet are mostly video recording of the traditional teaching process. There is minimal utilisation of engaging tools like animation, smart boards or even presentations.

The question regarding the reason for attending online classes was answered by Sreebadhra, an OBC student from lower socioeconomic background

I think it is mainly their teaching skills. If those teachers are taking classes here, then I don't have to attend the online classes anymore. Face-to-Face teaching is more effective than online classes.

Thus, the free classes on public platforms are mostly recorded versions of traditional classes, whereas the paid online resources offer more engaging due to their high-quality content.

The paid subscriptions or classes increase the competitiveness among students and that results in a more focussed usage of digital devices for education. This spiralling effect of technological usage for educational purposes is more witnessed among upper caste students. Online coaching platforms maintain a high level of engagement among students by continuously reminding them of their current position compared to other students and the imperative to stay focused. They achieve this through various means including mock tests, small and frequent quiz challenges, and publishing national level rankings. This increases the stress level as well as the competitive mentality of the students.

Eeshwar, an upper caste student in CBSE school explained how these platforms help him to stay focussed

Aakash + Byjus's online platform is good and engaging. They have a lot of mock tests, question papers and explanation videos available there. The mock tests and the immediate results provided by them help us to keep on track.

The level of competition in digital platforms is very intense. In Eeshwar's words,

The national level rankings will constantly remind whether you are going to make it or not. We all have an idea that if we are in a ranking less than 200 at national level there is a good chance to make it into IIT. So, every test

seems like a JEE (Joint Entrance Examination). Every week I can either make it into IIT or not. It is also very stressful

The availability of online classes and other resources significantly increases the flexibility of educational planning for the upper caste students in this study. They tend to exhibit more confidence in education and consider these resources as a strong backup for their educational development. They consider these classes and materials as additional support to reinforce the knowledge production process that they gained from physical classes. Whereas the lower caste students in the study consider physical classes as the most vital and sometimes their only source of knowledge production. They became more critical about online classes after the pandemic. The irregularity of the availability of classes and other access issues exacerbated their educational challenges and widened the learning gap with the upper caste.

5.2 Caste-Based Disparities in Digital Cultural Capital

This study found that, despite the pressing issue of digital technology and access, a wedge is created between upper and lower caste students in the utilisation of digital technology for education and empowerment. This divide is driven by differences in digital skills, knowledge, and other forms of cultural capital. Factors such as the professions and educational backgrounds of parents, career aspirations, and proficiency in the English language further contribute to this divide. The cultural dimension of technology usage plays a pivotal role in discerning digital and educational inequalities in the present era. Insights gathered from the interviews are organised into four sub-themes, aimed at elucidating the connection between digital cultural capital, caste, and the resultant disparities in the utilisation of digital technology for learning and advancing the position in the fields of education and career.

5.2.1 Impacts of Caste on Digital Skills and Knowledge

The interviews suggest that the ability to utilise digital devices varies significantly among different caste groups. Those from upper caste groups are exposed to

digital devices and they possess a personal device at an earlier age and have access to a broader range of technologies compared to their peers from lower caste backgrounds. This corroborates the difference in digital skills between these groups. While rudimentary digital skills, such as operational skills or button knowledge for simple operations and formal skills like browsing and navigating, are similar for both groups, there is a considerable gap in information and strategic skills between them. This means that while both groups are equally confident in the simple operational knowledge of the devices and proficient in formal uses such as communication and informal browsing, students from higher caste backgrounds use them for finding, processing, and evaluating information and are capable of employing digital devices to attain a particular educational or professional goal much more than their lower caste counterparts. Also, the knowledge regarding higher digital skills such as programming, knowledge resources and the ability to search, navigate and locate educational and other important content on the internet is considerably higher for the upper caste students compared to their Dalit and OBC counterparts. To enumerate, 80 percent of the upper caste students reported either possessing higher technological skills, such as programming, or frequently applying technology for capital-enhancing or empowering activities. These activities include searching for better courses, educational and other learning materials, and acquiring knowledge and information that might be useful for them in the future. Whereas only 27 percent of the Dalit students and 57 percent of OBCs utilise technology in the same manner. This explicates the disparity in digital skills and usage among different caste groups.

Upper and lower caste groups represented in this study have distinct perceptions of the necessary digital knowledge and skills. Upper caste students consider coding and system maintenance, including the ability to troubleshoot software and hardware issues, as superior digital skills, while they view other skills as rudimentary. Meanwhile, most of the lower caste students believe that web navigation, vlogging, application installation, and the usage of various mobile applications are essential digital skills and knowledge. It should be noted that while four Dalit students claim to be regular content creators in social media platforms such as Instagram and YouTube, only one OBC student and two upper caste students claim to be frequent content generators.

For example, take the case of Manisha. Manisha, a Dalit student in the urban government school was confident in her digital skills and knowledge. Her father works in Dubai. Manisha's mother runs a business from home. Manisha explained that she helped her mother and grandfather to setup various Apps in their mobile phone and she is very confident in her ability to use technology. While asked about her skills and knowledge in coding, software and other areas she admitted that she does not have expertise in those areas. While asked about her family's influence on her digital usage, she said

My family members are not very skilled in the usage of technology. I don't think their usage has influenced me.

Manisha claimed to be the most digitally skilled person in her home, and she helped her mother and grandparent to set up applications in their phone. Manisha said that

I explained the usage of many Apps to everyone at home. I can easily use a smartphone and can download Apps.

Manisha further explained her confidence in using technology. Based on her understanding on her personal mobile phone usage she claimed that

I am very confident that I can use technology. At least my mobile. I know almost all functions in this mobile.

However, while enquired about higher digital skills such as coding and software knowledge she replied

No. I don't know coding. I think it's not required in daily life. Only if you become a software engineer then only you need coding and all that knowledge. Normal people don't need that

Nonetheless, as explained above, a different perspective regarding digital skills and knowledge were observed among the upper caste students from middle and upper-middle class background.

To give an example, Sanju is a OBC student from the international school whose both parents are working for an MNC. Both parents are postgraduates and Sanju wanted to join in a top engineering college for B.Tech (Bachelor of Technology) in Computer Science.

I know the basics of C and CPP even before joining Plus-Two. We had classes on programming during our high school itself. Web surfing and googling are all normal skills. Everyone has that. I keep notes and other documents in Google Docs and Google Drive. But I think these are all very normal. I think computer language is something that determines your knowledge and skill.

Such instances from the interviews show that upper caste students are confident in their digital capability, and they utilise digital technology for educational and other strategic advancement. The data also indicate that the digital skills they possess are superior than the Dalit and most of the OBC students. Many upper caste students claim to have an understanding of basic coding or computer language and are proficient in web navigation and usage of computer applications such as MS Word, Google Docs etc.

Meanwhile, when asked about their digital skills and knowledge, Dalit students attending the CBSE school and government schools expressed their lack of proficiency in more advanced digital skill areas, such as using computers and programming languages, e-resource identifying and locating, digital note taking etc. Only three students from these schools claimed to have knowledge of any of these skills. On the other hand, nine upper caste students and six OBC students have reported possessing any of these skills.

Even Neeraj Nath, a Dalit student who hails from a more affluent economic background whose father is a graduate and works in Kerala State Electricity Board, and mother, a senior section officer in the Urban Development office, lacks confidence in his computer skills particularly in downloading and installing new applications. He primarily uses a personal computer for gaming, watching movies, and other entertainment purposes.

I am confident about my skill in digital technology. I can use smartphones very efficiently. I don't find much difference in the usage of computers as well. I don't use that much computer at home. I use both for the same purposes. But I haven't tried downloading applications on a computer. The installation process is a bit confusing.

Similarly, Shivani a Dalit student from rural government school explained her issues in acquiring high-end technological competencies like coding and other software skills.

I have learned some basics in my high school. It is very confusing. I do understand what is happening on that screen. Have you seen a coding screen? It is very dull. One thing that I was sure of after my 10th was, I would never choose CS (computer science stream) for my Plus-Two. Also, one of my cousins is working in a computer service centre. I am afraid to even enter his room. It is full of wires, chips and computer parts. I will get a headache if I see that many complicated components.

This means the existing superior digital skills and awareness about technology provide an impetus for upper caste students to pursue and integrate new technological developments in their daily usage and educational activities. This results in a Matthew Effect in the sphere of education. The upper caste students are better equipped and aware of nuance technological developments and educational resources such as ChatGPT, Khan Academy etc.

To give an instance of the utilisation of latest technology, Sanjana's response is relevant. Sanjana is an OBC student in the CBSE school. Sanjana explained that she started using ChatGPT to understand the concepts more quickly and efficiently.

ChatGPT is great. We don't need to google anymore. Just type the question and you will get the answer directly. But due to my old habit I still Google a lot. Once I remember about ChatGPT, I will jump into that rather than Googling and going through websites. You can also ask it to explain it in a simpler way if you don't understand the answer. It will give examples also.

In contrast, the Dalit students and OBC students from lower economic situations are largely confined to the traditional or popular technological avenues.

5.2.2 Role of Education and Profession of Parents/Family in Shaping Digital Usage

The education and occupation of parents were found to play a significant role in shaping the digital habitus of students who participated in this study. A significant portion of the upper caste parents, around 83 percent, fall into the middle- or higher-class categories, while only 44 percent and 64 percent of the Dalit and OBC parents respectively fit into these categories. Furthermore, over 90 percent of the upper caste parents have received a college education, whereas nearly 40 percent of the Dalit parents and 36 percent of OBC parents either did not attend college or their children were reluctant to disclose their parents' educational status.

According to the responses from the students, seven students from the upper caste claim that either of their parents uses technology regularly for occupational purposes. Whereas only four OBC students and only one Dalit student claim the same. Higher levels of education and professional occupations among upper caste parents were often associated with a more positive and supportive attitude towards digital technology. These parents recognised the educational benefits and opportunities that digital tools offer and actively encouraged their children to embrace and utilise them for learning purposes. For instance, Sanjana, the student who mentioned the usage of ChatGPT in the earlier example, said that her father introduced her to that technology. In contrast, parents with lower backgrounds, who may have limited education or lower-status occupations, were more likely to adopt restrictive measures, perceiving digital technology as a potential hindrance to their children's academic progress.

To represent the lower caste parents' objection towards the technology-enhanced learning practice, Neha's response is appropriate. Neha, a Dalit student discussed her parents' reservations about her use of technology. Neha also acknowledges that she tends to overuse digital devices, particularly for entertainment purposes.

They are completely against my usage as they know about my addiction. They don't like my usage, especially Instagram.

While asked about her parents' reaction in an imaginary situation where Neha sitting in front of a book with a pen in one hand and a phone in other, she replied

They know I prefer books to phone for education. If I am using a phone, it means I am not studying. So, they will scold for sure.

Furthermore, these interviews revealed that the association of caste with traditional occupations was relatively negligible. However, it was noticeable that parents of lower caste students were predominantly engaged in low-wage, low-skilled occupations. Furthermore, the immediate family members and relatives of Dalit students were often situated in economically disadvantaged situations. In contrast, the upper caste students from lower economic backgrounds who utilised technology for educational purposes were enthusiastic about highlighting their economically or academically successful relatives, and they aspired to follow in their footsteps. Such family connections were less common among Dalit students. It must be noted that none of the Dalit students from lower economic situations talked about an educated or successive relatives from whom they wanted draw inspiration.

For instance, Deepthi is an upper caste student, her father works in a photostat and printing shop. Her mother passed away during the Covid. She explains that she wants to be successful in her life. She thinks that it is possible through utilising the available resources for education, and her role model is her own aunt who is a CA (Chartered Accountant) professional in Bangalore.

I think education is the key to get a better life. There is no way someone can stop us if we get good marks. I don't want to repeat one year for Engineering entrance. I want to get into a good institute this year itself. I am focussing on CUCET. Its challenging, but if you are ready to put all things into learning, it is possible.

Deepthi was very enthusiastic while talking about her aunt. She said that

My aunt cleared CA in her first attempt. I have seen her studying. She learned in a smart way rather than by-hearting everything. That is what I am also doing. I select the best classes in YouTube and then I watch, rather than watching all videos and wasting time.

Thus, alongside parents, relatives also influence the cultural capital and digital usage of students.

This study indicates that on top of everything else, parents of the participants from upper caste backgrounds with better socioeconomic status tend to encourage their children to use technology in a more effective and efficient manner. They introduce new technologies to their children, and as a result, the children often learn how to use that technology at a similar pace.

To exemplify, Sanjana explained how her father, a software professional introduced and encouraged her to use new technologies.

My father is tech-savvy, and he introduce all new technologies to me. He actually asked me to use ChatGPT to quickly understand and learn concepts. It is way easier than Googling. We can get any answers by asking the right questions.

Notably, many of these parents utilise technology for professional purposes, which helps shape their children's perception of digital technology as a tool also for professional use rather than mere entertainment. The students are exposed to the professional and strategic uses of digital technology at an earlier age. While they do utilise technology for entertainment, they also possess a strong awareness of its educational advantages and exercise caution when using it for educational purposes.

To be noted, Aansilla's both parents use laptops for their occupation. When asked about her parents' technological usage she explains

They use it. They use it for both professional and personal needs. They have this hybrid format for working so they used to work on their laptops all the time. During free time also they might be using a phone or (smart) tv.

On the other hand, Dalit parents mainly use technology for entertainment and communication. Important uses of technology such as professional tasks, financial transactions, and online applications are often introduced to these parents by their children, making them more confident in their technological use. They tend to view technology mainly as a venue for entertainment and as a tool to simplify life, rather than for professional development or strategic advancement.

Two Dalit students from distinct economic backgrounds shared insights on their parents' technological usage. Both students believed that their parents were not as digitally skilled or proficient as the students themselves are.

Firstly, Arya from the CBSE school from a middle-class economic background, whose father runs a tailoring shop and mother is a home maker, mentioned that

They use it for social media, like Facebook, YouTube etc. They also use it to make calls and discuss matters in WhatsApp groups. They know the usage. I don't know whether they are very skilled. At times I have to explain certain things to them.

Sudhimol from the Vocational Higher Secondary School, whose parents are daily wage workers without secondary school education, told that

They use the phone for communication. As I said, I use my mother's phone, and my father doesn't have a smartphone. So, most of the time I will be using the phone, and they use it very rarely. Normally they use the phone for communication and sometimes I show them some interesting videos or reels, but they are not much interested in it.

She further mentioned that

I have installed GPay and other important Apps and taught them how to use it. But still, they ask my help to use it.

This explains the difference in digital capital between the upper caste and Dalit parents. This results in the disparity in the inheritance of digital capital from parents to children.

Additionally, the lower level of engagement in the education of their children and the perception about technology shaped by their own usage, which is primarily for entertainment and communication, often leads lower caste parents to encourage their children to rely on traditional learning practices. Lower caste students often mentioned that their parents primarily use technology for entertainment purposes, which has led them to question their parents' moral authority to restrict their own usage of technology.

Shivani a Dalit student from rural government school pointed out

They use the phone for entertainment such as WhatsApp, Facebook and YouTube, and for calling. They use it a lot. My father spends a lot of time on Facebook, and he also watches all the WhatsApp forward videos. My mother also wants to watch videos whenever she gets time. But they complain about my usage. My father scold me without even stop scrolling the phone.

The digital skills of parents are also an important factor which influences the digital usage of the students. While the students interviewed claimed that parental cultural digital capital, such as proficiency in technology, did not directly influence their digital usage, it became evident that parental dispositions towards technology had an indirect impact on the quality and quantity of their digital engagement. The proficiency of parents in utilising technology and their attitude towards digital usage influenced the students' perception of technology and their access to digital resources. Students with parents who were proficient and supportive in using technology tended to have more positive dispositions towards technology and engaged in capital-enhancing digital activities. This influence was observed to vary among different caste groups, with upper or general caste

students having a greater advantage due to the higher prevalence of digital cultural capital within their households. To elucidate, while enquiring about the imaginary situation as in Neha's case that discussed above, the responses from different caste groups were different. The answers indicate that 80 percent of the upper caste parents do not disturb the students while they are using technology for learning. However, only 25 percent of the Dalits and 57 percent OBC students claimed the same.

For instance, Ardra is an upper caste student in the rural government school, and she explains how her parents support the usage of technology for educational purposes. Both of her parents are postgraduates, and her mother is pursuing a PhD. Technology is an integral part of her parents' profession and career advancement.

They have no problem in the usage of digital devices if I am studying. They will understand that I am studying if I am using my laptop. They are totally support for my studies. They subscribed the Xylem for me and next year they will subscribe it for NEET coaching.

In Sandra's case, her parents are not IT professionals, but they do leverage technology for strategic advantages in their business. They have also provided digital technology to Sandra at an early stage for her learning and educational purposes. She is an upper caste student in an International School.

I would say they are good at using tech. They know how to manage their activities but can't say that they are highly proficient. I couldn't say that their usage has influenced me, but they have provided the digital devices from a very young age and that might be a reason for my obsession towards these devices.

Therefore, the education and occupation of the parents and family members influence the digital usage of the students. The upper caste and OBC parents with better occupational and educational experience support the usage of digital technology for learning, while the lower caste parents, especially Dalits, who lack such cultural capital, discourage the usage.

5.2.3 Proficiency in English Language Impacting Digital Usage

The interviews revealed that most of the students from the upper or general caste demonstrated a significant advantage in terms of English language proficiency, enabling them to access a wider range of digital content and resources. Whereas students from the lower caste faced linguistic barriers and limitations in their ability to navigate and comprehend online information. This disparity in digital cultural capital perpetuates social inequalities, restricting opportunities for knowledge acquisition and social mobility. The possibilities of Google and other websites are mostly explored by the upper caste students due to their efficiency in the English language. In contrast, lower caste students are mostly restricted to a certain number of YouTube classes. Proficiency in the English language often plays a significant role in determining higher-level digital skills, including the ability to search for, navigate, and locate necessary content, retrieve information from various websites, and utilise the possibilities offered by digital resources. Additionally, it facilitates the process of updating digital knowledge and competencies.

It was interesting to note that the caste does play a role in the confidence to handle the English language effectively. While asked about their ability to scroll through the contents, and ability to learn and understand from English language tutorials and materials, the students from different castes responded differently. While 73 percent of the upper caste students were confident regarding their ability to handle and understand English language contents, only 50 percent of the OBC and 20 percent of the Dalit students exhibited the same confidence.

For instance, take the case of Janaki, a CBSE school student. She belongs to the general category and coming from a better economic background. Her father works as a tax consultant and her mother is an Ayurvedic doctor. Janaki has always studied in CBSE schools in different states in India and some of her answers were in English as she was more comfortable talking in English than Malayalam. She explained the way she searches contents in Google and how important is her English reading skills.

It is very easy to ask questions in Google. But the way you search will surely impact the results which are fetched by Google. I think it is safe to type only keywords in Google but if you use better words the result will be more filtered and will be easier to get answers. But more than typing, I think the key to find better answers lies in quickly going through search results and to find the right one. For that you need reading skills. The small sentences under the links will help you to choose the right one. A quick skim read through those small sentences can save a lot of time

This means language skills increase the confidence of upper caste students in using the internet and technology for educational and learning purposes. Meanwhile, lower caste students are more inclined to search for content using general keywords on platforms like Google and YouTube. This makes it challenging for them to locate specific content or topics they intend to learn about. Consequently, this discourages lower caste students from utilising digital devices to clear doubts or enhance their learning process. It was an important finding in the research that English language proficiency was not having a linear or direct correlation with the school or curriculum. Even the education in English medium and CBSE schools does not instilled the confidence to handle English language among many Dalit students. While three out of four Dalit students from the CBSE schools expressed difficulties in easily understanding the English language, only one upper caste and OBC student expressed the same difficulty.

For example, a Dalit student from the same school of Janaki gave a very different answer for the same question regarding the use of Google to locate and retrieve information.

I don't google. It is very difficult to find answers in Google. I usually google to get meanings and it is very easily available in google. The searching is available in English only. So, you have to type the content name in YouTube, and you will get the whole class. If I type the name of the topic such as gravitational force or matrix, I will get the whole class.

When I asked why she choose Malayalam classes and not English classes, which is higher in number with better quality content, she replied.

It is very easy to understand classes in Malayalam. If the classes are all in English, then textbooks would be better.

Similarly, in the government schools, 62 percent of the upper caste, 50 percent of OBC, and 25 percent of the Dalit students were confident in their English language skills. Also, none of the Dalit students from the vocational higher secondary school claimed to be proficient in English.

The students assert that language skills are crucial for posting doubts in the chat, comprehending and learning from comments, and assessing the quality of a class through the comments section. Upper caste students tend to be more confident in proactively asking questions, and they also review the video descriptions before attending posted classes. This practice enables them to effectively filter and select the classes or sessions they require.

When asked about the difficulty to sit for the whole class to get the required information, the same student explained

Yes. That is correct. But there are only a few channels that are really good. So, I have to sit through the whole chapter, or I need to drag and find where they are teaching that topic.

English language proficiency is an important cultural capital in the country, often acquired by students from their families and early years of schooling. Exposure to English materials from a young age plays a pivotal role in developing English language skills and proficiency. The cultural capital of English proficiency has a significant impact on students' access to various digital social networks.

5.3 Caste-Based Disparities in Digital Social Capital

Social capital has already been infused into the digital domain as a result of the advent of interactive social media platforms. The interviews with students have revealed that there is a wide range of differences in social media communication and activities between students from different caste groups. Social media

communication platforms used by the students were primarily Instagram, WhatsApp, and Snapchat, but were not limited to these platforms.

5.3.1 Caste-Based Distinctions in Using Social Media and Other Online Communication Platforms

The time dedicated to digital social interaction is quite less among upper caste students compared to students from lower caste. Whereas the topic of discussions regarding education and the future are high among the upper caste. Also, the sharing of digital resources for education is high among upper caste students compared to their lower caste counterparts. The students from lower caste claim to utilise most of their time in digital entertainment and communication platforms such as Instagram and WhatsApp. They are more proactive in online communication and consider digital communication platforms as a vital part of their technological usage. Notably, when 70 percent of the Dalit students and 57 percent of the OBC admitted using WhatsApp and other platforms on a daily basis, only 33 percent of the upper caste students admitted the same. Moreover, while 73 percent of the upper caste claims that they use social media to update information regarding academic resources, performance, and higher education other than during the board examination period, only 19 percent of the Dalit and 43 percent of the OBC students made a similar claim.

A typical way in which Dalits and other lower caste students responded when asked about social media usage could be described using Aparna's response. Aparna is a Dalit student in the rural government school. While asked about her online activities despite not having a personal device, Aparna claimed that she uses it more than 4 to 5 hours daily and she spends more time on social media platforms

I think I use it 5-6 hours a day. It is like the availability. If I get the phone, I will use it continuously. I use it mainly for entertainment and communicating with my friends. I mostly use Instagram, WhatsApp and YouTube. I like to watch reels in Instagram. I also chat on Insta and WhatsApp.

On the other hand, the upper caste students who are more invested in academic activities and competitive examinations exhibited a cautious attitude towards social media platforms, especially content platforms such as Instagram, Facebook and YouTube. Many of those students claimed that they are not active in those platforms during academic days and alleged it as a potential distraction for their focus on education and examination.

Parvathy is an upper caste student who prepares for NEET (National Eligibility cum Entrance Test) examination. She is attending a famous coaching institute in the city and has subscribed an online resource to augment her preparation. She found online communication platforms as very distractive.

I am not much active in online communication. It is a distraction. We do discuss some questions and doubts in online groups, but it is not regular. I prefer more personal chats than group chats. It is also very limited.

However, the usage of social media platforms and the contacts in social media to enrich their knowledge and understanding about their career aspirations and goals were prevalent among many upper caste students. Those students attested that they follow the social media pages and vlogs which share the experience about the courses and institutions that they intent to attend and those digital media contents provide them an impetus to prepare intensively for the competitive examinations and to achieve their targets.

For instance, Karthik is an upper caste student in the international school. He wanted to join in a university abroad for his undergraduate studies. He already listed different courses and universities in three different countries. Karthik utilise his contacts created through social media and the channels he follows in those platforms to gather information

I follow vloggers and influencers who share information about universities and courses abroad. I have made a lot of connections through Insta. They share everything. From how to find different opportunities to how to cook and where to get groceries. I have already heard about Lidl and ASDA.

The distinction between the quantity and quality of social media usage of students from different caste groups was apparent in the interviews. Although the students from the upper caste students were comparatively spending less time on social media, their usage was different from their lower caste counterparts. They communicated with their friends regarding subjects, examinations and often use it as a tool to encourage each other to achieve better results in entrance tests.

Eeshwar from the CBSE school explained that he uses WhatsApp. When asked about the nature of communication through WhatsApp he explained that he communicated with the friends from the coaching academy to understand and compare the marks they scored in mock tests and also use it as a platform for sharing the learning resources.

That we do. We need to know about the marks and ranking of our friends to understand our performance. We also discuss about IITs all the time, you know, to boost each other. Sometimes we share resources each other. That is easier than explaining a whole concept to somebody.

These variations among students lead into the formation of different small and intimate groups on digital platforms based on the students' digital preferences. The students who communicate more frequently through digital platforms have formed their own online communities. Those students were largely absent on other groups where discussions about examinations, new learning resources and academic future were common. This could be translated into the formation of caste-based social media networks among students.

The experience of digital ghettoisation among Dalit students in CBSE schools due to the difference in digital tastes was already mentioned while explaining the disparity in digital cultural capital. The Dalit students who are not proficient in English language feel disconnected while having conversations regarding international films, music and other language content in WhatsApp groups.

This could be explained using the following example. Abhishek is a Dalit student in the CBSE school. While asked about his engagement in the WhatsApp group of his class, he mentioned

There is one official group and one unofficial. Official groups have teachers and students. In the other group only we students are there. I talk in the second group, only if it is about football.

When asked about the topics they discussed in another group and why he did not feel like he belongs there, he responded

Other topics they discuss are about series, anime and movies. I am not much interested. I tried to watch anime since they were talking a lot about it. I found it very boring. Don't understand how they can enjoy cartoon at this age. Even my younger sister doesn't watch cartoon anymore.

Hence, the cultural taste differences in the physical space were reflected in the digital space as well. More importantly, it is not limited to the Dalit students in the CBSE schools. The OBC students from lower middle class who attend these schools have also reported such dissonance. For instance, Devananda is an OBC students who attend CBSE school. Her father is an automobile mechanic, and mother is a home maker. Devananda also mentioned that she is not very active in the class group as she feels like she does not belong there. Therefore, the cultural distinction among students from different caste and class groups could be deduced through these responses.

5.4 Relationship Between Caste-Based Digital Habitus and Digital Technology Usage

This theme explores the disparities and distinctions in the use of digital technology, with a particular focus on the students' digital habitus. The analysis of the findings allows the researcher to extrapolate that habitus, as both a structured and structuring element, plays a crucial role in shaping and being shaped by the patterns of digital engagement among students. This comprehensive investigation defines the digital habitus, revealing its intricate interconnection with the caste backgrounds of the students.

The concept of digital habitus is explored through the lens of student digital engagement, which is critically influenced by their dispositions, aspirations, norms, values, and practices. Furthermore, these findings extend the concept of digital habitus to encompass the shaping and reinforcement of digital activity through the algorithmic patterns created by students and their families' digital media usage. Importantly, these findings underscore how the social and cultural identity of caste is deeply ingrained within the digital habitus of the students.

5.4.1 Caste-Based Distinctions in Disposition Towards Technology

One of the emerging themes from the interviews is the distinction in the perception towards digital technology between Dalit and upper caste students. It was observed that many Dalit students and OBC students from lower economic situations tend to view digital technology as more of a distraction from their studies. They primarily use digital technology for entertainment and communication. As mentioned earlier, when 81 percent of the Dalits students and 50 percent of the OBC students in this study preferred to use technology more for entertainment and communication than education, only 27 percent of the upper caste students responded in the same manner. They mostly resort to traditional learning mechanisms such as physical classes, textbooks and hand-written and printed notes for their daily learning practices. This disposition, or the narrow perspective that regards digital technology primarily as a platform for entertainment, is one of the critical factors contributing to the divide between upper caste and lower caste students in terms of utilising digital technology for educational purposes, despite the increased access and prevalence of the internet and technology in Kerala. For instance, when 60 percent of the upper caste students were comfortable with online classes, only 50 percent of the OBC and 25 percent of the Dalit students had the same opinion. Also, while three upper caste students preferred online classes more than offline classes, only one OBC and Dalit students made the same preference.

To understand this better, Swathi's response will be helpful. Swathi is a Dalit student from the social learning centre who attends the vocational higher secondary school. Her father and mother are daily wage workers. She shares a smartphone with her mother. Although, she said she had access to the phone for

more than five hours in a day, much of this time is dedicated for entertainment. She perceives her smartphone as a platform to entertainment and communication. Swathi thinks, it will distract from her studies, so she keeps her phone away while she is learning.

I use mobile phones mainly for entertainment and communication. I use Instagram, YouTube and WhatsApp a lot.

While asked about using different online classes and other apps for learning, she responded,

No. If I use my mobile, I won't learn. There are all these Apps in this phone which will keep me engaged, it is a kind of addiction. So, If I want to learn, I will keep it away. But then also, I have this feeling that I am hearing a notification sound. That is why I said that it is an addiction. It is a huge distraction. But somehow, I will manage to keep that away if I need to learn.

However, they utilise digital devices during examinations, which helps them consolidate and encapsulate exam-oriented information to tackle the examination process. This develops a tunnel vision for the lower caste students, especially Dalit students, regarding the use and application of digital technology for the learning and knowledge enhancement process. They confine the educational usage of technology mostly to revision classes during the examination season rather than using it daily or frequently to augment their education. In their daily process of education, they consider it as a distraction more than a support for their learning. To give an example of the application of technology during the examination period, Devapriya, an OBC student from a lower middle-class background explained the benefits of digital technology during the examination. She considers it as a life saviour which helped her to cover the portions of subjects within a short span of time.

It was very useful during the final year examinations. The YouTube revision classes were a lifesaver. They will cover only the most important sections and questions that are most likely asked in the examination. So, you don't

have to go through all the guides, materials and notes for the exam preparation.

It is important to acknowledge that most of the Dalit students, and OBC students from lower economic backgrounds exhibit a tendency to reconfigure their habitus as they experience a dissonance between the field of traditional education system and their digital habitus, particularly during the examination period. While the pandemic reinforced their scepticism about digital technology's utility for classes that were difficult to follow, the higher secondary examinations provided an opportunity to explore the potential of digital technology. Several Dalit students explained that they began to appreciate its value, especially after using it during the exams. These responses reveal the initial efforts to reshape their digital habitus. The digital technology provided them with the opportunity to learn swiftly and efficiently, surpassing the capabilities of the traditional learning mechanisms. However, there were limited indications of a shift toward using it daily for education as most lower caste students still predominantly use technology for entertainment and communication purposes.

For example, Arya, a Dalit student from the CBSE school said that she does not prefer online classes. But then she mentioned about the YouTube classes which she has subscribed to prepare for the examination.

It does affect learning. I will try to keep my phone away while there is something to learn. It will cause distraction.

While asked about some of the YouTube classes that she mentioned earlier, Arya responded

That is during the examination. The revision classes will help to cover a lot of portions in a very short time. So, it will become a necessity during the examination.

Although many Dalit students utilise technology for learning, especially during examinations, they are concerned about distraction and lack of focus. Digital technology is viewed more as a shortcut for learning and tackling examination

rather than a means to enhance holistic subject knowledge or gain a strategic advantage. These students are often more attracted to the entertainment and communication aspects of technology rather than its potential for educational development. Consequently, their digital competencies tend to be concentrated in these areas as they prioritise entertainment and communication over educational pursuits. Hence, they try to develop and hone their digital skills in aspects such as social media usage, gaming, vlogs and movie downloading (mostly Malayalam) due to their dispositions regarding digital technology and digital skills. The creative aspect of digital technology is more utilised by Dalit students. When there are only two regular content creators among upper caste and one among OBC, there are four creative content creators among Dalit students. Arya is a social media content creator with thousands of followers.

While asked about the digital skills in which she is very confident, Arya mentioned online shopping, vlogging and understanding the latest trends in Instagram and WhatsApp

I download Apps. I can make digital payments, and I can do online shopping. I also do some vlogs, video uploads and everything that can be done with a mobile. Since I have been using it for a very long time, I am very used to this device. I got to know most updates on Insta and WhatsApp much earlier than my friends and I used it way before them. They use these facilities when they see my profile.

When asked to explain how acquainted she is with the up-to-date trends in the digital spaces, Arya mentioned that

I started using my own Avatar as a WhatsApp DP. Then all my friends started using it.

Furthermore, many Dalits and lower middle class OBC students are considering it as a tool to search for specific information rather than incorporating it into their regular learning process. Although they expressed confidence and competencies in the usage of technology, they were less likely to utilise it for their strategic advantage, knowledge enhancement and career advancement.

The lack of clarity regarding their academic future and a tendency to seek stable government jobs were more pronounced among lower caste students. Even Dalit students from more favourable economic backgrounds were not inclined to extensively plan their education and academic pursuits. While many of them expressed a desire to participate in highly competitive entrance examinations, their level of commitment and rigor appeared comparatively lower than that of upper caste students preparing for similar exams. This was evident from the answers regarding the time dedicated for studying, the method of learning, their future and career plans etc.

For instance, consider Neeraj Nath, a Dalit student from a more affluent economic background. When asked about his choice of discipline for higher education, he mentioned that he does not have a specific preference for any course. Actually, he plans to prepare for the PSC examination while studying for the undergraduate degree. While asked about how he uses technology to search for courses he mentioned that

I haven't done any search regarding courses. I might choose a college within this city so that I can prepare for government tests. There is nothing much to search. There are a few courses and just need to apply for one or two.

On the other hand, many upper caste students perceive digital technology as a necessary component of their education, considering it as a supplement that enhances their learning experience. This difference in disposition towards digital technology reflects the contrasting ways in which students from different caste groups engage with and perceive its value in the educational context. They consider digital devices as an integral part of their daily activities, especially education. They try to augment and modify their learning process with the aid of digital resources.

They view digital technology as a crucial resource at their disposal, one that must be effectively harnessed to navigate the intense competition of entrance examinations. The inability to utilise this resource makes them uneasy, and they are willing to change their environment rather than adjust their digital habitus to

meet the requirements of the environment. While enquired about the order of usage of digital technology, majority of the upper caste students, 73 percent of them mentioned education as their main usage. Whereas 81 percent of the Dalit students claimed to use technology either for entertainment or communication more than education. This explains the vast disparity in the application of technology among different caste groups. Many upper caste students in this research consider technology as an unavoidable tool for their learning and competitive exam preparation.

For example, Parvathy is an upper caste student attending an urban government school and preparing for the NEET Examination. Initially, she stayed in a hostel near her entrance coaching centre. However, the hostel had a strict policy prohibiting the use of smartphones and laptops, which hindered her access to online educational resources. In response, she made the decision to move from the hostel to her home, where she could use the internet and access online classes and resources.

They didn't allow me to access my phone. I have requested multiple times and explained the importance of online classes, tests and other materials. They were unwilling to change this. Hostel authorities didn't know the situation. All other students in other parts of the country are accessing these materials and they are already performing well. So, I decided to leave the hostel.

Most of the upper caste students utilise digital devices mainly for education and they understand the importance of learning through technology. They are more confident in their usage, and they claim that they can turn off unnecessary notifications and websites which can cause distraction. They perceive it as an important or integral tool for the learning process by acknowledging the plausible pitfalls that can cause distraction in their learning process. They also perceive it as an integral part of their learning process and treat it like a necessary tool like textbooks or notes. Similar to the lower caste students, they tend to utilise it for examination preparation but more importantly, they use it for their day-to-day learning activities.

They recognise the potential of digital technology and employ it as an empowerment tool to enhance their standing in society and their career prospects. They actively seek information, strategies, and methods to navigate new challenges and domains where their existing social and cultural capital may not suffice. They firmly believe that digital technology could be doorway through which they can explore new academic and professional careers.

For example, Alvin, an upper caste student hailing from an educated and upper-middle-class family. His father is involved in real estate and operates a supermarket chain, while his mother works in the finance department of a government cooperative enterprise. Alvin aspires to join the National Defence Academy (NDA) or pursue Aeronautical Engineering. He recognizes that there are no individuals in his immediate social circle who can provide guidance on these career paths. Hence, he is completely relying on digital resources to help him achieve his goals.

I want to go either for NDA or Aeronautical Engineering. There are very few people in my neighbourhood and school to provide me with proper guidance. But there are thousands of experts on the internet who can give me proper guidance to aid my preparation and push me in the right direction. There are Telegram channels in which people share their day-to-day preparations for these exams and it keeps me motivated.

Similarly, Ronish is a student in international school who want to pursue his education abroad. He believes that his parents cannot provide the necessary guidance to choose his course or University. Ronish is following the footsteps of his elder brother

You can't rely on your parents for everything. They also don't know everything about courses and universities. We need to make our own choices, and we need to be very quick. Or someone else will apply it before you and you will be on the waiting list. For that also we need net, laptops and phones.

This means the upper caste students tend to perceive technology as an important resource for planning and building their future. They view technology as an empowerment tool that can garner information, which is otherwise unavailable in their environment.

5.4.2 Influence and Attitude of Parents/Family in Shaping the Digital Usage

One prominent emerging theme is the influence of parental disposition towards digital technology on the digital habitus of students. The interviews revealed that parents from lower caste backgrounds tend to impose more restrictions on the usage and access of digital technology for their children. They may perceive it as a distraction or a potential threat to their children's academic performance. In contrast, parents from upper caste backgrounds, for the most part, exhibit a non-restrictive or supportive stance towards the usage of digital technology. They view it as a valuable tool that can augment their children's learning process and provide access to a wider range of educational resources.

Many upper caste parents are ready to provide extra digital devices for their children to support their educational pursuits. They regard these extra devices as important educational resources rather than mere platforms for communication or entertainment. Conversely, lower caste parents often provide digital devices with the primary intention of offering a means of communication or entertainment for their children. Many lower caste parents, particularly those from lower economic backgrounds, instruct their children to share these digital devices either with their siblings or with the parents themselves. Based on the responses from the students while 80 percent of the upper caste parents were ready to support the usage of a device for learning only 25 percent of the Dalit parents and 57 percent of the OBC parents were ready to support the technology usage.

Ardra is an upper caste student who has a digital device (laptop) for learning purposes. She explained that her parents do not disturb her learning process while she is using her laptop.

They have no problem with the usage of digital devices if I am studying. They will understand that I am studying if I am using my laptop. They are

supportive of my studies. They subscribed to the Xylem for me and next year they will subscribe to it for NEET coaching.

At the same time, Anamika is a lower caste student from a lower-income family who shares her phone with her brother. She explained that her brother and mother will presume that she is not studying while she is using a phone.

My brother will grab the phone. Or my mother will ask my brother to take that away from me. They will ask me to study and not to use the phone as I am sitting in front of a book.

Students from upper caste backgrounds typically receive substantial support for utilising digital technology in their education. Parents from this group are highly involved in their children's education. Upper caste students frequently report that their parents are deeply committed to their academic progress, offering both material and other forms of support to enhance their digital learning experience. As a result, they are inclined to take education and the usage of digital devices very seriously and allocate more time to learning and education, leading to a reduction in their usage of digital devices for entertainment and communication. Such parental pressure and continuous involvement are less common among lower caste students.

As opposed to their higher caste counterparts, parental involvement among Dalit students is largely limited to the occasional inspection of the students' digital activities, which often results in discouragement or criticism of digital usage. Although, the students claim that their parents continuously urge them to study or learn the quality of engagement is different from the upper caste parents. Dalit and OBC parents from lower economic situations tend to have lower levels of education compared to upper caste parents, and this often translates into lower confidence in engaging and inquiring about their children's education. Although the students claim that they routinely enquire about the studies, the quality of engagement, specifically regarding subject details, suggestions regarding future academic plans and understanding their children's learning practices, were comparatively lower among the lower caste and less-educated parents compared to their upper caste and more educated counterparts.

To elucidate, parental engagement in digital technology usage for education was explained by two students from different caste groups in the following manner.

They don't have any problem with my usage. Actually, they introduced the educational part of technology to me. They subscribed to Byju's and asked me to use technology for learning. My mother especially gave me a lot of information and asked me to research different colleges and courses on Aeronautical Engineering. She keeps on pestering me to do my graduation in VSSC (Vikram Sarabhai Space Centre). Since she is working in Manorma, she hears a lot of news about this kind of colleges and subjects. She always asks me to visit their website and tries to develop an interest.

The above statement is from Arunima, an upper caste student. Her father works as a manager in a hospital and her mother works in Malayala Manorama newspaper. Both are postgraduates. Arunima's mother involves in her education and helps her to plan about her higher education and career.

Whereas Neha's response is different from that of Arunima's. Neha is from a different class and caste category. She is a Dalit student, and her parents work as daily wage labourers. She said she is not sure about her parents' educational qualifications. Additionally, they run a teashop in the afternoon. When questioned about her parents' involvement in her education, Neha mentioned that her parents do not have much knowledge about her learning practices. Consequently, they regularly encourage her to study but are not directly engaged in monitoring what or how she is learning. Their primary suggestion is for her to excel in her higher secondary studies. However, they do express concerns about her mobile phone usage.

They are not much aware of my subjects. They ask me to learn all the time and to pass with good marks. So, they don't have to pay a fee for my degree course. Also, they want me to get an office job

To understand the approach of her parents regarding technology usage for education, Neha's next response is useful.

They are completely against my usage as they know about my addiction. They don't like my usage, especially Instagram.

Social pressure from immediate family members to maintain educational standards serves as a motivating factor for upper caste students, encouraging them to use digital devices in a more focused and strategically calculated manner. Even when upper caste students come from lower economic backgrounds, they often have relatives who provide them with guidance and motivation. This support system contributes to their efficient and effective utilisation of technological devices for learning. Examples of successful immediate family members serve as sources of inspiration for students and boost their confidence in pursuing similar paths. Students have the opportunity to inquire about the strategies these relatives applied to achieve their success, and they express the intent to apply these strategies in their own educational practices.

For instance, Gauri is an upper caste student who comes from a comparatively poor background. Her father is sick and unable to work, and her mother is an insurance agent. She explains how her cousin, an engineering student in the top engineering college in the state is pushing her to write the entrance examination and become an engineer.

My cousin sister is an Engineering student at CET (College of Engineering Trivandrum) and she is the one who motivates me to pursue Engineering. She sends me links of study materials and videos from her college. That actually motivates me to prepare for KEAM.

Also, how is she motivated to focus more on her studies rather than wasting time on internet.

It is not necessarily the technology, but it motivates me to learn more and to keep my focus on learning rather than scrolling things on the internet.

Conversely, many lower caste students tend to hail from lower socioeconomic backgrounds, and many of their relatives share similar economic and social

circumstances. This diminishes the opportunities for lower caste students to find someone to inspire them, and they tend to lean more towards traditional and established educational practices. Additionally, they lack a higher yardstick of academic achievements that would push them to perform better. Many higher secondary students are already more educated than their parents and relatives, and the exposure of the families of these lower caste students to technology is also limited. This is because their families and relatives are engaged in low-skilled occupations with minimal use of technology. None of the Dalit students from lower middle-class backgrounds have mentioned about a highly successful relative.

However, if lower caste students do find themselves in a more favourable economic situation, they often choose to distance themselves from their family and social background. This is evident from the responses provided by the Dalit students who come from more favourable economic backgrounds. Both Neeraj, studying in a CBSE school, and Manisha, attending an urban government school, relocated to a city that is distant from their relatives. Their families are in a better financial situation than their relatives, and their new neighbourhoods are predominantly middle-class with improved occupational and social statuses.

Apart from this, upper caste students tend to have more exposure to the professional usage of digital technology by their parents or family members compared to their lower caste counterparts. During interviews, 46 percent of the upper caste students reported that either one of their parents uses digital technology for professional purposes. In contrast, only 28 percent of the OBC and 6 percent of the Dalit students mentioned witnessing the same among their parents. This stark difference in exposure has had a significant impact on shaping their attitudes towards digital technology. While only a minority of students have explicitly mentioned that their technology usage was influenced by their parents, those who have been exposed to the professional use of technology within their families tend to utilise it more extensively for educational purposes and strategic advancement compared to their peers. Another interesting finding from the interview is that none of the Dalit parents were involved in a profession directly related to technology like IT (Information Technology) and IT enabled services.

As an example, Eeshwar's both father and mother are involved in professional occupations which require the regular use of technology. He explained their usage accordingly,

They use it a lot. Father has to use his laptop all the time for his work. Flight schedules, staff working arrangements and whatnot. He is always busy with his work laptop. Mom also uses it. But mostly for entertainment. Also, they watch programmes on smart TV, if that counts

He claims that they support his digital usage, and they appreciate how technology has made learning easier and more efficient. They encourage the use of technology for education.

They support my usage. They always tell me that when they were studying it was very difficult to clear the doubts and to read extra, and now for us, it is very easy. So, they always encourage the use of technology for learning purposes. The only demand is to be cautious while using it. The resources should be used effectively.

The profession or career of parents and family members also exerts a significant influence on students' aspirations and correspondingly plays a pivotal role in shaping their digital habitus. Upper caste students, who often hold higher educational, and career aspirations nurtured within their family environments, tend to employ digital technology strategically in pursuit of their career and academic goals. On the other hand, their lower caste, especially Dalit counterparts, who may not always harbour clear academic or career aspirations, often view technology primarily as a means of communication and entertainment.

Upper caste students typically discussed not only the undergraduate programs they planned to pursue but also the specific higher education institutions they aspired to attend. Many of them drew inspiration from immediate family members and were enthusiastic about replicating their family members' academic accomplishments. Such motivated educational targets impel them to utilise the technological devices at their disposal in a focussed manner to achieve those goals.

Take Janaki's case as an example. Janaki is an upper caste student who is preparing for NEET examination. She claims that her mother, an Ayurvedic doctor, pushes her to perform well and to become an MBBS (Bachelor of Medicine Bachelor of Surgery) doctor and not to become an Ayurvedic doctor.

My mother wanted me to be an MBBS doctor. She pushes me for it as she says that ayurvedic doctors are not as respected as MBBS doctors in the society. Although she is a really great doctor, she is not given the respect that she deserves. So, she wants me to go for medicine (MBBS)

It should be noted that the OBC students from better economic situations are also encouraged to pursue higher dreams like their parents.

Sanjana, an OBC upper middle class student's father is an IIT alumni, and she explained how her father motivated her to join the IIT and how she is employing digital technology to achieve that target with the help of her father.

My father was an IITian and he wants me to join in IIT as well. He always mentions about the difficulty of getting into the IIT and the importance of that. His life was changed because of IIT.

The continuous motivation from Sanjana's father helps her to push harder.

He always asks to study and to do hard work. Hard work will pay off, that is what he always says. He doesn't have any issue if I am studying with my laptop. He used to download and give me some mock test questions from very old IIT papers and asked me to solve them with him. It is quite challenging. I think new questions are way easier than the old ones.

It was evident that the family environment shapes the digital usage of students.

5.4.3 Role of Educational Institutions in Shaping Digital Habitus

Another important emerging theme is the influence of the institutional habitus on students' digital habitus. The interviews revealed that government schools tend to restrict or discourage the usage of digital technology among students. Teachers in these schools often view digital devices as distractions or disruptions to the learning process.

A significant finding from the interviews is that, instead of challenging the status quo, state-run government schools, in particular, are helping to reproduce or even reinforce existing structural and educational inequalities. Students hailing from upper caste backgrounds and higher socioeconomic classes, who possess substantial primary digital capital, often find the digital technology infrastructure of government schools to be limited. They perceive the technology provided by these government institutions as rudimentary in comparison to the technology that they are aware of. These students possess a familial digital habitus, cultivated within their family environment. They are capable of mobilising their high capital to shield against any dissonance in the field, rather than accepting a transformation of their established digital habitus. In contrast, students from lower caste communities attending government schools, who have limited exposure to and experience with better digital technology, were obliged to develop a cultured digital habitus based on the limited technological infrastructure and the narrow perspective offered by these schools.

The digital engagement in government schools is dominated by rudimentary technological applications such as simple copy-paste of online materials into a slideshow using a projector. This develops a considerable difference in the perspective and disposition of students towards digital technology and its application in an educational context. Students from higher socioeconomic backgrounds, primarily upper caste, in these schools, are well-acquainted with sophisticated, state-of-the-art technologies and devices. Consequently, their understanding and perception of technology and digital interaction for educational purposes considerably differ from the school context.

Roshini, an upper caste student in the government school explains the limitations of the technological infrastructure of the school and the discontent of teachers in utilising digital technology.

Teachers are discouraging tech usage. They consider it a distraction from the studies. Although they send notes via WhatsApp, they ask us to take printouts and then read the notes. I think they like the old method of teaching. Even when they use smart class, they simply make PowerPoint presentations and teach like a normal class. They don't even use new presentation software to make it more interesting.

Moreover, government teachers frequently emphasise the significance of physical classes and express criticism towards online classes, considering them as a mere repetition of previously attended lessons. While they do utilise digital platforms like WhatsApp to distribute PDFs and other notes, they often encourage students to take printouts and adhere to traditional learning practices.

For instance, Ashmitha, a student from the government school mentioned how her teacher criticised the digital usage among students.

Teachers ask us to not use phones unnecessarily. They don't encourage the usage. They allow usage only for clearing doubts. They say that it is a huge distraction. They know that we may get distracted very quickly. One teacher always complains that we have the attention span of a Skink. So, the digital devices and social media are customised accordingly

Students in this study from lower castes and lower economic situations, who often lack exposure to the latest digital technologies and infrastructure, tend to adhere more to traditional learning practices. They place greater importance on physical classes than online classes, viewing the latter as an emergency measure that was introduced as an ad-hoc pedagogical practice during the pandemic, and consider it largely irrelevant in the post-pandemic era.

In contrast, CBSE schools (Central Board of Secondary Education) and International Schools were found to provide facilities and support for utilising the possibilities

of digital technology. These schools view digital tools as valuable resources that can enhance learning and equip students to engage with a competitive society. Students from upper caste backgrounds attending CBSE schools are more likely to have access to digital devices, utilise digital resources in their education, and develop a positive digital attitude and habitus. Also, the students attending these schools are much earlier exposed to advanced digital technology and digital skill training. Important digital skills such as coding, animation, smart classrooms, 3-D printing, digital libraries, and robotics labs are introduced to the students at their high school or upper primary level itself. This helps the students from these schools cultivate a higher level of understanding and perception about digital technology and its applications in education.

Take the case of Karthik, an international school student, when asked about school's digital environment he mentioned,

Yes. School's facilities are good. We have smart classrooms, digital lab and all. Teachers have recording rooms for online class. Some teachers have YouTube classes also. One teacher discusses about different courses and opportunities abroad through her YouTube videos.

The class of students is an important factor in their choice of educational institutions. The CBSE and International Schools are exclusively preferred by students of higher socioeconomic classes. However, despite coming from better socioeconomic backgrounds the integration of digital technology into educational practices and applying it for strategic advancement are lesser among Dalit students compared to their upper caste counterparts. Three out of four Dalit students in the CBSE school preferred traditional learning materials and classes and mentioned that they do not regularly utilise the digital resources provided by schools. These students are not digitally skilled and involved in capital-enhancing activities as compared to their upper caste counterparts. This shows that digital habitus cultivated from the family environment is not significantly challenged at the schools, despite having access to better facilities.

5.4.4 Career Aspirations Influencing the Utilisation of Digital Technology

This study reveals that a critical difference in the utilisation of digital technology for strategic advancement is rooted in the future goals or aspirations of the students. The students coming from upper caste or higher socioeconomic backgrounds have a clear and focussed objective about their future career and profession more than their lower caste counterparts. The students from upper caste backgrounds were more likely to express their interest in a particular course or career path even before their higher secondary examinations. On the contrary, the lower caste students, particularly the Dalit students were not having a concrete plan for their future, and they were awaiting their higher secondary grades to make a more informed decision. This explains the distinction between the upper caste and lower caste students in planning their future and the importance of grades or higher secondary results in determining their path.

The upper caste students are more confident in their success, rely less on their higher secondary grades to decide their future, and are less likely to change their career path as they can capitalise on their economic, cultural and social resources. Hence, many upper caste students expressed their interest in repeating the competitive examination in the next year if they are unable to qualify in the current year but not to alter their choice of higher education or career goal. These upper caste students seem to utilise digital technologies to gain more knowledge and strategic advantage to achieve those predetermined goals.

Most of the Dalit students from lower economic situations were awaiting their final secondary examination results to determine what educational and career path to choose next. Only 37 percent of the Dalit students have made any decision regarding their future. On the other hand, 75 percent of the upper caste students and nearly 67 percent of the OBC students in the interviews have a better understanding regarding their future career or educational destination. This distinction in planning their career and educational trajectory is generating distinct digital utilisation and perception among students from different castes.

Some of the upper caste students tend to choose non-conventional career paths and they rely more on digital technology to learn and understand about these

careers or professions. Notably, the students who expressed their interest in non-conventional career paths were predominantly upper caste. For instance, Jyothir is an upper caste student in international school, and his intention or aim is to study industrial psychology. This is not a popular career or academic choice in Kerala. Even though his family is educated and in a better financial position, they are not able to provide the necessary guidance for him to achieve his goal. Hence, he utilised digital technology to develop knowledge regarding his career path.

I have heard about industrial psychology, and I found it very interesting. But I don't think it can be learned here [Kerala/India]. My father asked me to do BA Psychology here and then to go for MA industrial psychology. I am not sure it is necessary. I have checked websites and BA programs are already available abroad.

When asked about the different platforms he use, the response was,

I use Quora, Reddit etc. You just post a question or even search your question in google, you can quickly get answers from experienced people. There are many other platforms to know about courses and their possibilities. They [parents] prefer standard courses. I need to convince them

The aspirations have a significant influence in the usage of digital devices for education. If the student intend to go for professional courses such as Engineering or Medicine, they will be preparing for entrance coaching and digital devices are an integral part of their coaching as many institutes provide digital resources, and online sessions and mock tests. In this research mostly students coming from upper caste background irrespective of their economic situation are preparing for these entrance examinations. Although some of the lower caste students from both OBC and Dalit categories intended to prepare for the entrance examinations, they were mostly from better economic situations. However, the explicit aim to join a particular group of elite institutions such as IITs (Indian Institute of Technology), NITs (National Institute of Technology) and AIIMS (All India Institute of Medical Sciences) was mainly witnessed among the upper caste students.

Most of the students coming from lower caste background in this research haven't determined their career path yet or they intent to prepare for the tests for government jobs, which makes their preference for a stream of graduation less relevant. Some of them want to choose a graduation course which has less entry competition.

For example, Abhishek is a Dalit student at CBSE school. His father is a contractor, and his mother is a nurse in a government hospital. When asked about his future plans, Abhishek explained that he is already going for entrance coaching but is not good with maths and physics. He is not sure about which Engineering stream he wants to choose, and he may prepare for government examinations which his mother wants him to prepare for. When asked about using technology for finding a suitable course to study, he said that he haven't tried that yet.

No. My mother asked me to prepare for PSC courses. I am thinking about joining for some course and prepare for PSC. Maybe I can complete Engineering and prepare for PSC. So that I can apply for government technical jobs also.

When asked about the mass competitive examinations and engineering, because his father is a contractor in the construction field, he responded by saying that

That is correct. I haven't decided about that yet. Maybe I will write the KEAM and then I will decide. Anyway, I have already joined for the coaching, so I will write the examination.

A similar reply was received from Neeraj Nath, another CBSE student from the Dalit category when asked about his future and his choice of undergraduate course. He aspires to emulate his mother, who is a government employee and secured her job at the age of 22. Neeraj believes that, rather than meticulously planning his undergraduate studies, it is more important to prepare for a Public Service Commission (PSC) test. He sees this as a more secure path for his future, as opposed to investing time in higher education. Also, he resorts to traditional practices while preparing for the PSC test rather than integrating digital technologies into his preparation.

I don't have any preference for any of that. A degree is a must for many government jobs, so I will join for some degree course. May be for some BA course. Science is a bit difficult for me. I will write all PSC examinations. Any government job is fine for me.

The strategic utilisation of devices for career planning and advancement is also a critical factor in deciding the digital inequality and the concomitant reproduction of socioeconomic inequalities in the society. The students from higher socioeconomic background intent to follow the career of their parents, especially if they are in professional fields such as Technology, Engineering or Medicine. Hence, they are more focussed in their entrance examination preparation by using their digital devices. Also, they are much more invested in their future career options, and they tend to utilise technology to learn and pursue new courses, subject specialisations and higher education institutions both in India and abroad.

Karthik's case is a perfect example for this situation. Karthik is an upper caste student in an international school. He wants to go abroad to learn a course related to data science as such courses have more job opportunities abroad. Hence, he has searched and found the course of his interest and has also identified the pathways to attain that by utilising digital resources at his disposal.

I want to learn data science. I think it is a waste to do a normal engineering for four years and then to do a Masters in data science. But such courses in India are very limited. Hence, I am looking at Universities abroad to learn a course that aligns with my interest. There are a lot of options available there.

When asked about the sources, like educational consultancies, which is now very prevalent in Kerala, he replied,

Consultancy is next stage. I have to decide the course and university and then I may approach a consultancy firm. Now I am going through university websites and other educational websites to understand the courses they offer.

Such effective utilisation of digital resources for securing their future was a prevalent practice among the upper caste students.

In contrast, students from Dalit backgrounds showed less enthusiasm towards joining elite institutions and exploring varied career trajectories. Even those from better socioeconomic backgrounds felt pressure from their parents to pursue safer, more established career paths like government jobs, mirroring what their parents managed to accomplish. Hence, they follow the traditional methods of learning without incorporating digital technology into their education and career planning.

When Neeraj Nath was asked whether he utilise digital technology for PSC preparation, he replied that he prefers traditional methods of learning and preparation.

As I said, any Government job is good. Also, there are a lot of rank files and questions available. I listen to some YouTube classes for PSC. But that is not very often, I have to join a coaching centre after joining for a degree course for serious preparation.

Also, students from upper caste backgrounds often have a clearer sense of their career paths and approach education with a high level of seriousness and competitiveness. This distinction was apparent in the time allocation between learning and entertainment activities. They emphasised the significance of mock tests, online classes, and consistent study practices, exhibiting heightened concern about competition and giving substantial importance to the outcomes of weekly and monthly mock tests from their online or offline coaching centres. This mindset drives them to use technology primarily for educational purposes while exercising control over its usage for entertainment and communication. This strategic utilisation of technology enhances their ability to achieve educational and other developmental goals. They allocate more time to learning and leverage technology to augment their learning processes.

For instance, Eeshwar is an upper caste CBSE student preparing JEE (Joint Entrance Examination) and aims to join IIT. He wants to become a software engineer. Eeshwar is attending a coaching institute and follows their online coaching classes and materials regularly. He explained the importance of digital technology in his education.

It is extremely useful if you are truly invested in education. If you think you can't control the urge for entertainment, you need to stay away from it. If you can stay focussed on your studies, it is really helpful and a huge support for your learning. It is almost like a part of my body now. The first thing that I search for in the morning is my tab. Even before my specs, I need my tab in my hand.

The upper caste students who have a better vision of their fictitious future, employ digital resources to reinforce their ambitions and career aspirations. They actively seek information about courses and their desired institutions, using these insights as motivational tools to achieve their goals. Also, the family members of the upper caste students who have already achieved success provide guidance and information through digital media about institutions and career programmes further invigorating the students' pursuit of their ambitions.

Take Deepthi's case, she is an upper caste student in a rural government school, who aspires to join an integrated Life Science program at Hyderabad Central University (HCU). She actively engages with YouTube content related to the campus and various programs at HCU, following vloggers who provide insights into life at the university. This exposure serves as a significant motivation for her pursuit of that particular goal.

I used to watch videos and content related to HCU. I follow one page in Insta and YouTube which explains the life at HCU and the campus. It is a huge campus, and the integrated life science programme is really great. There are only 30 seats for the programme. So, I need to get within the first fifteen. I really want to study there. After watching those contents, I became addicted to my HCU dream. Now that is a problem, if I don't get admission there, I will be really disappointed.

5.4.5 Neighbourhood Influencing Digital Usage and Digital Habitus

The neighbourhood in which students reside has a critical role in shaping their digital habitus. The student's neighbourhood is largely determined by their economic background. Although many students do not recognise the direct influence of neighbourhood in their digital usage, some students describe the importance of social learning spaces, online gaming in their neighbourhood, and the pressure of competition in housing colonies. The upper caste students from better socioeconomic backgrounds highlighted the role of residence associations in shaping communities and organising programmes that influence or impact their academic performances and motivations. These initiatives involve celebrating the academic success of the students, awarding prizes for outstanding achievements, and displaying posters and banners honouring those who have excelled in public examinations. According to these students, these activities heighten the pressure on both them and their families.

For example, Arunima is an upper caste student in the urban government school. She is from a better economic situation. Arunima lives in a neighbourhood that predominantly occupies businesspersons, doctors, bank managers, and IT professionals. She mentioned that the residence association and community members are very active, and it can influence her learning, academic stress and competitive mentality.

Yes. There are a lot of activities conducted by residence associations related to education. There are quiz competitions, poem writing, essay writing etc. Also, there are prize distributions, and they erect flex of students who have won A+ [above 90 percent] in all subjects.

When requested to elaborate on the social pressure exerted by the neighbourhood community for the upcoming board examinations, she replied,

That is a stress. I have won prizes in my 10th standard. They have already asked my photo for to erect my banner even before my +2 results are published.

When asked about the situation if she is unable to score a 90 percent in all subjects, she responded quickly by saying that,

Please don't say that. It will be so embarrassing. They already believe that I will get such a result. My sister has done this all the time. They think that I also have same kind of talent. I don't know what to do if I can't get a full A+. I might need to elope from my home (laugh). I am afraid of language. Some say that they never give you full marks in language subjects. There should be a category for full A+ in science subjects.

The stress was visible in her face and sound. She considered her result as a matter of her family's reputation.

Hence, the constant and mounting pressure in the publicising of their academic results and the competitive atmosphere among their peer group within the same neighbourhood is a significant driving force among students to focus more on educational activities. They perceive their academic results as reflections not just of their individual capabilities but also as a representation of their family's status and social positioning within the neighbourhood and society at large.

The middle class and upper middle-class neighbourhoods actively involve themselves in and communicate about the education of children, and this results in the provision of material and immaterial digital resources for their children to keep up with the pace. Also, the constant pressure and comparison oblige the students to stay more focused and actively utilise digital technology for educational purposes.

Sanjana is an OBC student who studies at CBSE school. She explained that her mother communicates with their neighbours about her education and suggests online resources that she is unaware of.

They talk about it. I think that is the only thing they talks. The problem is she will get some new information every time. Then she will come and ask

me whether I am aware about. Have you seen this channel? I heard about this course have you checked it etc.

Such active involvement and engagement are not prevalent in lower class neighbourhoods. It should be noted that only two upper caste students reside in a comparatively poorer neighbourhood in comparison to 58 percent of the Dalit students, and 28 percent of the OBC students. The lower caste students residing in lower class neighbourhoods stated that the community members are involved in low skilled, low wage jobs and the main community activities tend to be religious festivals, marriage functions and other personal events. It seems that in lower class neighbourhoods, residence associations might not be as actively involved in organising educational competitions or intense comparisons of academic performance among students, as is more common in affluent neighbourhoods. It appears that in these lower-middle class neighbourhoods, the celebrations for passing exams might be more generalised, focusing on the achievement of passing rather than specific grades or percentages. As some of the students mentioned, passing the exam itself might be considered a significant achievement, resulting in celebrations such as distributing sweets regardless of the grade or percentage attained. Additionally, there seems to be less communication and sharing of information regarding academic activities, with more interest in skill development courses and their employability prospects rather than gathering knowledge about specific digital academic resources. As an explanation for this, Sudhimol's response would be helpful.

Sudhimol is a Dalit student from the vocational higher secondary school. Her both parents are daily wage workers for a government contractor. She explained that her neighbourhood is not active in organising academic competitions and the flex boards will be erected by a sports club in her village for all students who have passed the examination.

There are not many activities organised by residence associations. All activities are organised by the youth sports club and political parties. There will be prizes for all the students who have passed the examination. There is no difference between A+ winners and the rest. Photo of every student who has passed will be included in the flex boards. Everyone will distribute

sweets here. Some of them will distribute sweets even if they do not pass, to make others believe that they have passed the exam

Also, she mentioned that there is minimal communication regarding learning activities between her parents and neighbours.

They [parents and neighbours] talk do about courses which we can do in future but not about resources and books, I think. They often ask about courses which are good and easy to attain jobs.

As explained earlier, Dalit students from better economic backgrounds often choose to relocate to urban or better neighbourhoods, fostering weaker ties with their extended families. On the other hand, upper caste students from lower economic conditions are less likely to reside in lower and lower middle class neighbourhoods. This was deduced from the occupations of their neighbours mentioned by upper caste students from lower economic situations. The inherited capital of upper caste families might have potentially influenced their ability to maintain residence in better middle-class neighbourhoods, even in instances where their current economic situation might not directly correspond to that status.

Whereas Dalit students from lower class background are predominantly residing in lower-class neighbourhoods. Also, upper caste families irrespective of their economic condition and location of residence tend to maintain stronger connections with their extended families. They frequently draw inspiration and gather information about academic resources and activities from these family connections. It must be noted that only two upper caste students are coming from poor neighbourhoods in comparison to more than half of the Dalit students.

5.4.6 Digital Habitus Reinforced by Digital Usage Pattern

An important finding from the interviews is the influence of browsing history on the suggested content received by students. The interviews revealed that lower caste students often encounter distractions due to the nature of the suggested content they receive while browsing the internet. These suggestions may lead

them away from educational material and towards unrelated or less productive content. In contrast, upper caste students, who potentially have a different browsing history, tend to receive more relevant and educational content suggestions. The browsing history of both parents and students plays a role in shaping the suggested content, which, in turn, influences the digital experiences and learning opportunities available to students.

Eeshwar, an upper caste CBSE student coming from a higher socio-economic background. Eeshwar possesses two personal digital devices, and he pays heed while using the secondary device that is dedicated for learning. He mentioned that he has noticed the difference in content suggestions based on the browsing pattern. He is attentive in filling his YouTube recommendations with learning related content.

Yes, that is correct. My YouTube and Google will all be filled with learning related content. Sometimes when I take my mother's phone, I can see the difference. I used to tease her for her video suggestions that can be seen in YouTube.

The digital engagement patterns of students tend to structure their digital habitus, and the shared usage of digital devices with their parents also plays a significant role in shaping their future digital usage. The students from lower classes, especially the lower caste students who share digital devices with their parents and siblings encounter this situation. The internet activity of their parents, predominantly centred around entertainment and communication activities, influences the digital environment of the students and consequently shapes their digital habitus.

Anamika is an OBC student from the rural government school. Her father is a driver and mother, a home maker. Anamika shares her mobile with her brother. Anamika's brother follows gamers and travel vloggers, which influences her digital usage.

I have to go through his contents and notifications all the time. The YouTube will be filled with gaming videos and travel vlogs. I am also getting

used to these gamer videos and travel vlogs. Now I can speak in the way travel vloggers speak, I know a lot of their vocabulary. Also, the notifications from my channels will be also there.

In contrast, upper caste students who own personal devices are somewhat insulated from the influence of parental usage in shaping their digital habitus. Moreover, a few technologically aware parents of upper caste students intentionally maintain a distance from their children's digital space and encourage them to use it primarily for educational purposes.

For example, Janaki is an upper caste student in CBSE school. Her both parents are highly educated. She mentioned that her parents try to keep their digital activities isolated from Janaki's digital space.

Obviously because of the AI used by these companies. That is why my parents never share their phones with us. They surf through all these news, cookery, fun and travel vlogs. So always say that their YouTube and other feeds might be very distractive, and we should be very careful while using it.

Upper caste students who possess a dedicated technological device for learning receive suggestions and notifications based on their previous search patterns. This, in turn, further encourages them to utilise technology for educational purposes, leading to an upward spiral in their educational technological usage.

Karthik's response is important to understand this. He is an upper caste student from international school. When asked about the problems with recommendations and suggestions in digital devices, Karthik mentioned that

Very much. You need to ask properly in Google otherwise you will fall into the rabbit hole. Especially near examinations you have no time to waste. Also, if you search for unnecessary things, you will get all those trash suggestions on YouTube and other platforms. So, either you use dedicated platforms for learning, or you need to be very careful when you search and watch content on social platforms like YouTube.

An important factor that shapes the digital space and future digital usage is the strategies adopted by the students to avoid distraction. One of the major concerns of the lower caste students while using digital technology for education was the potential distractions stemming from the abundance of entertainment content available on digital spaces. However, they were able to sustain their focus for a longer period of time while using it during the examination period. Whereas, the upper caste students, accustomed to regular educational use of digital devices, employ more effective strategies to mitigate distractions and maintain focus on educational content while using technology. Their commitment to integrating digital technology into their daily learning routines leads them to adopt various practices. These may involve using distinct IDs for their secondary devices, deactivating notifications, and employing focus modes on their devices to minimize distractions and optimise their learning environment. Two upper caste students mentioned about using distinct IDs for their learning devices.

For instance, Janaki is a CBSE student from upper caste background. When asked about the possibility of distraction while using digital technology, she explained that

That is true. It is a distraction for a lot of students. But there are mechanisms to avoid distraction. If you can keep your keep your notifications off and block the unnecessary websites and channels, then you can effectively use it for studying. There are a lot of students who do use this efficiently for exam preparation. So, if I keep away from this due to fear of distraction, I will be the one with a disadvantage. These examinations are really competitive, and you need to keep your concepts crystal clear.

The findings suggest that students predominantly derive digital recommendations and suggestions from their routine digital engagements rather than consciously crafting a deliberate digital habitus. Only a small minority indicated intentional efforts to carefully construct their digital space, with most students naturally shaping their digital domain through regular digital interactions and those who intentionally cultivated the digital spaces were predominantly from upper castes.

Notably, five upper caste students mentioned they used to remain cautious of what they search, while two among them keep a separate digital ID for their educational device, only two OBC students mentioned the same. Whereas none of the Dalit students were trying to cultivate a digital space that provided more educational content recommendations. Interestingly, despite being aware of this process of machine learning algorithm and pattern recognitions, the majority exhibited an acknowledged ignorance, allowing their digital preferences to organically shape their digital habitus. For instance, Aansilla, a student from the CBSE school mentioned that she is aware of the suggestions and recommendations influenced by her previous internet activities.

If you are talking about the search results, yes, I think so. The suggestions from google especially in the autofill I can truly sense that. If I type D I M, the Google will autofill it into dimensions which makes your search quite easy. Also, the news suggestions in Google pages will be all related to entrance examinations and other education related stuff. Whereas, in my mom's mobile it will be all entertainment and cookery related news.

This indicates the formation and reinforcement of distinct digital habitus among different caste group of students

5.5 Non-Conforming Participants in Research

While the majority of upper caste and lower caste students tend to align with the themes mentioned above, there exist certain outliers who do not fit within the structure of these identified patterns. Among these outliers are upper caste students from higher socio-economic backgrounds who do not receive significant family support for using digital technology and have no intention of using it for learning purposes. They view technology as a potential distraction from their studies and prefer to rely on traditional learning methods.

For instance, Chandhana is an upper caste student in CBSE school. Her both parents are postgraduates. Her father is a police officer and her mother, a head nurse. Despite all these conditions, her digital usage for educational purposes is

very limited. Her parents restrict digital usage and urge her to resort to traditional learning practices.

I don't use it much for education, my parents won't give the device in my hand while I am studying.

She claims that her learning completely relies on traditional learning methods such as books, printed materials and other supplementary sources.

Similarly, among lower caste students, there are those who are eager to use technology for learning and strategic development. Some lower caste students from lower economic backgrounds have the desire to utilise technology for learning and career planning but face challenges in doing so due to limited access or resources. On the other hand, there are also lower caste students who clearly employ digital technology for learning and strategic career planning, as evidenced in the interviews.

Sruthi is an SC student in rural government school. Her both parents are involved in low-skilled low wage occupations. She uses digital devices mainly for learning purposes and is very confident in her digital usage

If I am studying I will be using the phone only for learning purposes. I am not going to use it for watching videos or texts or anything. I use it to check the concept, meaning, may be an alternate explanation from the textbook. If you read two or three explanations, the concept will be very clear. You don't have to learn it by-heart (rut-learning)

Furthermore, Athul is a Dalit student in the CBSE school who is technologically skilled and efficient like the upper caste students. He comes from an upper middle-class background and in response behaved akin to upper caste.

It was also difficult to categorise the digital behaviour of OBC students into one single group, which was another limitation of the interviews. Compared to the upper and Dalit caste groups, the OBC students had a complex pattern of digital behaviours. The students from higher socio-economic situations were mostly

following the digital patterns of the upper caste or general and the OBC students from lower socio-economic situations exhibited digital behaviour that is more similar to the Dalit students. Since the specific caste of each individual was not enquired in the interviews it is difficult to analyse otherwise.

Another important understanding regarding the non-usage of digital technology from the interviews is that the complete isolation from digital technology was again a privilege of the students who can get access to better traditional learning resources. Students like Chandhana and Neeraj are not using technology but are confident in their preparations due to access to better offline educational materials. Whereas students without access to such high-quality devices were obliged to rely on mass digital content for their exam preparation.

5.6 Summary of the Findings

The analysis of the transcripts generated four main themes and twelve sub-themes that effectively fit into the research's theoretical framework. The digital economic capital, digital social capital, digital cultural capital, and digital habitus were placed in the context of caste to deduce the main findings of the research.

There are two sub-themes under the main theme of digital economic capital and caste. The sub-themes are disparity in access to material digital technology and disparity in access to paid online resources. The disparity in material digital technology consists of inequality in access to digital devices in both quantity and quality between different groups of students. Likewise, the disparity in paid online resources discusses the difference between different groups of students in having access to resources that need to be paid or subscribed to. The inequality in both quantity and quality of access between students from different caste groups was established based on the evidence from the findings.

The digital cultural capital and caste is subdivided into three sub-themes. The first sub-theme discussed the disparity in digital skills and knowledge between students from different caste groups. It was found that upper caste students have a significant advantage over Dalits in terms of higher digital skills and knowledge. The second theme analysed the role of education and profession of family

members in shaping the digital capital of the students. It was found that the upper caste parents with better education and occupation transfer higher digital capital to their children. Whereas with lower education and low-skilled low-wage labour, Dalit parents are unable to transfer such digital capital to their children. Followingly, the proficiency in English language skills is examined in the third sub-theme under the digital cultural capital and caste theme. The disparity in English language skill between different caste groups and how it impacts the digital usage were identified in this part. Also, it was discovered that this gulf in English language skill is widening the digital usage gap between different caste groups.

Followingly, under the third theme, the digital social capital and caste, the role of social media usage and online interaction was analysed. Distinctions in the quantity and quality of usage between students from different caste groups were discovered. Despite spending lesser time on the digital online interactions, upper caste students discuss more regarding education and academic future than lower caste students.

The last main theme is digital habitus and caste. Under this theme there are six sub-themes. The first sub-theme discusses the role of neighbourhood in shaping the digital dispositions and attitude of the students. It was found that students from economically better neighbourhoods, which is predominantly upper caste, feel more pressure to use technology for learning purposes. Such an impetus is absent in lower socioeconomic neighbourhoods. Secondly, the influence and attitude of the parents and extended family in influencing the digital usage of students were examined. It was found that upper caste students with better social proximity to successful individuals were inclined to use technology for capital-enhancing activities. On the contrary, chances for such motivations were limited for the Dalit students. In the next sub-theme, career aspirations and its interlink with dispositions towards digital technology is analysed. It was found that upper caste students with higher educational and employment aspirations tend to use technology more proficiently than their Dalit counterparts. In the next sub-theme, the role of educational institutions in shaping the digital attitude and usage of students was explored. The findings point out that the government school discourage the usage of technology and only provide exposure to rudimentary technology. Alternatively, the CBSE and international schools encourage the

effective integration technology into learning practices and facilitates access to better technological equipment. Followed by the distinction in technological usage and its impacts in getting recommendations from the devices and applications were analysed. The findings suggest that the search history inherently influence the suggestions and recommendations in the digital space, and this encourage students to pursue more of those contents. Finally, the general distinction in the disposition towards technology was examined under a sub-theme. Findings establish that, while upper caste students generally perceive technology as an integral part of their learning activity, Dalits tend to view it as a medium for entertainment and communication, and a potential distraction for their studies.

Chapter 6: Discussion

This chapter examines and interprets the main findings in relation to theoretical frameworks and the existing digital sociological scholarships. The discussion chapter includes 4 major topics along with their respective subtopics. It is listed as follows

Major Topics of Discussion	Sub-Topics
Reconceptualising Digital Inequality in India	Material: Digital Autonomy; Quality of Digital Devices
	Non- Material/ Sociocultural: Digital Skills and Motivation; Empowerment
Reconceptualising Digital Habitus in Indian Context	Digital Dispositions, Attitude and Usage
	Formation of Distinct Digital Ecosystems
Reconceptualising Digital Capital in Indian Context	Arguments for Considering Digital Capital as a part of Primary Capitals
Revisiting Class and Caste in the Context of Kerala	Class v Caste
	OBC: A Peculiar Case

Table 5: Topics of Discussion

The findings of this research make original and unique contributions to the studies of educational and digital inequality in general, and to the Indian context in particular. The major points discussed in this chapter relate to the newly emerged nuances of digital inequality, digital capital, digital habitus, and the relationship between caste and class. The research findings successfully broaden the framework of digital inequality from token material digital access to both material and non-material digital access. Similarly, the important findings regarding digital capital and digital habitus enable the researcher to reengage with these theories and reframe them in light of new evidence. Furthermore, in this chapter, the highly contested debate between caste and class is effectively discussed based on the findings of this research. Most importantly, the intricate relationship between digital technology and educational and social inequalities in the technological era

is effectively established through this research. This chapter deals with four major topics of discussion on the light of findings.

Firstly, the contemporary digital inequality persisting in Kerala society is observed through both material and non-material terms. The subtopic of digital material inequality is extrapolating the access issues or the first stage of the digital divide in Kerala. The second subsection under this topic examines the non-material factors that produce digital inequality. These are the sociocultural factors that determine digital skills, motivation and the ability to use digital technology for empowerment.

Subsequently, the formation and perpetuation of digital attitudes and usage that reflect the caste habitus are discussed. In addition, the researcher explores the construction and reinforcement of that digital attitude in the digital domain. The first part of this section articulates the development of a distinct digital disposition, perception and usage. These features emerge from the sociocultural environment of the students, which includes both familial and non-familial factors. The familial factors or primary social environment that shape the digital dispositions and attitudes of students consist of influence from parents and close relatives. The non-familial factor encompasses the students' educational institutions and neighbourhoods. The second part of this section discusses how the distinction of attitudes, dispositions and usage of digital technology is reproduced and reinforced in digital space through algorithmic suggestions and feedback loops. Furthermore, under the second topic, the purposeful and strategic design of a peculiar digital habitus by a group of students is analysed. Through leveraging the capital, they construct a digital habitus for upgrading their position in the educational field. The third topic discusses the reason for treating digital capital as part of the three primary capitals, not as separate capital. The reasons are for that conceptualisation based on the data from findings is discussed here. Finally, the fourth part discusses the caste and class aspects in Kerala's context. In the first subsection of this topic, the importance of class and caste in shaping the Indian social structure is discussed. Followingly, the peculiar case of OBCs, a group which behaved like both upper caste and Dalits according to their class positions is discussed in detail.

6.1. Reconceptualising Digital Inequality in India

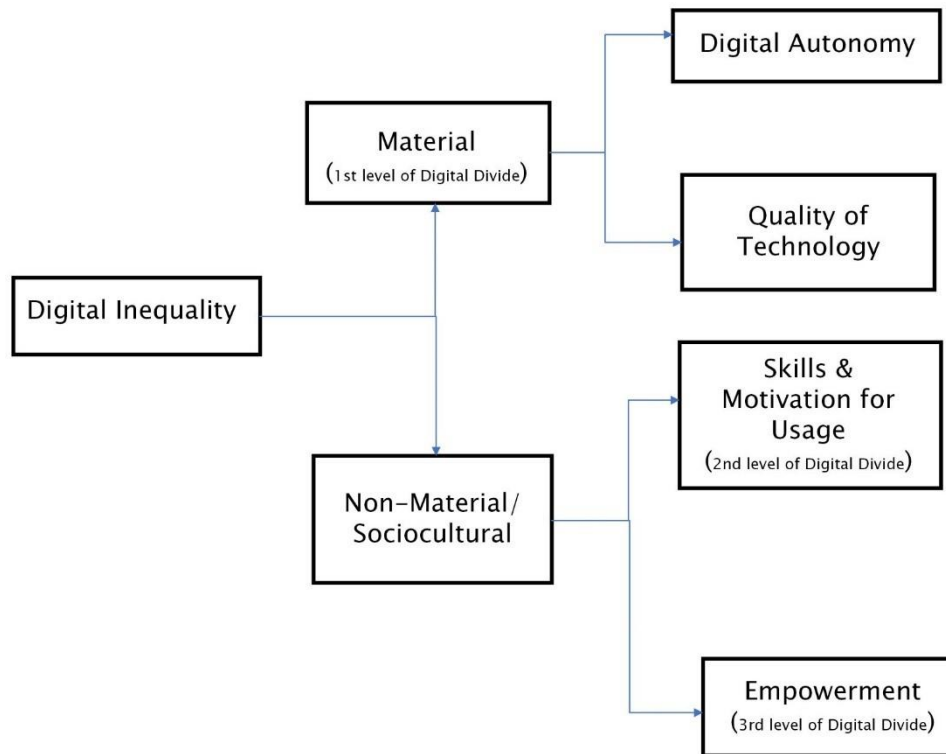


Figure 4: Flow chart of Digital Inequality Discussion

In this section, material and non-material aspects of digital inequality are discussed. Firstly, the role of existing qualitative and quantitative disparities in technology possession in perpetuating digital inequality is explained. Following this, the importance of non-material or pre-existing sociocultural factors in exacerbating digital inequality is critically analysed.

The first part of this section focuses on the aspects of digital resources. This includes the importance of autonomy in using digital technology and the quality of digital technology an individual possesses. Digital autonomy, in this context, refers to the ability to engage in digital space without hindrance. Drawing upon evidence from the findings chapter and other digital inequality research, the state of material digital inequality in Kerala based on caste is analysed here. Additionally, this section explains the new aspects of the first stage of the digital divide revealed in the findings. These aspects highlight the existing gaps in the digital divide scholarship. It extends the academic discussion of the digital divide

beyond the dichotomy of access and inaccessibility to the multilayered issues of the extent and quality of existing access.

In the non-material or sociocultural aspect of digital technology, two key subsections are identified: digital skills and motivation to use digital technology, and the ability to transform digital skills into real-life opportunities. This discussion illustrates that disparity in digital skills and the utilisation of technology for empowerment are influenced by sociocultural factors rooted in the distinction of capitals and habitus of individuals from different castes.

By emphasizing Bourdieu's concepts of habitus and the various capitals within the digital realm, particularly their interlinkage with the caste system, this main topic explicates digital inequality from multiple perspectives. The conceptual analysis of the findings of this research affirms the presence of all three stages of the digital divide (access, skills, empowerment) in India, which are deeply rooted in the intricate issues of caste that span across economic, cultural, and social facets.

6.1.1 Manifestations of Digital Material Inequality

The material access is the criteria for the first stage of the digital divide (van Dijk, 2020) and the findings from the interviews have exposed different layers of digital material inequality still existing in India's digitally most 'progressed region' (Moinuddin, 2021 p.9). This multifaceted digital resource inequality issue revealed through findings necessitates that the digital divide and digital inequality discussions in India must be extended beyond the contours of having and not having access dichotomy.

The findings of this research have opened up the possibilities of academic discussions in new areas of digital inequality. These areas include - the relationship between digital autonomy and the possession of a secondary device dedicated to learning; the distinction in digital choices due to the daily data cap on the internet in India; the quality of devices and its influence on accessing different educational materials; and the disparity in access to private ed-tech digital resources and its impacts on learning. Also, the interlacing of digital capital

with caste put forth the theoretical possibilities of using a Bordieuan lens to understand the structural issues of Indian society and education in the digital domain. These are comprehensively discussed under the subsections of digital autonomy and quality of digital technology.

The digital autonomy or the degree of liberty to engage in digital space and the quality of digital technology an individual possesses are the two important and often neglected factors of digital resource inequality studies in India. These two factors critically influence the quality of digital access and concomitant digital technology usage (Hargittai, 2021). Nevertheless, these factors are often overlooked in India's digital surveys and scholarships that largely focus on token digital access and engagement. For instance, as per the latest data from ASER (Annual Status of Education Report) 2023, internet penetration and digital connectivity are widespread in India and a large scale of the population, especially teenagers (89%) are digitally connected. The report claims that 92% of teenagers know how to use mobile technology and 50% of them are already using it for education. The techno-optimistic articles based on this report argue that coupling digital technology with open education will be a great advantage in the Indian educational context (Chavan, 2024).

However, such reports and arguments based on peripheral material access have neglected the different layers of digital resource inequality persisting in India. According to Hargittai, the usage of the term digital divide itself might not accurately represent the situation as it reduces digital inequality issues into a linear, binary dissection between haves and have-nots. Whereas digital inequality is a multi-layer disparity ranging from technological access, autonomy in the usage of devices and digital proficiency (Hargittai, 2011). Hence, the discussions on digital autonomy and the quality of digital technology are helpful in clearly understanding the intricate issues of digital inequality existing in Indian society.

6.1.1.1 Autonomy to Use Digital Technology Shaping Digital Usage

Digital autonomy is the liberty of the usage of technology whenever and wherever the individual desires (Hassani, 2006). The findings of this research indicate the close relation between digital autonomy, caste, and an individual's digital

economic capital. The possession of a higher number and quality digital resources enhances the digital freedom of an individual. It was observed that having access to a personal device, a secondary device, and better internet connectivity provides higher freedom for the student to utilise technology without inhibitions and restrictions. Hence, this liberty is closely related to the individual's possession of digital resources, or digital economic capital. Hargittai (2022) claims that technological autonomy is closely associated with the quality and number of digital devices and the quality of internet connectivity in a household. This disparity in digital economic capital between the upper and lower caste students was clearly established in the findings.

A new factor that emerged through the findings of this research is the important relationship between the ownership of secondary devices by the student and their increased digital autonomy. This heightened digital autonomy eventually leads to the utilisation of digital technology for learning purposes. It was observed that students who possess a secondary device experience more digital autonomy. This higher degree of autonomy motivates them to utilise it for educational purposes. Findings also revealed that while using the secondary device there is less supervision or surveillance from the parents, leading to even higher digital autonomy for the students. The experience of digital autonomy translated from the possession of a secondary device is a privilege mostly for the upper caste students and unavailable for most of their Dalit counterparts.

Similarly, access to a personal device, a key factor in digital autonomy and the integration of digital technology into education was a significant issue for lower caste students. Constraints on digital usage time were predominantly observed among these students due to limited device access and daily internet data limits. The necessity to share digital devices with family members and restricted internet access critically impacted their digital autonomy and usage. It is apparent that the limited digital economic capital of lower caste students, which restricts usage, shapes their digital habitus. As a result, they consider digital learning platforms and e-classes as unnecessary. The limited time is primarily allocated to consuming popular content and accessing only the most crucial learning materials. Lower caste students with limited access confine their educational use of technology to

examination periods, fostering a perception that technology is essential only for quick revision during exams.

In contrast, upper caste students with greater digital capital and autonomy view digital technology as a fundamental component of their learning process. They dedicate more time to searching, locating, and identifying learning content in the digital domain. By strategically utilising their economic, social, and cultural capital, these students integrate digital technology into their daily learning practices. It enhances their digital skills and fosters a positive attitude towards technology-augmented learning. This process concomitantly helps them to accumulate more digital capital and shapes their digital habitus.

The findings have shown that autonomy over technology is a crucial determinant of utilisation of technology for learning purposes. The ability to use technology without barriers increases students' confidence to regularly incorporate technology into their education. It was observed that students from upper caste backgrounds lessened their dependence on classroom-based instructions, prioritizing their convenience in the learning process. This shift was facilitated by their access to personal devices, online resources and uninterrupted internet connectivity.

Conversely, lower caste students, who had less control over digital devices, relied more heavily on traditional classroom instructions. This means that the students with higher digital economic capital or autonomy tend to convert this into digital cultural capital. Research conducted by Hassani (2006), Hargittai (2003), and, Robinson, DiMaggio, and Hargittai (2003) underscores the significance of autonomy in digital usage. They assert that freedom in terms of usage duration, unrestricted and unsupervised usage, and the liberty to access digital resources as and when needed, enhances digital skills and promotes sophisticated web usage among individuals.

A similar argument was raised by Robinson (2009). She argues that limited internet access compels individuals to prioritise their internet usage based on tasks that provide immediate gratification, leading to the development of a 'taste for the necessary' that concurrently shapes their information habitus (p.491). In contrast,

individuals with unrestricted internet access cultivate an exploratory attitude towards web activities. This enables unrestricted users to engage in ‘studious leisure’ with the internet and digital technology (p.504). Consequently, unrestricted technological access encourages these users to engage in learning through leisure, which ultimately enhances their digital skills and knowledge. Robinson employs the Bordieuan concept of ‘skhole’ to articulate that unrestricted users develop a disposition to dedicate their time to certain activities that may seem unnecessary to those with restricted access (p.491). This disparity in dispositions eventually results in a distinction between digital usage and digital capital.

This research echoes these concepts utilised by Robinson to explicate the caste disparities in technology usage and digital habitus. The lower caste students with limited daily internet quota and restrictive access to devices, develop a taste for the necessary for technology usage. This disparity was reflected in how students allocated their use of technology. Lower caste students, who only used technology for revision and quick learning during examination periods, viewed it differently from their upper caste counterparts. Upper caste students, with their higher digital economic capital and unrestricted access, considered technology as an integral part of their daily learning activities. They engaged in what lower caste students might consider as potential distractions or unnecessary activities, such as studious leisure. Hence, despite having personal internet access, unlike Robinson’s lower-class participants those who rely on public internet facilities, the lower caste students cultivate a similar habitus due to the internet cap and constrained access. The daily data limit hinders the students from playfully engaging in the digital domain. The students who share digital devices have explained that they must consider the digital needs of their family members and need to save some data for unforeseen needs that might come up later in the day.

The access to Wi-Fi internet was also an important aspect in findings that determines the autonomy of technology usage. Findings identified that most students from the upper caste and better economic situations have access to Wi-Fi connectivity at home. In contrast, none of the students from lower socioeconomic groups, predominantly lower caste, have this resource. They are

completely relying on mobile data with a daily data cap for their online activities. The daily data limit is a hinderance to the digital autonomy of the students, especially those from lower caste and lower socioeconomic situations. According to the Australian Digital Exclusion Index (2019), relying solely on mobile data connectivity lessens the access aspect of digital inclusion (Wilson, Thomas, and Barraket, 2019). It limits the connection alternatives a person has and also decreases the data quota users can utilise, as mobile plans typically offer considerably smaller data allowances. It was considered as a 'second-class' access as their access and quality of usage is hindered by the monthly data limit (Crawford, 2011).

Although these studies are from the Western context where the internet charge is higher with a monthly data limit, despite higher quota availability of internet at a cheaper price, the findings of this research have shown that daily data cap was still affecting the digital liberty and choice of students in Kerala. This was explicit in the findings where the student from a lower economic background explained their limitations in utilising technology for education regularly. The daily data limit hinders those students from seamlessly integrating their education into the digital domain. The students like Abhirami confessed that they needed to reduce the streaming quality and play only selective videos to cover all the necessary portions within their daily data limit. This means those students were under-connected to the internet and digital space despite having access to it. Also, the 'dependable instability' (Gonzales, 2016 p.235), the chances of frequent connectivity disruptions becoming a norm is a part of the digital experience of those students.

However, contrary to the prevailing digital inequality scholarships, the rural-urban divide was not visible in the findings of this research. The locational disparity in internet availability and digital usage (Galperin, Bar, and Kim, 2017; Helsper, 2019) was not identified in Kerala. The rural and urban government school students exhibited the same level of engagement without any considerable disruption within their prescribed data limit. Even the students in the Social Learning Centre, which is located near the tribal areas, did not raise any complaints regarding their data speed and connectivity.

Another important factor that unfolded through the interview and is sparsely available in the existing literature is the role of private edtech subscriptions that provide higher autonomy for the students. The subscription to such paid online resources is significantly shaping the dispositions of students towards technology-augmented learning. The subscribers of paid online resources are mostly upper caste students. Those students explained the importance of such resources in strategizing their technology usage for education and exam preparation. It was explicit that those platforms reduce their dependence on time-bound, space-bound learning and provide more autonomy for their educational planning. While many students consider it a necessary annexe of their educational resources and subsidiary coaching classes for mass competitive examinations, students from rural government schools consider it as the main component of their competitive examination coaching due to the distance to the coaching institutes located in cities. Hence, the students in rural schools without an edtech subscription are unable to access high-quality private coaching.

Students like Eeshwar explained the role of these platforms in keeping them motivated and competitive by using strategies like regular mock tests, publishing national level ranking, small and frequent quizzes etc. Those platforms urge the students to sustain a higher level of digital engagement, particularly for education through consistently reminding them about their national ranking positions. Also, while the students without such subscriptions are obliged to consume unfiltered, unsupervised educational content produced for mass consumption, the subscribers are accessing high-quality customised content that helps them gain an edge, particularly in mass competitive examinations.

Hence, the possession of a secondary device, a personal device, and the quantity and quality of internet availability determine the digital autonomy of the individual and concomitantly their digital usage and habitus.

61.1.2 Quality of Digital Technology Shaping Digital Usage

The quality of digital devices is a significant factor influencing digital technology usage and digital inequality. The quality of digital devices includes larger screen size, better quality of screen resolution, larger storage capacity and better

software and hardware that makes the performance better. Findings have shown that while better devices such as personal computers including laptops and desktops, tablets and even smart televisions were owned by students from better economic backgrounds, mostly upper caste, the lower caste students' digital ownership was largely confined to smartphones.

Students with better digital devices or digital capital tend to allocate more time to explore educational and career opportunities in the digital domain. They integrate nuanced technological possibilities, such as animation, software, video, and interactive modules, into their learning and strive to accumulate more cultural capital, especially in the field of education. They expressed their interest in acquiring more knowledge about subjects, higher education and careers, and learning concepts in science and mathematics more engagingly using technology. Conversely, lower caste students with inferior digital devices ration their internet usage for educational activities and are more engaged in entertainment activities. This disparity contributes to the widening of the digital divide.

The research has found that differences in the quality of smartphones that give varied video and audio experiences create a distinction in attitude and usage especially while allocating it for non-entertainment activities such as education and knowledge creation for longer hours. Students like Abhirami explained their challenge while they were obligated to use low-quality smartphones for longer hours during the pandemic and how it negatively impacted their education. Studies that meticulously examine the difference in usage due to the disparity in the quality of smartphones are sparsely available. Although Ickin and colleagues (2012) investigated the factors influencing the quality of experience (QoE), they did not check the distinction in usage emerging from the QoE.

Furthermore, it was found that digital connectivity through smartphones is mostly utilised for communication and entertainment purposes by lower caste students. Students using low-quality mobile devices reported difficulties and cognitive strain during prolonged use, resulting in limited usage for educational purposes. It became evident that access to secondary devices, such as a computer, tablet, or even a smart television in some cases, significantly influences students' learning patterns. Students with access to a superior secondary device dedicated that

device to educational purposes, and the quality of usage was markedly different from smartphone usage.

Despite identifying lower caste students with a smartphone as digitally connected, scholars such as Katz (2017) urge us to identify them as ‘under-connected’ because digital connectivity solely through a smartphone might reproduce and aggravate the distinction in digital skills, digital engagement, and empowerment. While mobile phones are an effective and easier way of providing digital access from a policy perspective, digital connectivity through smartphones is an inferior form of access (Napoli and Obar, 2014). It is also argued that, while internet activities through computers are more in-depth and engaging, smartphone-based internet usage is peripheral and extractive (Humphreys et al., 2013). Other research has indicated that the smaller screen size, the need for scrolling, and the lower engagement level of smartphones compared to computers, make their use more cognitively demanding. Consequently, smartphones tend to be used more for leisure and communication activities (Murphy et. al, 2016).

Although this research has almost similar findings in some areas of the existing literature, there are some important distinctions. Firstly, Katz (2017) termed tablets along with smartphones as a source of under-connectedness but, the findings have shown that students who possess tablets as secondary devices utilise it very similar to a personal computer. Also, the extension of digital engagement and the quantity of content creation was largely among the exclusive smartphone users in contradiction to the argument raised by Napoli and Obar (2014) along with other scholars (Ghose, Goldfarb and Han, 2013). They claimed that user engagement, content creation, and the circulation of content is more common among high-quality device (computer) users. Whereas the research findings discovered that the exclusive mobile phone users, particularly the lower caste students, are more engaged in content creation and its dissemination than the computer or tablet users. Similarly, the use of mobile phones in an educational context was previously considered counterproductive and termed as disruptive by some scholars (Sharples, 2002). However, this assertion does not hold entirely true in the context of this research. Some students, particularly those from upper caste backgrounds with higher social and cultural capital, have effectively utilised mobile technology for learning and social advancement. Therefore, the findings

of this research indicate that caste, or the capitals emerging from caste, play a significant role in determining technology usage.

Other studies have discussed the relation between the quality of technology an individual possesses and their digital activities. It was found that individuals with higher social status and superior technology engage in capital-enhancing activities such as career development, knowledge accumulation on the internet, while their lower-status counterparts with inferior technology invest in leisure or entertainment (DiMaggio et. al, 2004). Similarly, Gonzales and colleagues (2021) confirmed that the quality of a device, a crucial factor often overlooked in digital divide surveys, which determines network stability and maintenance, critically influences digital usage. It is important to note that this study also have similar findings. Therefore, it can be asserted from this research that the quality of a device significantly influences digital usage within the Indian context.

The findings clearly indicate that the digital divide, or the disparity in the ability to utilise digital devices among different groups, cannot be solely explained through the unidimensional aspect of access to a specific digital device. It transcends the objective understanding of having and not having access. An in-depth analysis of interviews has revealed various layers of material inequality within the digital domain. Beyond the disparity in access to digital devices, digital inequality also encompasses the quality of digital devices, the freedom to use the device, and the quantity and quality of internet availability. Therefore, as the findings have unequivocally established, caste-based material digital inequality, identifiable as the first stage of the digital divide, is a pervasive issue in Indian and Kerala society.

6.1.2 Role of Non-Material Factors in Digital Inequality

This section explains the role of non-material factors, especially sociocultural factors in the reproduction of digital inequality. In this part, the various dimensions of digital inequality across different caste groups are examined. These dimensions include the gap in digital skills, the contrast in the motivation to use digital technology (second stage of digital divide) ,and the difference in the ability to utilise technology for empowerment (third stage of digital divide). It also

investigates how these factors are related to the individual's sociocultural background.

Before moving into the two subsections of this part- digital skill and motivation, and digital empowerment- it is important to reflect on the theoretical background of this section. The background is the interlinkage between the sociocultural inequalities and the existing digital inequalities which is revealed through the findings of this research.

The sociological studies on digital inequality put forth an argument that pre-existing socioeconomic inequalities greatly impact contemporary digital inequality (Ragnedda, 2017). On a similar note, Kuttan and Laurence (2003) claimed that the diffusion of technology will impact the social, economic, and educational fields of society and exacerbate the existing social inequalities. Numerous other scholars (Hargittai, 2011; Van Duersen and Van Dijk, 2014a) also mentioned that the structural factors pre-determine the usage of technology despite its democratic and unrestricted features (Castells, 2011). The findings of this research offer a comprehensive understanding of the influence exerted by pre-existing caste-based socioeconomic inequalities on digital skill and usage disparities. It further explains the reinforcement of educational and social hierarchies in Indian society as a consequence of these disparities. Henceforth, the findings posit that the educational disparities emerging from the advent of technologies will compound the existing ones, resulting in a cyclical and mounting process.

In a similar manner, by utilising a Weberian approach to understand the sociological effect of the internet and technology, Blank and GroselJ (2015) argue that even without any formal barriers to technology access, individuals tend to replicate their offline stratification in online spaces. They further claim that these online activities of individuals that result in the reproduction of the existing social hierarchy align with Bourdieu's concept of stratification based on distinction (Blank and Groselj, 2015 p. 2776). Furthermore, Bonfadelli (2002) identified a double digital divide based on access and usage of technology and reaffirmed the role of already existing social and economic factors in shaping those divides. The findings of this research also offer insight into the double digital divide based on

access and usage and a clear interlinkage between those divides and caste. There is a double digital divide between upper and lower caste students in terms of both access and quality of usage.

Hence, to have a proper understanding of the second and third stages of the digital divide in Indian society, a caste-based sociocultural analysis regarding technological skills, motivation and usage is necessary. The findings of this digital inequality research through the lens of caste offered a comprehensive understanding of the influence exerted by the historically accumulated and inherited capitals on digital disparities. As we have seen, the upper caste students with higher economic, cultural, and social capital had better skills and knowledge about digital educational resources compared to their lower caste counterparts.

6.1.2.1 Sociocultural Dynamics of Digital Skills, Usage and Motivation

Skills: The findings underscore a disparity in digital skills and usage between upper caste and lower caste students, which is exacerbating the educational gap between these caste groups. The correlation between the sociocultural aspects of caste and the contemporary digital and educational inequalities is one of the most important findings of this research. In particular, the caste dynamics in strategic digital skills, the competency in the English language, motivation of students to utilise digital technology for educational and career advancement etc., are the key new insights unravelled through this research.

According to van Dijk (2017), an individual's digital usage is influenced by two primary factors: the skill to use digital technology and the motivation to use digital technology. Van Duersen and van Dijk (2014b) identify several digital skills that significantly influence and shape digital usage. These include operational skills (basic skills to recognise and operate), formal skills (skills to navigate and interpret), informational skills (skills to search, locate, identify, and interpret information), communication skills (skills to interact in the digital space), content creation skills (skills to create online content), and strategic skills (skills to develop an orientation towards a goal and take actions to achieve it).

The findings of this research reveal that upper caste students possess superior formal, informational, and strategic skills compared to their lower caste counterparts. These enhanced skills stem from their higher capitals and their distinct caste habitus, which provides the necessary motivation to acquire these digital skills. Interestingly, in a similar vein, Van Dijk and Van Duersen (2014) posit that sociocultural backgrounds are the root cause of diverging digital interests and skills. Informational and strategic skills, which are crucial for performing serious and complex tasks in the digital space, are lacking in individuals from lower socioeconomic situations, thereby creating a usage gap (Van Dijk and Van Duersen, 2014). Similarly, despite belonging to the same age group and having comparatively earlier exposure to digital technologies, web usage skills among young students vary based on their socioeconomic backgrounds, leading to distinct usage patterns (Hargittai, 2010).

In this research, the findings have shown that lower caste students, who lack informational, operational, and strategic skills, exhibit a disparity in digital usage, leading to digital inequality. Unlike the prominent Western digital inequality scholarship, which emphasises social class or economic factors in determining digital skills and usage patterns, the findings of this research necessitate a focus on the caste background of students to understand the disparity in advanced digital skills. This is because the students from almost similar economic situations in the CBSE and government schools have differences in digital usage and skills. For instance, there were instances in the findings where upper caste students from lower economic situations like Gauri, expressed their ability to use technology for strategic purposes. In contrast, lower caste students, such as Neeraj Nath and Arya from CBSE schools, demonstrated confidence in using digital technology, but their interests and confidence were primarily rooted in formal and communication skills. It is noteworthy that none of the Dalit students expressed knowledge in advanced strategic skills, such as coding and software skills, regardless of their economic situation.

Findings have also underscored that the English language skill, a significant form of cultural capital often associated with caste, plays a pivotal role in determining digital skills and usage. This aspect of digital skill and concomitant educational inequality is not widely covered in the Indian digital sociological

scholarship. Upper caste students with higher proficiency in English have reported advantages in accessing higher quantity and superior quality educational content. On the other hand, lower caste students, who lack this capital, tend to restrict their learning to resources in the Malayalam language. Norris (2001) identified that 85% of all the content on the internet is in English language. However, data regarding the disparity in the quantity of online content in English and Malayalam is not readily available. Students who access educational content in both languages have reported that the volume of high-quality content in English significantly surpasses that in Malayalam. Consequently, proficiency in the English language provides an added advantage for upper caste students in the digital and educational spheres. This factor has been largely overlooked in Indian educational research.

Key insights from the findings chapter, such as the superior utilisation of online search, content navigation and filtration, access to interstate and international educational content, and the ability to identify the nature and quality of content through skim reading by upper caste students, have clearly established their dominance in digital skills and enhanced access to learning. Upper caste students attributed this ease in navigation and processing of information in digital domain to their superior cultural capital of English proficiency. In contrast, lower caste students found web surfing and searching for content to be time-consuming, and thus, tended to limit their searches by typing in only essential keywords. Tewathia et.al (2020) have correlated the digital divide with caste identity and cultural capital of English proficiency and found the existence of a caste-based digital divide in India due to linguistic inequality. Their study argues that English language proficiency is the least among the lower caste, and this might be the reason for their struggle to learn digital skills and utilise digital technology despite its availability. Linguistic imbalance in English proficiency persists among different castes, with this cultural capital largely favouring the upper castes in India (Fuller and Narasimhan, 2010).

However, digital sociological studies based on caste, focusing on ‘digital natives’ (Helsper and Eynon, 2013)—a group or generation that has largely grown up using the internet—are seldom available in India. This research, conducted among teenagers who are confident in their digital usage, has identified a significant

disparity in digital skills and access based on caste, due to differences in English language proficiency. Consequently, this digital skill gap is creating a distinction between upper caste and lower caste students in terms of digital capital, and is subsequently shaping their digital habitus

Motivation: The findings underscored the motivation for the strategic use of technology by upper caste students to lay the groundwork for improved educational and occupational prospects, leveraging their superior economic, social, and cultural capital. Their use of technology and their disposition towards it are deeply rooted in their habitus and their cultural, economic, and social capital. The superior social position, occupation, and education of their parents clearly provide an added advantage and motivation for upper caste students to integrate technology with education, compared to their lower caste counterparts. It was evident from the findings that the motivation to use digital technology varied among different caste groups. While upper caste students used it primarily for educational purposes, lower caste students were more inclined to use it for entertainment and communication purposes.

A crucial aspect of the motivation to use digital technology for education, as revealed through the findings of this research, is the ambition of upper caste students. These students aspire to gain admission to elite higher education institutions and to excel in mass competitive examinations. This ambition, influenced by caste dynamics, plays a significant role in their utilization of digital technology for educational purposes. The motivation to utilise the resources in the digital sphere was highlighted while the students discussed their preparation for mass competitive examinations such as JEE (joint Entrance Examination), NEET (National Eligibility Entrance Test), and CUET (Central University Entrance Test). It emphasised how the education and occupation of parents and close relatives influenced upper caste students to efficiently utilise digital technology for the preparation of competitive mass examinations. These students, predominantly from upper caste backgrounds, attributed their motivation, seriousness, and competitiveness to the caste habitus and various forms of capital inherited from their families. The intense competition in these mass competitive examinations (Mann, Tiwari and Mishra, 2021) offers students a platform to strategically

leverage their capital in the digital space, thereby enhancing their chances of success.

In contrast, lower caste students with less capital struggle to augment their digital capital for the preparation of these examinations. Also, the Dalit students, with their distinct caste habitus and social and cultural capital, did not exhibit a similar level of enthusiasm to tackle these examinations, compared to their upper caste counterparts. Hence, the necessity to utilise digital resources for strategically preparing for such competitive examinations is not largely visible among the scheduled caste students.

This is particularly reflected in Subramaniam's study. Subramaniam (2019) argues that the enduring structural factors of caste and class history are crucial in determining the success and failure of these mass examinations. The cultural capital such as education and profession of parents, support from the family, etc., considerably influence the success rates of students. Hence, the understanding of the utilisation of digital capital, or the strategic utilisation of all resources at their disposal, including technology, for the preparation of competitive mass examination, which is a concomitant result of the disparity in habitus and the possession of different capitals, could be an important addition to Subramaniam's study.

Another interesting factor in the findings is the disparity in the motivation for content creation between upper and scheduled caste students. Despite having internet access, different caste groups exhibited distinct utilisation of digital opportunities. The findings indicated that upper caste groups were more inclined to explore educational resources and other strategically advantageous digital assets compared to their lower caste counterparts. It is noted that lower caste students expressed a keen interest in producing entertainment and social content in the digital space, a trend less prevalent among upper caste students. There are some important distinctions between the findings of this research and the evidence from Western scholarships concerning the relationship between content creation and social class. Whilst Western scholarships emphasise the role of class in content creation, this research highlights the influence of caste. Hence, it

underlines the importance of caste in digital inequality studies in the Indian socio-cultural context.

A study on online content creation in the United Kingdom by Blank (2013), revealed a correlation between social status and the type of digital content created. Blank states that the production of social and entertainment content such as photos and videos is inversely proportional to an individual's income or social class. Whereas findings of this research indicate that lower caste students, irrespective of their economic position, show a greater interest in producing social and entertainment content compared to their upper caste counterparts. Also, contrary to the arguments of Correa, Hinsley, and Zuniga (2010), who claim that social class has no impact on online content production, and Hargittai and Walejko (2008), who suggest that students from higher social class tend to produce more content in the digital space, the findings of this research posit that students from the scheduled caste and lower social class are more likely to produce and share content in the digital space than their upper caste counterparts. Furthermore, the arguments of Blank (2013) that social status has a neutral effect on the production of skilled content or creative content also do not align with the findings of this research. The evidence from findings has shown that the students who produce creative content such as gaming and Instagram vlogs belong to Dalit groups.

6.1.2.2 Role of Sociocultural Factors in Digital Empowerment

The findings of this research have unveiled the disparities among different caste groups in the utilisation of information and knowledge obtained from the digital realm to enhance their social positioning. These findings provide insights into the influence of caste dynamics on the third level of the digital divide, which relates to the disparity in social benefits derived from variations in internet usage patterns (Ragnedda, 2017), specifically in the Indian education sector. This aspect, often overlooked in Indian digital scholarship, represents a significant insight in this research.

The findings have shown that upper caste students utilise digital technology to update their knowledge regarding higher education, competitive examinations and career prospects. Whereas the lower caste students mostly confine their digital technology usage to entertainment and communication purposes. Upper caste students, such as Alvin, utilise technology to access information about opportunities for admission into the defence academy, information that is otherwise unavailable in their environment. Alvin's cultural capital and caste habitus enable him to use technology to gather information about prestigious examinations and integrate that knowledge into his learning and lifestyle. Therefore, it can be argued that digital capital and habitus function as a virtuous cycle or cumulative process among upper caste students, aiding them in accruing greater benefits and opportunities in life. In contrast, lower caste students with less cultural and social capital did not significantly utilise the empowering potential of technology. Their practical use of technology is mostly limited to financial transactions and the consumption of popular news. Similarly, the perceptions of upper caste and lower caste students regarding the empowering aspects of digital technology were distinct. Upper caste students perceived advanced technological skills, such as coding and hardware and software skills, as empowering digital skills and knowledge. In contrast, lower caste students identified digital payment, downloading mobile phone applications, and digital content creation as forms of digital empowerment.

The empowerment aspect of digital technology is another important point to discuss. The caste factor could be emphasised in the utilisation of technology for building a better future. The western scholarships have noticed this phenomenon through the prism of class. Particularly, Ragnedda (2017), analysed the third level of the digital divide through a Weberian lens. Accordingly, the life chances of an individual are decided by the ability to use the skills and resources. This means the betterment of the position of an individual in a digital society is not merely determined by digital access and the possession of digital skills but the ability to use it. The findings of this research provide evidence of caste-based distinctions in the ability to use digital skills and improve life chances. For instance, upper caste students in better economic positions, such as those in international schools, utilise digital resources to access information about international courses, institutions, and scholarships. In contrast, lower caste students from economically

similar situations in CBSE schools tend to resort to traditional learning and coaching mechanisms to achieve their future goals. Furthermore, upper caste students leverage the flexibility of technology and online classes to enhance their learning freedom by choosing subjects and class times based on their convenience. Conversely, lower caste students express a preference for physical classes and do not feel the need to overcome the constraints of time-bound and space-bound learning practices.

6.2 Reconceptualising Digital Habitus in Indian Context

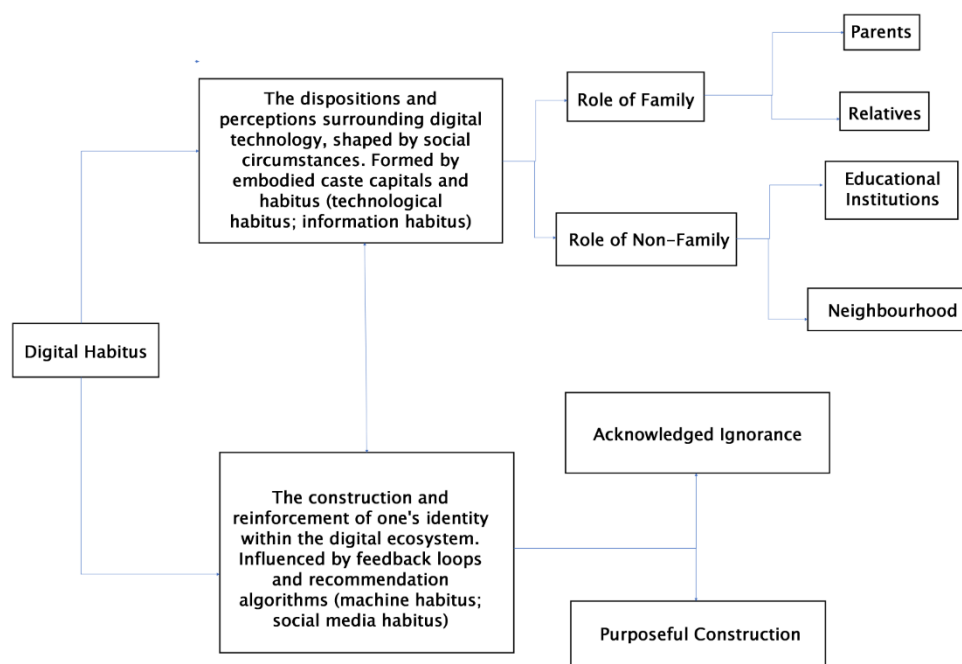


Figure 5: Flow chart of Digital Habitus Discussion

Interconnecting caste with digital habitus is a nuance theoretical construct used in this research to clearly identify the reasons for distinct digital usage amongst different caste groups. This section deals with two aspects of digital habitus and its interlinkage with caste. The first aspect discusses the formation of dispositions and attitudes towards digital technology and the distinction in usage. The second aspect explains the cultivation of a replication of these dispositions in the digital space and its reinforcement. It is to be noted that these two aspects are interconnected and influence each other.

There are two important theoretical standpoints for habitus in the digital realm that are being discussed in digital scholarship. The first aspect is the technological disposition and its operationalisation emerging from the habitus of the individuals. This means the assimilation of technological background, individual disposition towards technology, personal experiences with technology, shared beliefs and practices related to technology, and the potential benefits of technology application in daily life could all contribute to this phenomenon (Beckman et al., 2018). Hence, digital habitus is the formulation of dispositions and values towards digital technology, and the way perceptions and practices in the social world are shaped by technology (Zevenbergen, 2007). This aspect provides insights into the cyclical process of how an individual's social circumstances shape their understanding of technology and how using technology based on this understanding influences their social circumstances.

The second aspect deals with the shaping and reinforcement of digital habitus in the digital space through the online engagement of an individual. While the individual's social and technological dispositions continuously shape their online environments, the recommendations from these online spaces, reinforce their dispositions and cultivate a self in digital space through recommendation algorithms. Algorithms that provide recommendations operate through complex feedback loops between the user and the self-evolving code. These algorithms identify, amplify, and reinforce data patterns, thereby promoting the creation of echo chambers (Jiang et al., 2021). Consequently, the modern digital domain, which heavily relies on feedback loops, tends to increase or decrease exposure to specific content based on the user's previous digital behaviour. This process leads to the development or reinforcement of a digital habitus among end users, which is shaped by their past digital usage (Bucher, 2019).

The findings have demonstrated that both aspects of habitus are at play, influencing the dispositions, attitudes, and usage of digital technology among students. The first aspect of habitus shapes the students' disposition and attitude towards digital technology. The second aspect reinforces these dispositions and constructs a digital environment based on usage and recommendations derived from these dispositions.

The first section addresses the formation of distinct digital dispositions and attitudes among digital natives from different caste groups. It is crucial to comprehend how students from various castes form perceptions about technology and subsequently utilise it based on these perceptions. The role of family including parents and relatives is crucial in shaping their dispositions and usage. Along with family, non-familial factors such as neighbourhood, friends and educational institutions are also important in influencing the digital attitudes and digital tastes of the students. The interconnection of these factors with caste is also established in the first part of this section based on evidence from the findings chapter.

Subsequently, the second part of this section discusses another aspect of digital habitus revealed through the findings. The research has shown that students' social and cultural characteristics have permeated the digital realm, with the digital environment reflecting and amplifying these sociocultural traits. This has led to the formation of continuous feedback loops and recommendations based on the sociocultural identity of the students.

This section examines the influence of caste and family dynamics on the usage patterns of technology, emphasizing how yesterday's and today's interactions with technology contribute to shaping a student's future utilisation of digital tools. Recommendation-giving algorithms operate through intricate feedback loops between the user and self-evolving code, identify and reinforce the patterns in data. This discourse not only scrutinises the natural or unforced formation of digital habitus resulting from the persistent utilisation of technology and the internet, but also the deliberate attempt by a specific group of students with higher capital and a distinct habitus, to foster a particular type of digital milieu. Consequently, the second part of this section attempts to engage in the discussion concerning the genesis of digital habitus, viewing it as a process of not only reinforcing the structure but also as a meticulous and well-calibrated process of structuring the structure itself.

6.2.1 Formation of Caste-Based Digital Dispositions and Attitudes

The development of distinct dispositions regarding technology amongst students from different caste groups is discussed in this section. The cultivation of such

perceptions about the values and usage of technology stems from their family, relatives and neighbourhood, friends and schools. These factors are intermingled with the embodiment of caste norms and practices of the student. Hence, this section analyses the role of caste habitus in shaping the disposition and attitudes towards technology and the utilisation of technology in the learning process.

6.2.1.1 Role of Family in Cultivating Digital Dispositions, Attitudes and Usage

The findings have shown that there is a significant role for the primary habitus of students in shaping their technological disposition and concomitant technological practice. One of the important insights unravelled through findings is the disparity in perceptions towards technology and its interlinkage with the habitus of caste in different families. Upper caste parents and close relatives with higher cultural and social capital often guide their children to skilfully employ technology to gain knowledge regarding education and future careers. Such practices have critically shaped their dispositions and perceptions regarding digital technology. The upper caste students considered technology as an integral part of their learning and knowledge-building process. Hence, incorporating technology into their educational practice was a normal process for them. The embodied cultural capital of these students stemming from their familial background regarding the dispositions and values about digital technology, motivates them to utilise digital technology for social and educational advancement strategically. Whereas students from lower caste backgrounds had to face consistent criticism and discouragement from their families for their digital usage. Hence, those students tend to develop a distinct disposition and values regarding digital technology and their application for educational purposes.

Czerniewicz and Brown (2013) termed such values and dispositions as 'technological habitus' and utilised that concept to categorise students into 'digital natives' and 'digital strangers'. The digital strangers are students who are relatively new to the technology (less than four years) and do not have access to technologies outside educational institutions. The extension and confidence in the usage of digital technologies, as expressed by the participants, mandate the researcher to categorise all participants in this research as digital natives. Their

key differences in digital space practices are the products of their individual capital and habitus.

In other studies that explore the intersection of parents' perspectives on technology and children's learning, it was found that middle-class educated parents exhibited 'technophilia' or a positive outlook towards technology. They were more actively engaged in their children's learning with technology, shaping them into suitable learners in the knowledge economy. In contrast, working-class parents viewed technology as detrimental to their children's progress (Hollingworth et al., 2011). Numerous studies argue that the education, occupation, and social class of parents influence students' technological dispositions and usage (North et al., 2008; Ortiz et al., 2018; Nikken and Oprea, 2018). These arguments are reflected in the findings of this research. Findings of this research have indicated that parents with better education and occupation were able to support the capital-enhancing or educational digital usage of their children.

However, this research goes beyond economic class. It further investigates the role of the caste structure in cultivating distinct technological dispositions. It does not merely correlate parents' education and income level quantitatively with their perception and usage of digital technology. There are a few studies in India that investigate the distinction in digital usage based on caste. However, studies that provided an in-depth analysis regarding the reasons for the disparity in technology usage, especially in the field of education, are limited. The findings of this research provide insights in that area.

It was evident that parents' orientation and practices influence the technological disposition and practices of the students. Parents who are educated and utilise technology for professional purposes, predominantly from the upper caste, develop a positive outlook towards technology. They are able to transpose the values and capital acquired from their professional and social life, facilitating strategic technology usage for their children. Their children are exposed to the occupational and knowledge enhancement uses of technology from an early stage. Parents from the upper caste motivate their children to use technology cautiously, rather than asking them to keep their distance from it. In contrast, parents of

lower caste students, who perform low-skilled jobs, use technology exclusively for entertainment and communication purposes. As a result, the children who are exposed solely to these applications of technology inherit their parents' disposition and usage patterns. Drawing from their own experiences, these lower caste parents consider digital learning as an oxymoron and instil these ideas in their children.

Another important factor in determining the use of technology as a strategic tool is the competitive nature among students and parents from the upper caste. These students experience more stress and pressure from their parents and family to excel in examinations. This competitiveness prompts them to leverage the technological resources at their disposal for a tactical advantage. In contrast, students from the lower caste do not receive the same degree of encouragement from their parents to excel in competitive examinations. Consequently, their motivation to frequently apply technological resources for strategic purposes, such as examination preparation and future planning, is comparatively less.

The educational and occupational achievements of parents compel the upper caste students to believe that success in examinations and targeting prestigious higher educational institutions and courses is both a norm and a necessity. These future aspirations, inherited from their parents and embodied in their nature, play a critical role in shaping their technological usage.

Furthermore, the endorsements from upper caste parents to use technology for educational purposes, such as subscribing to resources, providing additional devices for learning, reducing surveillance, and granting higher digital freedom, provide positive reinforcement for technological usage among upper caste students. In contrast, lower caste students, without such guidance to cultivate definitive future goals and aspirations from their families, and with limited digital resources and encouragement to use digital technology, perceive the digital space as a domain for entertainment and communication.

The role of close relatives is also an important factor that encourages upper caste students to normalise success in competitive examinations and to utilise technology for educational and career development purposes. Some upper caste

students, despite coming from less affluent backgrounds, expressed their desire to gain admission to elite educational institutions, a success achieved by their close relatives. The success from their close social circle made these targets seem rational and achievable to them. Consequently, they perceive technology as a critical tool to reach these targets, following the path set by their relatives. However, such ambitious role models and examples of strategic technology utilization were largely absent among the family circles of lower caste students. As a result, the competitiveness to join elite educational institutions and the associated capital-enhancing activities using technology were not as prevalent among them.

While the digital dispositions and attitudes towards technology-augmented learning are regressive among lower caste students and parents, the findings reveal instances of dissonance between the habitus and the field of education. This was especially evident during the pandemic period when lower caste students felt obligated to use digital technology. During this period, their pre-existing notions or digital habitus were unable to meet the demands of the situation, leading to a disruption between the field of education and habitus. This resulted in a hysteresis effect, or a counter-adaptive lag (Hardy, 2012), among the lower caste students. Consequently, the retention of their past traits, such as dependency on physical classes and a pessimistic outlook towards digital education, has adversely affected their learning.

As Strand and Lizardo (2017) have claimed, the hysteresis effect will be followed by some form of reflexiveness. In this case, the reflexiveness of lower caste students can be witnessed in the application of digital technology for learning and revision during the examination period. They were compelled to utilise digital technology during the examination period as they needed to cover a large number of portions within a limited amount of time. This could be identified as a gradual transformation of their digital dispositions corresponding to the changes occurring in the field.

6.2.1.2 Role of Non-Familial Factors in Cultivating Digital Dispositions, Attitude and Usage

Educational Institutions: An important factor outside the family that can influence the digital attitude, dispositions and usage of students is the educational institutions. From the findings, it was evident that the application and exposure to digital technology are different for different schools. While the government schools restricted and discouraged the practice of technology augmented learning, the CBSE and international schools offered better exposure and encouragement to access and utilise technology for learning. The government schools provided basic and rudimentary technological experience for the students, such as slideshows using projector, sending PDF materials through WhatsApp etc. At the same time, the CBSE and international schools provide exposure and training in better technological applications such as robotics labs, digital libraries, smart classrooms and 3-D printing. It is important to remember that the economic class is the determining factor of admission into these schools.

However, regardless of these differences in technological exposure and facilities available at schools, the findings prompt the researcher to focus more on caste differences rather than class differences. This is because of two important patterns identified in findings from government and CBSE schools. Firstly, despite studying in government schools that provide minimal exposure to high-quality digital technology and restrictions towards technology-augmented learning, upper caste students develop a positive outlook towards technology. These upper caste students experience discordant relational modalities between their habitus and the field of school. Their digital habitus, shaped by exposure to superior technology and a techno-optimistic outlook inherited from their familial habitus, contrasts sharply with the regressive digital perspective prevalent in government schools.

A dissonance exists between the digital habitus of the upper caste students and the field of the school. This dissonance necessitates the development of a cleft habitus (Bourdieu and Wacquant, 1992) for the students. This is because the student experiences discontinuity in the field, which requires a different set of attitudes towards digital technology. However, upper caste students leverage

their higher capital to shield themselves against this destabilisation. They maintain their superior digital habitus intact by mobilising their capital, rather than transforming it to reduce the dissonance.

In contrast, lower caste students, who have less digital capital and a distaste for the incorporation of technology into learning cultivated from their familial habitus, find a prevalent concordance with the digital practice and experience in government educational institutions. As a result, they develop a cultured digital habitus. This is a reinforced understanding of digital technology and its application in education, evolved from their familial habitus.

Similarly, in CBSE schools the digital attitudes and dispositions of students from different caste groups are significantly different. In their study, Beckman, Bennett and Lockyer (2014) argued that digital dispositions and usage in the fields of school and home are distinct for students. When digital usage at schools is completely based on instruction, digital engagement at home is based on personal habitual choices. This argument can be applied in this research. While the upper caste students effectively utilise digital resources for learning purposes, the lower caste students in the same school with the same exposure were involved in social media content creation, entertainment consumption and communication using these technologies. Hence, it should be argued that the digital doxa regarding technology developed from their home environment has a critical role in shaping their personal digital usage and digital habitus. Despite having access to advanced digital technology, most Dalit students in CBSE schools are not incorporating it into their learning and career planning. This suggests that institutions are not effectively motivating these students to use technology in their education. In contrast, upper caste and OBC students are actively taking advantage of the facilities provided by CBSE and international schools. Hence, educational institutions are widening the digital wedge between the students from different caste backgrounds.

Neighbourhood: The disposition and attitude regarding technology are also shaped by the neighbourhood or location of residence of students. North et. Al (2008) has also identified that the digital taste can vary based on the location of residence, as it is an important part of the social class construct. Meanwhile, the

findings of this research have shown that these factors are interlaced with not only economic status or class but also the caste of the individuals. For instance, despite coming from a lower socioeconomic status, some of the upper caste students resided in better areas. Their residence in these better areas could be due to their traditional wealth or the possession of their ancestral properties. However, none of the lower caste students from lower economic backgrounds were living in such residential areas. While the importance of location in digital inequality studies in India is reduced to the access issues in the rural-urban divide, this research focuses on the socio-cultural factors of different neighbourhoods within the same region that contribute to distinct digital dispositions and usage. Hence, this research assimilates the concepts of social, cultural and economic capital into the digital disposition based on location, rather than grounding it in an economic deterministic standpoint. Similar to the findings of Hartung and Hillmert (2019), this research also found that the social and educational composition of the neighbourhoods can critically influence the aspirations of students. The findings of this research further indicate that students will be obligated to utilise the digital resources at their disposal to realise such aspirations.

The involvement of the lower caste in low-skilled, daily wage occupations and the concentration of Dalit households in poor neighbourhoods were explicit in the findings. Also, relocating and distancing themselves from their poor family backgrounds and fostering weak ties with their relatives were noted among the Dalits who were economically in a better position. Whereas upper caste students in poor neighbourhoods express their close ties with their extended family and often draw inspiration from their professionally and academically successful relatives.

The upper caste students from better economic situations communicated about the resident associations in the neighbourhood and the social pressure they encountered to excel in examinations from those associations. The publicising of results by erecting banners, adulation for high achievers, higher expectations based on earlier success in the family, and comparison and competition with the peer group are all contributing to their mounting academic stress and competitive mentality. Hence, they are obliged to utilise the technological and other resources

at their disposal to increase their chances of success. Also, parents with a higher cultural capital in a neighbourhood significantly influence attitudes towards digital technology through their communications about education. The information they share about digital resources and education, coupled with their high expectations for examination results, encourages students to strategically use technology. However, it has been observed that students from lower castes, who mostly reside in economically disadvantaged neighbourhoods, do not experience the same level of social pressure regarding examination results. Furthermore, the discussions among these parents about technological tools are not focused on strategic educational resources, but rather on skill development courses that could lead to employment. Consequently, these differing factors cultivate a unique disposition and attitude towards digital technology among lower caste students.

Findings exemplified the way in which caste identities govern the behaviour and thoughts of individuals regarding technology and its applications through the social and cultural norms that constitute their habitus. The upper caste students have better access to digital resources and are often encouraged to blend technology into their learning practices by their primary and secondary social environments. In contrast, their lower caste counterparts with limited access did not have the same level of motivation to use technology for learning.

6.2.2 Formation of Caste-Based Distinct Digital Spaces

The durable digital dispositions and attitudes developed from the primary and secondary socialisations discussed in the previous sections are replicated or reproduced in digital social spaces. In the current era of machine learning and numerous feedback loops, such cultural identities are effortlessly reinforced and reproduced in the digital domain. This research asserts that the digital attitudes and perspectives of an individual cultivated from their sociocultural environment are mirrored in their digital environment. As society increasingly transitions into the digital space (Hargittai, 2021), the digital ecosystem persistently influences the social realm and vice versa. The interplay between the physical and technological aspects of habitus demonstrates a circular pattern (Romele, 2024).

Therefore, an important point to discuss here is modern technology's role in the consistent reinforcement of digital distinctions and inequalities based on caste. This research found out a mutual relationship between the social and digital aspects of habitus. Students who showed an interest in the educational aspects of technology are often presented with numerous recommendations and suggestions, encouraging them to engage with more of such content. Conversely, students who viewed digital resources as platforms for entertainment and communication had their digital space mostly filled with such content. This disparity in providing digital feeds for different groups of students based on their past usage, further propels them towards digital engagements like their earlier usage, creating a repetition and widening distinction. To elucidate, the advancements in digital technology such as artificial intelligence, automated suggestions and big data are intensifying the existing caste-based digital disparity in digital dispositions and engagements. This escalates the distinctions between the upper caste and Dalit students in applying technology for learning purposes.

Two different methods of digital ecosystem formation need to be discussed in detail. The first method involves students knowingly sharing their digital preferences without inhibitions. This allows techno-social feedback loops (Esposito, 2017) to craft a digital ecosystem based on these past digital inputs, a process the researcher refers to as 'acknowledged ignorance'. Although this method is widely discussed as part of the political and sociocultural impacts of new technologies (Zuboff, 2015; Mager, 2012), the educational impacts and the role of caste due to such machine learning algorithms are not adequately explored.

The second method analyses a group of students' conscious or deliberate attempt to formulate a digital space reflecting their educational and career aspirations. This involves employing their agency to construct a digital habitus that reinforces their dominant position in the field of education and society. This aspect of the digital habitus requires a more detailed discussion as this is not properly identified and critically analysed in the digital scholarships.

6.2.2.1 Acknowledged Ignorance

Students share their data with the clear understanding that their past internet activities and digital preferences will be used by digital spaces, such as YouTube and Google, to provide future suggestions. While most students acknowledged this process, they simultaneously ignored the formation of a specific digital ecosystem and expressed a willingness to continue using technology in the same way. As a result, the digital dispositions and attitudes in physical space permeate into the digital domain.

This is resonated in digital sociological studies. For example, Airoidi (2021) argues that new revelations regarding the biases and discriminations in the algorithms of digital platforms and their impact on the social fabric intensify the interlinkage between technical and social in the contemporary era. The social order could be more of a sociotechnical order as now social is part of the technical and vice versa (Law, 1990). The interlinkage between the digital and social of students discovered through the findings prompts the researcher to describe contemporary education as a sociotechnical field. Romele (2023) through introducing the concept of technological imaginaries, also disagrees with the reduction of technology to its materiality. He asserts that technology should not be reduced to an artefact and to the most immediate impact on a person.

The research findings highlighting the disparity in the educational field, the long-term impact on future prospects and careers, and the distinctions in social and cultural domains arising from technology use, are pivotal in asserting that technology should be considered beyond its material aspects in the Indian context. This suggests a need for a more nuanced understanding of technology's role, considering its socio-cultural implications and influence on various aspects of life. Hence, the role of caste in shaping the digital dispositions and concomitantly the digital spaces is central to understanding the development of digital habitus. The extension of the definition of digital habitus by incorporating caste, habitus from the physical space and the sociocultural background of the student has provided a nuanced outlook regarding the educational and digital domain in Indian society.

This research emphasises that higher algorithmic curation of digital choices in order to increase the personalisation of digital services reinforces the symbolic order of society. The Matthew effect, as it pertains to the educational and career trajectories of upper and lower caste students, was clearly evident in the research. While upper caste students appeared to benefit more from these personalised digital spaces, it was observed to have a counterproductive effect on the education and career progression of lower caste, particularly Dalit students. Previous scholarships in this area also claim that personalisation in the digital domain results in the reduction of social actors to distinct groups of expected online choices, behaviours and tendencies (Romele, 2021, p.121).

On a similar note, certain scholars postulate that algorithmic predictions generate social distinctions while personalising the user's digital experience (Airoldi, 2021). This research has also demonstrated that students' personal preferences are mirrored in their digital space. While these studies in the European context are identifying socioeconomic or class-based distinctions in the digital domain, in this research, students from diverse family backgrounds and geographical locations are more inclined to generate caste-based patterns in digital recommendations. This means despite coming from distinct economic situations, upper Caste and Dalit students attested to receive recommendations more akin to the members of their caste groups. Consequently, students are categorised into specific caste clusters based on their digital preferences. Inclusion in these clusters provides them with targeted content based on their past preferences, which gradually narrows their subjectivity to generic choices. This, in turn, influences students to aspire only to what is attainable within their social position. For example, the upper caste students who generally utilise technology for education claimed that they receive more educational content in their feeds and suggestions. Also, the recommendations of international and non-Malayalam educational content were mostly available among their digital feeds only. In contrast, the lower caste students received a very distinct algorithmic recommendation. This suggests the formation of different clusters in a deeply intimate personal digital space.

While discussing the algorithmic shaping of digital choices, special attention should be given to digital metaphors such as 'filter bubbles' (Pariser, 2011 p.21) and 'echo chambers' (Cookson and Engelberg, 2023 p.451). A group of scholars

argue that impermeable chambers of digital communication and preferences are constructed within social media pages (William et al, 2015; Smith and Graham, 2017). Such studies acknowledge the existence of such metaphors and attest to the formation of inescapable digital rabbit holes.

Albeit the findings of this research indicate a distinction in the personal digital spaces between students from different caste groups, none of them reported a highly isolated and insulated digital environment. Upper caste students, while acknowledging suggestions of online classes and educational videos in their YouTube accounts, also mentioned that channel subscriptions and the notifications they enable play a vital role in forming their digital ecosystem. Yet, they turn off YouTube notifications and surf the web cautiously to avoid potential distractions. Similarly, lower caste students, with a distinct channel subscription pattern and search history, are less likely to receive recommendations regarding online classes and educational videos but they also reported using such platforms during examination periods.

Therefore, while a digital ecosystem is being cultivated based on digital tastes and preferences, the assertion of the formation of inescapable digital echo chambers may be overstated. It could be an exaggeration to state that the agency of students is entirely nullified, and they are transformed into an object with completely redundant subjectivity due to a reinforcing digital structure.

Given the observed differences in digital preferences, there exists a potential for the formation of distinct digital groups based on the caste of the students. Interestingly, lower caste students including Dalit and OBC students from lower economic groups have reported that, within their groups, they predominantly discuss popular entertainment and local news. However, during examination periods, they share educational materials and links to online revision classes. They are also part of a broader network of classmates in WhatsApp groups, where they receive educational resources and information. Therefore, it is challenging to categorise these clusters and the students' digital spaces as echo chambers or filter bubbles. While the digital environment or the personal digital spaces of the students do reflect their attitudes and dispositions towards technology, the structure of such an environment is not entirely rigid and inert.

This research has shown that structures of such digital environments are situation specific. For instance, while the students were explaining the nature of their digital space during a normal period, it mostly reflected the cultural choices and digital tastes of the students. However, during the examination situation, many students from the lower caste section also mentioned receiving more notifications and content on education and learning because they start to consume such content.

However, this is not underplaying the role of feedback loops and algorithmic suggestions. Obviously, the students have claimed that their digital space get more suggestions based on their past usage pattern. For example, the lower caste students confessed that they did not receive English online class suggestions in their accounts as they have never attempted to consume such contents. Also, some of them stated that entertainment contents such as cooking vlogs and television dramas/ soap operas are frequently appearing in their accounts based on their consumption pattern. Hence, there is always a chance for a ‘selective exposure’ (Iyengar and Hann. 2009 p.20), and higher chances for the consumption of such contents.

6.2.2.2 Purposeful Cultivation of Digital Space

The upper caste students with higher capitals, and a distinct caste habitus, have exhibited the tendency to carefully craft their digital space so that their social position and advantage can be sustained. The purposeful effort to cultivate a digital space that is exclusively dedicated to enhancing their position in the field was a trend observed mostly among a few upper caste students. Such a dedicated utilisation of the agency to structure the existing digital structure is a nuanced and important observation revealed through the findings.

It is to be noted that students from upper caste backgrounds, who possess higher digital capital, were the ones able to intentionally shape their digital habitus. They appropriated digital capital to their advantage in various ways, such as dedicating a secondary personal digital device with a separate digital identification solely for educational purposes, leveraging their superior English

language skills for carefully conducting web searches, and parents with higher cultural capital keeping their digital footprint separate from their children's digital feed. These strategies played a crucial role in the conscious cultivation of a digital space or digital habitus.

Similarly, deliberate attempts from upper caste students to create a consonance between their habitus and digital space were also evident in the findings. The subscription to educational resources on YouTube, muting and unsubscribing distracting content, and turning off unnecessary notifications are strategic mechanisms implemented by them to shape their digital space that complements their habitus. Whereas lower caste students with lower digital capital did not exhibit the capability to consciously craft their digital space.

Notably, habitus is a conceptual tool developed by Bourdieu to overcome the dichotomy between structure and agency (Costa and Murphy, 2015 p.3). This section of the research explains the manifestations of both structural and agentic factors of the digital habitus. While the earlier part emphasised the structural characteristics of digital usage and its reinforcement, the second part explicates the role of students' agency in formulating their digital habitus. The agency of students is highlighted in their conscious attempt to seek different options in the digital space, evaluate different possibilities, and engage in prudent selection and elimination after considering different alternatives for erecting a digital space that is in total consonance with their field.

6.3. Reconceptualising Digital Capital in Indian Context

The key concern in the literature part of this research is whether digital capital should be treated as a separate form of capital, akin to other primary capitals, or if it should be categorised as a subset of the other primary capitals within the digital domain. The findings of the research provided a clear indication regarding the conceptualisation of digital capital, especially in the Indian context. It indicated that digital capital in the Indian context is more akin to the second strand of the digital capital framework. This means digital capital cannot be treated in silos with other capitals, if the intention is to understand the effective utilisation of digital technology for educational and social development. Hence,

digital capital should be treated as a part of the primary capitals. The conceptualisation of digital capital without transposing it with the cultural, economic and social capital is ineffective in the Indian context.

There are important characteristics of capital mentioned by Bourdieu such as - the possibility for accumulation, profitability from this accumulation, and convertibility to other tangible and intangible form of capitals (Häuberer, 2011). The research findings have shown that it was unable to maintain these characteristics in all instances if digital capital is treated as a separate capital. Also, the capital in different forms is related to one another and it influences the digital capital of the students without directly interacting with the digital aspects. To elaborate, the economic capital of the parents determines the neighbourhood of the students, and it influences their social and cultural capital and concomitantly the digital capital. The shaping of the digital capital of the students due to their neighbourhood has nothing to do with the digital capital of the parents.

An important reason for not treating digital capital as a separate capital in the Indian educational context is the inability to prove the social benefits from its accumulation without correlating it with other forms of capital. Since it is a key feature of the capital (Ragnedda and Ruiu, 2020, p.19), its accumulation should guarantee profitability, not limited to the field in which it renders the highest value, but also in other fields through conversion. The findings of this research indicate that increased usage, online interaction, and confidence in usage do not necessarily lead to improved educational or sociocultural positioning for lower caste students. Furthermore, without sufficient cultural and social capital and a distinct digital habitus stemming from their caste background, higher digital engagement appears to have a counterproductive effect on the education and future prospects of lower caste students.

The field analysed in this research is the educational field, not the broader digital field. Therefore, only the digital resources that benefit the educational field should be considered in the analysis. Digital material and immaterial resources, skills, and knowledge that can improve strategic positions in education should be regarded as digital capital in this context. The intersection of digital with the

educational field should be prioritised, rather than misinterpreting all digital skills and interactions as digital capital. To perceive digital capital as an important resource for educational and social advancement, it should be situated within the field of education. This approach makes it more appropriate to address the dilemma of treating digital capital as a separate capital or as part of the primary capitals.

It is true that the digital capital framework developed by Ragnedda and Ruiu (2020), i.e. digital capital as a separate capital, is an imperative and intriguing one, and it tries to comprehensively cover all aspects and stages of the digital divide. For instance, it investigates access, the ability to search, filter, and navigate in digital spaces, and the ability to share information in digital spaces. It also inquires about the ability to solve technical issues, time spent on digital spaces, and the acumen for digital creativity (Ragnedda, Ruiu, and Addeo, 2020). An important argument raised by Ragnedda is the ability of digital capital to act as a bridge capital. For example, an individual with high social capital and low digital capital cannot utilise the possibilities of technology to enhance his existing social capital. The digital capital is needed to bridge social capital into the digital sphere. However, that applicability of the absence of digital capital could not be tested in this research as all the participants were digital natives with a certain digital competency or capital.

Moreover, the inability of primary capitals to account for certain positional outcomes in the digital domain has been raised as an argument for treating digital capital as a separate entity. For instance, between the digital elite (those possessing high levels of all capitals) and the digital underclass (those possessing low levels of all capitals), there could be groups with high digital capital but low other capitals, and vice versa. Ragnedda (2018) contends that the latter positions of groups or individuals cannot be explained solely by primary capitals. However, such cases were largely absent in the context of this research. Generally, it was observed that students with higher levels of other capitals also possessed higher digital capital, and students with lower levels of other capitals possessed lower digital capital. Groups with contrasting extreme cases, such as possession of higher digital capital and lower other capitals and vice versa, were not commonly found in this research.

As mentioned in the findings chapter, the lower caste students use technology even more than their upper caste counterparts and they are more involved in creative pursuits using digital technology than the upper caste students. The lower caste students are confident in their usage, and they often train their parents to utilise digital technology efficiently. Hence, the extension or quantity of usage, the confidence in using digital technology, the ability to adapt to new technological devices and being creative etc. are almost similar or in some cases better for the lower caste students than their upper caste counterparts. Also, interaction in online spaces, incorporating new technological applications into their digital usage, and collecting and sharing information regarding new technological devices, were more common among the lower caste students.

However, the critical distinction between upper and lower caste students lies in the motivation to use technology and the utilisation of technology for empowerment. This is not merely the ability to use technology or the skill and knowledge regarding technology, but the distinction in cultural and social capital reflected in the digital domain. Nevertheless, despite having access to and better interest in technology usage, these students could not translate these abilities into technological utilisation for strategic advancement in education and career planning. Therefore, an independent analysis of digital capital without equating it in terms of cultural and social capital fail to provide a comprehensive understanding regarding the positionality in the field.

Another reason for considering digital capital as an extension of other capital is the issues arising with its convertibility. All aspects of digital skills, knowledge and usage are not convertible into other capitals of tangible benefits and outcomes. For instance, higher online interaction and communication are not exactly transformed into higher social capital for lower caste students. Also, more extensive usage and digital creative skills are not transformed into superior cultural capital amongst those students. The intention of usage, especially for education and their strategic advancement with a futuristic goal is a key reason for reaping higher dividends from the digital domain by the upper caste students. For example, communication through digital platforms is minimal for upper caste students but the topics they communicate are vital for their future education and

career. At the same time, lower caste students are engaged in daily and prolonged communication through digital platforms, but their topics are more related to entertainment, popular culture and daily life. The upper caste students with higher cultural, social, and economic capital, utilise these resources at their disposal by effectively incorporating these with digital technologies for the betterment of their social and educational position. Whereas the students from lower caste groups with lower capitals are more interested in entertainment and communication purposes of digital technology.

Moreover, the digital capital of parents is not directly inherited by the students. In many cases, it is the cultural and social capital of parents that became beneficial for the students to accrue higher digital capital. Many students have claimed that the digital skills and knowledge of parents did not influence their digital usage. It is the other forms of capital that influenced and shaped their digital technology usage. Although many parents provided digital devices and other forms of digital resources to their children, the encouragement for digital technology usage for educational purposes was mainly drawn from their cultural capital and habitus rather than their digital competencies. On the other hand, the higher digital usage of parents with lower cultural capital is bringing counter-productive effects to the digital learning of their children. Especially the students who share digital devices with their family complained about the presence of distracting contents in their digital feed. Hence, to understand the role of caste and the influence of Indian social and cultural scenario in the usage of digital technology for educational development, the cultural, social and economic capital should be juxtaposed with the digital usage of individuals.

Another question is the need for a digital capital concept if that capital is an amalgamation of the already existing capitals. As Park (2017) mentioned, it is difficult to explain the intricacies of digital inclusion by only using the economic, social, and cultural capital. The usage of technology is embedded in the social and cultural norms of the society. The unique features of the influence of digital technology in the social system could be identified and explained by transforming the primary capitals into its digital format.

To understand the intricacies of educational and social inequality in Kerala, the digital capital was an appropriate tool in this research. It would have been difficult for the researcher to explain the situation of digital inequality in Kerala without using the idea of digital capital. It helps to bring all aspects of digital inequality and all stages of the digital divide together under a single conceptual lens. While the researcher may not agree with treating digital capital as a separate capital, the practical application of using digital capital as a separate term to measure the extent or intensity of digital inequality is a significant observation made by Ragnedda (2020) that warrants agreement. This perspective highlights the importance of considering digital capital in its own terms when examining digital inequality, even if it is closely intertwined with other forms of capital.

6.4. Revisiting Class and Caste in the Context of Kerala

This topic deals with one of the most contested premises of Indian sociology. The contrasting positions of sociologists in choosing either caste or class as the central pillar of the Indian social structure have critically shaped the Indian sociology and inequality studies. However, the recent scholarships overcame this dichotomy and acknowledged the co-existence of caste and class in the Indian society (Naudet, 2022). This research also identified the existence of both caste and class dynamics in society. Also, the findings help to identify the instances where these two phenomena interact and influence each other.

The peculiar case of OBC (Other Backward Class) who behaved both like upper caste and lower caste according to their class positions are discussed in the following section. The historical reasons for the community upliftment among certain OBCs are also presented in this part.

6.4.1 Caste and Class

To understand the digital and educational inequality in Kerala, both caste and class factors need to be analysed. A framework that synthesises caste and class is imperative in understanding the social and educational structure of Kerala society. Findings have shown that within caste groups there is an important role for class

in determining social position and social mobility, and within class sections, there is also an inherent caste hierarchy.

6.4.1.1 Role of Class

The importance of class or economic positions in determining digital and educational inequality was evident in the findings. Although caste is not completely absent from the picture, economic positions significantly impacted the digital access, dispositions and attitudes of the students. For example, within the upper caste students in government school, the students who come from better economic backgrounds are more likely to use digital technology for learning. For instance, the students who subscribed to the digital learning resources and planned to continuously utilise those resources were mainly from better economic backgrounds. The rigorousness in the utilisation of technology for shaping education and future careers was more prevalent among the upper caste students coming from better economic situations.

The digital economic capital such as access to quality digital equipment, WIFI connectivity, secondary digital device and digital cultural and social capital such as - exposure from parents and relatives who work with technology, knowledge about digital resources from the neighbourhood, experiencing better digital resources in the CBSE and international schools and the positive dispositions and attitudes of families towards technology etc., could be directly correlated with class factors.

Also, the Dalit students in the CBSE schools have exhibited better knowledge, access and higher skills in digital usage than the Dalit students in government schools. It was also observed that Dalit students in CBSE schools utilise technology for more creative pursuits like vlogging and running online channel etc., compared to Dalit students from lower economic situations. Moreover, some Dalit students from better economic situations have planned their future and aim to join the public sector by following in the footsteps of their parents. On the other hand, Dalit students from lower economic positions were awaiting the result of higher secondary to plan further. Furthermore, the Dalit students in better economic situations had access to better and more competitive neighbourhoods compared

to their counterparts with lower economic capital. It has to be noted that Dalit parents from better economic situations were investing more in their children's education by sending them to private CBSE schools. The attempt by the Indian middle class to reproduce and reinforce cultural capital by utilising their economic capital is evident in this study. For instance, Gupta's (2019) postulation about the importance and investment provided by the Indian middle class to transfer the privileges and the life standards to their children through school education is reflected in this research. At the same time, the intra-class differences such as disparity in cultural capital between parents from different caste groups impacting the transfer of accumulated resources into educational advantage are also evident in this research.

Also, the modernisation of Kerala society was indicated in the absence of traditional occupations amongst parents of students. As mentioned in literature traditional occupation was one of the key features of the caste. The caste title and occupational title were synonymous for many castes in Kerala (Gurukkal, 2015). As none of the Dalit participants' parents were involved in occupations considered polluting in the traditional sense, it should be regarded as an important indication of the modernisation of Kerala society. For example, none of them were involved in manual scavenging, leather works or any other bonded labour. This could be an important litmus test to claim that Kerala society is striving towards modernity or at least moving away from traditionalism. Thus, it would not be completely illogical to argue that class is slowly replacing caste in Kerala.

However, based on the findings, the researcher would argue that the caste system still persists in Kerala despite the modernisation of the economy and society. Although questions directly related to caste consciousness and practices were not asked, the general differences in class positions, attitudes and dispositions were visible. Hence, the modernisation of society and the concomitant developments did not eradicate the caste system and caste-based disparities.

The existence of class differences between different caste groups was emphasised in the findings. Although parents were not necessarily engaged in traditional occupations, it was observed that lower caste individuals predominantly performed low-wage, low-skilled jobs. In contrast, the highly skilled and well-paid

occupations were mostly occupied by the upper caste. A similar caste-based disparity existed in the educational attainment of parents. Beyond these objective variables of education and occupation, a disparity in qualitative aspects also exists between the upper and lower castes. The disparity in all forms of capitals between upper and lower castes was specifically highlighted in the findings. For instance, attitudes, dispositions, and the level of involvement in their children's education and career were distinct for parents from upper and lower castes. Also, the caste disparity in digital access, digital autonomy, digital dispositions and attitudes were highlighted in the findings. This indicates the intermingling of caste and class dynamics.

More importantly, the opportunities for class mobility and the utilisation of technology to provide an impetus for that mobility were witnessed mainly among the upper caste in this research. While there were many examples of upper caste students from the lower-class leveraging technology to advance their prospects, such cases were very rare among Dalit and OBC students from lower class. Therefore, it could be argued that the chances of class mobility and the utilisation of digital and other capital resources to aid that mobility, is not completely independent of the caste dynamics.

6.4.1.2 Role of Caste

The alternative paradigm in the class caste scholarship is the neo-orientalist approach, derived from the colonialist reading of Indian society (Naudet, 2022). In this approach they claim that caste is the central structure or the essence of Indian society. Through his Sanskritization theory, Srinivas (1964) claimed that the class mobility of a particular group is achieved through changes in ritualistic and cultural practices of the community along with economic development. Hence, he posits that class upliftment cannot be divorced from the caste dynamics of society. The reflection of this concept is evident in this research. The cases of social mobility were observed in the findings. This was observed particularly among the OBC students and will be further discussed in the next subsection.

The role of caste was evident throughout the research. The structural inequality between different caste groups has already been explained. Also, despite being in

similar economic situations, the disparity between Dalits and upper caste was also emphasised in the research. Especially, the middle class and upper middle-class students in CBSE schools have distinctions in digital attitude, dispositions and usage. For instance, while three out of four students in the CBSE schools engage with technology on a daily basis for capital-enhancing activities, only one Dalit student in the same school is engaging at a similar level. Also, despite belonging to the same educational institution, the English language proficiency was higher for the upper caste students.

Especially among the students from lower economic situations, the role of caste was more important in determining the distinctions. While the upper caste students had better digital social and cultural capital to cope with their lower digital economic capital, the lower caste students were found to be in a disadvantageous position. Their inheritance of lower digital cultural and social capital coupled with lower economic digital capital, results in the perpetuation of caste inequalities in Kerala. For instance, upper caste students from lower economic backgrounds were observed to gain information, knowledge, and inspiration to utilise technology for learning purposes from their close circles. Their social proximity to successful individuals seemed to normalise success in competitive examinations and foster aspirations for esteemed careers. This motivates them to effectively incorporate digital technology into learning practices. On the other hand, lower caste students not only lacked such motivational sources but were also, in certain cases, constrained by myopic ambitions prevalent in their close circles. This concomitantly results in the difference in digital usage and the penetration of caste inequality into the digital sphere. Hence while the upper caste groups could leverage their cultural and social capital to overcome the limitations of the economic situation, the lower caste is facing double deprivation.

Alternatively, in better economic situations, we can observe the diminishing role of caste, although not completely eradicated. The role of class is also an important factor in shaping the primary digital habitus of the students. Therefore, the role of both caste and class are imperative in analysing the social and educational fields, especially in the digital era.

6.4.2 The Peculiar Case of OBCs

The findings of this research helped to analyse some general trends in the upper caste and depressed caste situations. However, it was perplexing to deal with the OBC students. While some of the OBC students exhibited similar dispositions attitudes and usage towards technology augmented learning, some of them were more akin to the Dalit castes.

There are more than seventy-five castes on the state OBC list. Among this ‘Ezhava’ caste is the most prominent and the largest section of the Hindu community (Government of Kerala, 2020). The social advancement of the Ezhava caste serves as a prime example of caste mobility in India. Today, they occupy a social position parallel to upper caste groups such as Nairs, Namboodiris, and Syrian Christians in the social, political, and cultural domains of Kerala (Chandramohan, 2020). This unprecedented social mobility was made possible through a series of political and social reform movements, particularly under the guidance of Sree Narayana Guru. Also, the discontinuation of certain traditional non-Aryan practices such as toddy cultivation, offering of toddy to deities, animal sacrifice, coupled with the adoption of Aryan practices in worship, marriage and occupation by Ezhavas under Narayana Guru (Abraham, 2023), could be observed as a Sanskritization process that uplifted the social positioning of the community.

This research also identified the reflections of better social positionality among the OBC students. Students like Sanjana and Aansilla utilised technology for learning purposes similar to upper caste students. Their families also held similar dispositions akin to their upper caste counterparts. The future aspirations, competitiveness and educational planning of those students were similar to upper caste students coming from similar economic backgrounds. The economic backgrounds of their parents and their extended family were middle or upper-middle-class. This means the social, cultural and economic capital as well as the habitus of these students are not very distinct from many upper caste students. This evidence helps to understand the social and economic mobility of a few sections of the OBC castes, possibly Ezhavas.

However, it is important to note that the social and economic upliftment was not ubiquitous among all the OBC communities. Many OBC students have internalised dispositions and attitudes akin to those of the depressed castes. A significant reason for this might be the limitations of the SNDP (Sree Narayana Dharma Paripalana) Yogam movement, initiated by the social reformer Sree Narayana Guru. The SNDP was unsuccessful in extending the movement to include other backward class and the lower sections of the Ezhava community. The presence of sub-casteism within the Ezhava community acted as a barrier to building sectarian solidarity (Chandramohan, 2020). The latest report regarding the outcome of affirmative action in India by the Rohini Commission could also explain the dominance of a few OBC castes in the social, educational and economic domains in India. The commission found that 97% of the reserved positions and seats were cornered by 25% of the OBC sub-castes. Out of the 2,600 communities under OBC, 983 communities (37%) had no representation in jobs and institutions. Additionally, only 2.68% of the reservation has been utilised by 994 castes (Iftikhar, 2023).

The deprived position of many OBC students was evident in the interviews. The digital access and autonomy are a challenge for many OBC students, especially those who are coming from the lower economic classes. The role of class in determining social mobility was more significant among OBC students. The students from better economic situations showed the possibility for bettering their positionality, and it was more challenging for the OBC students from lower economic situations. Not collecting the name of the specific caste of the students is a major limitation of the research. Hence, it is possible only to assume that the OBC students who belong to better social and economic conditions might be from the Ezhava or other dominant caste in the OBC section. Nevertheless, the economic and social mobility of one section of students and the deprivation and marginalisation of the other section is an important revelation regarding the OBC communities in Kerala.

Chapter 7: Conclusion

This chapter elucidates the key contributions of this research to the relatively unexplored field of digital and educational inequalities in Kerala, India. There are conceptual, theoretical, and empirical contributions made by this research. The conceptual and theoretical contributions of this research is explained in the first two sections of this chapter. One of the key contributions of this research is the insights into the distinction of strategic utilisation of technology between different caste groups, and the sociocultural and economic factors that enable such utilisation.

The broadening of the concept of digital inequality is an important conceptual contribution of this research. New indicators such as secondary devices, Wi-Fi connectivity, paid subscriptions, quality of devices, and English language proficiency have influenced the reconceptualisation of digital inequality. Similarly, new evidence regarding digital capital and digital habitus has led to the reformulation of these concepts, particularly when situated in the Indian context. It is important to note that all these indicators are effectively associated with the social and educational inequality of the students. Hence, the socioeconomic background of the student impacting digital inequality is clearly linked to educational access and inequality.

The new aspects of digital inequality, digital capital, and digital habitus, and how they (re)produce social and educational inequality, are among the most vital contributions of this research. These aspects are collated and briefly explained in the first two sections of the concluding chapter. The quantity and quality aspects of technology under digital economic capital, including secondary devices, internet connection, quality of devices, extent of usage, and access to paid subscription services, are linked to the application of technology for learning purposes. Similarly, digital social and cultural capital explicates the importance of the extent and motivation of technology usage, education and occupation of parents and relatives, English language proficiency, and digital skills and usage in shaping the educational use of technology. Furthermore, digital habitus exposes the interconnection between social and cultural circumstances, such as family attitudes, school environment, neighbourhood, and future goals, in shaping

attitudes towards technology and how students interact with it. Moreover, the role of technology in shaping usage patterns and how digital agency rooted in higher digital capital reacts to this process is also a unique and important analysis made by this research. It is important to note that all these aspects are evidentially connected with the caste background of the students and their disparity in the use of technology for educational purposes.

This chapter discusses the enhancement of the theoretical framework of digital sociology through this research by intertwining digital capital and habitus with the phenomenon of caste. Furthermore, this chapter explains the limitations of this research and provides insights that could aid future educational policy and digital inequality studies. One of the important aspects of this study is its contribution to the scholarship in Indian digital sociology and its unique approach of intermingling digital technology with educational inequality research, both of which are currently underrepresented in Indian scholarship.

This chapter is divided into four sections. The first two sections consolidate the key findings of this research. The initial section focusses on the manifestations of digital inequalities in Kerala. Followed by the reasons for the perpetuation of caste-based digital and educational inequalities in Kerala are comprehended in the second section. The third section provides an overview of the theoretical contributions of this research to Indian digital sociology. Finally, the limitations of this research and the recommendations for further research and policymaking are explained in the fourth and last section.

Initially, this chapter discusses the existence of educational inequalities in Kerala, which stems from the digital disparities among different caste groups. This research explored the interlinkage between digital technology usage and educational inequality in India through the lens of caste. The findings and analysis of this study necessitate sociological research to extend the digital inequality investigation beyond the contours of the inclusion and exclusion dichotomy. The study displays the role of socioeconomic and cultural background of the students in shaping and determining their digital usage through the theoretical prism of digital capital and digital habitus.

Followingly, this chapter describes the perpetuation of caste based digital and the resultant educational inequalities. In this part, the role of technology in reinforcing the socioeconomic and educational inequalities in India unearthed through this research is comprehensively examined. This research entails the educational inequality debates in India to incorporate digital access, skills, usage, attitude and perception of an individual and the close interlinkage of these attributes with their caste background. The theoretical tools of digital habitus and digital capital are applied to decipher the reproduction of caste based digital and educational inequalities in Kerala, India.

In the third part of this chapter, the theoretical expansion of the digital sociological framework is evaluated. The integration of caste into the digital capital, habitus and field in a comprehensive manner facilitates the breakthrough of a new paradigm of research for Indian digital and educational sociologies.

Finally, the limitations of this research and the plausible policy recommendations are discussed in this chapter. This section is intended to provide insights and direction for future research and educational policy formulation.

The important conclusions derived from this research are listed as follows.

7.1 Existence of Caste-Based Digital and Educational Inequalities

This research has firmly established the existence of educational disparities based on caste, stemming from the distinction in digital access and usage among higher secondary (Science group) students. Despite being the first digital state in the country with 100% smartphone access and 75% internet literacy (Press Trust of India, 2015), the quality and quantity of access is still a pertaining issue in Kerala. The literature regarding the access issues especially regarding the quality and quantity of access in Kerala was not widely available for reference.

7.1.1 Digital Economic Capital

This research identified that to develop a comprehensive understanding of the social and educational impacts of digital inequality, the concepts of the digital

divide and digital inequality need to be reformulated. Merely having access to the digital domain does not necessarily mitigate the widening issues of digital inequality (DiMaggio et., al, 2001). Notably, in Kerala, access to and extent of usage are not significant concerns at a peripheral level (Moinuddin, 2019). The disparity lies in digital engagement, which is influenced by the quantity and quality of the digital technology one possesses. Therefore, to decipher digital inequality and the associated disparity in the educational use of digital technology, a more comprehensive and multidirectional approach to understanding technology access and usage is essential.

The research has established a significant relationship between digital autonomy and the use of digital technology for educational purposes. It was shown that students who have access to better devices and better internet connectivity are more inclined to use technology for educational purposes than their counterparts who do not have such seamless access. Students with a separate digital device dedicated to learning are more confident in incorporating technology into their learning practices. It is worth noting that students from upper caste backgrounds mostly possess a secondary device and have better technology access than their lower caste counterparts. This was evident as only 19 percent of Dalit students had access to a personal secondary device, compared to 67 percent of upper caste students and 50 percent of OBC students. Also, access to uncapped internet usage puts upper caste students in a better position compared to Dalits. While 63 percent of upper caste and 50 percent of OBC students have Wi-Fi connectivity, only 27 percent of Dalit students have access to Wi-Fi. Most Dalit students are connected to the digital space exclusively through smartphones, which is considered as under-connectedness (Katz, 2017).

Although daily internet usage is not a significant challenge in India due to the availability of internet at a cheaper rate (West, 2015), the daily data limits hinder Dalit students from engaging in studious leisure (Robinson, 2009), unlike their upper caste counterparts. Especially during examination periods, Dalit students are obliged to meticulously plan their digital usage to consume as much content as possible, while most upper caste students do not encounter such limitations. This eventually shapes the digital taste and habitus of these two groups in a very distinct manner. Furthermore, among government school students access to paid

educational resources is observed as a prerogative of the upper caste students and a few OBC students from better economic situations. None of the Dalit students in government and vocational schools had access to it, which confines them to unsupervised, unfiltered online resources that are produced for mass consumption.

In addition, the quality of the device was a greater concern for Dalit students than for upper caste students. While half of the Dalit students in government schools expressed difficulties using low-quality devices, only 25 percent of the upper caste and OBC students in government schools faced this problem. Similarly, all the Dalit students in the vocational higher secondary school expressed concerns regarding the quality of the devices in their possession and confessed that it impacted their learning during the pandemic. It should be noted that there were no Dalit students from international schools in this study, which clearly indicates the disparity in economic inequality between Dalits and upper castes.

The socioeconomic inequality is translated into the difference in the quality and quantity of digital access. Hence, it could be asserted that the disparity in the possession of both material and non-material digital resources or digital economic capital is influencing the educational practices of the students, and this form of digital capital is skewed in favour of the upper caste students.

7.1.2 Digital Cultural Capital

The research highlighted a disparity in the cultural capital aspect of digital capital, such as digital skills and usage, between upper caste and Dalit students. While basic digital skills, such as operational knowledge for web surfing, navigating, and identifying content (Van Duersan and Van Dijk, 2010), are similar across students regardless of their caste, strategic and informational skills vary significantly. Among the government and CBSE school participants, only three Dalit student possessed advanced strategic and informational skills, such as coding and the ability to search and locate information beneficial for educational and career goals. In contrast, nine upper caste students and six OBC students claimed to have these strategic and informational digital skills. This stark difference in digital

cultural capital exemplifies the existing caste-based educational and digital inequalities in Kerala, India.

This research also highlights the differences in attitudes towards technology, which is a critical factor in explaining the inequality in digital usage for educational purposes. While many Dalit students view technology as a potential distraction from their studies, a significant portion of upper caste students (73 percent) and OBC (64 percent) have a positive attitude towards integrating technology into their daily learning. Notably, two upper caste students plan to exclusively choose online classes for their Mass Competitive Examination preparation in 2023-24. Conversely, 74 percent of Dalit students prefer to keep technology at bay during their daily learning, primarily using it for revision purposes during the examination season. Interestingly, a few of the upper caste students who chose not to use technology for their learning had access to other high-quality learning resources such as coaching classes and numerous preparation materials. In contrast, Dalit students who were hesitant about using technology did not have the luxury of avoiding it during examination periods due to a lack of quality traditional learning resources. Therefore, the digital habitus, or disposition towards the educational use of technology, varies among different caste groups. Each caste group incorporates technology for learning purposes in distinct ways.

The research clearly shows the distinction in the usage of technology between different caste groups. Although, Dalit students are confident in their digital knowledge and the ability to use technology, their digital skills and digital interests are more directed towards the entertainment and communication aspects of technology. Furthermore, the cultural capital of English language proficiency was clearly distinct for upper caste and lower caste students. Despite attending the same school and sharing similar class backgrounds, students exhibited caste-based disparities in this cultural capital, which perpetuate digital and educational inequalities. While 73 percent of upper caste students expressed confidence in their ability to handle and understand English language content in digital space, only 50 percent of OBC students and 20 percent of Dalit students reported the same level of confidence.

Furthermore, the disparity in education and profession of family translates to differences in digital cultural capital between upper and lower caste students. Parents of upper caste students with better education and involved in higher skilled and technology related occupations, are able to accumulate and transfer digital cultural capital to their children. Whereas lower caste students are unable to inherit such capital from their parents. To enumerate, while 80 percent of the upper caste parents support the integration of technology into learning, only 57 percent of the OBC and 25 percent of the Dalit parents support it. This results in difference in digital usage between different caste groups. It was found that only 26 percent Dalit students from this research indicated that they use technology more for learning than for entertainment and communication. In contrast, 73 percent of upper caste students and 64 percent of OBC students stated that their primary use of technology is for education. These findings underscore the distinct digital usage and capital between upper caste and Dalit students.

Notably, the OBC students generated a complex set of responses. It should be noted that socioeconomic class of the OBC students strongly influenced their digital habitus and digital capital. The upper class OBC students exhibited digital dispositions and attitudes more akin to the upper caste students and the lower class OBC students were behaving more like Dalit students.

7.1.3 Digital Social Capital

In addition to the above factors, the distinction in digital communication patterns is also an important indicator of the existing digital disparity between upper caste and Dalits. Both the nature and extension of online communication were distinct for upper caste and lower caste, especially Dalit students. While the upper caste students preferred to communicate much less through digital platforms, they were interested in discussing educational and career topics. They tend to consider WhatsApp and other online platforms not merely as communication channels but also as an entity to motivate them to achieve success in competitive examinations. Whereas only one of the Dalit students has exhibited such a pattern in their online communication. Their communication regarding educational topics through WhatsApp was mostly during the examination periods. Also, 70 percent of Dalit students confessed to using WhatsApp and other platforms for daily

communication, which is much higher than the upper caste students (33 percent) and OBC students (57 percent).

It is known that rather than the quantity of social connections, the quality of social connections is an important source of social capital (White, 2002). A similar trend is identified in this study. Despite being low in frequency of communication, the educational aspects of communication were more occurred among upper caste student circles. Therefore, the digital social capital is also accumulated by the upper caste students through a distinct communication pattern and networks which is necessarily different from their Dalit counterparts.

Hence, this research establishes the inequality in educational and digital spheres between the upper caste and Dalits by using digital capital and digital habitus concepts. Also, this research reaffirms the close interlink between digitality and learning practices, which is shaped by the sociocultural and economic background of the individuals.

7.2 Reproduction and Perpetuation of Caste-Based Digital and Educational Inequalities in Kerala, India

The caste-based inequalities are reproduced and reinforced in Kerala and India by different factors. This research identified some of the key factors that have a significant sway in the perpetuation of caste based digital and the concomitant educational inequalities. The Caste-based sociocultural factors clearly reinforce the structural inequalities in social, educational and digital domain.

One significant factor contributing to the perpetuation of caste-based digital and educational disparity in Kerala is the structural inequalities present in society. Despite Kerala's economic and social development (Singh, 2011), caste-based inequalities were evident throughout this research. The differences in educational attainment and occupational status between upper caste and lower caste parents, especially Dalits, were apparent. The caste-based digital habitus and digital capital that developed from different socioeconomic and cultural circumstances reinforce this inequality. These factors could be disentangled once again.

7.2.1 Family Matters

A majority of upper caste parents, which means approximately 83 percent of the upper caste participants, and 64 percent of OBCs, belong to the middle class or above sections, while only 44 percent of Dalit participants' parents fall into these categories. Furthermore, more than 90 percent of upper caste parents have attended college, whereas nearly 40 percent of Dalit parents either did not attend college or the participants were hesitant to share their educational status. This stark disparity in educational and occupational levels between upper caste and Dalits translates into differences in digital access and usage. Consistent with previous research indicating that parents' education and occupation influence children's digital access and usage (Goh, Beh and Chen, 2015), this research also found that Dalit parents often discourage technology-augmented learning practices, viewing them as potential distractions. Conversely, upper caste parents, who are more familiar with the potential of technology, guide and encourage their children to use it judiciously for learning purposes. Data from this research indicates that while 46 percent of the upper caste parents utilise technology for professional purposes, only 28 percent of the OBC and 6 percent of Dalit parents engage in technology related professions. This is clearly influencing the digital attitude of the children.

Also, the extended family of upper caste students from lower economic situations provides them with the confidence and motivation to integrate technology into their academic and career planning activities. However, such close social proximity to successful relatives is absent among Dalits from lower economic situations. Interestingly, Dalit students from relatively better economic situations reported that they have relocated and are not very close to their relatives. This kind of distancing from families was not observed among economically better upper caste families. Therefore, parents and extended family play a crucial role in shaping the digital habitus and digital capital of students. They reinforce the structure of digital and educational inequalities by passing on their accumulated capital to their children. Furthermore, the students' digital attitudes and dispositions are significantly influenced by their family's perceptions. This suggests that the way students interpret technology and its use and necessity for educational purposes are shaped by their primary socialisations and habitus.

7.2.2 Aspiration and Digital Agency

Apart from this, the research also pinpoints the role of career aspirations and planning of a fictitious future in shaping and influencing digital usage patterns. The study reveals a strong correlation between having clear goals and ambitions for future education and professions, and the use of digital devices for capital-enhancing activities. These activities include using digital devices for competitive exam preparations, searching and gathering information about courses and institutions, and researching various career options.

It is important to note that none of the Dalit students were aiming for the top educational institutions in the country. Most Dalit students (63 percent) from lower economic situations were waiting for their final secondary examination results to plan their next steps. In contrast, three-quarters of the upper caste students and nearly 67 percent of the OBC students have a clear plan for their future courses or professions. Also, the students who seriously prepare for the mass competitive examinations are mainly from the upper caste and OBC students from better economic situations. This disparity in future aspirations is fostering different digital usage patterns and attitudes among students. This suggests that students with higher social, cultural, and economic capital leverage these resources to set ambitious targets for their futures. These targets and goals align with their primary habitus, in which caste plays a significant role. Therefore, the career aspirations and potential futures, which are shaped by the habitus and capital of different caste groups, inherently influence their digital habitus.

7.2.3 Locational Inequality

Another important reason for the perpetuation of digital and educational inequality revealed through this research is the location of residence. This is an important aspect of the research as it dismisses the rural-urban digital divide which is otherwise prevalent in digital inequality scholarship (Singh, 2010). This research emphasised the location of residence not because of access issues but due to the sociocultural and economic setting of the neighbourhood. To elaborate, the sociocultural and economic milieu of the neighbourhood influences the digital exposure and attitude of both family members and students.

The upper caste students have indicated that the social pressure from their neighbourhood to excel in the public examinations (as the banner of the top achievers (Full A+ winners) will be erected) has influenced their digital usage for learning purposes. Whereas in poorer neighbourhoods such pressure to outperform in public examination is absent. As the students who pass the examination with minimum marks are also recognised and celebrated in these neighbourhoods. Hence, the students in the middle class and upper middle-class neighbourhoods are obliged to leverage different resources at their disposal to achieve the best possible outcome in public examinations. Also, the parents in these neighbourhoods discuss about digital resources and their advantage in educational contexts. Such discussions are absent in poorer neighbourhoods. It is interesting to note that only two upper caste students are hailing from a poor neighbourhood in comparison to 58 percent of the Dalit students and 28 percent of the OBC students.

7.2.4 Technology Reinforced Digital Inequality

Another important factor that perpetuates the digital disparity and the application of digital technology for learning is the digital habitus shaped by recommendation algorithms and feedback suggestions on the internet. This research argues that the dispositions, attitudes and perceptions regarding digital technology are reflected and reinforced in the digital domain. This means that the recommendation-giving algorithms operating through intricate feedback loops between the user and self-evolving code, identify, magnify and reinforce the patterns in data (Jiang et al., 2021). The students from upper caste backgrounds who use technology for educational and learning purposes are inclined to use it more for those purposes due to suggestions appearing on their feeds. On the other hand, the Dalit students confessed that they use technology for entertainment purposes. They have mentioned that the recommendations on their digital spaces are more based on their past digital usage (entertainment). Hence, technology use shaped by historical attitudes and dispositions towards technology is echoed in the digital domain. It is further crystallising the same usage pattern due to suggestions from the technological spaces itself.

Furthermore, the purposeful cultivation of a digital environment that could provide an edge in a highly competitive educational environment was identified in this research. Five out of fifteen upper caste students mentioned they were careful about their digital usage as it could influence their future digital usage. Also, two upper caste students specified that they use a different digital ID for their secondary device dedicated to learning. This factor requires thoughtful attention. While the upper caste students are careful in shaping their digital habitus and they restructure their digital habitus by exploiting their accumulated capitals. Whereas the Dalit students are involved in an acknowledged ignorance and allow the digital environment to structure itself without any hinderance. None of the Dalit students and only two OBC students mentioned about being thoughtful of shaping their digital spaces. Also, the Dalit students who share devices with their family indicated about receiving suggestions based on their family members' digital usage. On the contrary, there are a few upper caste parents who purposefully keep their digital activities aloof from their children's digital devices. Hence, the digital spaces of the Dalit students are supposed to mirror their digital attitudes and dispositions, which is distinct from the digital spaces of upper caste students.

7.2.5 Role of Schools in Reproduction of Digital Inequality

Finally, educational institutions play a crucial role in reinforcing the digital and educational inequalities in Kerala, India. Private educational institutions with better technological facilities support the integration of digital usage and learning practices. They provide exposure to state-of-the-art technological facilities like smart classrooms, robotics labs, and a digital library. Also, the international school has a councillor who encourages students to search for courses and Universities abroad. This cultivates a positive attitude towards technology among CBSE and international school students. Whereas government schools discourage digital technology usage altogether and their digital engagement is limited to sharing PDF materials through WhatsApp.

The research has identified the caste angle in the institutional digital habitus. As Dalit students mostly attend government schools, the digital habitus of those institutions critically shapes the digital habitus of the Dalit community.

Furthermore, the digital habitus cultivated from their primary habitus is reinforced in government educational institutions. On the other hand, the upper caste students with higher digital capital and a distinct digital habitus encounter dissonance in government schools. However, they utilise their higher capital to shield against this dissonance or cleft habitus. Moreover, despite being exposed to better digital technology, most of the Dalit students participants in the CBSE schools are not integrating technology into learning and career planning. This means the institutions are not actively motivating the students to incorporate technology into education. Whereas the upper caste and OBC students are actively utilising the facilities provided by the CBSE and international schools. Therefore, the distinct digital habitus in educational institutions is reinforcing and reproducing the digital and digital-educational inequalities in Kerala, India.

7.3 A New Paradigm for Indian Digital Sociology

The integration of caste into the framework of digital capital and digital habitus has revealed a new paradigm for Indian digital sociological studies. Although digital capital and digital habitus concept has been sparingly used to understand the role of caste in shaping the socio-digital structure of India, a comprehensive application of digital capital coupled with digital habitus in the field of education is a nuanced approach.

7.3.1 Widening the Scope of Digital Inequality

This new digital sociological paradigm has widened the scope of digital inequality and educational inequality studies in India. Firstly, this research has established the existence of four stages of digital divide in India, which include access, skill and motivation, empowerment, and technology generated. This means, even the digital access or the first stage of the digital divide should include different aspects of material and immaterial inequality rather than focussing on the token connectivity through smartphone and daily internet quota. Also, the access to quality online resources should also be brought under the gamut of digital access. Similarly, the research stipulates to incorporate the sociocultural and economic background while probing into the digital skills, attitude and usage of the technology. On a further note, this research argues that the role of educational

institutions, neighbourhood and extended family should also be included under the structural factors rather than limiting it to parents and the rural-urban divide.

7.3.2 Widening the Scope of Digital Habitus

Furthermore, this research has manifested the role of digital habitus, especially the online recommendation algorithms and feedback loops in reinforcing and reproducing the digital and educational inequalities based on caste. The research propounded to encapsulate the digital attitudes, dispositions and usage of technology, and the representation of self in digital space under the definition of digital habitus. This means the connotation of digital habitus must include two aspects - primarily, the interpretation of digital technology, a social construct, grounded in the primary habitus of the individual. Secondly, the reflection of this interpretation in the digital domain, is further refined and reinforced by the latest technological applications. The synthesis of caste into this digital habitus framework will be necessary to decipher the Indian digital sociological structure.

7.3.3 (Re)Focussing Digital Capital

Subsequently, this research established a suitable digital capital framework for the Indian context. Despite the existence of a prevalent strand of scholarship that considers digital capital as a separate capital (Ragnedda, 2018), this research ascertained that digital capital should be treated as a combination of other primary capitals in the digital domain. Especially, in the field of Indian education and within the context of caste, it is difficult to treat digital capital as a separate capital. The process of capital accumulation, including the inheritance of cultural capital from parents that aids in acquiring digital capital, becomes difficult to explain when digital capital is viewed as a separate capital. The challenge lies in considering the extent and ability to use technology, along with certain digital skills, as forms of digital capital in the field of education. For instance, all digital skills cannot be considered as digital capital in the field of education. Similarly, it is difficult to necessarily view an extensive and diverse social network as social capital within the educational field. These complexities necessitate treating digital capital as an extension of the three primary forms of capital - economic, cultural, and social - within the digital realm. This perspective allows for a more

nuanced understanding of the interplay between these forms of capital in shaping digital inequalities.

Hence, the application of digital capital and digital habitus in the Indian context cultivates a new path for Indian digital sociological scholarship. Also, the intermingling of caste with the Bordieuan digital concepts has proved the ability of his concepts to operationalise in different sociocultural circumstances.

7.4 Limitations and Recommendations

This section discusses the limitations of this research and also provides future research and policy recommendations. The first part of this section explains the methodological and conceptual limitations of this research.

7.4.1 Limitations

This research has certain methodological and conceptual limitations.

7.4.1.1 Absence of Specific Caste Identity:

Firstly, the specific caste of the students was not enquired and only the caste categories were noticed in the research. This was because of the pre-set notion regarding the hesitancy of students to reveal their caste identity. This became a setback especially while analysing the social positioning of the Other Backward Classes. As discussed before, the OBCs provided a complex narrative regarding their digital capital and digital habitus. There are more than 75 castes among the OBCs in Kerala (Census, 2011). Hence, to understand the difference in responses from different OBC castes might have been useful for a better analysis of the interview data. Furthermore, the class factor was more prevalent amongst the OBCs. The individual caste identity of each OBC student might have been helpful in having a clear understanding regarding the social equation of the OBCs in Kerala. This means the difference in digital capital and digital habitus among the OBC students and even among upper caste and Dalit students could be more thoroughly analysed if I had the information regarding their individual caste identity. Also, the caste and sub-caste identities of all individuals might have made the analysis of this research more thorough and comprehensive. Also, there

are some studies which are focussed on specific caste identities in Kerala (Chandramohan, 2020), which helped them to make an in-depth analysis with respect to caste. This should have been followed in this research process as well.

7.4.1.2 Absence of Income Data

Another limitation of the study is the absence of data regarding the income of participants' families. Although the occupation and education of parents were enquired in the research, data regarding their annual or monthly income might have made the data analysis more accurate. The research is completely relied on the researcher's sociocultural and economic knowledge and awareness regarding the field of the study. Hence, the class categories were completely decided based on that understanding. The chances of error could have been reduced if data regarding income was collected. The predisposition regarding the hesitation of the students and family members to share their income was the reason for not collecting that data.

7.4.2 Recommendations

As an extension of this research, there are possibilities for further research and policy recommendations that could be used as a route map for digital educational policies in India.

7.4.2.1 Further Research

The feasibility of the PhD project has limited the scope of research in certain aspects. The future researchers could take research beyond these barriers to enrich the knowledge of digital inequality, caste and education in India.

Notably, verifying the educational outcome of students could be an important extension of this study. Although this research identified distinctions in access to educational resources and preparation strategies, whether these distinctions are translated into varying educational outcomes is not confirmed in the study. Also, in a traditional educational and exam environment, the advantage of digital technology is not completely tested in this research. For this purpose, a

longitudinal study that investigates different learning patterns and strategies, examination results and progress in academics and career should be conducted. Moreover, detailed research into caste based digital tastes is also necessary to understand the distinction of Indian society in the 21st century. The formation of political, cultural and social clusters should be carefully studied to understand whether the tastes and preferences are aligning or diversifying in Indian society after the advent of digital technology. Although there are some studies which showcase the presence of caste disparity in digital platforms such as Twitter (Vaghela et al., 2021), detailed studies on this aspect are absent.

7.4.2.2 Policy Recommendations

Finally, this research postulates to consider different aspects of digital inequality while formulating digital and educational policies. The New Educational Policy (NEP) 2020 in India does not treat digital inequality and its ramifications seriously. The policymakers should consider all three stages of the digital divide including different issues of access before implementing large-scale digital education plans in India. The research established that the most digitally progressive state in India itself has significant disparities in digital access, skills, usage and attitude. This means the incorporation of technology in the existing educational environment without any structural changes would render counterproductive results. It may widen the digital and educational inequality rather than narrow them. A detailed plan to address the disparity in sociocultural dispositions towards technology, the techno pessimistic approach of government educational institutions towards technology, along with infrastructure development plans to plug the loopholes in both quantity and quality of technology access etc., should be incorporated meticulously into the educational policy.

Also, the quality of educational resources available through the government educational portals such as Swayam, Shodhganga, KITE etc., should be upgraded. It should utilise technical tools such as animations, VFX, interactive modules etc., to make it more engaging like the private Edutech firms. This would be helpful for the students to engage with digital technologies for learning and development purposes.

Appendix 1: List of Participants

No	School	Category	Name
1	CBSE	General	Eeshwar
2			Alvin
3			Chandhana
4			Janaki
5		OBC	Sanjana
6			Aansila
7			Naveen
8			Devananda
9		SC	Abhishek Venu
10			Arya
11			Neeraj Nath
12			Athul
13	Govt. Urban	General	Roshini
14			Parvathy
15			Gauri
16			Arunima
17		OBC	Devapriya
18			Akhila
19			Ashmitha
20			Radhika
21		SC	Manisha
22			Neha
23			Nayana
24			Reshma
25	Govt. Rural	General	Anjana
26			Anagha
27			Ardra
28			Deepthi
29		OBC	Sreebadhra
30			Anamika
31			Devika
32			Shalini
33		SC	Abhirami
34			Shivani
35			Aparna
36			Sruthi
37	VHSS	SC	Sudhimol
38			Vishnu
39			Aromal
40			Swathi
41	International	General	Sandra
42			Karthik
43			Jyothir
44		OBC	Sanju
45			Ronish

Appendix 3: Data Clusters

1. Occupation of Parents
2. Occupation of Relatives
3. Location of Home
4. Festivals
5. Locality
6. Digital Devices at Home
7. Personal Devices
8. Access to Devices
9. Internet Connectivity
10. Data Speed/ Package
11. Subscriptions
12. Extension of Use
13. Weekdays and Weekends
14. Use of Technology
15. Perceptions Regarding Technology
16. Educational Use
17. Entertainment Use
18. Communication Use
19. Websites Visits
20. Online Class
21. Offline Class
22. Engagement in Class
23. Examination
24. Parents' Role
25. Parents' Response
26. Relatives' Role
27. Future Plans
28. Career Related Search
29. Digital Skills
30. English v Malayalam
31. Residence Association
32. Motivations
33. Teachers
34. Digital Facilities in Schools
35. Friends
36. Suggestions and Notifications



College of Social
Sciences

Consent Form for Interview

Title of Project: The Dynamics of Educational Inequality in Technology Enhanced Learning in Kerala, India .

Name of Researcher: Mayukh Devadas

Name of Supervisor: Dr Mark Murphy

Please tick as appropriate

Yes ☐ No ☐ I confirm that I have read and understood the Plain Language Statement related to participation in interview sessions and have had the opportunity to ask questions.

Yes ☐ No ☐ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

Yes ☐ No ☐ I consent to interviews being audio-recorded

Yes ☐ No ☐ I acknowledge that participants will be referred to by pseudonym.

Yes ☐ No ☐ I acknowledge that de-identified transcripts and consent form will be safely stored separately in university's archives for ten years.

I agree that:

Yes ☐ No ☐ All names and other material likely to identify individuals will be anonymised.

Yes ☐ No ☐ The material will be treated as confidential and always kept in secure storage.

Yes ☐ No ☐ The material (personal data) will be destroyed once the project is complete.

Yes ☐ No ☐ The material may be used in future publications, both print and online.

Yes ☐ No ☐ I waive my copyright to any data collected as part of this project.

Yes ☐ No ☐ Other authenticated researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.

Yes ☐ No ☐ I acknowledge the provision of a Privacy Notice in relation to this research project.

I agree to take part in this research study ☐

I do not agree to take part in this research study ☐

Name of Participant

.....

Signature

Date

.....

Name of Parent/guardian

.....

Signature

Date

.....

Name of Researcher: Mayukh Devadas

Signature

Date



University
of Glasgow

College of Social
Sciences

Participant Information Sheet

Research Project: The Dynamics of Educational Inequality in Technology Enhanced Learning in Kerala, India
Researcher: Mayukh Devadas

Invitation

Your son/daughter are being invited to take part in a research study. Before you give your consent for this it is important for you to understand why the research is being done and what it will involve. Please read the following information carefully and discuss it with others if you wish. Ask the researcher if there is anything that is not clear or if you would like more information. Take some time to decide whether you want to give your approval to your son/daughter to take part.

Thank you for reading this.

The research is intended to identify the relationship between socio-cultural and economic background and the technological usage of students, particularly for educational purposes. The researcher will conduct interviews with the participants to learn about their social and cultural situation and family background. The researcher will also enquire about their access to technology, pattern of usage and their views regarding digital technology. There will be an interview process happening within the school itself. The duration of the interview will be one hour.

Personal details such as name and other identities will be protected and will not be revealed. During the data analysis itself pseudonyms will be used instead of real name.

Confidentiality will be respected subject to legal constraints and professional guidelines.

Data collected will be used for the publication of thesis, journal publications, conferences, and seminars.

I hereby confirm that this project has been considered and approved by the College Research Ethics Committee

To pursue any complaint about the conduct of the research: contact the College of Social Sciences Acting Lead for Ethical Review, Dr Benjamin Franks: email socsci-ethics-lead@glasgow.ac.uk

_____End of Participant Information Sheet_____



University
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Sciences

Participant Information Sheet

Research Project: The Dynamics of Educational Inequality in Technology Enhanced Learning in Kerala, India
Researcher: Mayukh Devadas

Invitation

You are being invited to take part in a research study. Before you decide to take part it is important for you to understand why the research is being done and what it will involve. Please read the following information carefully and discuss it with others if you wish. Ask the researcher if there is anything that is not clear or if you would like more information. Take some time to decide whether or not you wish to take part.

Thank you for reading this.

The research is intended to identify the relationship between your socio-cultural and economic background and your technological usage, particularly for educational purposes. The researcher will conduct interviews with the participants to learn about their social and cultural situation and family background. The researcher will also enquire about your access to technology, pattern of usage and your views regarding digital technology. There will be an interview process happening within the school itself. The duration of the interview will be one hour.

Your personal details such as name and other identities will be protected and will not be revealed. During the data analysis itself pseudonyms will be used instead of your real name.

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_____ End of Participant Information Sheet _____



College of Social Sciences

09 January 2023

Dear Mayukh,

College of Social Sciences Research Ethics Committee

Project Title: The Dynamics of Educational Inequality in Technology Enhanced Learning in Kerala, India

Application No: 400220131

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: 09/01/2023
- Project end date: 30/09/2024
- 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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