University of Southampton

FACULTY OF SOCIAL SCIENCES

SOUTHAMPTON BUSINESS SCHOOL

SMARTPHONE USES IN BRICK-AND-MORTAR RETAIL STORES: GRATIFICATIONS AS ANTECEDENTS OF CONSUMER'S STATE ANXIETY AND PURCHASE INTENTION

By

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Thesis for the degree of DOCTOR OF PHILOSPHY

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Abstract

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SMARTPHONE USES IN BRICK-AND-MORTAR RETAIL STORES: GRATIFICATIONS AS ANTECEDENTS OF CONSUMER'S STATE ANXIETY AND PURCHASE INTENTION

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The purpose of this research thesis is to explore the distinctive smartphone uses and a consumer's expected gratifications during shopping journeys in brick-and-mortar retail stores in the United Kingdom. Also, it investigates whether and how smartphone's uses and gratifications reduce consumer's state anxiety and subsequently influence in-store purchase intention.

A two-step mixed-method research approach is followed. First, 43 individuals took part in a qualitative study in which open-ended interviews were conducted in shopping centres and high streets of two southern cities in the United Kingdom. After identifying the emerging smartphone uses and distinctive gratification goals, a quantitative study was followed to examine the correlational relationships between the constructs. Three hundred and forty-nine self-administrated valid surveys were collected from consumers shopping for apparel products in high streets and town centres of selected cities. By performing factor analysis, structural equation modelling and mediation analysis, the research questions were answered.

The thesis empirically pinpoints that in-store consumers are smartphone-dependent and a range of gratifications are achieved from using smartphones during shopping journeys, further categorised as utilitarian, hedonic and social dimensions. Due to distinct smartphone uses and gratifications, consumers are seen contacting their acquaintances and checking online product reviews to obtain second opinions, rather than consulting store assistants for advice prior to any purchases. Meanwhile, apprehensive consumers pursue a more assured and confident shopping experience to make optimal decisions. Therefore, the quantitative results support that smartphone's utilitarian and hedonic gratifications help reduce consumer's state anxiety, while social gratifications do not impact the anxiety. More importantly, consumer's state anxiety is revealed to decrease in-store purchase intention. Consequently, in terms of managerial implications, both shopping centres and omni-channel retailers should encourage in-store smartphone uses, accommodating consumers' needs and enhancing communication performance.

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Research Thesis: Declaration of Authorship

Print name: JING LYU

Title of thesis: **SMARTPHONE USES IN BRICK-AND-MORTAR RETAIL STORES: GRATIFICATIONS AS ANTECEDENTS OF CONSUMER'S STATE ANXIETY AND PURCHASE INTENTION**

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I confirm that:

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List of Abbreviations

Abbreviation	Meaning
A	
AVE	Average Variance Extracted
C	
C2C	Consumer-to-Consumer
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN	Chi-square Value in AMOS Output
CON	Being Connected During Shopping
CR	Construct Reliability
CSA	Consumer's State Anxiety
D	
DF	Degree of Freedom
DV	Dependent Variable
E	
EFA	Exploratory Factor Analysis
G	
GFI	Goodness-of-Fit Index
GOF	Goodness of Fit
H	
HG	Hedonic Gratifications
I	
IBMA	Information Searching via Branded Mobile Apps
IOBC	Interactions via Online Brand Community
IPI	In-store Purchase Intention
IV	Independent Variable
K	

List of Abbreviations

KMO	Kaiser-Meyer-Olkin
M	
MQP	Mobile Quick Payment
MTF	Multi-tasking Functional
MV	Mediator Variable
MLE	Maximum likelihood estimation
N	
NBMA	Number of Branded Mobile Apps Installed
O	
OS	Online Socialising
OSO	Obtaining Second Opinions
P	
PCA	Principal Component Analysis
PT	Passing Time
R	
RMSEA	Root Mean Square Error of Approximation
RSP	Relaxing Shopping Pace
RQ	Research Question
S	
SEM	Structural Equation Modelling
SG	Social Gratifications
T	
TLI	Turker Lewis Index
U	
U&G	Uses and Gratifications
UG	Utilitarian Gratifications

Chapter 1 INTRODUCTION

1.1 Introduction

The first chapter provides an overview of the thesis. Starting with the research background, it first highlights the ubiquitous smartphone uses in consumers' daily lives, by addressing their shopping experience with smartphones for diversified purposes. In particular, the thesis concentrates on understanding smartphone uses in apparel retailing segments in the United Kingdom, and there will be explanations attributed to the chosen markets. In order to grasp the motivations of individual smartphone use during a shopping journey, the uses and gratifications (U&G) theory is employed as an appropriate theoretical vehicle to disclose inherent motivations. At the same time, the researcher expects to reveal various types of gratification goals derived from smartphone uses when consumers visit brick-and-mortar retail stores.

By understanding the specific marketing practices and revisiting existing marketing literature, the first chapter also outlines the research gap and prospected research aims pertaining to tackle a set of research questions. In addition, this chapter presents a brief demonstration of the research methodology, introducing the mixed-method research design. Lastly, it draws a map displaying the thesis structure with respect to further chapters.

1.2 Research Background

1.2.1 The Ubiquitous Smartphone Uses

Mobile devices or tools, especially smartphones, have significantly influenced consumers' ways of communication and shopping. Since its introduction in the late 90s, the media has attracted a large number of users, for instance, Apple's iPhone dominated the smartphone markets by offering touch screen interface and a virtual keyboard for the first time in 2007 (Statista, 2020). Due to the rapid technological advances, consumers nowadays depend more on their smartphones to accomplish different types of tasks.

Furthermore, people typically user their phones for information searching, social communication, productivity, and entertainment purposes (van Deursen *et al.,* 2015).

Given their convenience and accessibility, smartphones are consumers' constant companions, with penetration at its highest ever level in the United Kingdom, accounting for 85% of the entire population (Mintel[1], 2018, see Figure 1.1).This figure suggests an increasing ownership by individuals who purchase smartphones, compared with traditional mobile phone users. Smartphones create opportunities in purchasing, because they facilitate the purchase intention process; indeed, half of all retail transactions now involve multiple devices (Criteo, 2015). Meanwhile, the ubiquitous smartphone uses also fulfil users' social, communicative and information desires (Kang and Jung, 2014). With the touch of a finger, consumers can access product information, establish virtual shopping baskets, compare prices, and complete purchases.

Figure 1: Ownership of mobile phones, January 2012-June 2018

Base: 2,000 internet users aged 16+

"Which of these technology products do you personally own? Please select all that apply."

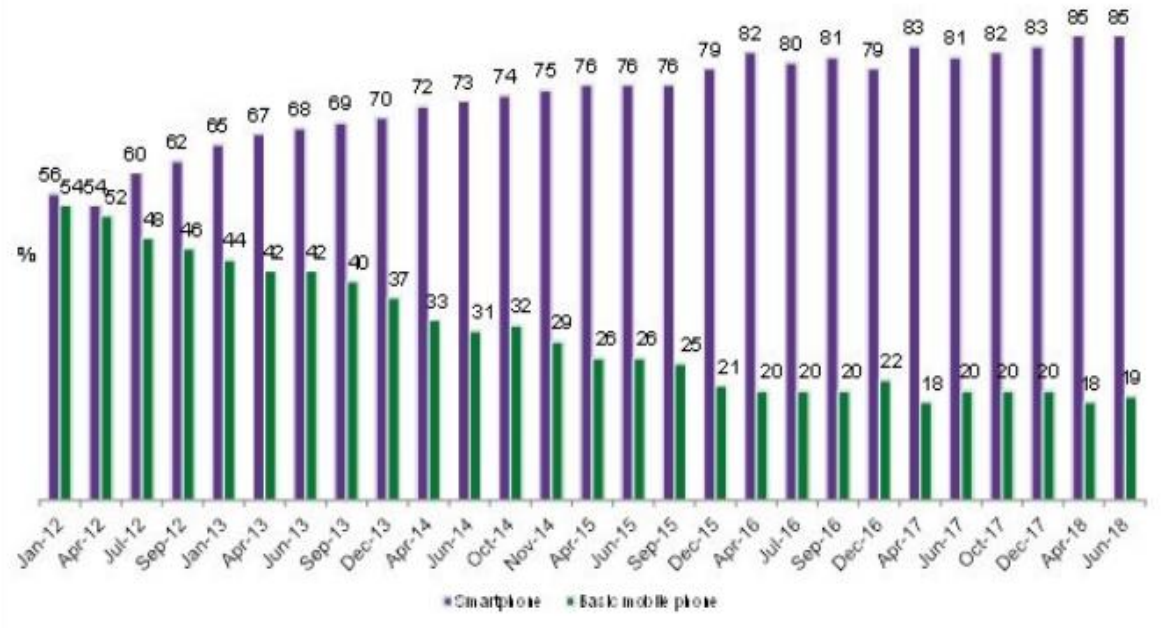

Figure 1-1 Smartphone Ownership in 2018 in the United Kingdom.

Source from: Mintel academic report (2018).

Due to the remarkable advantages of owning a smartphone, businesses have modified their mobile websites and application-based stores in an attempt to optimise

engagement with target audiences via mobile media (Lamberton and Stephen, 2016). Previous research has provided statistical evidence; for example, Kumar *et al.* (2013) stated that mobile devices contribute to 5.1% of overall in-store retail sales, contributing 10% of the entire e-commerce profits. Another report disclosed by Deloitte states that the rise in mobile retailing via smartphones impacted approximately $600 billion of in-store shopping revenues compared with $159 billion in the year 2012 (Haims, 2015). This infers that the combination of online, offline, and mobile channels has empowered omni-channel retailers to attract potential targets and achieve financial returns as their ultimate objective, due to the technological revolution (Lee *et al.,* 2012). Hence, this thesis sets out to look at how consumers evaluate their shopping experience with smartphone assistance.

1.2.2 Consumers' Experience with Smartphones

It is not surprising that the smartphone is considered an affordable and accessible device, enabling users to accomplish a variety of tasks in daily life at the touch of a finger. The device predominantly enhances information exchange and communication efficiency, while providing ultimate functional applications to solve goal-oriented tasks (Elhai *et al.,* 2016). For example, it is reported that 63% of millennial consumers complete their online purchases via a smartphone, compared with 48% who purchase from laptops (Mintel, 2020). This implies consumers' wide adoption of smartphones for shopping-related motivations apart from the fundamental communication and information requests. Younger generations, including millennials and Generation Z, show to a greater extent the appeal of using smartphones for shopping activities, due to their frequent exposure to social media platforms (Mintel, 2020). Therefore, smartphones indeed offer benefits to consumers and potential opportunities for businesses.

At present, smartphones are considered as essential media related to pre-purchasing activities (De Haan *et al.,* 2015). On the one hand, shopping practices have changed over time, and consumers are observed using their smartphones whilst browsing in brick-and-mortar stores (Harris *et al.,* 2018). Such omni-channel behaviour (adopting smartphones in physical stores) directs consumers to obtain information instead of concentrating on completing transactions (Rapp *et al.,* 2015; Rodriguez-Torrico *et al.,* 2017). Additionally,

the combined use of offline, online, and mobile channels (via a smartphone) facilitates consumers' pre-purchase searching, by displaying trending products and checking product performance based on peer reviews (Erkan and Evans, 2016) and friends' suggestions. Lemon and Verhoef (2016) further illustrated that different consumers have their own preferences in terms of mobile device usage across different purchase phases, taking into account the synergy of online and offline shopping channels.

On the other hand, consumers nowadays are offered such a diversified range of product/brand choices when they visit a busy shopping centre, that they are no longer confident in making purchasing decisions (Nagar and Gandotra, 2016). Moreover, in-store consumers may also feel apprehensive when they switch to online or mobile shopping channels (Brooks and Schweitzer, 2011; Correa *et al.,* 2010). One reason for this is that they are presented with too much variety, which overwhelms their information processing performance (Nagar, 2016). Additionally, searching and assessing product quality/performance can be time-consuming and complicated for specific product categories, increasing the consumer's psychological distress in terms of buying the appropriate product; while in-store consumers are pursuing shopping productivity at the same time (Voropanova, 2015). Nevertheless, mobile devices are used in nearly 70% of purchases (Interactive Advertising Bureau, 2015) and academics in the field of marketing have particularly focused on the association between purchase motivations and in-store experience (Yoon, 2013; Morschett *et al.,* 2015).

Consumers are pursuing more convenient and efficient shopping journeys, which are increasingly facilitated by their smartphones to search for product information, pay without queuing, and without having to consult the store salespersons (Retail System Research[1], 2018). Consumers who have obtained complementary product-related knowledge will be more assured and confident. Thus, the use of smartphones in-store assists consumers with quick access to information that helps them make decisions, which in turn reduces their apprehension when visiting shopping centres.

The above information suggests that smartphones assist the individual shopping journey. In addition, such constant uses trigger interpersonal communication between consumers due to their portable and convenient features (Grewal *et al.,* 2018). More specifically,

consumers frequently communicate with each other to exchange information, share experience, and update their shopping activities through cell phones and mobile social networks (Nedra *et al.,* 2019). However, shopping contexts may guide different smartphone uses, as online and offline environments encompass distinctive shopping features such as navigation systems. This thesis therefore examines in depth smartphone uses in offline settings - so-called brick-and-mortar retail stores.

1.2.3 Smartphone Uses In-store

In-store consumers are frequently seen using their smartphones during shopping journeys. Furthermore, Kaatz *et al.* (2019) demonstrated that the smartphone is the ideal tool to stimulate consumers' communication with cohorts any time, and at any place. This is because contemporary consumers are experiencing a higher level of engagement with peers in-store to balance information asymmetries rather than relying on what retailers supply in terms of product specifications (Kumar, 2018). Thus, there is a need to investigate the various ways in which smartphones are used whilst shopping in brick-and-mortar retail stores. Since individuals are perceived to be different in their using of smartphones during shopping trips, this may lead to substantial shopping patterns.

Retail System Research (2016) reported that 74% of consumers browse their smartphones in-store, 53% of in-store consumers read users' reviews during the process of shopping, and 41% of consumers indicate their 'webrooming' shopping preferences on smartphones prior to visiting retail stores. Hence, the ratios indicate positive smartphone use for offline shopping experience.

It is interesting to address how the smartphone relates to webrooming shopping, which could take place during store visits. Webrooming concerns a particular type of consumer behaviour, whereas online pre-searching and browsing take place before actual in-store purchasing. For instance, motivated consumers obtain second opinions from peers, checking and considering via their smartphones, in order to make better purchase decisions (Zhang *et al.,* 2015). This practice has significantly increased consumers' confidence and leveraged the uncertainty in making purchasing decisions (Flavián *et al.,* 2016). Through webrooming, consumers may have more access to product-related

information and shopping alternatives before or during actual browsing in physical retail stores (Kietzmann *et al.,* 2011).

Therefore, it is not surprising that emerging consumers are addicted to using smartphones in-store, while interactive consumers are able to derive their own satisfying shopping experience and fulfil their purchasing needs. Besides, those non-buyers known as 'showroomers' frequently use smartphones to check online product information or obtain recommendations from friends, instead of completing transactions in-store. As a result, smartphone usage enables in-store consumers to accomplish their own shopping purposes, regardless of whether they complete purchases or not.

1.3 Research Context

1.3.1 Apparel Retailing Segments in the United Kingdom

The research context focused on is the apparel retailing industry in the United Kingdom. It has been reported that approximately 80% of British consumers purchased clothing items from high-street retailers in 2017, almost 31% buying clothes from a department store; additionally, 87% of consumers continue to shop in-store for fashion brands (Mintel[2], 2018). Thus, the majority of consumers choose to purchase clothing products from brick-and-mortar retail stores. This is because the in-store interface not only offers actual items, but also places more emphasis on the consumer's experience in being able to touch or try on items prior to purchasing. Moreover, in-store consumers tend to be influenced by product displays; they also evaluate and update brands for testing new products (Mintel[3], 2018). Therefore, apparel items are perceived as hedonic and experiential product lines instrumental in shaping consumers' self-enhancement (Dommer and Swaminathan, 2013; Park and Armstrong, 2019).

With the trend for online and mobile shopping channels, apparel consumers are transferring to multi-channels, using their smartphones to conduct online purchases, as well as browsing in-store at the same time. It is rare that consumers do not use their smartphones at some point when visiting a physical store (Retail System Research[2], 2018), which further implies consumers' smartphone dependency behaviour. Together with

growing consumer demand, mobile technology such as smartphone assisted-service has gradually shaped consumers' ways of interacting and purchasing in brick-and-mortar retailing spaces. Taking Zara as an example, it has successfully responded to the need for multi-channel shopping diversity by encouraging purchasers to participate in in-store experiments and to try different in-store technology. Hence it is no wonder that the retail brand has achieved such a strong performance in the apparel retailing industry (Mintel[4], 2018).

Besides the statistical insight, the researcher chose to target the apparel retailing market for its additional attributes in the second study of the thesis. There are a variety of motivations attributed to exploring the apparel industry, based on the existing marketing literature. First, Roger (2003) put forward that fashion brands who promote their pioneer storefronts via mobile-assisted channels positively affect competitors or other industries in society. That said, fashion apparel retailers are more likely and willing to extend their businesses via smartphone-assisted technology, such as branded shopping apps. Second, the past few years have seen apparel retailers constantly adopting technological innovations in-store to interact with their target audience (Skorupa, 2012; Lewis and Loker, 2014). A typical practice is that apparel retail employees are encouraged to explain the latest technology-assisted purchasing alternatives to store visitors (Skinner, 2011), especially to Generation Y who demand ongoing access to social media networks via their mobile phones. Third, Nikhashemi *et al.* (2019) indicate that it is very challenging for apparel retailers to cope with consumers' preferences and purchasing patterns due to rapid changes. Furthermore, they suggest that apparel retailers should devote effort to understanding major trends occurring in their industry, such as heavily-dependent smartphone users in brick-and-mortar retail stores.

The above observations note that the apparel retail industry enjoys a large number of consumers who are smartphone dependents. These groups may seek shopping related or non-shopping related gratifications from using a smartphone when visiting brick-and-mortar retail stores. In addition, apparel retailers often generate potential customers by offering competitive prices, user-friendly shopping experiences, available mobile-based purchasing channels such as websites, and branded shopping apps (Sun and Chi, 2018). These initiatives encouraged the researcher to understand emerging in-store purchasing

patterns with smartphone assistance, by discovering the motivations and gratifications derived from using smartphones during individual shopping journeys.

1.3.2 The Uses and Gratifications (U&G) Theory

Positioned in the core research on brick-and-mortar retail and smartphone usage during the consumer shopping journey, this thesis employs the Uses and Gratifications (U&G) Theory (Katz *et al.,* 1974) as the theoretical foundation. Conceptually, the U&G theory was initiated to examine consumer engagement behaviour inherent in choosing specific types of media and corresponding gratifications that an audience might obtain (Wimmer and Dominick, 1994). The theory has been employed for studying the social and psychological motivations which stimulate users to choose a particular media, with a variety of gratifications in different contexts (LaRose and Eastin, 2004), ranging from radio and television to mobile learning and social networking websites (Paragas *et al.,* 2011; Wei *et al.,* 2015). U&G has been the appropriate theoretical vehicle used by scholars to explore and understand the various ways (i.e., user's motivations and preferences) in which smartphones are used whilst shopping, and what the associated motivations are for consumers (e.g. Joo and Sang, 2013; Wei *et al.,* 2015). Additionally, scholars in the field of marketing have been calling for research with respect to exploring the impact of mobile devices on the individual shopping process (Shankar *et al.,* 2016; Gogan *et al.,* 2018).

Hence, the main premise of this thesis lies in investigating if and how smartphones affect consumers' shopping journeys in-store. Thus, there is a need to investigate the distinctive smartphone uses whilst shopping in brick-and-mortar retail stores, given the increasingly dynamic nature of in-store consumer shopping behaviour. Because individuals have different perceptions when using their smartphones during shopping journeys, this may lead to diversified shopping patterns. In addition, mobile technological advances also influence consumers' decisions on the different uses of their smartphones. Therefore, the researcher has employed the U&G theory to reveal emerging smartphone uses and consumers' expected gratification goals when choosing specific usages. Moreover, the theory allows the researcher to present a variety of media usages and intrinsic consumer

insights, and to identify the reasons why in-store consumers are becoming more smartphone-dependent.

1.4 **Research Gap**

The research gap explained here may be understood as bringing together key areas of research that remain under-explored. First, a number of marketing scholars have studied omni-channel consumer shopping behaviour, where a seamless shopping experience is emphasised with the assistance of digital devices (Erkan and Evans, 2016; Juaneda-Ayensa *et al.,* 2016). However, studies have called for further research insight into the contemporary role of technology in the physical fashion apparel store. Besides, the authors consider that future studies should also explore motivational constructors that impact consumer shopping patterns. It suggests a need to investigate deeper insights of consumer behaviour relating to smartphone use when visiting brick-and-mortar retail stores.

Second, recent scholars have drawn attention to applying the Uses and Gratifications (U&G) theory in the computer-mediated sphere, especially in the context of mobile and social media communication, from the social and psychological perspectives. Theoretically, the researcher attempts to apply the theory to brick-and-mortar retail practice, exploring the specific smartphone uses and consumers' expected gratifications during individual shopping journeys in busy shopping centres. Methodologically, previous studies have employed U&G as grounded theory in qualitative research (O'Donohoe, 1994) and quantitative studies (Lee and Ma, 2017; Lim and Ting, 2012). In addition, Pai and Arnott (2013) stated that the use of U&G would be significantly appropriate for inductive research and integrating qualitative findings as the foundation of deductive research designs. Hence, this thesis uses a mixed-method approach, as suggested, by carrying out an open-ended interview study prior to conducting the self-administrated surveys. It aims to provide comprehensive marketing insights considering both the interpretive and statistical evidence.

1.5 Research Aims, Objectives and Questions

First, the thesis is grounded in the Uses and Gratifications (U&G) theory, whereby consumers' motivations for adopting smartphones during their shopping journeys are examined. Extant literature applies U&G to understand the individual social and psychological motivations for choosing particular media (LaRose and Eastin, 2004; Dones *et al.,* 2018; Liu *et al.,* 2019a). Recently, marketing scholars have extended the theory's applications from the website context to mobile applications, implying a variety of gratifications that consumers can obtain from various uses of mobile media, by conducting quantitative analysis. Alnawas and Aburub (2016) demonstrated the potential benefits of using branded mobile apps, including learning, social integrative, personal integrative and hedonic benefits. Lin *et al.* (2017) proposed that media technology might shape customers' intentions in generating gratifications via mobile-based social networks. An interesting research direction lies in clarifying the relevant gratifications with respect to smartphone usages in brick-and-mortar retail stores, since individuals pursue different gratification goals, and their smartphone usage behaviour varies (Gao and Feng, 2016).

In a similar vein, the current thesis aims to follow a thorough investigation of various smartphone uses and consumers' motivations (Joo and Sang, 2013; Ahad and Anshari, 2017; Dones *et al.,* 2018), in order to contribute to the marketing literature in terms of smartphone usage during shopping journeys in brick-and-mortar retail segments. It expects to specify and extend the existing gratification dimensions derived from smartphone uses in brick-and-mortar retail marketplaces.

Second, existing publications have mainly documented two types of consumer-related anxiety, so-called 'state anxiety' and 'technology-derived anxiety'. On the one hand, state anxiety emphasizes individual emotional distress when responding to a stimulus. For instance, Nagar and Gandotra (2016) indicated that consumers can feel anxious and uncertain when exposed to a surfeit of product and brand options. Even those calling themselves variety seekers may be anxious when comparing products and making purchase decisions, and as such, their perceived anxiety may accelerate when they choose to search on their smartphones for extra information. At the same time, consumers may experience anxiety due to the absence of smartphones especially for

those heavily smartphone-dependent users (Elhai *et al.,* 2016). These consumers dread the 'fear-of-missing-out' on any types of information if they cannot access their smartphones promptly. Thus, individual psychological apprehensions influence consumer's shopping behaviours to some extent.

On the other hand, technology-derived anxiety has frequently been discussed in terms of consumer distress when adopting new information technology in the context of online/Internet shopping channels (Powell, 2013). Furthermore, anxiety here is understood as an emotional response towards technology adoption (Venkatesh, 2000; Srinivasan, 2015), which has considerable impact on the decision to use technology/media (Oyedele, 2007). Celik (2011) disclosed that Turkish consumers experience high anxiety towards Internet Shopping technology, which might undermine consumer spending on online transactions (Celik, 2016). Besides, Saprikis *et al.* (2018) conceptualised the specific mobile phone uses for shopping activities and emphasised that anxiety has a strongly negative effect on the consumer's perceived ease of use towards mobile shopping activities. Thus, the above literature concentrates on technology-derived anxiety among consumers deciding to adopt a mobile device.

However, limited research to date has investigated consumers' state of anxiety (as an emotional response) after adopting smartphones in a particular shopping setting. Nevertheless, the current thesis does not focus on technological attributes, but studies consumers' state anxiety, illustrating how consumers may experience anxious or apprehensive feelings when confronting information overload and the choice complexity in a crowded shopping centre. Moreover, this thesis assumes that the use of smartphones is expected to drive diversified gratifications during shopping journeys, enabling consumers to feel more confident and assured in making purchase decisions.

In sum, this thesis builds on the Uses and Gratifications (U&G) theory in order to discover whether and how smartphone uses can affect the consumer's state anxiety, and subsequently impact purchase intention during an individual shopping journey in brick-and-mortar retail stores, through employing a sequential exploratory research design (qualitative followed by quantitative approach). In order to achieve the research aim, a set of research objectives have been developed:

- To explore the distinctive smartphone uses and consumer perceived gratifications during the consumer shopping journey in brick-and-mortar retail stores;
- To build a conceptual framework illustrating the relationships between smartphones' U&G, consumer's state anxiety and in-store purchase intention;
- To explore whether and how different smartphones' U&G influence the consumer's state anxiety, and subsequently influence purchase intention in-store.

Accordingly, a set of research questions are formulated:

1. Given the diversified uses of smartphones, what are the expected gratifications that consumers obtain via smartphone use in brick-and-mortar retail stores?
2. What are the different motivations for in-store consumers to choose mobile applications or mobile websites?
3. Do smartphone uses affect consumers' state anxiety during shopping journeys?
4. Does the consumer's state anxiety subsequently impact (increase/decrease) in-store purchase intention?

1.6 Research Approach

The previous section has demonstrated the literature propositions of U&G and consumers' state anxiety in the brick-and-mortar retail domain, indicating a set of research objectives to be accomplished. Therefore, the current thesis decided to employ a mixed-method design, including both qualitative and quantitative approaches. The following paragraphs briefly introduce the research approaches, with more in-depth discussion following in the third chapter.

First, the thesis primarily aims to investigate contemporary smartphone uses during an individual shopping journey. It expects to generate the emerging diversified uses and gratifications, extending the extant literature by conducting open-ended interviews in the field to answer the research objectives. Furthermore, the open-ended interviews aim to discover participants' behavioural and psychological insights, empowering the researcher to collect rich information in terms of consumer shopping diversity and smartphone use, through conversations and taking notes. More importantly, by reviewing the previous literature and generating interpretive results from the first study, a conceptual

framework could be developed to discover the associations between the research constructs in the second study.

Second, as the researcher seeks to explore the potential connections and confirm the research model, a self-administrated survey was distributed to selected targets in order to statistically measure and evaluate the relationships. Moreover, the researcher aims to investigate if and how smartphones' U&G can affect consumers' state anxiety and influence in-store purchase intention. A pre-determined structured questionnaire asked questions regarding consumers' attitudes towards adopting smartphones during their shopping journeys; participants' demographic details were also recorded, as age or gender could be control variables when analysing the data. Structural Equation Modelling (SEM) was employed to examine the correlational relationships, help interpret the results and answer the objective – should smartphones be used during consumer shopping journeys in brick-and-mortar retail stores? Ultimately, both the qualitative and quantitative findings will be translated into marketing insights and offer implications from the theoretical and managerial perspectives.

1.7 Thesis Structure

The thesis consists of seven chapters, each chapter discussing significant points attributable to the whole thesis.

The first chapter introduces the research background, establishing the importance of smartphone use to the consumer shopping journey in brick-and-mortar retail stores. It also addresses the reason why the researcher specifically investigated the apparel retailing industry in the United Kingdom. It then illustrates the Uses and Gratifications (U&G) theory as the theoretical vehicle to support the rationale of the thesis. The research aims and specific questions are formulated in order to fill the research gap. Thus, the mixed-method research method is briefly introduced to showcase the methodological decision of accomplishing the objectives.

The second chapter pays a critical and comprehensive visit to the existing literature and theories concerned with the research topic and context from four disciplines. First, it emphasises smartphone uses in brick-and-mortar retail stores, attempting to strengthen

the debate on the impact of smartphone usage on individual shopping behaviour. Second, the researcher investigates the dynamics of consumer shopping journeys under different channels, especially focusing on in-store shopping patterns. Moreover, the second literature sphere further addresses consumers' purchase intention as an additional attribute to understand if in-store smartphone assistance affects purchase decisions to some extent. Third, the chapter focuses on demonstrating the Uses and Gratifications (U&G) theory as the theoretical ground, by summarising different dimensions of similar studies that adopt the theory and explaining its applications in the current thesis. Moreover, most of the literature reviewed is drawn from marketing and information systems domains, due to smartphone technologies' interdisciplinary discussions. In the end, the researcher summarizes key research takeaways from existing publications and proposes core propositions of the thesis.

The third chapter begins with an explanation of the mixed-method research design and the research philosophy. The research contexts are treated differently in the two studies. In the first study, open-ended interviews were carried out to disclose the emerging smartphones uses and consumers' perceived gratification goals. Target audiences from a broad range of retailing industries were interviewed, because the researcher was attempting to collect as much rich information as possible from consumers with various backgrounds. When conducting the second study, the researcher particularly explored apparel product shoppers regarding their opinions of smartphone uses during their shopping journeys by generating self-administrated surveys. Different sampling techniques were employed due to respondent variances in the data collection procedures in the two studies. Furthermore, specific data collection and analytical tools are explained regarding the two studies separately, considering the restrictions of implementing qualitative and quantitative research designs. At the same time, ethical considerations will be highlighted due to the research nature of interactions with human beings and potential bias in analysing the data.

The fourth chapter looks at the open-ended interviews in depth, considering the data analysing process (using NVivo as the tool), presenting the empirical results and forming additional discussion-making comparisons compared with existing literature. By probing the opinions of consumers in real shopping scenarios, the findings identify a common

psychological distress derived from interview conversations - so-called consumer's state anxiety. Moreover, the results suggest that consumer's state anxiety is reduced when shopping is assisted with mobile devices (i.e. smartphones and mobile tablets). Especially in busy shopping centre contexts, smartphones play a key role for consumers needing to obtain additional information and second opinions prior to completing transactions in-store. Only if consumers are satisfied with information obtained during their shopping journey do they feel more comfortable and confident when making purchasing decisions.

The fifth chapter is devoted to the core research model and hypotheses development of the thesis, before planning and conducting the second study. Key constructs such as utilitarian, hedonic and social gratifications are aggregated from interpreting the first study, and they are perceived as the antecedents of reduced status anxiety during a shopping journey. Therefore, a set of hypotheses are formulated, specifying the possible relationships between smartphones' U&G, consumer's state anxiety and in-store purchase intention. In addition, this chapter presents a proposed research model shaping the hypothesised relationships between independent, mediating and dependent variables. Hypotheses establishment and research framework are then considered as an essential step before undertaking the quantitative study.

The sixth chapter draws on the main quantitative plans and analysis of the second study. First, participants' demographic details are explained, followed by the data screening process. Furthermore, survey participants' gender, education and income are discussed based on descriptive analysis. It moves on to Likert scale questions to measure individuals' opinions towards their shopping experience with smartphones. Due to the primary data collection, pilot tests are conducted prior to distributing the official survey to ensure questions' reliability and readability. In addition, a series of reliability and validity tests are examined to provide sensible outcomes. By performing the exploratory factor analysis, confirmatory factor analysis and structural equation modelling, the hypotheses are verified, and the research model is finalised after confirming the appropriate correlational relationships between the constructs.

The final chapter is dedicated to the conclusions, contributions and limitations of the thesis. It begins by presenting the significant conclusions drawn from the entire thesis,

reinforcing the theoretical and managerial contributions to the research fields. Furthermore, the chapter confronts the limitations of the current thesis, while at the same time suggesting future research avenues.

Chapter 2 LITERATURE REVIEW

2.1 Introduction

The research objectives and questions have been outlined in the first chapter, it then proceeds to demonstrate the key literature relating to the research topic. In general, there are three allied streams of research themes contributing to an understanding of smartphone use during consumer shopping journeys in this thesis. First, the research illustrates an important marketing phenomenon, whereby smartphones are frequently adopted during consumers' shopping journeys and omni-channel shopping practices. The thesis pays particular attention to understanding in-store consumer behaviour involved with smartphone use. Moreover, the smartphone is thought to diversify and enhance consumers' engagement behaviours due to its portability and convenience. Second, it explains the emerging diversified shopping journeys, given the specific contexts such as shopping centres. At present, consumers are confronted with rich product options and choice complexity, and their purchasing decision-makings can be affected when using smartphones for utilitarian and hedonic motivations.

Third, the uses and gratifications theory is adopted as the theoretical vehicle to support the research rationale, because it drives consumers' expected gratifications from selecting specific smartphone usages. It is necessary to understand the association between smartphone uses and the theory's adoption, so the thesis discusses other, similar studies that adopt the theory in the field of marketing and information systems, in order to provide comprehensive reviews on the theory's application in the area of mobile media. In the end, the researcher will raise three-dimensional gratification goals as suggested by existing studies, namely utilitarian, hedonic, and social perspectives. The categorisation contributes to the establishment of further hypotheses in the fifth chapter.

2.2 Smartphone Uses in Brick-and-Mortar Retail Stores

2.2.1 The Significance of Omni-channel Retailing

Before introducing the impact of smartphone usage in offline settings, it is necessary to understand how smartphones influence omni-channel retailing, whereas traditional offline, online and mobile shopping channels co-exist. Due to the widespread uses of smartphones, retailers have accommodated the trend by extending their storefronts via mobile-based channels such as mobile websites and branded mobile shopping applications. In particular, this thesis acknowledges the smartphone as an important platform for multichannel retailers to distribute and promote their products. In addition, contemporary retailers perform their businesses through multiple channels including traditional offline stores, electronic commerce, mobile-based and social media platforms, and even integrated channels to optimise their returns (Flavián *et al.,* 2019). Hence, omni-channel retailing performance is further enhanced, since smartphones play an important role in channel selection.

Extant retailing channels have experienced a constant transformation from the traditional channels to multichannel and even omni-channel formats (Verhoef *et al.,* 2015). More specifically, with the rapid development of digital technology, together with consumers' seamless channel choices, multichannel has entered a broader phase - so-called omni-channel retailing. The combination of mobile devices, social media and other digital platforms has shed light on the omni-channel's advantages, whereas consumers are seeking to fulfil their purchasing needs from online websites and mobile platforms, and offline brick-and-mortar stores simultaneously (Brynjolfsson *et al.,* 2013). In similar vein, Herhausen *et al.* (2015) proposed that online-offline integration would enrich consumer value but warned that channel integration might increase the consumer's 'research shopping' activity, implying a potential risk to physical retail stores.

It is reported that omni-channel consumers accounted for nearly 73% of the entire purchasing population shopping for retail products during shopping journeys, amongst 46,000 customers investigated in total (Sopadjieva *et al.,* 2017).Only 7% focused on online-only channels and 20% chose to purchase from store-only. Sopadjieva *et al.* (2017)

further reported that omni-channel consumers spent 9% more in physical stores, and those omni-channel consumers who conducted prior online research spent 13% more in-store. These figures suggest that emerging consumers are becoming omni-channel shoppers due to rising channel alternatives. The immediate motivation for consumers to select omni-channel is that it saves time and effort, and optimises purchasing decision-making (Flavián *et al.,* 2019). Yet, this thesis rates highly the positive aspects of integrated channels since in-store consumers continue to switch channels.

	Multi-channel management	**Omni-channel Management**
Channel focus	Interactive channels only	Interactive and mass-communication channels
Channel scope	Retail channels: store, online website, and direct marketing (catalog)	Retail channels: store, online website, and direct marketing, mobile channels (i.e., smart phones, tablets, apps), social media Customer Touchpoints (incl. mass communication channels: TV, Radio, Print, C2C, etc.).
Separation of channels	Separate channels with no overlap	Integrated channels providing seamless retail experiences.
Brand versus channel customer relationship focus	Customer – Retail channel focus	Customer – Retail channel – Brand focus
Channel management	Per channel	Cross-channel objectives (i.e., overall retail customer experience, total sales over channels)
Objectives	Channel objectives (i.e., sales per channel; experience per channel)	

Figure 2-1 Multichannel VS Omni-channel Management

Source from: Verhoef et al. (2015, p. 175)

According to Verhoef *et al.* (2015), the distinction between omni-channel and multichannel lies in their additional channel presence via mobile and social media, especially with the assistance of smartphones for shopping purposes. As shown in Figure

2.1, omni-channel entails more channels, with a particular focus on the combination of digital media and mobile devices; for example, about 41% of smartphone users conduct online research when visiting a retail store (Google, 2014). The boundary between offline and online channels has become unclear, as consumers have the flexibility to switch between purchasing channels and change their decisions at the information processing stage. From the retailer's point of view, omni-channels permit sellers to concentrate on maintaining the consumer experience in the long-term, in addition to making profit as a short-term objective (Verhoef *et al.,* 2015). Another difference between multichannel and omni-channel lies in that the latter enables channel integration, and consumers are encouraged to use smartphones during any purchasing stages. Thus, smartphones have evoked and enhanced omni-channel retailers' performance in providing a satisfying shopping experience, while consumers simultaneously enjoy more flexible and convenient shopping journeys than ever before.

Judging from customers' opinions, integrated channel practice has enriched purchasing diversity and changed shopping patterns, as consumers can access rich information in real time via their available smartphones. By a simple click, they can be shielded from confusion and frustration. For instance, Souiden *et al.* (2018) demonstrated that some consumers prefer to purchase from mobile shopping apps but collect their items at a physical store or collection point. Moreover, the product researching process varies, because some consumers prefer to check in-store and buy later, while other groups tend to pre-search via their smartphones before completing transactions in-store. These so-called research shopping behaviours embrace different channels and purchasing devices. Hence, it is necessary to understand how research shopping practices are delivering dynamic shopping journeys with the assistance of smartphones.

2.2.2 Research Shopping: Showrooming versus Webrooming

Following the previous section, a variety of shopping patterns have evolved owing to the rising adoption of smartphones. Research shopping, for example, pays more attention to the product research process in making a purchase, and reflects cross-channel shopping behaviours. Consumers may research products on one channel, but complete their purchases through alternative channels (Forrester, 2015; Santos and Goncalves, 2019).

Verhoef *et al.* (2007, p. 129) provided a pioneering definition of research shopping as "*the propensity of consumers to research a product in one channel (Internet), and then purchase it through another channel*". To date, existing marketing scholars have largely documented two main types of research shopping activities, known as 'showrooming' and 'webrooming' behaviours, by combining mobile, online channels, and brick-and-mortar retail spaces (Kang, 2018). On the one hand, Rapp *et al.* (2015, p. 360) proposed a definition of showrooming as "*a practice whereby consumers visit a brick-and-mortar retail store to (1) evaluate products/services first-hand and (2) use mobile technology while in-store to compare products for potential purchase via any number of channels*". This demonstrates a marketing practice where in-store consumers may use smartphones to switch channels and make subsequent decisions via a different channel. Alternatively, consumers visit physical retail stores to conduct product information searches but pay later online.

On the other hand, webrooming indicates the opposite behaviour, where consumers conduct information searching online, but complete their purchases in physical retailing shops (Philips, 2013). Consumers want to be well informed and prepared before visiting a specific retailer, and smartphones can aid in meeting the preferences of channel choice during the consumer shopping journey (Nesar and Sabir, 2016).

Showroomers and webroomers are seen to adopt channels differently according to their purposes and preferences in a single transaction, leading to different channel integration alongside the shopping process (Fernández *et al.,* 2018). Retailers nowadays consider showrooming as an effective means of displaying new products, especially in the segment of fashion apparel, since it is less complicated to evaluate a product; in-store consumers, on the other hand, pay more attention to the features relating to the retailer (Fernández *et al.,* 2018). Even though consumers can easily switch purchasing channels, the showrooming activity can undermine point-of-purchase and decrease sales, while the salesperson's performance may be challenged (Thau, 2013; Zimmerman, 2012). Moreover, Jing (2018) identified the threat of showrooming, as it may cause price comparison and severe competition between online and offline suppliers when consumers conduct research on their smartphones. Thus, retailers should be able to facilitate effective

managerial solutions while at the same time offering promising channel options to showroomers.

Extant scholars in the field of retailing have reinforced that consumers' webrooming behaviour is mostly appreciated in omni-channel shopping (Jang *et al.,* 2017; Flavián *et al.,* 2019). They further demonstrate that online and offline research helps consumers to obtain sufficient information and make optimal purchasing decisions, contributing to a more confident purchasing process. In the same vein, Accenture Consulting (2016) reported that approximately 72% of British consumers acknowledged their webrooming behaviour. For instance, webroomers are observed as focusing on online and mobile channels for intensive information generation but choose to complete their transactions mainly in physical stores, after touching the products and trialling them. In addition, when consumers think of buying expensive goods, they may spend a relatively longer time evaluating decision determinants by searching online (PushOn, 2018), while the brick-and-mortar stores provide further assurance to complete purchases (Flavián *et al.,* 2019).

Another study similarly concluded that approximately 44% of in-store consumers were influenced by web research (Flavián *et al.,* 2016), further implying that 'webrooming' is favoured by extant cross-channel consumers, especially in-store consumers searching intensively on their smartphones. Thus, both webrooming and showrooming practices enrich consumer shopping patterns due to smartphone involvement in researching product information and making quick mobile payment. Given Internet access and smartphones' functional assistance, in-store consumers can obtain various sources of product specifications and make purchase decisions through integrated channels. Moreover, mobile devices and mobile-based channels are increasingly appreciated due to their portable and productive performance.

2.2.3 Rising Adoption of Mobile Retailing

The development of mobile technology sits at the centre of omni-channel retailing and addresses the relative consumer shopping experience (Verhoef *et al.,* 2017) by placing emphasis on consumers' purchasing patterns in alternative channels (Ailawadi and Farris, 2017). Beck and Rygl (2015, pp. 172-173) presented several outstanding mobile

technologies in brick-and-mortar shopping environments, including "*location-based applications, scan-and-go technologies, self-check-out technologies, and artificial intelligence-based technologies*". Theoretically, the most recent definition of mobile retailing is "*a new kind of consumer purchasing experience, where the consumer buys by mobile phone and collects at home or at the store (pick-up boutique or collection point)*" (Pantano and Priporas, 2016, p. 549). Therefore, given the research context, it is expected that mobile retailing practices could assist individual purchases in physical retailing stores through the use of smartphones.

A typical example of mobile retailing lies in smartphone adoption, and mobile device-based retail transactions which can also take place in-store. For instance, a consumer may first browse new products on a mobile-friendly website, then check the actual items in-store, and finally complete payment via the retailer's brand mobile app or mobile quick payment. Using a smartphone speeds up the purchasing process, and since consumers have their phones available anywhere, with instant Internet access, they are more likely to accomplish purchases when mobile channels are involved. Hence, this thesis emphasises the positive effects of smartphone assistance when visiting brick-and-mortar retail stores, proposing that using a smartphone allows in-store consumers to be connected and updated promptly through habitual checking on their phones.

There are advantages in adopting the mobile retailing channels. Some consumers enjoy mobile purchasing channels because they aim to participate in online brand communities, exchanging and sharing with friends or strangers (Weinberg *et al.,* 2013). For example, consumers can check or evaluate a retailer's product performance based on peers' comments via customised mobile websites and application-based stores. Both buyers and non-buyers can obtain information before making further choices. Strom *et al.* (2014) suggested that mobile devices such as smartphones provide platforms to combine knowledge-seeking, primary phone functions and collaborations for consumers either shopping in-store or ordering online at home. Such convenience has encouraged multi-tasking consumers to perform various transactions at the same time. Similarly, consumer shopping efficiency is enhanced due to immediate Internet access to a retailer's website or mobile application-based store (Adipat *et al.,* 2011).

Lastly, mobile platforms can optimise product ordering, tracking and delivery productivity (Cagliano *et al.,* 2015), because buyers and sellers can keep an eye on their order updates from transaction to completion, and from order dispatch details to delivery status. Therefore, mobile technology motivates both companies and consumers to stay in the loop of existing achievements, regardless of time or location constraints (Wong *et al.,* 2016), especially when in-store consumers can still browse their smartphones for various types of information. However, consumers may embrace different attitudes towards using websites and mobile apps, and dynamic conditions could pose further influences on selecting a particular platform to research products and complete purchases during a shopping journey. Thus, it is also necessary to look at the difference between mobile websites and applications regarding the channel characteristics.

2.2.4 Mobile Websites Versus Mobile Applications

In general, mobile marketing presents as website browsing and application-based stores that assist the Internet services in one's 'pocket' (Lu and Su, 2009). One Google study lately revealed that more than 40% of transactions were accomplished through mobile-based channels including both mobile websites and apps (Lacy, 2018). Due to the development of online website stores, tailored websites on smartphones, such as microblogging services, can provide well exhibited product information (Wang *et al.,* 2015). Moreover, compared with personal computers, customised mobile websites offer *convenience, companionship* and *efficiency* to site visitors. Customised mobile websites (on a smartphone) also embrace characteristics such as limited access only with Internet supplied, but can be reached from external web links anytime (Liu *et al.,* 2019b). Thus, due to these alternatives, consumers are more likely to visit mobile website-based stores for the convenience and efficiency of obtaining richer information than sitting in front of their desktops.

The mobile app-based store has been updated in order to expand new storefronts continuously, and companies employ mobile application channels to attract additional targets as well as to enhance brand loyalty (Wang *et al.,* 2016). Existing marketing practitioners have identified five distinctive dimensions that distinguish smartphone applications from mobile websites, including "*visibility, accessibility, capability, usability*

as well as functionality" (Racherla *et al.,* 2012, p. 43). Thus, the convenience of smartphones and efficiency of mobile applications have motivated both companies and consumers to use the technology intensively. For example, large organisations such as Apple and Google with different operating systems, have been collaborating with retailers to create apps (e.g. Nike), so that the majority of consumers are able to approach and download the apps, ultimately completing transactions in the mobile application retail stores (Kourouthanassis and Giaglis, 2012). Consequently, mobile application retailing continuously penetrates the marketing trends resulting from channel extensions.

Due to the dynamic consumption patterns, mobile apps have been further designed for the following functions: i*nformation seeking, self-identity expressing, social experience sharing, shopping entertainment hunting* as well as *mobile payment* (Lariviere *et al.,* 2013). Product information searching is considered to be most frequently adopted function, allowing consumers access to price, quality, reviews and supplier's details in a single purchase. In addition, Taylor and Levin (2014) emphasised that consumers' interest in a retailer's mobile application could have an impact on their purchasing intention and channel decisions. Hence, branded mobile applications may influence an individual's purchasing pattern and channel choice.

Nevertheless, not all app-based store visitors concentrate on purchasing objectives; some hedonic buyers enjoy the pleasure of browsing shopping apps on their smartphones without buying in the end, as a means to alleviate boredom (Leung, 2020). Besides, consumers like to obtain social approval from experienced buyers and to exchange shopping experiences (Kim *et al.,* 2015). Consequently, individual identity can be expressed, especially for those non-buyers with socialisation goals. Last but not least, in terms of the mobile shopping perspective, the mobile quick payment method (i.e. Apple Pay) has been adopted due to its fast and convenient features. Hence, mobile apps installed on a smartphone are considered essential media for both shopping and non-shopping related activities.

To conclude, mobile websites and mobile applications attract a large number of users to conduct shopping related and non-shopping related tasks. Due to the differences in terms of functions, displays and navigation systems, consumers choose to browse websites or

apps under different circumstances given unique purposes. The current thesis aims to explore consumers' motivations for choosing two channels, respectively during an individual shopping journey.

2.2.5 Smartphone Uses in Brick-and-Mortar Retail Stores

Smartphones play an important communicational role between retailers and consumers in people's daily lives, and create discussions between new visitors, existing buyers and service suppliers. Since the introduction of smartphones, consumers' purchasing activities have been dramatically transformed in physical retail environments (Grewal *et al.,* 2017), and they are seen habitually checking and depending on their smartphones when visiting physical retailing stores.

Before highlighting the significance of smartphones, extant marketing academics have reinforced the important service that physical shopping channels provide to fulfil consumer demands (Mehra *et al.,* 2017). Furthermore, the physical storefront continuously stands out due to its ability to offer immediate product possession (Noble *et al.,* 2005). Revisiting the statistical figures, Deloitte's research stated that about 60% of U.S. smartphone users admitted to using their smartphones while visiting physical retailing stores, and consumers' purchasing decisions were influenced to some extent by their smartphone use (Paul *et al.,* 2012). Moreover, about 21% of respondents acknowledged that they checked retailers' mobile apps simultaneously while hanging around brick-and-mortar stores. Thus, smartphones compel the consumer experience particularly in offline contexts.

In addition, Yallow (2013) indicated that 73% of consumers preferred to use smartphones than to consult store staff regarding product enquiries. Moreover Google (2014) partnered with Ipsos MediaCT and Sterling Brands in order to explore the impact of smartphones on in-store purchasing behaviour, reporting that 71% of smartphone users chose to research online while in-store. More specifically, consumers admit that smartphone availability is more important than in-store experience. They use their smartphones to check and compare prices, evaluate a retailer's product performance based on peers' comments via customised mobile websites, and make instant payments.

For instance, some consumers may search product reviews online, check the actual item in-store, and subsequently complete their orders via smartphone (Harris *et al.,* 2018). As a result, consumers who are constantly using their smartphone (for product research and evaluation) purchase more than those who shop via a single channel (Deloitte, 2014).

Contemporary marketing scholars have investigated omni-channel retailing practice, with a significant focus on in-store smartphone uses, as consumers are depending more on their mobile devices to satisfy their communication and information needs (Grewal *et al.,* 2018). For example, Fuentes and Svingstedt (2017) explored young adults' mobile phone use in aiding their shopping activities, demonstrating that consumers are enabled to engage in social shopping and exchange shopping experiences via their mobile phones. Eriksson *et al.* (2018) recently investigated how smartphone use affected in-store purchasing decisions based on different product categories and gender variance, by collecting surveys from university students. These indicate that consumers nowadays spend increasingly more time searching for product information and evaluating product performance via smartphones.

2.2.6 Smartphones Facilitate C2C Communication during Shopping

At present, in-store consumers are motivated to accomplish shopping related tasks by engaging with fellow consumers or searching answers through their mobile phones, rather than acquiring help from salespersons (Kucuk and Krishnamurthy, 2007). Such behaviours have enhanced consumer-to-consumer (C2C) interactions, where consumers are involved with social and emotional engagement with fellow buyers. Moreover, the primary trigger of interpersonal interactions is information sharing (Belk ,2010) through conversations, knowledge and experience exchange, word-of-mouth (WOM) and giving recommendations to help less experienced users (Chen *et al.,* 2018). As a result, consumers can generate adequate knowledge of a product/retailer before making purchasing decisions.

Given the current research context, in-store consumers are believed to seek product reviews or additional suggestions through contacting their acquaintances via smartphones instead of depending on the information (or resources) offered by the

companies (Nguyen *et al.,* 2016). Hence, smartphones have enhanced consumers' communication by allowing them to search and shop in a different way – seeking help from peers regarding a specific product performance. Simultaneously, consumers influence one another (Zhu and Huberman, 2014; Chatterjee *et al.,* 2017). They not only search and fulfil needs for themselves, but also for other fellow buyers. Hence, such social interactions considerably influence consumer decision-making in the pre-purchase, search stage of an individual shopping journey (Chatterjee *et al.,* 2017).

2.2.7 The Significance of Mobile Social Media

The previous section illustrates the underlying C2C communications in physical retailing stores whereby smartphones contribute as a medium. Moreover, social media networking is also considered as an essential platform that connects retailers, consumers and non-buyers. Consumers' perceived value can be co-created through interactions between companies and consumers via digital platforms, such as mobile social networks on smartphones (Nambisan and Baron, 2007; Strom *et al.,* 2014). Collaborating virtually with retailers does not require consumers' presence in the physical environment, whilst at the same time consumer engagement level is not undermined. Besides, companies can focus on maintaining consumer interactivity (Kaplan and Haenlein, 2010) by checking their opinions online, in order to enhance their products or service performance. Hence, Shankar *et al.* (2016) have further suggested that marketers should concentrate on innovating branded mobile apps to encourage co-creating products and customer experience.

In general, social media offers additional consumer touchpoints through online conversations and interactions (Roncha and Thomas, 2016). The various approaches in which consumers interact with retail brands have influenced companies to apply mobile social media and collect valuable content relating to consumers' experience (Schulze *et al.,* 2015). Mobile social media tools allow consumers to 'check-in' to businesses and share information, reviews and feedback from fellow buyers at the touch of a finger (Pagani and Malacarne, 2017). Especially for those consumers who are in the process of shopping, they may seek additional information or reviews through checking mobile social media on

their smartphones. Therefore, these informed consumers will be less worried about making wrong decisions.

Simultaneously, retailers have created a strong online existence to maintain consumer interactivity (Kaplan and Haenlein, 2010; Kietzmann *et al.,* 2011), and are thus able to check consumers' opinions online, revising products and services to enhance product specification and consumer experience. Facebook, as an example, is said to be the most preferred social network application for participants (such as consumers and communities) to advocate product reviews (Headstream, 2015). Besides, Instagram is favoured by a large number of young generations under 35 amongst different social media apps (Mancuso and Stuth, 2015), users adopting the social app to interact with brands and follow product information immediately (Weise, 2015). Moreover, they simply use hashtags to discuss a popular topic on a brand, interacting with other followers and companies. Hence, consumers are often active on their mobile social apps in order to grasp true, up-to-date information on retail brands and make confident choices by avoiding information asymmetry.

In addition, with the wide adoption of mobile social networks, consumers may decide to participate in online brand communities for discussion and information sharing. Jang *et al.* (2008, p. 57) defined online brand community as a "*specialised, non-geographically bound community, based upon social relationships among admirers of a brand in cyberspace*". Consumers can flexibly share their experience and receive peers' comments which strongly contributes to C2C interactive benefits. Furthermore, eWOM occurring in online communities also impacts other co-buyers' purchasing intentions as they refer to experienced consumers' judgements for assured decision-making (See-To and Ho, 2014). As a result of virtual communities of focal brands, retailers and consumers nowadays are more *informed*, *connected, networked* and *empowered* than ever before (Luo *et al.,* 2015). Thus, retailers have subsequently adopted digital technologies such as smartphones to increase consumer engagement with retail brands and peers (Bianchi and Andrews, 2018), while majority retailers have expanded their social media presence via Facebook or Instagram (Tirico, 2016). At the same time, consumers become more confident from accessing and evaluating additional opinions before making purchasing decisions.

2.2.8 Smartphones' Dependency

As indicated above, smartphones have deeply penetrated individual shopping behaviour, and smartphone ownership was up nearly 30.9% worldwide in the year 2017 (Statista, 2018a). Having a smartphone in one's pocket connects the user or consumer with the universe due to its immediate reach and accessibility (Manzerolle, 2013). This leads to an increasing debate that consumers are addicted or strongly dependent on using smartphones in most parts of their daily lives. They need to live with their smartphones for functional assistance, entertainment, and habitual checking (Westlund, 2010; Chen *et al.,* 2017). Moreover, millennials show a heavy dependency on using smartphones for constant information generation and social networking objectives (Eastman *et al.,* 2014). Therefore, as discussed earlier, smartphones play an inseparable role in the individual shopping process.

However, there are voices paying attention to the negative effects that smartphone dependency could cause in the era of anxiety (Baker and Perez, 2016) and to their influence on purchasing behaviour. For example, non-stop smartphone use may increase psychological distress (Chesley, 2005) and distract one's attention (Gill *et al.,* 2012). Shaw *et al.* (2018) also illustrated that human-technology interactions (i.e. consumers using smartphones) trigger psychological concerns. Hence, on the one hand, over-use of smartphones may lead to growing numbers of anxious consumers, who are hindered from making rational decisions. This is because consumers may feel more apprehensive when optimising choices due to information overload and smartphone overuse.

Yet, on the other hand, as the current thesis advocates, consumers may also feel anxious about not having a smartphone, causing '*no mobile phone phobia*' (Park, 2019, p. 124). This phobia could increase, since consumers are used to having smartphones accessed and available anytime, in order to be updated and connected with society. Thus, smartphone's absence may trigger consumer's anxiety or distress at losing contact or missing out on information. In other words, consumers nowadays have realised their dependence on smartphones regardless of dynamic situations, as they pursue their instant availability. A positive attitude towards using smartphones is evident when consumers need the device to accomplish a specific task. Nevertheless, smartphones play

an inseparable role throughout the purchasing procedure (Taylor and Levin, 2014), although consumers are urged to critically evaluate the downside of smartphone dependency to alleviate their mental benefit. Alternatively, balanced smartphone dependency may help with decision-making and subsequently facilitate a satisfying shopping journey.

2.3 Consumer Shopping Journey and Purchase Intention

2.3.1 Consumer Shopping Journey

The consumer shopping journey (or customer journey) has been frequently addressed in consumer-centric literature, and the concept has been closely connected with the consumer shopping experience (Clark, 2013). Teller and Reutterer (2008) explained the customer journey with retailing brands in shopping malls, and this has been further conceptualised relating to the increasing usage of smartphones in physical shopping environments (Meola, 2016). Theoretically speaking, Richardson (2010, p. 1) defined the customer journey map as "*a diagram that illustrates the steps your customers go through in engaging with your company, whether it can be a product, an online experience, retail experience, or a service, or any combination*". Moreover, the consumer journey should be strongly considered by retailers with the purpose of seeking maximised resources and maintaining channel distribution (Wolny and Charoensuksai, 2014). This is because a satisfying shopping experience can lead to pleasant shopping journeys (Sipe and Testa, 2018) so that consumers may re-visit the shops and be willing to leave positive post-purchase feedback on retailers' websites, so-called electronic word-of-mouth (eWOM). Derived from Vázquez *et al.* (2014), approximately 92% of consumers refer to the suggestions/advice from families, peers and eWOM channels before making purchase decisions.

In consumer behavioural studies, the customer shopping journey and the process of consumer decision-making have been frequently discussed and compared (Häubl and Valerie, 2000; Hoyer, 1984). One important stage in the shopping journey involves decision-making, because decisions matter if a consumer is choosing to complete purchases as the ultimate goal. In general, the consumer shopping journey covers richer

images regarding the consumer experience in a particular transaction, while decision-making is more about an individual's cognitive dynamics towards buying a product. In short, the consumer shopping journey focuses on consumer touchpoints and engagement during store visits, revealing behavioural and psychological dynamics. Besides, these dynamics perform differently if consumers switch to mobile-based channels at some point. By contrast, consumer decision models pay more attention to consumer cognitive changes, by specifying their decision-making procedures (see Table 2-1). Alternatively, smartphones contribute to diversified decision-making due to extra information and functional assistance being enabled. As a consequence, diversified decision-making may drive distinctive purchasing intention in a shopping journey, which is a key construct of the proposed research framework in the fifth chapter.

Table 2-1 Customer Journeys and Decision-making Comparison

Customer Journeys	**Decision-Making Models**
• Involve every touchpoint and channel that customers engage with in a shopping journey • Non-linear structure • Reflect cognitive, emotional and behavioural drives	• Hierarchical stages customers go through to reach a purchase decision • Linear structure • Reflect cognitive drives

Source from: Wolny and Charoensuksai (2014, p. 319).

Wolny and Charoensuksai (2014) further identified three types of consumer journeys, namely impulsive, balanced and considered, attributed to the amount of time and effort spent on product information searching. Considering the research nature, the researcher specifies shopping journeys given smartphones' access and assistance. First, the impulsive shopping journey is where shoppers spend very limited time seeking for information to make decisions. Such consumers often refer to previous experience and product trials and may not think to use their smartphones for additional help or information, due to the limited effort required. These impulsive consumers can easily be affected when exposed to new brands. The balanced shopping journey indicates an additional search for product specifications, considering different channel resources, such as extra research on their phones if they find something interesting in-store. These pre-purchasing activities are further extended when 'considered shoppers' not only think of their own shopping tasks,

but are also thinking for their friends or intending to write product reviews later. Some considered consumers typically send a picture to friends or update their shopping trips on Snapchat for peer advice, the smartphone being an immediate tool to facilitate shopping journeys.

A good shopping journey can be perceived as consumers acknowledging the enjoyment of engaging with stores and making further efforts to interact with a store or brand (Pine and Gilmore, 2003). Bousaleh and Methew (2011) documented the specific phases of a shopping journey when visiting a physical store: consider, evaluate and purchase. More specifically, consumers first need purchase incentives. This is followed by evaluating the alternatives and subsequently purchasing the products which most closely meet their needs. However, with the rise in multichannel retailing, the typical shopping journey has been further diversified due to the enhancement of information systems and communication means (Muzellec and O'Raghallaign, 2018). At the same time, retailers nowadays find it challenging to supply consumers with superior experience alongside the shopping journey, due to the complexity of omni-channel implications (Homburg *et al.,* 2017; Barwitz and Mass, 2018). Harris *et al.* (2018) additionally pointed out the difference in the multichannel shopping journey, where product searching and evaluation procedures take longer than in the traditional shopping journey.

Therefore, a variety of consumer shopping journeys take place in the physical retailing contexts, resulting from individual purchasing purposes and channels' unique characteristics. At the same time, the adoption of advanced information technology (e.g. smartphones) may diversify consumers' shopping patterns and affect their in-store purchase intentions.

2.3.2 Consumer Purchase Intention

Consumer purchase intention has been attracting much academic attention in the field of multichannel retailing practice, ranging from intentions in physical shops, online purchase platforms and mobile channels. Extant research has documented rich concepts in defining purchasing intention concerned with different purchasing channels. Thus, this thesis also shows interest in understanding how smartphone uses impact the consumer's purchase

intention in brick-and-mortar retail stores. Moreover, the researcher aims to figure out whether smartphone uses increase in-store purchase intention.

Theoretically, Fishbein and Ajzen (1975) gave a simple pioneering definition that purchase intention was related to one's objective motivation towards buying a product. Later, Zwass (1998, p. 65) extended the description of purchase intention, to "*the intention of buyers to engage in the exchange relationships at shopping websites, such as sharing information, maintaining business relationships, and creating business transactions*". Since the introduction of e-commerce, online purchase intention has been gradually investigated, explaining the consumer's cognitive willingness to buy a specific product via online channels (Spears and Singh, 2004; Pavlou, 2003). Later, Internet purchase intention has been explained as individual incentives to conduct purchases via the Internet (Edy *et al.,* 2014; Zarei *et al.,* 2019). Marketing scholars have also started demonstrating the purchase intention with respect to smartphone setting. For example, Chen *et al.* (2010) simplified it as the consumer's intention to perform purchasing activities via a mobile application. More specifically, Martins *et al.* (2019) argue that consumers' purchasing intention is affected by mobile advertising campaigns via their smartphones.

The above illustrations have indicated different schools of defining consumer purchase intention, which can also be perceived as a cognitive attribute that shapes how individuals decide to complete purchases (Keller, 2001). Despite the diversified definitions, this thesis looks at the extent to which consumers are willing to complete purchasing a product after using smartphones in physical retailing spaces. This is because purchase intention is a typical variable that is used as a proxy for measuring the actual purchase, while this thesis particularly explores purchase intention from the consumer's psychological angle and measures the extent of making purchasing decisions. Furthermore, marketing researchers are encouraged to explore consumer purchasing intention, because it addresses the degree of satisfaction during a shopping journey, particularly with regard to purchase decision-making (Jeong and Jang, 2011). In addition, Martins *et al.* (2019) reinforced that increased purchase intention contributes to more completed transactions.

During the consumer shopping journey, purchase intention can be considered as a positive outcome of the pre-purchasing procedure. Moreover, when studying omni-channel purchase intention, several determinants, such as personal innovation effort expectancy and performance expectancy are accounted for as influencing consumers' purchase decisions (Baker *et al.,* 2016). Moreover, consumers who shop cross-channel may find it more challenging to make optimal decisions. For example, Lee and Koo (2012) suggested that consumers tend to rely on fellow shoppers' suggestions/ideas rather than learning from retail organisations before making purchases during a store visit. The unexpected dependency on smartphones may impede instant purchase decision-making in-store.

Consumers can also benefit from constant communication and checking via smartphones regarding their personal and work life when shopping in-store (Martins *et al.,* 2019). Aside from smartphone involvement, purchase intention can be diversified in different shopping contexts, as explained previously. For example, consumers may find it stressful when making decisions in complex physical retailing environments such as busy shopping centres, where too many brands and services are provided. Additionally, due to limited time spent in the brick-and-mortar retail shops, consumers may find it difficult to move between channels when visiting a crowded shopping centre. Such concerns may impede consumers from making prompt purchasing decisions, given the complexity of shopping settings.

2.4 Theoretical Ground: The Uses and Gratifications (U&G) Theory

2.4.1 Introduction to the Concept

The U&G builds a theoretical framework disclosing consumer motivations for using smartphones during shopping journeys from a media perspective. Theoretically, U&G was introduced to examine inherent consumer engagement behaviour when choosing specific media and the related gratifications obtained (Wimmer and Dominick, 1994). As explained in the previous chapter, the theory has been considered the most effective paradigm for studying social motivations that stimulate users to choose particular media, with a variety of gratification goals (LaRose and Eastin, 2004). In addition, O'Donohoe

(1994) recommended that U&G can disclose an audience's desire when selecting preferred media in advertising campaigns.

As demonstrated by Katz *et al.* (1974), the theory comprises several assumptions. First, the audience is active and goal-oriented, indicating that human beings determine subjective responses. Second, users select media based upon their former usage experience. Third, goal-oriented audiences themselves are inspired to choose preferred media in order to satisfy their initial needs. Fourth, the use of media as a gratification tactic is supposed to compete with other forms of fulfilment. Lastly, due to media diversity and individual differences, prospective gratification goals could be unique, and users' psychological disposition would vary to some extent. Conclusively, Ruggiero (2000) further emphasised that users' engagement behaviour with available media is expected to achieve respective gratifications.

In addition, the reason for adopting U&G theory rather than other theories is because the current thesis argues that goal-oriented consumers initially use smartphones to realise different gratifications. In studies relating to information technology adoption, the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have been highlighted in understanding behavioural intention when predicting technology uses, mainly within organisational contexts (Venkatesh *et al., 2003*; Venkatesh *et al.,* 2012). Both theories emphasise predicting users' behavioural intentions towards IT acceptance in a similar way; moreover, the UTAUT concerns key attributes such as performance expectancy, effort expectancy and social influence, which are not the core concepts in this thesis. While these attributes are considered evaluation criteria before adopting an innovation or a piece of technology, they do not fit the current thesis, in which consumers are determined to choose smartphones during shopping journeys in physical retailing stores. However, the U&G is thought to disclose consumers' proactive motivations for smartphone use during shopping journeys.

This thesis derives from social and psychological roots, explaining that individuals choose to use smartphones and aim to achieve corresponding gratifications from the various uses in a particular shopping context. By exploring the hidden motivations for smartphone

adoption, the theory helps to understand more details regarding an individual shopping journey. As a consequence, the uses and gratifications theory is thought to be the ideal theoretical vehicle to ground the research propositions.

2.4.2 U&G Adoptions in Computer-mediated Communications

The U&G theory has been applied in various media ranging from radio and television, to mobile learning and social networking websites (Paragas *et al.,* 2011; Wei *et al.,* 2015). Extent scholars who employ the theory concentrate on exploring the impact of information technology on individual media selection and the inherent benefits from using media in the context of mass communication (Gan and Li, 2018). At an earlier stage, the U&G was frequently used to discuss consumption behaviour in computer-mediated communication settings (Eighmey and McCord, 1998; Papacharissi and Mendelson, 2010; Sundar and Limperos, 2013). Since the Internet age has become prevalent, researchers have particularly applied the theory when studying Internet and online services usage and gratification goals.

Recently, scholars in marketing areas have extended the theory from the website context to mobile and social applications (Jang *et al.,* 2018). Furthermore, a study has proposed that media technology could shape consumer intentions of generating gratification via mobile-based social networks (Lin *et al.,* 2017). This has resulted from mobile tools' mobility and portability; for instance, smartphone users can play games anywhere (Chen and Leung, 2015). Likewise, tablets create gratifications of mobility and connectivity, in that consumers can keep in touch in real time (Leung and Zhang, 2016). Besides, social media platforms have been enjoying academic interest in studying media usage and derived benefits. For example, Gao and Feng (2016) examined Chinese consumers' motivations when using social media networking platforms and their subsequent influence on companies' branding campaigns. Dolan *et al.* (2016) looked at the significant role of social media content in maintaining interpersonal engagement diversities, highlighting that consumers needed substantial social and communicational interactions. Thus, an important outcome of selecting mobile media is to discover consumer interactive actions with available media, while users themselves reflect the motivational reasons for using mobile devices.

2.4.3 Media Uses and Expected Gratifications

Marketing researchers have largely adopted the U&G theory to study various forms of media usage motivations and gratifications. Through revisiting the extant literature in the marketing discipline, Table 2-2 exhibits relevant publications that disclose specific media usage and prospected gratification goals. The researcher also addresses corresponding data collection methods as additional information with respect to the theory's adoption.

Table 2-2 Uses and Gratifications Studies in the Marketing Discipline

Authors (Year) & *Journal*	**Media/medium**	**Data Collection Method**	**Derived Gratification Dimensions**
O'Donohoe (1994), *European Journal of Marketing*	Advertising on mass media	Qualitative interviews with 14 groups and 14 individuals, 82 respondents in total.	Marketing (information, convenience, quality assurance, consumption stimulation, vicarious consumption, added value) and non-marketing uses (structured time, enjoyment, scanning the environment, social interaction, self-affirmation)
Nambisan and Baron (2007), *Journal of Interactive Marketing*	Virtual customer environments which provide services ranging from online discussion forums	Web-based questionnaire	Four experiential motives: cognitive, social integrative, personal integrative, and hedonic
Calder *et al.* (2009), *Journal of Interactive Marketing*	Online media websites	Quasi-experiment design using survey	Consumer online engagement motives: personal (stimulation & inspiration, social facilitation, temporal, self-esteem & civic-mindedness, intrinsic enjoyment, utilitarian) and social-interactive (participation & socializing,

			community) engagement initiatives
Sultan *et al.* (2009), *Journal of Interactive Marketing*	Mobile marketing	Survey, two-country comparison	Mobile marketing acceptance antecedents: risk acceptance and personal attachment (providing information, sharing content and accessing content)
Eisenbeiss *et al.* (2012), *Journal of Consumer Marketing*	Virtual worlds as an unstructured social and technological environment	Study 1: open-ended surveys Study2: online survey through viral networking	Individual motives: socializing, love, creativity, and escape. Social influences: group norms, social identity including cognitive social identity, affective social identity, and evaluative social identity
Whiting and Williams (2013), *Qualitative Market Research: An International Journal*	Social media networks	Exploratory study with 21 in-depth interviews	Ten uses and gratifications are found: social interaction, information seeking, passing time, entertainment, relaxation, communicatory utility, expression of opinions, convenience utility, information sharing, surveillance and watching of others
Alnawas and Aburub (2016), *Journal of Retailing and Consumer Services*	Branded mobile apps	Self-administrated survey	Interaction-based benefits in the context of mobile apps: learning benefits, social integrative benefits, personal integrative benefits, and hedonic benefits. Among these, only learning benefits and hedonic benefits are found to impact purchase intention
Dolan *et al.*	Social media	Conceptual study	Social media content categories

(2016), *Journal of Strategic Marketing*		proposing a model of social media engagement behaviour	facilitate consumer engagement, namely information content, entertaining content, remunerative content, and relational content. These contents drive different levels of social media uses and participation
Lim and Kumer (2019), *Journal of Retailing and Consumer Services*	Branded online social networking (Facebook brand pages)	Self-administrated web-based survey	Findings identified information, incentives, entertainment, and connectedness as motivations for participating in branded online social networking. The results also confirmed variations among different groups of participants based on their gender and business types
Hollebeek and Macky (2019), *Journal of Interactive Marketing*	N/A	A conceptual paper redefining DCM based on literature review	Formalised a consumer-based digital content marketing (DCM) based on U&G: informed functional, hedonic and authenticity-based motives for DCM interactions
Grover and Kar (2020), *Journal of Retailing and Consumer Services*	'mobile wallets' on social media (Twitter)	Dataset 1 (mobile wallet firms-generated tweets) and dataset 2 (user generated tweets)	Firms should post a mix of content to drive users' motivations for adopting mobile wallet: informational content, entertainment content, remuneration and social content. User participation increases social promotions in online communities

Note: N/A indicates no particular medium applied.

Source from: the researcher's own output.

Accordingly, extant marketing publications also research mass media and social media usage motivations. O'Donohoe (1994) first disclosed marketing and non-marketing uses of mass media advertisements through exploratory approach, highlighting that users' gratifications consist of information, convenience, added value and social interactions. Later, since the development of online platforms and virtual worlds, marketing scholars have paid attention to discovering consumer engagement behaviours. Common uses and gratifications are found falling into personal and social-driven classifications such as social initiatives, self-esteem, intrinsic enjoyment, socializing and other benefits (Nambisan and Baron, 2007; Calder *et al.,* 2009; Sultan *et al.,* 2009; and Eisenbeiss *et al.,* 2012). Besides, Whiting and Williams generated ten uses and gratifications of social media usages including social interaction, information seeking, passing the time, entertainment, relaxation, communicatory utility, expression of opinions, convenience utility, information sharing, surveillance and watching of others. Moreover, the past few years have documented users' motivations for employing branded mobile apps via social media platforms, the majority of studies suggesting that information, entertainment, connectedness and social elements are common significant incentives for selecting media (Alnawas and Aburub, 2016; Dolan *et al.,* 2016; Lim and Kumer, 2019; and Grover and Kar, 2020).

In addition to marketing disciplines, since the current thesis is positioned as smartphone adoption in consumer shopping journeys, the researcher additionally provides relevant U&G studies in information systems and technology adoption fields. Furthermore, users' motivations for choosing mobile devices or smartphones are summarised to provide an overview (see Table 2-3), and the researcher expects to draw up a set of gratification dimensions (reflecting smartphone uses in brick-and-mortar retail stores) based on the two streams of literature reviewed.

Table 2-3 Summary of Mobile Media Uses and Gratification Dimensions

Author(s), Year, Journal	**Media**	**Data Collection Method**	**Gratification Dimensions**
Jun and Lee (2007), *International Journal of Mobile Marketing*	Mobile cell phones	Survey	Mobility, convenience, fashion, information, entertainment, relaxation, sociality

Lee *et al.* (2010), *Journal of American Society for Information Science and Technology*	Mobile game application on smartphone	Survey	Information quality, leisure, socialisation and personal status
Joo and Sang (2013), *Computers in Human Behavior*	Smartphone	Self-reported survey	Motivation for ritualised use, motivation for instrumental use
Atkinson (2013), *International Journal of Consumer Studies*	QR code on smartphone	Survey	Information-seeking, institutional trust, involvement, mavenism
Lewis *et al.* (2014), *Proceedings of the Conference American Academy of Advertising*	Mobile applications on smartphone	Survey	Personal productivity, entertainment, status, education, communication, self-improvement, and personal enjoyment
Lin *et al.* (2017), *Telematics and Informatics*	Mobile SNSs	Sequential qualitative and quantitative methods	Social benefits, social enhancement, economic incentives, message intrigue, immediate social affective communication, and immediate information support
Ahad and Anshari (2017), *International Journal of Cyber Behavior, Psychology and Learning*	Smartphones	Focus groups and in-depth interviews	Communication, safety and emergency purposes, status symbol
Gan and Li (2018), *Computers in Human Behavior*	WeChat (a mobile social application used in China)	Survey	Hedonic, social, utilitarian and technology gratifications
Gogan *et al.* (2018), *Sustainability*	Weibo (a mobile social application used in China)	Online survey	Hedonic (entertaining value), social (social participation) and utilitarian (information consumption) gratifications
Dones *et al.* (2018),	Snapchat	Online survey	Interactivity, easy access

Esic Market Economics and Business Journal			to content, distraction, creativity, fun and dynamism
Yang and Lin (2019), *Computers in Human Behavior*	Mobile social service via smartphone	Online survey	Social, enjoyment and fashion motivations

First, Jun and Lee (2007) were the first to identify certain gratifications by selecting mobile cell phones related to mobile advertising aspects, known as mobility, convenience, fashion, information, entertainment, relaxation and sociality. Lee *et al.* (2010) identified four types of gratification involved in sharing mobile games including information quality, leisure, socialisation and personal status. Later, Joo and Sang (2013) discovered ritualised and instrumental motivations for Korean consumers to use smartphones. Atkinson (2013) specifically investigated QR code uses on smartphones, consumers acknowledging the information-seeking, institutional trust, involvement and mavenism gratifications. In addition, Lewis *et al.* (2014) disclosed that personal productivity, entertainment, status, education, communication, self-improvement and personal enjoyment are key motivations for consumers to download mobile applications on smartphones.

More recently, Lin *et al.* (2017) explored consumers' motivations for disseminating eWOM in mobile SNSs, as social benefits, social enhancement, economic incentives, message intrigue, immediate social affective communication and immediate information support gratifications. In the same year, Ahad and Anshari (2017) conducted interviews to understand young users' motivations for using smartphones, namely communication, safety and emergency purposes, and status symbol. Then, Gan and Li (2018) identified the social, hedonic, utilitarian and technology gratifications for Chinese consumers who continue to use WeChat (a mobile social media application used in China). Moreover, Gogan *et al.* (2018) studied a similar mobile social application (Weibo in China), contributing to consumers' satisfaction commitment, known as hedonic (entertainment value), social (social participation) and utilitarian (information consumption) gratifications. In similar vein, Dones *et al.* (2018) explored the gratification goals from using Snapchat, namely interactivity, easy access to content, distraction, creativity, fun and dynamism.

Lastly, Yang and Lin (2019) illustrated the incentives of elderly mobile phone users of mobile social services as they pursued social, enjoyment and fashion activities.

In sum, the above extant research has adopted the U&G theory to disclose a variety of gratification goals resulting from diversified media usages in different contexts, particularly since recent years have started paying attention to smartphones and mobile social apps. Moreover, both marketing and information system scholars suggest the utilitarian (i.e. information seeking and convenience), hedonic (i.e. enjoyment, relaxation, and passing the time), and social (i.e. socializing, interactions, self-identity expression and sharing) gratification dimensions that can be obtained from using mobile media. Nevertheless, limited studies employ the theory to capture the unique gratification that consumers may obtain from using their smartphones during a particular shopping journey in offline settings. Therefore, the research gap invites this thesis to find out how the smartphone's uses achieve consumer gratification goals during a shopping journey in brick-and-mortar retail stores. The researcher expects to extend and specify the existing gratification dimensions (utilitarian, hedonic and social) generated from distinctive smartphone uses, simultaneously investigating the theory's application in physical shopping contexts.

2.5 Summary

This chapter has provided thorough and critical reviews of the extant marketing research, aiming to outline the emerging research focus and potential gaps. More specifically, it began with in-depth discussion on smartphone uses and adoption in omni-channel and brick-and-mortar retail marketplaces. In addition to outlining some significant figures, the researcher also articulated how smartphones affect consumers' daily lives and shopping patterns under different circumstances. It was concluded that smartphone penetration and dependency relatively impact the consumer shopping experience. Second, due to media diversity and individual preferences, consumers' shopping journeys are then influenced by smartphones, particularly in offline retail settings. Derived from the extant literature, smartphones also impact consumer purchasing decisions owing to their technological assistance. Employing the uses and gratifications (U&G) theory, the researcher provided critical reviews of both marketing and information systems literature.

Both streams of research suggest utilitarian, hedonic and social gratifications as motivations when adopting a particular media or innovation. The theoretical vehicle enabled the researcher to investigate consumer gratifications from smartphone uses during a shopping journey. In addition to that, more in-depth variances in terms of choosing mobile websites and mobile apps will be revealed during the data analysis procedure.

Chapter 3 RESEARCH METHODOLOGY

3.1 Introduction

The first chapter introduced the research context and raised key research questions to be answered. The second chapter outlined the relevant literature and research gap, and then proceeded to design appropriate research approaches in order to tackle the research phenomenon. Derived from the American Marketing Association (Fellman, 2000, p. 33), 'marketing research' is theorised as:

"Marketing research is the systematic and objective identification, collection, analysis, dissemination, and use of information for the purpose of improving decision making related to the identification and solution of problems and opportunities in marketing".

Thus, marketing researchers will need to demonstrate an in-depth plan regarding specific methods of implementing the market research, approaching potential targets, sampling method and data collection procedures.

This chapter explains the methodology in depth. The current thesis adopts a mixed-method two-step study entailing both qualitative and quantitative approaches. More specifically, the researcher firstly employed in-depth interviews to disclose emerging marketing practice with regards to the different ways that consumers use their smartphones in physical retailing stores. Through on-site observation and subsequent face-to-face interviews, the researcher collected first-hand information about consumers' behavioural and psychosocial diversities related to smartphone-assisted shopping journeys. In terms of qualitative data analysis, the reliability and validity of the interview questions was justified, NVivo 11 software playing a significant role in coding and grouping the themes/sub-themes.

After generating the specific variables from an individual shopping journey (discussed in depth in Chapter 4), the researcher proposed a conceptual framework to outline the rationale of the research model (see details in Chapter 5). A follow-up self-administrated survey was carried out to examine the correlational relationships among the constructs

and to answer the third and fourth research questions. By distributing surveys in shopping centres and high streets, the researcher received timely feedback from potential respondents (consumers on the spot). In addition, IBM SPSS 26 and AMOS 26 programmes contributed to the quantitative data analysis in terms of confirmation of the measurement model and proposed structural model. Lastly, the researcher revisited the conceptual framework and provided a comprehensive interpretation. It is emphasised that the current thesis involves ethical considerations due to human interactions and access to the interview scenes. Therefore, the researcher provides explanations at the end of the chapter on how the ethical issues were addressed, according to the University ERGO (ethics and research governance online) policy.

3.2 The Mixed-Method Research Design

Previous studies on the U&G theory have concentrated on quantitative phases and statistical measuring. For example, Joo and Sang (2013) looked at Korean consumers' smartphone adoption by conducting quantitative surveys, and Grewal *et al.* (2018) identified the positive effects of in-store smartphone use through implementing eye-tracking technology and recording consumer shopping trips. Through employing a purely quantitative research design, these scholars aimed at detecting the exact impact of smartphone usage and providing significant statistical figures. By contrast, a piece of qualitative research by Whiting and Williams (2013) explored consumers' motivations for using social media, aiming to provide primary information generated from conversations with mobile device audiences. Hence, the current thesis similarly focuses on consumer-centric aspects, by designing exploratory research and adopting a mixed-method design to disclose empirical marketing phenomena with statistical supports.

In addition, mixed-method research design may require different weights of qualitative and quantitative strategies (Cresswell and Plano Clark, 2011), allowing researchers to collect data more than once, or re-collect data of the same study. Moreover, one study may target the same samples or different groups of participants, depending on the nature of the research (Tashakkori and Teddlie, 2010). Marketing researchers are also challenged in determining the sequence of implementing qualitative or quantitative designs. Based on the research objectives, this thesis adopts a 'sequential exploratory research design',

where qualitative method is followed by quantitative design (Cresswell and Plano Clark, 2007), which is frequently applied in social science fields (Morgan, 1998).

Mixed-method design has received considerable attention by social scientists in the fields of information systems and sociological segments (Cao *et al.,* 2006; Atienza *et al.,* 2015; Venkatesh, *et al.,* 2013). Researchers respect the advantages and drawbacks of both qualitative and quantitative approaches by strengthening exploratory and confirmatory results simultaneously (Tashakkori and Teddlie, 2009). Venkatesh *et al.* (2013, p.26) presented the purposes of undertaking the mixed-method design in information system (IS) schools, as seen in Table 3-1.

Table 3-1 Purposes of Undertaking the Mixed Methods Research

Purpose	**Description**
Complementarity	Mixed methods are used in order to gain complementary views about the same phenomena or relationships.
Completeness	Mixed methods designs are used to make sure a complete picture of a phenomenon is obtained.
Developmental	Questions for one strand emerge from the inferences of a previous one (sequential mixed methods), or one strand provides hypotheses to be tested in the next one.
Expansion	Mixed methods are used in order to explain or expand upon the understanding obtained in a previous strand of a study.
Corroboration/Confirmation	Mixed methods are used in order to access the credibility of inferences obtained from one approach (strand).
Compensation	Mixed methods enable compensating for the weakness of one approach by using the other.
Diversity	Mixed methods are used with the hope of obtaining divergent views of the same phenomenon.

Source from: Venkatech et al. (2013, p. 26).

As shown in Table 3-1, the significant advantage of employing the mixed methods design is that it combats the constraints of using one approach against the other. Similarly,

mixed methods will be able to draw comprehensive and conclusive results while expanding the research insights beyond the researcher's initial plan at the same time. Particularly, for empirical research projects, it helps establish and develop the theories through examining the hypotheses. Hence, due to its increasing acknowledgement, marketing academics in the field of consumer behaviour started adopting the mixed method to perform their research campaigns. For example, Pavlou and Fygenson (2006) originally conducted mixed-method research to explore consumers' adoption of e-commerce. They firstly undertook open-ended interviews to identify the hidden value behind a marketing phenomenon, then tested the mechanisms using a confirmatory deductive method. Hence, the current thesis expects to achieve fruitful results by implementing a sequential exploratory design.

More specifically, the researcher expects to interview consumers in shopping contexts and achieve first-hand consumer experience relating to smartphone uses in the first study. Through face-to-face interviews, this should enable the researcher to interpret the emerging consumer behaviours in-store. The second study allows the researcher to further test possible relationships between key constructs drawn from the first study, by using a follow-up quantitative approach. Thus, such sequential exploratory design is considered as the most appropriate approach to provide comprehensive answers to the research questions.

3.3 Understanding the Research Philosophy – Pragmatism

Marketing researchers should be aware of the research philosophy for the reason behind adopting a particular research method and its implications for practitioners (Bristow and Saunders, 2018, p. 46). As shown in Figure 3-1, the research philosophies, beliefs and assumptions and research design are associated with each other, indicating that the philosophical proposition of a research project is essential and correlated with determining the research methods and developing the research hypotheses. Besides, as demonstrated by Saunders *et al.* (2016, p.124), research philosophy is fundamentally recognised as knowledge development through understanding a specific question or phenomenon. Moreover, it motivates the researchers to explore deeper insights and assumptions about their own beliefs and nature of the world.

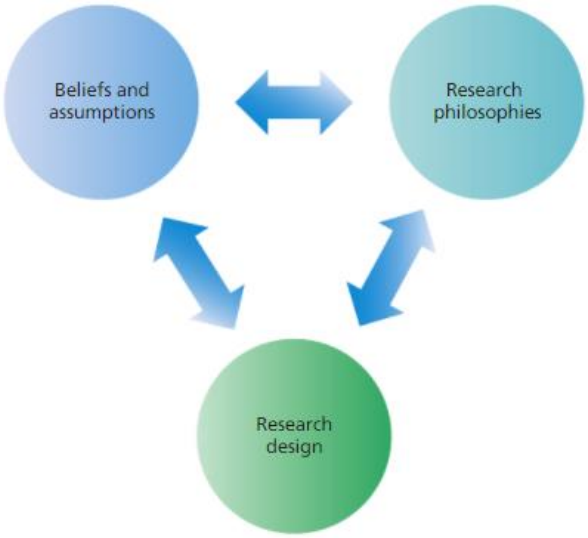

Figure 3-1 Developing your Research Philosophy: a Reflexive Process

Source from: Bristow and Saunders (2018, p. 46).

This thesis emerges from pragmatism philosophy, since the research questions are set to understand a practical marketing issue and contribute to real marketing insights. As Saunders *et al.* (2016, p. 130) further addressed, pragmatists choose to accept diversified views of interpreting the world and carrying out research. In addition, pragmatism aims to provide a whole picture of the research phenomena in order to perform a more creditable and reliable consequence. By considering and tacking actual marketing issues, pragmatists expect their research output to be applied to enabling actions for marketing practitioners.

Pragmatism propositions are suggested, but not limited to employ multiple methods and research approaches; moreover, marketing researchers need to be aware of the practical contribution that potential methods could achieve in the end. Existing scholars have significantly acknowledged the practical and applicable nature of employing pragmatism (Datta, 1994; Teddlie and Tashakkori, 2003), as it aims to provide practical implications for marketing organisations. For example, Venkatesh *et al.* (2013) also suggested that pragmatism enables researchers to consider both qualitative and quantitative method in the same study. Some social scientists, however, consider single method such as pure qualitative or quantitative approach to resolve marketing problems.

Hence, due to the nature of this thesis, pragmatism was thought a suitable philosophical vehicle to answer the empirical questions that are under-explored in the field of marketing. Furthermore, the mixed-method design delineates two-step studies including both qualitative and quantitative approach. The researcher will understand the research assumptions from ontological, epistemological and axiological aspects, as Niglas (2010) suggested, concerning multiple dimensions rather than a single paradigm.

Theoretically, ontology implies the assumptions that reflect the way that researchers understand and implement a study; epistemology emphasises how people accept the knowledge and communicate and share it with each other; and axiology concentrates on the value and ethical angles of the research (Saunders *et al.,* 2016, p. 134). To apply these characteristics to the pragmatism of the thesis, ontology addresses the complexity and reality of marketing practice. For instance, it is relatively complex and challenging to stop high-street consumers and ask about their smartphone uses during a shopping journey due to the dynamic processing. The researcher will also need to note down respondents' behavioural changes during interview. In similar vein, the epistemological position of pragmatism concentrates on resolving problems, given specific research settings. For example, this thesis attempts to suggest prevalent managerial implications for retailers and shopping centres of future practices, given that smartphones would enhance omni-channel retailing performance and consumer experience. As for the axiological position, this demonstrates the substantial value of the research that a marketing researcher manages to achieve. Moreover, it gives the researcher a certain amount of reflexivity in terms of understanding participants and interpreting the research consequences. Thus, this thesis expects to accomplish valuable research and provide meaningful insights into real marketing practices.

The reason for following pragmatism philosophy is summarised as follows. As explained above, pragmatism is employed to resolve a specific marketing problem by rigorously considering both subjectivism and objectivism values of the fact. Apart from its focus on real practice, pragmatism embraces theory development, research hypothesis and value propositions that support the data collection process. In addition, the reflective nature alleviates the researchers' initial doubt regarding the marketing questions and enables the researcher to retain his or her own beliefs towards the marketing reality. Instead of

delivering abstract social truths, the current researcher essentially wants to find out about the emerging consumer shopping experience with smartphones' assistance, and how attitudinal and behavioural diversities lead to distinctive usage motivations. In addition, the researcher employs a mixed method study to investigate different perspectives and provide a comprehensive interpretation. Given all these attributes denoted to conducting pragmatism research, the researcher is confident of solving the empirical marketing issues.

Once the philosophical positions are confirmed, the decision is made whether to adopt induction, deduction or abduction approaches. This is a vital step before determining the mixed-method design, since social scientists should be clear about the research phenomenon and theoretical application, given a specific context. Theoretically, interpretivism schools choose inductive approaches (e.g. in-depth interviews or focus groups) to identify the themes and develop a conceptual framework. By contrast, in deductive reasoning, the conclusions are derived from examining the hypotheses based upon an existing theory (Ketokivi and Mantere, 2010). The current thesis used an 'abduction approach' which entailed exploring the research phenomena, identifying the themes and pinpointing these in a proposed conceptual framework, testing the results and re-confirming the research proposition (Saunders *et al.,* 2012, pp. 144-145). The abductive approach also enjoys the same flexibility as the school of pragmatism, the researcher being able to ascertain plausible questions, refer to existing theories or concepts affiliated to the problem, set up a proposed theoretical agenda, and collect multiple sources of data to draw the results. This further supports the motivation for adopting a sequential exploratory research design.

In conclusion, mixed-method research design encourages marketing researchers to follow the pragmatism paradigm to alleviate the disadvantages of the objectivity or subjectivity of each approach in two studies, respectively. By considering the philosophical positions, the researcher was able to apply acceptable knowledge to specific marketing phenomena. Research context is also important in the sense of how researchers perceive and make decisions to adopt different approaches.

3.4 Research Context and Time Horizon

This thesis intends to follow primary data collection and derive empirical results and contributions. Conducting research in real marketing scenarios implies the benefit of collecting real-time information from the target audience. Meanwhile, the researcher was able to record consumers' purchasing patterns, which contributed to more meaningful results (Malhotra, 2007, pp. 106-107). In general, the cost of conducting primary data collection can be high, and it is time-consuming compared with generating secondary data. However, the researcher established a set of empirical research objectives and determined to collect primary data. Both studies were carried out in the shopping centres and high streets of two southern cities in the United Kingdom where the research group was based. The author aimed at providing insightful knowledge and contributing to contemporary retail industries in the United Kingdom.

For the first study (qualitative research) of the thesis, the researcher interviewed consumers from a broad range of retail segments, such as supermarkets for groceries and essential products, shopping centres for clothing items and leisure activities, and certain individual retail brands on high streets in city centres. The reason for determining the broad retailing segments was because the first study aimed to identify as many smartphone uses as possible, and diversified uses might take place across the different backgrounds of store visitors. Meanwhile, due to different retailing lines, individual smartphone uses vary from pre-purchase to purchase stages of a buying trip owing to the dynamic shopping purposes (Lin *et al.,* 2017). Thus, broader retailing segments were chosen to draw on fruitful smartphone use and corresponding impact on individual shopping journeys in the first study.

In particular, for those respondents approached from shopping centres, the researcher spent time negotiating with the administrative teams of the shopping centres, due to ethical considerations (to be explained at the end of the chapter). The variety of respondents led to a more comprehensive understanding of individual shopping journeys and consumers' perceived gratifications from using smartphones. In addition, a significant value in conducting this marketing research lay in that respondents could provide reflective and vivid shopping experiences, as taking part in the research could be part of

their day's shopping journey. In this case, consumers had a clear memory of their shopping experience and tended to share more information on the spot.

In terms of the second study (quantitative research), the researcher specifically concentrated on the apparel product industry. The reason for targeting the apparel market has been explained in section 1.3.1. In short, apparel retailers actively marketed their businesses via digital platforms consisting of customised mobile websites, branded mobile shopping applications and social media accounts. Omni-channel consumers chose to research or purchase from one channel as opposed to others, based on individual preferences and convenience. Similarly, the researcher distributed pre-determined surveys in the high streets and town centres of two selected cities. The researcher was able to approach an adequate number of participants to answer the questionnaire in open shopping settings. More in-depth discussion regarding the quantitative data collection will be explained in section 3.6.

For both the qualitative and quantitative studies, the researcher interviewed specific target respondents only once at a specific time in real shopping scenarios. Moreover, there were no follow-up interviews or questions for the selected respondents. Each respondent was supposed to complete one type of research, only once at a snap point during an individual shopping journey. Since the researcher only intended to collect first-hand information on the spot, it was not necessary to compare attitudinal or behavioural changes with respect to individual smartphone uses.

3.5 Study 1: Discover emerging Smartphone Uses during Consumer Shopping Journey

A qualitative study was employed prior to the quantitative phase. Qualitative strategy is linked to interpretivist philosophy that generates specific insights from a small sample of subjects (Denzin and Lincoln, 2011). Qualitative research methods attempt to answer questions relating to the 'what', 'how', and 'why' of social phenomena, in order to discover how individuals or groups perceive realities (Baruch, 1999). One distinct advantage is that qualitative methods (such as focus groups and in-depth interviews) enable researchers to communicate with respondents in person and to observe their

emotions and attitudes through conversations. Furthermore, they decently capture respondents' cognitive understanding and establish a rapport during the interview process. In addition, researchers are able to review and extend the theoretical assumptions.

Qualitative strategies mainly explore interviewees' perceptions and hidden relationships with respect to a specific value. During data collection, the process is not structured, both interviewers and subjects being free to talk around the questions. This is beneficial as it builds up a rapport during the conversations. Extant qualitative methods consist of case study, in-depth interviews, focus group study, ethnography and action research, etc. The first study of the thesis applied open-ended interviews to disclose smartphone uses and consumers' perceived gratification goals.

3.5.1 The Open-ended Interviews

By observing consumers' behavioural patterns and asking what they were doing (Harris, 2007), the first study aimed to understand whether in-store consumers were smartphone-dependent during their shopping experiences in brick-and-mortar retail stores, through conducting open-ended interviews. Open-ended interviews, also known as semi-structured interviews, have the advantage that interviewers can flexibly move between questions and expand answer diversity (Denzin and Lincoln, 2011). The researcher (also known as the interviewer in the study) prepared and specified a list of themes to be answered during the interviews. The order of probing questions could be flexible in order to enhance the flow of face-to-face conversations, as long as participants were able to share their opinions and provide valuable insights.

On the one hand, compared with structured interviews, employing open-ended interviews benefits both the researcher and participants, given the research purpose. Moreover, the researcher expected to gather diversified answers on a set of pre-determined themes, while at the same time, participants could flexibly share their shopping experiences in a comfortable manner. Seidman (2006, p. 10) reinforced that open-ended interviews aim to build and explore the questions regarding participants' opinions, and are appropriate to apply in research relating to participants' experience.

On the other hand, the reason for opting for open-ended interviews rather than in-depth interviews was due to time restrictions, given the interviewing context. In-depth interviews generally require at least 30-minute conversations with each interviewee in a decent setting, which was not applicable in the current study. The first study approached potential participants in real shopping scenarios (e.g. shopping centres and town centres), and it was challenging to interrupt consumers expecting them to participate in a long research conversation during their shopping journeys. Thus, open-ended interviews were selected.

In addition, while the interviews were being processed, the facilitator could play a leading role in directing responses. Alternatively, participants could lead and extend the discussions into areas that had not been touched on before, which might help to understand and extend the research phenomena. The researcher was then able to formulate a new question relating to the research objectives. Therefore, open-ended interviews were suitable for undertaking this exploratory study. Furthermore, this strategy is important for discovering the hidden and intrinsic perceptions embraced by each participant.

3.5.2 Sampling Strategy and Participants

Marketing scholars and practitioners have frequently addressed sampling techniques in order to draw representative results from the whole population. In general, probability and non-probability sampling techniques can be used to collect primary data. Figure 3-2 conclusively describes the variety of sampling means adopted from Saunders *et al.* (2012, p. 261). Theoretically, probability sampling demonstrates that each participant has an opportunity of being selected and is commonly used when conducting surveys or experimental research. On the other hand, non-probability sampling fails to confirm the chance of individuals being selected but can be used in both qualitative and quantitative designs.

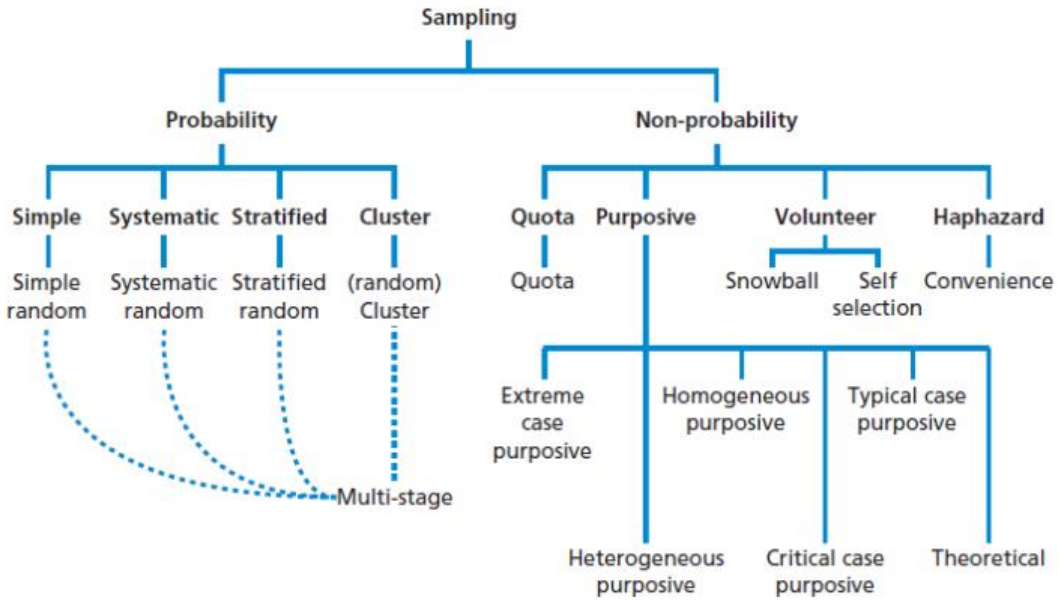

Figure 3-2 Classification of Sampling Techniques

Source from: Saunders et al. (2012, p. 261)

Probability sampling methods are often employed to evaluate the statistical features of a population based on the sample performance. Marketing researchers adopt probability sampling when undertaking experimental or survey designs, which does not fit the nature of data collection in the first study. In terms of the first study, non-probability sampling method was chosen, as it helps the researcher to discover individual differences towards a particular phenomenon, rather than generalising the results of a population. By considering the purposive sampling method, marketing researchers have certain control over participant selection according to the nature of the research, targeting the diversified background of participants so as to demonstrate the specific attitudinal and behavioural outcomes.

For the first qualitative study, the researcher decided to adopt non-probability sampling method – purposive sampling (also known as judgement sampling) (Saunders *et al.,* 2012, pp. 287-288). It is necessary to compare non-probability sampling methods and explain why purposive sampling was decided upon. First, quota sampling is suitable for structured interviews and can be considered as stratified sampling that needs larger data than typical semi-structured interviews (Barnett, 2002). The first study employed open-ended interviews as participants' opinions were distinctive from each other regarding the

research theme. In addition, the researcher only aimed to interview a small number of homogenous groups who used smartphones during their shopping journeys.

Second, volunteer sampling assists the marketing researcher with voluntary participants, instead of being chosen to collaborate with the study. It also embraces the risk of some bias, leading to pure homogeneous samples in the end (Lee, 1993). Therefore, the researcher did not consider using the snowballing method, so as to minimise bias. Since the study required the researcher to approach potential participants in person, their consent was generated before proceeding to the interviews. Third, as for haphazard sampling, the so-called convenience sampling technique, it merely controls suitable respondents, but mainly approaches available targets for convenience. The first study sought to interview potential participants who might have used their smartphones during shopping journeys in-store. In conclusion, the above three non-probability methods were not considered ideal sampling tactics to be applied in the first study.

Referring to purposive sampling, the researcher selects potential participants, considering whether they will fit the research setting and will be able to provide meaningful answers to the research questions. Purposive sampling lacks representativeness of the selected population but increases the answer diversity. Hence the researcher followed the 'heterogeneous sampling' approach. Moreover, potential participants were expected to embrace diversified characteristics (i.e. different income and education levels, level of smartphone dependency) and draw expanded results (Patton, 2002).

Given the above justifications, purposive sampling was applied where prospective consumers were observed carrying shopping bags and had their smartphones available. Since the researcher assumed that they might have been using their phones for various reasons at some point during their shopping journeys, these groups were more likely to contribute related information regarding the research questions. The researcher spent approximately 30 hours over two weeks in retail environments (shopping centres and high streets), observing and interviewing consumers who used their smartphones in physical shopping settings. As a result, 43 consumers between 18 and 52 years of age collaborated with the research in shopping centres and high streets of two southern cities in the United Kingdom.

The chosen cities for conducting interviews were Southampton and Bournemouth, both located in the south of the country. First, these cities are reasonably close to London, and enjoy a large population from multinational cultural backgrounds. The two cities are not too far apart, and share similar sociocultural values, so that the researcher was able to narrow down the diversities. In addition to geographical advantage, both cities have large-scale universities and enrol international students from various backgrounds and ethnicities. Moreover, younger generations, especially university students, are smartphone-dependent and keen to adopt the new technology (Fuentes and Svingstedt, 2017). Given the above reasons, the researcher believed that potential participants approached from these cities would reflect a general image of smartphone use during individual shopping journeys. Simultaneously, the researcher expected to discover the hidden motivational values of using smartphones from participants with different demographic backgrounds.

3.5.3 Data Collection Procedure

Regarding data collection procedure, the researcher devoted time to negotiating with shopping centre administrations to agree access to appropriate interviewing spaces. This was necessary due to the ethical considerations associated with collecting data from human interactions (to be further addressed in section 3.7). Being an external researcher, a considerable amount of physical and continuing effort was required (Saunders *et al.,* 2012, p. 210), because marketers need to clearly demonstrate their research objectives and specify the interview guidance to gain the third party's permission. Traditional access was chosen, and the researcher interviewed each participant in person, so that participants' behavioural and attitudinal dynamics could be captured and recorded.

The researcher sat near the high streets of city centres, where shopping malls, department stores and independent retailer brands operated in close proximity. She also made observational notes, such as whether consumers were talking to their companions, or to sales assistants in-store, etc. An interview guide was prepared in advance including all possible topics related to the research questions (see Appendix A). While scanning potential participants in shopping contexts, the researcher first approached potential respondents, obtaining their consent to participate in the study. Participants then read

the research information and agreed with the consent form (see Appendix B). This also relates to conducting ethical marketing research and will be discussed in more detail later.

Each interview lasted for 15 minutes on average and was implemented on a one-to-one basis. In addition, the interviews were conducted during afternoons and weekends to increase the chance of approaching a sufficient number of participants from different demographic backgrounds (i.e. gender, occupation, age) and purchasing diversity (i.e. window shopping, or actual purchasing). As indicated previously, implementing heterogeneous sampling technique maximises the variation among participants. The total amount of time spent accomplishing the fieldwork was approximately 30 hours over two weeks spent in shopping malls and city centres of selected cities. Moreover, the overall conversations took up nearly 10 hours, 20 hours being spent approaching target respondents. In the end, participants shared distinctive examples of smartphone use before and during their shopping journeys. The majority of conversations were recorded via a voice recorder according to participants' consent, although a few interviewees were not recorded because they wished to avoid being identified through their voice, in which case written notes were taken.

3.5.4 Qualitative Data Analysis & NVivo

Qualitative data enjoys the richness and uniqueness that challenges marketing researchers at the data analysing stage. In addition, researchers need to construct meaningful answers in a logical system based upon the subjective conversations and interpretations. Data is fundamentally drawn from the words not numbers, and the analysis is carried out empirically through conceptualisation (Healey and Rawlinson, 1994). At the same time, qualitative analysts are required to draw analysis with minimum bias, due to the subjectivity. Hence, the validity and reliability of qualitative data are questioned in the coding process.

Despite the fact that existing scholars think highly of validity and reliability in quantitative research, the importance of examining these two criteria in qualitative studies cannot be neglected. Kirk and Miller (1986, p. 63) initially informed the qualitative school,

"*Reliability is the degree to which the finding is independent of accidental circumstances of the research, and validity is the degree to which the finding is interpreted in a correct way*".

More specifically for the first study, reliability was more related to interview procedure. This can be explained as each participant being independent from the researcher and other respondents, their opinions being recorded separately but not undermining the content reliability. Regarding content validity, the researcher undertook a pilot study amongst cohorts in the field prior to the actual marketing research. This enabled the researcher to discover if the wording or order of the questions would cause any misunderstanding, before finalising the interview guide. After the pilot test, the researcher identified two questions raised by participants during the interview stage, which were then accommodated in the official interviewing guide. Thus, the reliability and validity of qualitative analysis were maintained as required.

After transcribing the dialogues, NVivo 11 software was employed to record and analyse the empirical data. Qualitative data needs to be analysed and categorised through verbal identification, collecting key answers from the interviewees' statements. At the same time, the data analysts should facilitate content validity when interpreting the raw materials (i.e. original conversations with participants). Saunders *et al.* (2012, p. 564) introduced a three-step approach to performing data analysis – data reduction, data display and conclusion drawing and verification, which the researcher followed. More specifically, data reduction requires the researcher to simplify the raw data. Data display helps the researcher to concentrate on the key themes regarding the research objectives, without being affected by extended knowledge of participants through assembling participants' dialogues into a summary notebook (Miles and Huberman, 1994). Lastly, conclusions are generated and verified from the valuable messages obtained from the conversations.

In terms of the coding process, the researcher referred to Strauss's systematic schema (Strauss and Corbin, 1990), where themes are developed based on the researcher's interpretation after conscious discussion. Moreover, the themes were coded through distinguishing similarities and differences among various groups and developing

hierarchies, as suggested by Gioia *et al.* (2012). Additionally, by using thematic coding and running queries (such as text search and word maps), the researcher was able to identify the most frequently mentioned answers on interview topics, subsequently concluding the results from the open-ended interviews.

According to the 'qualitative rigor' raised by Gioia *et al.* (2012, p. 21), the first coding step is to generate first-order themes by distinguishing similarities and differences of key words drawn from transcripts. At this stage, there could be a vast number of notes indicating different categories and representing the surface information of the entire conversation notes. These categories can be further labelled into several simple phrases if they share similar meanings. For example, when reporting general smartphone uses, participants answered with a variety of emerging usages and purposes under different circumstances.

Second, these overwhelming notes need to be further categorised into the second-order themes to code a more narrative and structured concept. The researcher should consider if it is possible to distil first-order themes to related second-order themes, in order to give a more conclusive coding hierarchy. For instance, some similar notes (i.e., make a phone call, text messages, make a plan with friends) indicated the same type of smartphone function – being connected during shopping, so-called second-order themes. The researcher cautiously revisited the dataset and repeated the coding processing several times to list the whole number of second-order themes. Additional coding notes will be detailed in sections 4.6 and 4.7.

The last and most rigorous step is to purify more advanced coding hierarchy which represents aggregated dimensions of the entre dataset as the ultimate analysing step. More specifically, some codes of second-order themes can be further grouped into the same aggregated category. For example, smartphones' functional, informative and communicational uses were able to achieve consumers' utilitarian gratifications during their shopping journeys. Similarly, smartphones' entertaining and passing time uses were perceived as hedonic gratifications. Moreover, mobile social apps' socialising characteristics and online communities of branded shopping apps contributed to consumers' social gratification goals. By following this rigorous scheme, the researcher

managed to draw a coding map (see Table 4-4) demonstrating detailed coding logics which enhanced data analysis performance.

More importantly, when developing the gratification dimensions, the researcher also referred to the literature review section with respect to smartphones' uses and gratifications. Based on existing research, the researcher ultimately summarised the utilitarian, hedonic and social gratifications obtained from smartphone use during an individual shopping journey.

3.6 Study 2: Examine the Relationships between Key Constructs of the Conceptual Framework

The first study managed to identify a set of emerging smartphone uses and consumers' expected gratifications through open-ended interviews. It then proceeded to the quantitative phase of the thesis, in which the researcher aimed to examine whether in-store smartphone use affects consumer's state anxiety and subsequently influences their purchasing intention. Therefore, the second study began with building up a set of hypotheses and a proposed conceptual framework in order to map the associations between the key constructs.

Theoretically, quantitative scholars emphasise positivist philosophy when studying market characteristics and functions. They pursue the advantages of collecting larger sample size, providing statistical evidence and more objective features compared with qualitative schools. More specifically, quantitative schools focus on exploring the knowledge through statistical analysis, figures and tables that could pull marketing researchers back from subjective conclusions without affecting participants' objectivity (McCusker and Gunaydin, 2015). Quantitative approaches are also known as deductive logic, concentrating on using data to test a specific theory; they look at the relationships between the constructs through standardised question probing. In addition, conducting quantitative research is less time-consuming and less expensive compared with qualitative approaches, owing to reduced effort with human interactions in social science domains.

Typical quantitative methods include descriptive and causal research designs, whereas causal research is mainly related to implementing experimental studies. Considering the research objectives, the second study of this thesis aimed to examine possible correlational relationships between constructs, and participants were only required to provide answers once without pre-test or post-test comparisons. Therefore, descriptive research was considered appropriate and feasible to answer the research questions. Furthermore, a self-administrated survey was employed to collect participants' answers regarding their experience and attitudes to using smartphones. By generating responses from a larger sample of audience in the second study, the researcher intended to identify if key constructs (derived from the first study) were significant to the research questions and hypotheses examination of the conceptual framework.

3.6.1 Self-administrated Survey

Malhotra (2007, p. 183) defined survey as "*a structural questionnaire given to a sample of a population and designed to elicit specific information from respondents*". Typically, participants will need to answer a variety of questions in terms of their attitude, intentions, behaviour, motivations and lifestyle details in a structured rationale. In the fields of business and marketing research, survey is used to explore 'what', 'where', 'how often' and 'how much' questions. Therefore, marketing researchers should pre-determine the question sequence and make sure that the answer options are standardised and structured.

The researcher decided to carry out a survey (see Appendix C) rather than other methodological alternatives due to the following rationales. First, the second study investigated and measured consumers' agreement towards a list of smartphone uses and benefits. It did not involve extraneous variables or manipulated conditions to accomplish the study as a typical experimental design request. By probing structured questions in a pre-determined questionnaire, it is easier and more productive to maintain data collection process. Second, structured questions in a fixed order could enhance the reliability of results, since participants only respond to pre-listed options when completing the survey. Third, a questionnaire survey is convenient to manage and the researcher could have more control over distributing and collecting the data, at a lower

cost. Finally, coding and presenting the survey answers can be more straightforward, which saves a large amount of effort (Malhotra and McCort, 2001).

Extant research has documented different means of undertaking surveys, including telephone interviewing, personal interviewing, mail interviewing and electronic interviewing (Malhotra *et al.,* 2007, pp. 184-194, see Figure 3-3). In general, telephone interviewing has experienced decreasing adoption (Thurkow, 2000), as more advanced communication media have developed, such as social media and digital platforms. Mail interviewing results in relatively low response rates, as researchers cannot facilitate the interview context. Typical mail surveys are maintained through mailbox which lacks verbal communication between researchers and participants (Bachmann, 1999/2000). The researcher therefore considered that conventional methods (telephone and mail access) were not ideal for the data collection technique, given the research context. Since these methods also require a certain amount of physical access in approaching potential targets and collecting the responses, with low response rate, this did not fit the second study in generating real-time responses.

E-mail interviewing has gradually enjoyed marketing researchers' adoption due to its convenience and effectiveness in generating larger responses, given a short time. Respondents need Internet access and collaborate with answering questions via online submissions. Researchers can quickly generate responses and perform data analysis straight away compared with traditional survey techniques. Although electronic survey distribution is capable of generating broader phases of subjects and efficient feedback, higher result bias can be a key issue impeding the data analysis.

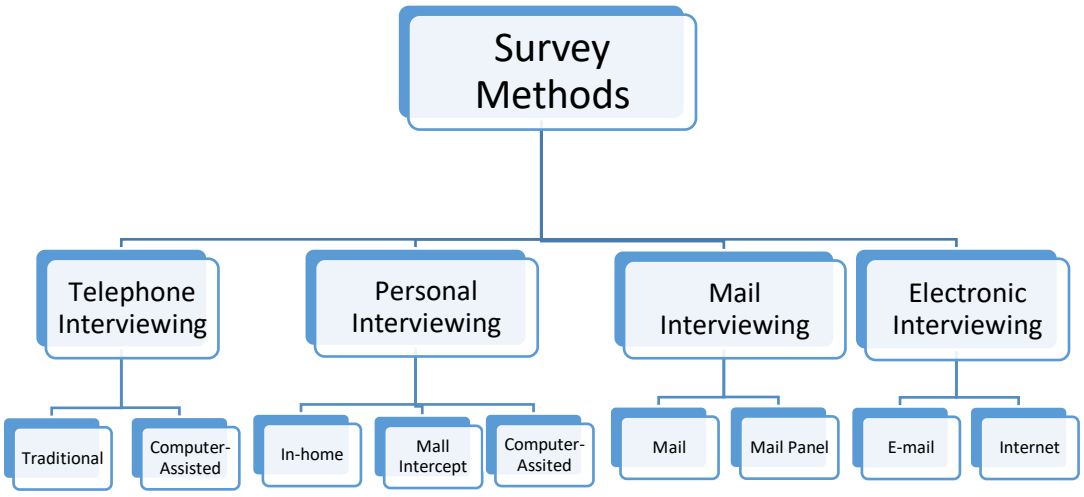

Figure 3-3 Classification of Survey Methods

Source from: Malhotra (2007, p. 184)

Personal interviewing such as at-home and mall-intercept interviews require face-to-face communication, in which both marketing researchers and respondents can enjoy the flexibility of the process. In particular, the second study conducted the survey by adopting personal interviewing technique or mall-intercept personal interviews. The survey distribution took place in city centres, and consumers were interviewed during their shopping journeys. Employing mall-intercept interviews enjoys a high level of flexibility and high diversity of questions, given the particular interviewing setting. However, such a physical survey method can be challenging when the researcher approaches potential targets, as they may refuse to collaborate with the survey right from the start. Nevertheless, the researcher managed to distribute surveys in shopping environments in order to collect real-time information about individual shopping experiences, since in-person interviews would increase the reliability of participants' answers and control missing values when answering the survey.

Mall-intercept survey distribution was the most suitable method to capture specific smartphone uses and consumer behavioural dynamics, as this thesis empirically inspects the consumer's attitude towards smartphone usage during shopping journeys. Through utilising the mall-intercept approach, respondents were anticipated to provide a vivid shopping experience, given the ongoing shopping setting; at the same time, the researcher expected a high response rate.

Moreover, to ensure a rigorous questionnaire, the researcher also maintained quality controls such as social desirability bias and attention checks. First, the questionnaire was administrated in a traditional way and participants could answer questions by sharing a favourable image of themselves (Richman *et al.,* 1999). The face-to-face interviews established a rapport with participants, who believed that their on-the-spot responses would remain confidential (Holbrook, Green and Krosnick, 2003), and so provided honest answers. Second, to gain participants' attention, the self-reporting survey began by asking straightforward questions such as "Have you used a smartphone during your shopping journey? If yes, please tick the specific smartphone uses that may take place when visiting an apparel retail store". These questions offered key information about the study and raised interest particularly among young respondents. In addition, due to Likert scale adoption, the survey mainly phrased a positive voice, but additionally applied reverse wording for the construct (consumer's state anxiety) in order to lead participants to treat answers differently rather than ticking all positive answers.

3.6.2 Sampling Strategy and Participants

The second phase of the thesis focuses on exploring apparel retail segments in the United Kingdom, and apparel consumers in particular were approached in brick-and-mortar retail stores. Some of them might have completed their purchases in-store, or via smartphones. In addition, potential targets were supposed to have shopping experience of mobile channels and have installed or used mobile shopping applications. Given the difficulty of recruiting respondents during their ongoing shopping journeys, the researcher considered it sensible to adopt convenience sampling method. This sampling technique can collect data from available population members at cheap cost and with less additional requirements. Moreover, it is useful for conducting pilot studies and exploring real marketing issues on the streets or in large shopping malls. More importantly, it can also be used for face-to-face contacts with reduced sampling bias (Saunders *et al.,* 2012, p. 273) since consenting participants are obliged to complete the survey on the spot. However, a low response rate may be more problematic in real shopping scenarios than when conducting an online survey.

Once a convenience sampling method is justified, it is important to determine the sample size, as this is closely connected with the nature of the research, number of constructs/variables, analytical methods and completion rates, as well as resource limitations (Malhotra, 2007, p. 338). On the one hand, Malhotra (2007, p. 339) further recommended that typical sampling size for designing test-marketing research requires 300-500 responses, with a minimum of 300 responses accepted; on the other hand, as the main results will be analysed by performing structural equation modelling (SEM), the researcher also referred to the sample size policy of Hair *et al.* (2014, pp. 573-574). When running SEM, there are five features to be addressed in determining an appropriate sample size, including normality of data, estimation technique, model complexity, the amount of missing data and the average error variance amongst the indicators. In particular, the second study proposed a complicated conceptual framework (two-order variables) representing four main constructs in the measurement model. Besides, only a few indicators with communalities values less than 0.5 (see Appendix H) were detected in the exploratory factor analysis (EFA) stage. Therefore, a minimum sample size of 300 responses was suggested, as recommended by Hair *et al.* (2014).

The researcher hence intended to collect at least 300 responses to meet the sampling size requirement. When distributing surveys in shopping scenarios, the researcher managed to obtain 380 participants' consent to take part in the study during the given time period. Amongst these interested consumers, 360 participants completed the survey when stopped during their shopping trips. Thus, the second study achieved a satisfying response rate of 94.7%. However, during the data analysis, and after the researcher had identified and excluded missing values and outliers from the entire number of responses, there remained 349 valid responses to be included in the final factor analysis and SEM. To conclude, the researcher had collected a sufficient sample size which enhanced further data analysis.

3.6.3 The Survey Questionnaire and Pilot Study Test

The questionnaire design is perceived as a set of formalised questions obtaining information from participants. Particularly for marketing research, it first requires the researcher to translate the requested information into specific questions which

respondents will be able to answer (Robson, 2011). Second, a questionnaire should be interesting enough to stimulate participants' attention and willingness to complete. Third, the types and order of questions should be carefully planned to avoid the risk of participants giving inappropriate answers. For example, the researcher should beware of asking sensitive or confidential questions and should consider the length of measurement scale questions to avoid boredom.

Questionnaires benefit descriptive and explanatory research campaigns. In particular, the second study employed the questionnaire as a survey instrument to test correlational relationships between constructs (Gill and Johnson, 2010). Moreover, it followed a self-completion questionnaire, in which the researcher delivered and collected the responses in real shopping scenarios. While it requires a considerable amount of time and effort to generate responses, on-site questionnaire completion can enhance the response rate to some extent.

The questionnaire used in the second study mainly consisted of category and rating questions encompassing three areas. It began by asking what specific smartphone uses consumers may have encountered during their shopping journeys. The purpose was to build up a general understanding of the research topic about different smartphone usages. The second part asked about respondents' attitudes and opinions towards using smartphones during their shopping journeys, through probing with 5-point Likert scale questions. This enabled the researcher to collect information drawn from numeric value, while simultaneously participants could productively answer with a simple tick. The third part collected information about participants' demographical background and their experience of branded mobile shopping apps (for apparel retailing). These questions would provide additional messages contributing to the data analysing process. For example, participants' demographic diversity (i.e. age, gender or occupation) may be the control variables when performing the SEM analysis.

As an essential step in conducting marketing research in real practice, a pilot study was undertaken prior to the formal distribution of questionnaires. The researcher recruited ten colleagues from the same department and ten postgraduate students from the university, pre-testing the questionnaire's validity in terms of wording, readability and

content of questions. The reason for employing the younger generation for the pilot test was that they are more likely to be affected by peers when making purchasing decisions (Chen *et al.,* 2011a; King *et al.,* 2014). Besides, these audiences are more sensitive than older generations to new technology adoption, especially via mobile and social media platforms, which supports the premise of smartphone usage diversions. In addition, when collecting data in actual shopping scenarios, the researcher focused on approaching the younger generation aged between 18 to 40 to generate heavy-smartphone users' insights.

As expected, the pilot test identified some problematic wording and confused meaning. For example, when asking about demographic details, the initial questionnaire version did not specify the age and income range properly, and pilot testers were confused whether to choose range A or B. Another amendment related to measuring scaled-question probing, whereby three research students criticised the length of questions, which meant that it took a lot of time and effort to complete the questionnaire. Thus, the researcher re-considered the length of questions and determined different sets of measurement scaling questions, whilst accommodating the probing sequence. Finally, inappropriate wording and statements were revised accordingly before carrying out the formal research in real marketing scenarios.

3.6.4 Measurement Scales as Significant Instrument

As mentioned above, the second part of the questionnaire predominantly used Likert scale questions to examine individual opinions towards using smartphones during shopping journeys. Conceptually, in quantitative research design, measurement is illustrated as "*assigning numbers or other symbols to characteristics of objects according to certain pre-specified rules*" (Wyner, 2004, p. 8). Moreover, consumers are not measured explicitly, but their behavioural and attitudinal differences are examined by assigning a specific numerical value to each object. Malhotra (2007, p. 258) classified comparative and non-comparative scaling techniques (see Figure 3-4). Comparative scaling tools require straightforward comparison between the options, while non-comparative scaling methods concentrate on answering the independent stimulus of the other. According to the questionnaire discussed above, 5-point Likert scaling (non-

comparative) was significantly adopted to indicate the degree of agreement or disagreement with each series of statements (Amoo and Friedman, 2000).

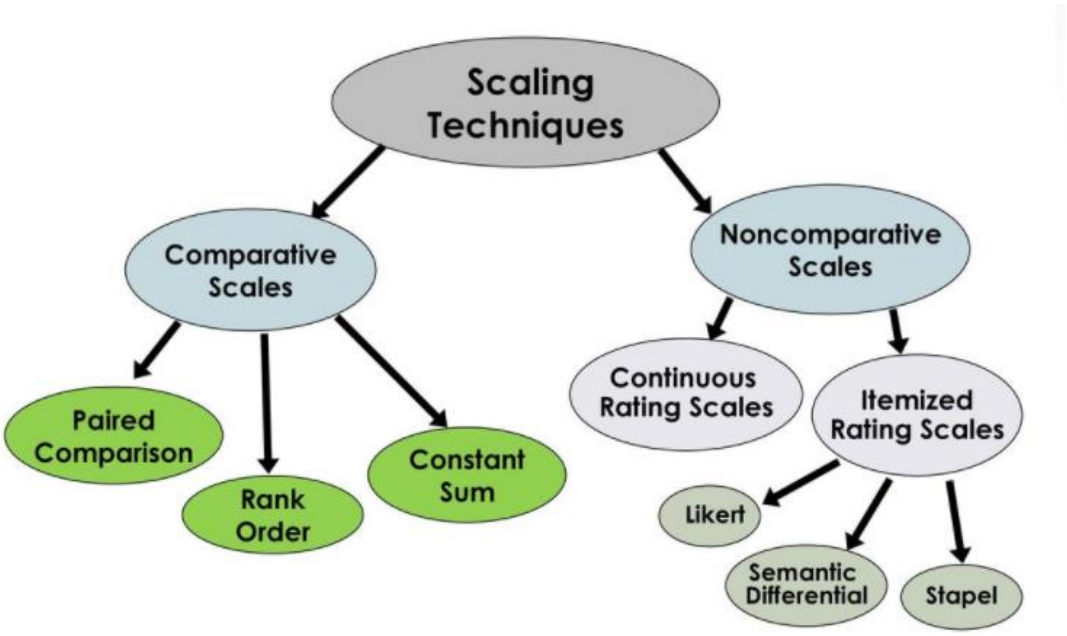

Figure 3-4 Classification of Scaling Techniques

Source from: Malhotra (2007, p. 258).

In general, answer options of scaling questions are displayed as: '1-strongly disagree, 2-disagree, 3-neither disagree or agree, 4-agree, and 5-strongly agree'. Employing Likert scaling contributes to the efficient administration of questionnaires, even though consumers may need to spend a certain amount of time reading each statement and giving their answers accordingly.

It should be acknowledged that scaling questions need to be verified in terms of validity and reliability. In order to optimise scale validity and reliability, the researcher borrowed measurement-scaling statements from the existing literature and further modified these to fit the current research context (more in-depth discussion will be supplied in Chapter 6). More specifically, variables summarised from the literature reviews and findings from the first study demonstrated three types of smartphone-derived gratifications, understood as independent variables. Consumer's state anxiety and in-store purchase intention were perceived as potential consequences of using a smartphone during a shopping journey.

Based on the borrowed scaling statements, a set of 37 items was developed to test the variables (see section 6.3). The policy of choosing existing items from extant literature reviews should be determined. First, the items corresponding to one variable should be adopted from the same literature source in order to maintain the consistency and validity of questions. Secondly, as Hair *et al.* (2014, pp. 608-609) suggested, the 'three-indicator rule' for quantitative marketing researchers implies that there should be at least three items of each variable to be tested. This is to optimise reliability and validity when performing the factor analysis in the sixth chapter. Once the appropriate questions have been designed for the questionnaire, the next step is to collect the quantitative data.

3.6.5 Data Collection Procedure

Similar to conducting open-ended interviews, surveys were distributed in high streets and city centres in two chosen cities in order to reach a sufficient number of potential consumers. One advantage of conducting an on-site survey is that participants are encouraged to complete the surveys when the researcher is present. This could relatively increase the response rate and decrease potential errors, such as 'outliers or missing values', since the participants need to spend time reading and answering the survey.

Collecting the primary data for the survey required the researcher to approach the target and distribute the survey in person. Moreover, a participant information sheet was also provided to obtain consent for taking part in the study (see Appendix D), and a debriefing form was also provided at the end of survey (see Appendix E). The survey took respondents five to seven minutes to complete; and it took approximately six weeks to obtain the 349 valid responses out of 360 completed in total (380 copies distributed), with a valid response rate of 91.8%. What differed from conducting the first study was that the researcher mainly encountered respondents in open spaces of the chosen city centres, without interviewing inside the shopping malls. This offset the difficulty of recruiting a larger sample size and saved time.

3.6.6 Quantitative Data Analysis – Using SPSS, AMOS and PROCESS

After generating the questionnaires, the researcher created a coding notebook with regards to each question. The coding process is necessary in analytical preparation before

conducting statistical analysis, since it helps the researcher to identify different types of data, data format required by the analysis software, processes of inputting and cleaning the data. Then, the correct analytical techniques must be determined, because the ways of analysing primary data differ from secondary data analysis.

The second study aimed to test the correlational relationships between variables collected empirically. Therefore, SPSS 26 and AMOS 26 were adopted to compare the group variances, test the significance, and investigate the potential associations between constructs. More specifically, the researcher first provided descriptive analysis to exhibit the appearance of participants' demographical differences through SPSS 26. Then, factor analysis was performed (both exploratory and confirmatory factor analysis) before finally confirming the constructs for structural modelling. Quantitative scholars frequently employ factor analysis as a means of data reduction and summarisation; similarly, marketing researchers are encouraged to conduct factor analysis in empirical projects. After accomplishing the confirmatory factor analysis (CFA), the researcher was able to evaluate a measurement model as the foundation for examining the structural model.

Extant quantitative scholars have applied various statistical analysis methods such as multiple regression analysis, logistic regressions, cluster analysis and factor analysis. The determinants of choosing an appropriate analysis approach depend on the nature of the research questions, methodological consideration, data types and result interpretations. Multiple regression is often used as a straightforward analytical method when simply exploring the independent and dependent variables in SPSS regression manipulation. It cannot be used to examine a great number of path analyses at the same time, given a complex research model. Logistic regression deals with dummy variables or categorical data rather than rated data such as Likert scales. Cluster analysis is applied when comparing and analysing the data of different groups.

The survey of the second study collected numeric values through measurement scales that embraced observed indicators/items and derived latent variables, in order to detect correlational relationships between constructs. Therefore, multivariate analysis was considered a suitable tool. The second study aimed to examine the interdependent relationships among latent variables; therefore, factor analysis and confirmatory factor

analysis were the recommended techniques. Furthermore, the researcher attempted to investigate all possible relationships between unobserved values (i.e. errors and residuals), observed variables and latent variables at the same time, simultaneously measuring covariance-based correlations. This strongly suggested the use of confirmatory factors analysis and structural equation modelling (SEM) approaches.

Structural Equation Modelling (SEM) is predominantly adopted in quantitative schools, especially in the fields of U&G and omni-channel retailing research (Gogan *et al.,* 2018; Kang, 2019; Yang and Lin, 2019). SEM is perceived as a multivariate analysis tool to evaluate the correlational relationships among constructs (Williams *et al.,* 2009). In addition, SEM allows researchers to examine dynamic relationships simultaneously when one constructs changes; it can also show the prompt model fitness when certain constructs are changed or withdrawn. This modelling technique has enjoyed academic focus in marketing and management studies in order to measure and confirm structural relationships (Reychav and Wu, 2014; Yang and Lin, 2019). Therefore, the researcher decided to employ the analytical method, aiming to explore the correlational relationships of the proposed conceptual framework and confirm the acceptance/rejection of hypotheses. Chapter 6 will provide detailed explanation and results in terms of factor analysis and SEM.

Mediation analysis is also employed to test the mediated effect of consumer's state anxiety on the relationships between independent and dependent variables. When establishing the conceptual framework, the researcher assumed that a mediation effect might exist and further impact the relationships between the constructs. Therefore, by using PROCESS macro by Hayes (2013), a set of mediation models was analysed and will be explained in depth in Section 6.10. The mediation effect contributes to complementary findings on the foundation of performing factor analysis and SEM.

3.7 Ethical Considerations

Conducting marketing research in the field involves ethical issues, whether for commercial purposes or as an independent researcher. Malhotra and Miller (1999) listed four types of stakeholder, consisting of marketing researcher, client, respondent and

public, moreover, they suggested that ethical concerns may arise when any stakeholder has conflict in committing responsibilities. Thus, as a marketing researcher of this thesis, it was important to value consumers ethically, as they would be disclosing their own personal information and attitudes for the research purpose.

First, when dealing with consumers directly, obtaining their consent and offering a brief introduction on the purpose of the study was an essential stage, since the researcher was aiming to attract their interest and raise their willingness to participate. Moreover, the respondents needed to understand the research purpose upfront so that they would not get confused during the interviewing stage. Furthermore, as respondents' personal details would be kept confidential and stored safely for research purposes only, the researcher imparted this information prior to any interviews or surveys taking place. Another important note was to ensure that all participants were willing to have their voices recorded (in the first study), because some consumers may have been sensitive to the privacy aspects of their lives.

Second, gaining access to perform the research through a third party involves ethical concerns. For the first study, the independent researcher spent much time and effort negotiating with third parties, such as the administrative teams of shopping centres. Without their permission, the researcher could not approach any consumers nor undertake any research-related activities in selected shopping centres. In the end, the researcher successfully gained access to the shopping centres and was allowed to conduct the open-ended interviews.

Third, ethical issues can also arise during the data analysis and reporting procedure (Saunders *et al.,* 2012, p. 245). Regardless of whether qualitative or quantitative studies are being conducted, researchers should be objective when interpreting the data to avoid misunderstanding (Zikmund, 2000). When analysing the data, the researcher should keep anonymity and confidentiality as a priority, so that a participant's information will not be identified. It is also suggested that unnecessary information, such as participants' names should not be recorded. Again, anonymity should be properly managed to deliver ethical-friendly research.

3.8 **Summary**

This chapter has outlined the methodological proposition of the thesis, including open-ended interviews and survey research designs. Sequential exploratory research enables marketing researchers to identify marketing phenomena empirically and explore the potential relationships between the constructs accordingly. The researcher considered the research designs by weighing up the pragmatism philosophical propositions. In addition, on-site and face-to-face interviews were strongly acknowledged, as the research aimed to collect first-hand information about consumer shopping patterns and opinions on the uses of smartphones from real marketing practice. Through probing questions in the open-ended interviews and surveys, consumers appeared to share unique experiences of smartphone usages. Hence, the researcher was able to develop more comprehensive results, revealing emerging marketing implications. Considering the analytical techniques, the researcher made good use of analytical software such as NVivo, SPSS, AMOS and PROCESS macro to properly maintain the research data and present statistical results accurately. Lastly, the researcher considered the ethical elements involved in implementing the research, aiming to establish ethical relationships with clients and participants, as well as shopping centres.

Chapter 4 STUDY 1- THE INTERVIEWS: EMERGING SMARTPHONES USES AND CONSUMERS' GRATIFICATION GOALS DURING SHOPPING JOURNEYS

4.1 Introduction

The previous chapter demonstrated that the researcher first employed open-ended interviews to investigate emerging smartphone uses and consumer expected gratifications. Hence, this chapter provides in-depth understanding of the qualitative finding analysis and discussion. The findings and discussions were drawn from interview conversations and observational notes coupled with participants' shopping behaviours. Besides, the researcher also noted down consumers' emotional and behavioural dynamics during the interview procedures. Through coding open-ended answers, the researcher was able to capture in-depth insights in terms of individual shopping experience with smartphone assistance.

When interviewing potential consumers, the researcher was part of the data collection process, being the interviewer, but not being involved with participants' actual shopping plans. Consumers approached through purposive sampling method were observed carrying shopping bags and had their phones to hand. Once a participant's consent was obtained, the researcher started probing pre-determined topics and directing them to share opinions relating to smartphone-assisted shopping journeys. As a result, 43 consumers successfully participated in the interviews in shopping centres and high streets of two chosen cities in the United Kingdom.

Once data collection was completed, NVivo 11 was adopted to record and analyse the qualitative data. Observational notes were also attached, indicating whether participants were shopping alone or with acquaintances, to what extent they used their smartphones during shopping, and whether they were 'window shoppers' (end up with no purchases) or actual purchasers. More in-depth explanation regarding the analysis procedure will be addressed later on.

According to the preliminary findings, participants' demographic attributes were explained before the in-depth analysis on transcripts, providing a brief profile of interviewees in terms of their age, gender and occupation. Findings were then disclosed from three main streams, including: (1) in-store smartphone uses and consumer expected gratifications, (2) gratifications varying between using mobile websites and applications, (3) obtaining second opinions via smartphones. Referring to the research gap identified in section 2.4.3, the findings further specified and extended smartphones' U&G, given the research context. Lastly, a surprising and significant result lies in that smartphones were admitted as convenient shopping assistants to alleviate consumers' state anxiety in busy shopping environments and as an aid to achieving prospected gratifications. Besides, in-store consumers showed strong dependence on using their phones during shopping journeys.

4.2 Interviews

Before in-depth discussion of the empirical findings of the first study, it is necessary to understand the interviewees' diversified background profiles. In short, 43 consumers were successfully approached in shopping centres and high streets from two selected cities in the United Kingdom. Furthermore, participants were asked to agree with the consent form before answering any questions, and were probed to provide certain basic demographic information (i.e. age, occupation, brand of smartphone owned, and number of mobile shopping apps used) during the interviewing procedure (see Table 4-1). The majority participants agreed to be voice recorded when sharing their shopping experience. However, two interviewees' conversations were not recorded, according to their wishes, in which case the researcher took written notes to complete the interviews. The initial findings will be addressed in depth in terms of specific quotes from participants' dialogues (see section 4.6 and 4.7).

Table 4-1 Summary of Respondents' Socio-demographic Profile

Variable (N=43)	**Description**	**Percentage**
Gender	Female	69.8%
	Male	30.2%
Age in Years	18-24	34.9%

	25-34	41.9%
	35-44	11.6%
	45-60	11.6%
Occupation	Student	44.2%
	Employed	51.2%
	Retired	2.3%
	Not Applicable*	2.3%
Smartphone Brands	iPhone	65.1%
	Samsung	20.9%
	Other	14.0%
Product Purchased	Accessories or Clothes	77.4%
	Groceries	4.0%
	Shoes	7.0%
	Home Appliances	4.6%
	Other	7.0%
Number of Shopping Apps Installed	None	32.6%
	1-2	34.9%
	3-5	23.2%
	6-10	7.0%
	>10	2.3%

Not applicable: respondents refused to disclose their occupations.*

As shown above, the majority of participants who participated in the study were purchasing clothes, accessories and shoes, and were approached in a selection of retail spaces. The main aim in collecting data from diversified retail segments was to generate all possible smartphone uses, so that the researcher would be able to draw a full picture of smartphone-assisted shopping journeys. By contrast, the second study (see Chapter 6) focused on researching apparel product purchasers, since apparel retailers operate their business competitively on mobile channels, and consumers may potentially share their attitudes towards using smartphones for shopping related activities.

In terms of the age difference, the results showed a large proportion of young consumers, indicating that millennials (aged between 18 and 34) are smartphone-dependent when shopping in physical retailing stores. Participants came from a broad range of occupations, more than half of interviewees being employed (51.2%) and 44.2% being students. In

addition, most participants were iPhone or Samsung smartphone users (65% and 21% respectively). Furthermore, 67% of smartphone users admitted that they had installed and used mobile shopping applications. This implies that smartphones are not only individuals' shopping companions, but also impact multichannel consumers' purchasing patterns. Moreover, it suggests that consumers may enjoy shopping via branded mobile apps for convenience and efficiency. More in-depth findings and discussions related to personal smartphone usage will be demonstrated in section 4.6.

Due to ethical considerations, participants' identities and dialogues were protected to avoid being disclosed. Thus, as suggested by Myers (2013, p. 52-53), the researcher assigned pseudonym names (e.g., Participant 1: P1) to each interviewee to maintain anonymity as stated in the consent form. Moreover, the researcher provided additional information such as the participant's age and gender to enrich the quotes during the data analysing stage. Table 4-2 is initialised to present all participants' profiles when quoting their original answers as empirical findings.

Table 4-2 Interviewees' Profile of Study 1

Participant	**Gender**	**Age**	**Occupation**	**City (Being interviewed)**
P1	M	52	Retired	Southampton
P2	F	20	Student	Southampton
P3	F	23	Student	Bournemouth
P4	F	23	Student	Bournemouth
P5	F	32	Student	Bournemouth
P6	F	23	Finance clerk	Southampton
P7	F	20	Student	Southampton
P8	M	26	Staff	Southampton
P9	F	18	Student	Southampton
P10	M	25	Student	Southampton
P11	M	29	Telecom engineer	Southampton

P12	M	36	Recruitment manager	Southampton
P13	F	30	Research associate	Southampton
P14	M	52	Research staff	Southampton
P15	M	31	Lecturer	Southampton
P16	M	29	Manager	Bournemouth
P17	F	44	Independent consultant	Bournemouth
P18	F	51	N/A	Bournemouth
P19	F	47	Hairdresser	Southampton
P20	M	26	Navigator	Southampton
P21	F	26	Nurse	Southampton
P22	M	30	Restaurant manager	Southampton
P23	F	23	Student	Southampton
P24	F	36	Healthcare assistant	Southampton
P25	F	29	Research staff	Southampton
P26	F	20	Student	Southampton
P27	F	20	Student	Southampton
P28	F	21	Student	Southampton
P29	F	42	Research staff	Southampton
P30	F	41	Lecturer	Southampton
P31	F	25	Banking clerk	Bournemouth
P32	F	27	Hairdresser	Southampton
P33	F	28	Site manager	Southampton
P34	M	29	Teacher	Southampton
P35	M	24	Equipment strategist	Southampton
P36	M	21	Manufacturing	Bournemouth
P37	M	34	Investment banker	Bournemouth

P38	F	28	Student	Bournemouth
P39	F	23	Student	Bournemouth
P40	F	18	Student	Bournemouth
P41	F	21	Student	Southampton
P42	F	20	Student	Southampton
P43	F	30	Research staff	Southampton

Note: (1) F: female, M: male; (2)N/A: participant did not provide the information.

4.3 Sampling and Data Collection

In order to approach an appropriate target audience, the researcher employed purposive sampling (also known as judgement sampling) technique to seek participants' collaboration with the study. The targeted audience were consumers who had shopping bags and their smartphones to hand, and who were anticipated to provide valuable opinions regarding smartphone-involved shopping journeys. As stated in section 3.5.2, purposive sampling allows marketing researchers to collect effective responses from the right consumer segments more effectively than other non-probability sampling methods. Moreover, purposive sampling helps researchers to identify potential targets easily and improves data collection productivity. However, the researcher was still confronted with rejections and low response rates due to the necessity of interrupting consumers' shopping trips during the early phase of data collection.

Due to the nature of the interview scenarios in real shopping situations, it was challenging to stop consumers and obtain their consent during shopping trips. At the same time, the researcher only had limited time access to conduct interviews in the shopping centres of the two cities. Thus, the researcher tried to generate more participants during weekday afternoons and weekends, aiming for sufficient sample size. In general, 20 to 30 responses needed to be collected when conducting the in-depth interviews. Given the explorative nature and restrictions of the interview contexts, the researcher managed to conduct face-to-face interviews in an average of ten minutes per person.

When collecting the data, the researcher first disclosed her identity and gave a brief introduction on the research project, acquiring potential targets' consent to take part in the interview. Collaborated participants were aware of the voice recording tool to record the conversations for research purposes only, and that notes would be kept confidential and secure. At the end of the interview process, the researcher also gave a debriefing statement to participants if they needed further information regarding the research. In conclusion, the researcher followed the ethical policy of the University in terms of collecting data from human participants.

4.4 Thematic Analysis and NVivo

After collecting the data, the research proceeds to the data analysis stage, wherein qualitative researchers need to organise the interview conversations, prepare transcriptions, and determine a suitable analytical method to categorise codes and derive themes. Under the umbrella of qualitative data analysis, content analysis and thematic analysis is commonly adopted to interpret themes and concepts from dialogues with participants. On the one hand, content analysis is a systematic coding and categorising technique applied for exploring textual information to define the frequency, relationships, and structures of conversations (Mayring, 2000). On the other hand, thematic analysis is demonstrated as "*a method for identifying and analysing patterns of meanings in a dataset (Clarke and Braun, 2014); and is a process of coding and structuring interpretivist information from the texts of interest*" (Neuendorf, 2019, p. 220). Furthermore, the former pays more attention to understanding the characteristics of the content by examining who says what, and for what purpose, etc., while the latter concentrates on developing content as well as latent themes of a dataset, while establishing a hierarchy coding category. The current study does not focus on quantifying the results but employs thematic analysis as it investigates latent variables such as gratification dimensions owing to distinctive smartphone uses.

Thematic analysis has frequently been applied in performing empirical research in the domains of social and psychological studies, transforming the raw interview conversations into a structured and sensible information set. It also requires the researcher to revisit the codes many times so as to deliver comprehensive messages.

Therefore, given the nature of data collection in the first study, thematic analysis was determined as an appropriate vehicle to convey preliminary findings.

From the technological stance, recent developments in NVivo have focused on enabling imports from specialist environments, in terms of the systematic handling of codes and centrally located memos (Silver and Lewins, 2014, p.70). The technology is also concerned more with qualitative coding, where segments of data are identified as relating to, or being an example of, a more general idea, instance, theory or category.

NVivo 11 embraces the function of storing interview files, segmenting documents, coding theories, and deriving a word map. It has been recommended by qualitative scholars in the psychological fields (Powell *et al.,* 2008). For example, Leech and Onwuegbuzie (2011) suggested detailed coding steps when analysing with software such as NVivo to compare results, conduct key-words-in-text, content analysis, etc. This assistance empowers the researcher to code and categorise prospected themes.

Gibbs (2007, pp. 4-5) initially put forward a coding approach as induction, deduction and abduction. Considering the nature and objectivity of the research, the researcher referred to an inductive coding scheme that divided similar cases into homogeneous segments and developed new concepts. In general, coding procedure begins with identifying general themes to provide an overview of the raw data. It is then followed by the second coding phase, which illustrates and assigns content to the main themes more precisely. Alternatively, the researcher is advised to re-visit the data and modify the coding results - the so-called selective coding stage. These steps lead to divisions of data being selected to quote and discuss in the final written report. Therefore, the researcher prepared the electronic transcriptions and coded the data via NVivo 11 (see Figure 4-1). In order to deliver correct analysis, the researcher sought the expertise of experienced qualitative academics before interpreting the findings. As a result, a set of thematic analysis results are discussed in the following sections.

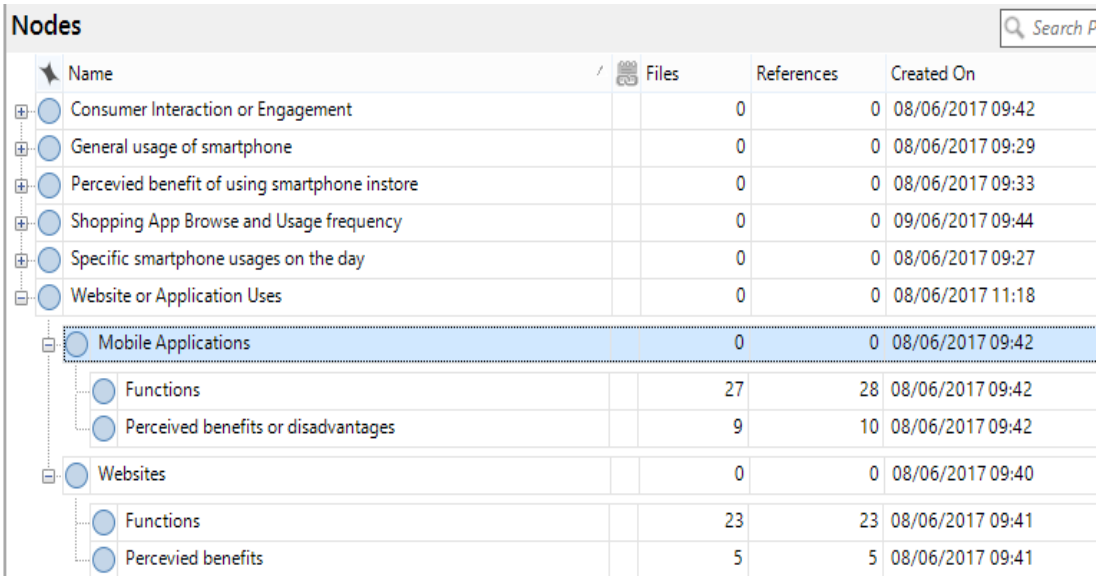

Figure 4-1 Screenshot of Qualitative Coding via NVivo

Source from: NVivo output of Study 1.

Additionally, in terms of analysing the qualitative data, the researcher followed the 'qualitative rigor' raised by Gioia *et al.* (2012) and established a coding set, including the first and second-order categories to draw aggregated dimensions. Such approach was critically adopted when determining the key constructs of the research model of the second study. The researcher also provided a map delineating rigorous data analysis with different ordered themes at the end of the chapter when discussing significant results of the first study (see Table 4-6).

As shown in Figure 4.1, six types of structured themes were drawn from the two orders of coding notes. More specifically, referring to Gioia *et al.* (2012), the researcher firstly screened the raw data (conversation transcripts) and decided the first-order analysis by examining similarities and differences of participants' answers. The next step was to analyse the second-order theories or concepts, by questioning whether certain first-order answers could form a narrowed theme of the research phenomenon. For example, the NVivo outputs indicated a second-order analysis, as participants were perceived differently in terms of using mobile applications and websites. Furthermore, the second-order themes could be formed into a more conclusive dimension to explain the research findings regarding smartphone usages and smartphone-assisted activities during shopping

journeys in brick-and-mortar retail stores. Therefore, the researcher could interpret the findings based on the six aggregated dimensions as displayed.

4.5 The Trustworthiness of Qualitative Data

Analysing and interpreting the qualitative data challenges the credibility and trustworthiness of the data. Due to the flexibility and subjectivity in the data collection and analysis procedures, qualitative scholars are required to show evidence in terms of providing sensible interpretations (Vishnevsky and Beanlands, 2004). This is because qualitative data collection deals with human participation regarding personal experiences and descriptions of social phenomena, individual differences and perception variances, which might lead to analysis bias (Cope, 2014). Besides, bias might take place when qualitative researchers are analysing the data. Hence, it is necessary to guarantee the data's trustworthiness before reporting the outcomes.

Qualitative researchers typically address the key criteria of trustworthiness as credibility, dependability, confirmability, transferability and authenticity (Guba and Lincoln, 1994). Thus, the researcher refers to the criteria element and demonstrates each characteristic applied to the current study (see Table 4-3).

Table 4-3 Trustworthiness of Qualitative Data

Criteria	Description	Application to Study 1
Credibility	Known as internal validity; the truth of data collection and participation, actual interpretation and representation by the researcher (Polit and Beck, 2012).	By conducting open-ended interviews in real shopping scenarios, the researcher managed to collect first-hand information from consumers who were in the middle of their ongoing shopping processes. Besides, the researcher also made observational notes to enrich information on the participant's shopping journey. Moreover, each participant gave consent and was issued with a debriefing form to maintain credibility.

Dependability	Known as reliability; the consistency of the data in similar situations (Tobin and Begley, 2004).	First, each participant was interviewed in a similar context (shopping centres or high streets), the process took around ten minutes per interview with voice recording. The researcher repeated the same process with all participants. Second, the researcher sought expertise from a supervision team after first-round data analysis, expecting them to agree with the draft analysis.
Confirmability	Known as objectivity; the ability to illustrate data's representativeness with limited bias in interpreting the data (Polit and Beck, 2012).	The empirical findings were analysed and derived from original interview conversations without the interviewer's own viewpoints. Thus, the researcher provided rich direct quotes from participants.
Transferability	Known as external validity; the potential to apply the interpretations to other settings or groups (Houghton *et al.,* 2013).	Despite the first study targeting a specific consumer group, given the predetermined research contexts, the researcher intended to strengthen the results' contribution to existing marketing literature. Thus, when discussing empirical findings, the researcher compared these with extant literature to establish justifications of the study.
Authenticity	Known as the trustworthiness; the ability and degree to which the researcher discloses participants' feelings and emotions in a sincere manner (Polit and Beck, 2012).	By reporting participants' direct experiences/quotes, the researcher acknowledged the fact that contemporary consumers significantly depended on their smartphones for shopping related and non-shopping related activities when visiting physical stores.

Source from: The researcher's initial output.

In addition, employing an analytical tool such as NVivo 11 also contributes to the trustworthiness. This is because NVivo assists researchers with enhanced analysis performance in terms of its systematisation, reflexivity and operational effectiveness in interpreting qualitative findings (Sinkovics *et al.,* 2008). Moreover, NVivo also provides greater transparency and credibility in displaying the data, and enables the researcher to check participants' quotes in an organised and systematic way many times. Such advances further ensure a more trustworthy analysis approach and process when deriving appropriate messages from interview conversations. Thus, by catering for five essential elements of trustworthiness of the data via NVivo 11 software, the researcher managed to conclude credible findings from the interview conversations.

4.6 Preliminary Findings

The main findings are drawn from thematic analysis of participants' conversations, by developing first and second-order themes and interpreting the aggregated dimensions. A set of gratification dimensions are further specified owing to smartphone uses alongside shopping journeys. Moreover, initial results are provided with detailed evidence from participants' direct quotes and observational notes that the researcher took during the interview process. This first demonstrates smartphone uses and consumers' expected gratifications, and how smartphones impact individual shopping patterns in brick-and-mortar retail stores. Additionally, the researcher distinguished between the mobile website and application usages, given the research context. Besides achieving gratifications, a more significant and surprising finding was revealed that in-store consumers used their smartphones to balance state anxiety. Using a smartphone enables the consumer to multi-task and continue their shopping activities in busy shopping centres. More detailed justification will follow in section 4.7.

4.6.1 In-store Smartphone Uses and Consumer Expected Gratifications

When asked to talk about their smartphone use during shopping journeys, participants supplied different answers with respect to usage characteristics and gratifications. Briefly, the first study specified a variety of utilitarian, hedonic and social gratifications resulting from smartphone uses in real shopping environments, while consumers' perceived

benefits were addressed when selecting a specific function. Moreover, the empirical findings revealed that utilitarian gratifications were acknowledged as: *communication, multi-tasking function, product information seeking*, and *mobile quick payments*. In addition, *relaxing shopping pace* and *passing the time* were perceived as hedonic gratifications. Social gratifications included *continuous online socialising* and *consumer engagement via online brand community*.

General Smartphone Uses

Before specifying the smartphone uses and gratifications during a particular shopping journey, the researcher presents general smartphone usages derived from conversations with participants. More specific examples of personal smartphone use during a shopping journey will follow.

In general, consumers used smartphones predominantly for communication and functional purposes. More specifically, these users often contacted people via traditional means (i.e. text or phone call) and social networking applications, because they wanted to keep connected and interact with their acquaintances or the external world. In addition, participants mentioned that they preferred to use their phones to access utilitarian practices, such as online banking, emails, maps, translations, etc. Because utilitarian-centric consumers needed immediate Internet access to any interesting information, they appreciated using their smartphones as convenient and helpful tools to save time and effort in obtaining utilitarian gratifications.

Some participants also checked their smartphones for information access. Moreover, these consumers mentioned accessing diversified sources of information, including mobile websites, online brand communities, brand mobile shopping apps and email accounts in their daily lives. The content of generated information existed as shopping related and non-shopping related dimensions. In addition, a few participants admitted to using mobile shopping channels and mobile payment alternatives during store visits. Those consumers who were experienced with mobile shopping channels would frequently browse retailers' websites or branded applications to check out new arrivals and seasonal offers. Retailers' branded shopping apps have relatively enhanced shopping productivity due to customised shopping experiences and simple clicks on a phone. This

implies that contemporary consumers pay a fair amount of attention to pre-purchasing activities via smartphones (De Haan *et al.,* 2015).

Besides, some consumers used smartphones for entertainment purposes during their shopping journeys, such as listening to music, watching videos, playing games and reading the news to occupy free time. Hedonic-centric consumers aimed for comfort and enjoyment from using their smartphones during shopping journeys while at the same time pursuing a relaxed shopping mood.

Among the diversified uses, the majority of participants indicated their preference for social media networking as they pursued up-to-date news from cohorts via online social platforms while undertaking their shopping activities. Participants remained active online to obtain social approval from like-minded groups and exchange updates; hence consumers themselves had unintentionally developed a 'compulsive checking habit' on their phones (Oulasvirta *et al.,* 2012). Nevertheless, when it came to the specific smartphone usages on individual shopping journeys, participants held distinctive opinions due to their unique shopping agendas.

It should also be emphasised that when concluding the gratification dimensions, the researcher followed utilitarian, hedonic and social perspectives, as justified in the second chapter. According to the extant research, the researcher particularly looked at these forms of uses and gratifications regarding smartphone adoption in a shopping journey.

Utilitarian Gratification – Being Connected during Shopping

Some participants reported having contacted their friends or family by calling or texting, irrespective of product categories, and whether shopping alone or with companions. Deloitte (2016) posited that consumers' increased mobile device usage (i.e. m-payments) contributes to more connected consumers. Participants indicated that they needed to be connected (via texting or calling people) while in-store. One participant who was approached whilst shopping alone for accessories on the high street said:

> "*Of course, I used my phone to check messages, and I also checked upon my nephews if they were alright at home... it means I don't need to worry about things.*

It also means that I can actually continue to be in touch with my friends while I was shopping" (P37, male, 34).

Similarly, several participants admitted that they used smartphones to be updated with friends or family members when shopping. P29 participated in the interview after shopping for clothes in the town centre. She was having a coffee and started sharing her experience in a relaxed mood:

"Well, I did not use my phone for shopping-related activities today such as checking the retailers' apps like I always do at home in the evenings. But when I am shopping alone in shopping centres, I always feel like chatting with my friends over the phone for quite long time as I don't feel like being isolated when I'm shopping…I always want to talk to friends and ask their opinions, so smartphone helps" (P29, female, 42).

Similarly, P42 also used her smartphone to communicate with family members when she was shopping alone. She was stopped on her way to the next apparel retail shop, and shared her opinions regarding smartphone uses:

"I always use my phone whenever I go. Because when you go into the shopping centre, and when you see something that relates to your family member, just take a picture and send to them… if they like the items, I can just buy for my families. I think smartphones really ease my communication anytime" (P42, female, 20*).*

Therefore, consumers internalise *communication gratification* in being connected through the use of smartphones. In particular, those consumers who shopped alone might have greater need for communication with acquaintances via phone calls and text messages. Besides the connection benefit, using a smartphone also allows people to shop without worrying about other aspects of their lives, and liberates busy consumers from external concerns.

Utilitarian Gratification – Multi-tasking Functional

Due to the smartphone's outstanding functions and performance, in-store consumers can be multi-tasking; they can browse smartphones for other tasks and perform shopping-

related activities simultaneously. During their ongoing shopping process, participants might need to solve non-shopping related issues at the same time, such as checking train times, online banking balance, work emails and other functional assistances via their phones. Besides, it is inevitable that some consumers stop themselves from focusing on shopping nowadays, as they often get distracted due to habitual smartphone checking and external shopping environments.

For instance, among those who used smartphones during shopping, a few participants checked their emails, and some consumers needed functional services such as access to train times and online banking accounts. These consumers might be distracted from browsing products in-store since they were worrying about other aspects of their lives that needed to be solved on a smartphone - so-called multi-tasking functional assistance enabled by a smartphone. Thus, the consumers were playing the role of 'anxiety managers' since they utilised their phones to balance feelings of worry and to decide which mobile technology (websites or apps) to adopt (Faqih, 2016). When P2 was identified outside a clothing retailer, checking something on her phone, she explained:

> "*I have my phone and my lanyard, I just walk around and use it all the time. Additionally, I need to use my phone to keep an eye on the train times while I am walking around and browsing in some shops*" (P2, female, 20).

Moreover, a few consumers also stated that they needed to check online banking apps to confirm their balance before paying in-store or extending their shopping budget. In-store consumers thought highly of managing their financial plans alongside their shopping trips. For example, P30 had finished her shopping with friends and was observed checking her phone in a chair on the high street. She explained her smartphone uses during the day:

> *"I called my friends to make plan of the day, we met and chatted during shopping. I did check my bank balance couple of times just when I was about to pay for something. I wanted to make sure if I spent over the budget…you always need to know how much you spend and plan for the rest items that you're gonna buy"* (P30, female, 41).

This implies that in-store consumers rely on their smartphones to acquire additional assistance during their ongoing shopping process. More specifically, consumers may need immediate access to their emails/online banking services, or to deal with other businesses at some point while browsing in brick-and-mortar retail stores. Hence, multi-tasking shopping journeys are frequently taking place nowadays. For instance, P12 appreciated and reflected on the benefit of his smartphone's multi-tasking function:

> *"smartphone is just so functional tools that help me sort out everything really…even when I am in shopping malls, I can use it to play games, look at my personal information of Internet Banking when I was buying an item. I also use it to communicate with friends when I feel like"* (P12, male, 36).

Thus, these cases demonstrate that smartphones provide consumers with functional assistance (i.e., Google Maps, online banking services, public services and emails) and make them less anxious about missing out on things during shopping journeys, which might contribute to a more planned and satisfying shopping experience.

Utilitarian Gratification – Product Information Seeking

Product searches were conducted by the majority of participants who needed information about online/offline stock availability, new brands and products, and product performance via branded mobile shopping apps on their smartphones. Nowadays, branded mobile apps enable consumers to achieve their information-seeking gratifications without time or location limits (Alnawas and Aburub, 2016). In addition to that, mobile-friendly websites also facilitate unlimited navigation systems for searching out rich information. For example, P10 was walking with his girlfriend while doing some research on his mobile phone, and after browsing at a Boots store, he stated:

> "*I use my phone to do some research about the brand that I am going to choose for shampoo. Because it's my first time to try this brand and I am not sure how it works, so I check the shampoo brand's online reviews and decide which one I would buy"* (P10, male, 25).

Moreover, multi-channel consumers reported that they frequently performed pre-purchasing activities before paying a visit to physical stores, although some consumers

still chose online channels after visiting the store. P34 agreed to be interviewed while he was waiting a friend outside a retailer's shop in the high street. He shared his experience of searching product information:

> *"Sometimes I use smartphones in the supermarkets to check the prices of products and I can compare. Or for example, I went to JD Sports, I would first check if they have my preferred things in-store on their app, then I will go straightaway and save time"* (P34, male, 29).

These behaviours imply that emerging consumers focus more on information acquisition via online or mobile channels before paying a visit to stores. Contemporary consumers have become rational decision-makers when they think of researching products and completing transactions via their smartphones. Furthermore, accessed information may reduce consumers' perceived risk in trying out new products, particularly for those who have no prior experience of a specific brand. Thus, such utilitarian assistance is expected to maintain a more confident shopping journey in busy shopping centres.

Utilitarian Gratification – Mobile Quick Payment

Consumers currently consider mobile quick payment as an efficient aid to shopping. With the rapid growth in technology development, mobile quick payment has become a positive payment option (Schierz *et al.,* 2010). A few participants admitted that they preferred to use Apple Pay and mobile contactless payment services. When P13 was asked about her phone usage when shopping in a clothing retail shop, she finished her shopping and explained:

> "*I used my phone to pay (Apple Pay) … it's easier and it does not take so much time to take my card out, insert and put in the pin… Mobile quick payment just speeds up my shopping process and I feel comfortable about it*" (P13, female, 30).

Smartphone technology enables in-store consumers to obtain enough information and subsequently complete transactions. Moreover, transactions are more easily accomplished because the consumer's payment details are previously stored, which enhances the shopping speed. P4, participating in the research after her shoe purchase, appraised the mobile payment and added:

> *"I transferred money to my friends on my banking app this morning; then while we were shopping, I paid with contactless method on my smartphone, it is so efficient when your transaction is under £30, then it quite saves time and you don't worry about losing any bank information*" (P4, female, 23).

Apart from the instant payment service, mobile quick transfer also enables an efficient user experience for participants who encountered money transfer issues. P23 took part in the research and shared her smartphone uses during a shopping journey with her friend. She explained:

> *"I have a habit of checking my mobile bank apps to ensure my balance… When we were shopping today, I had to transfer some money on my smartphone to my sister who is away. By simply clicking on phone, she received money and got helped, this made me happy"* (P23, female, 23).

Thus, consumers can save payment time due to mobile quick payment assistance. As expected, mobile quick payment is becoming more secure and is widely appraised by consumers who constantly shop with their smartphones during store visits (Venkatesh *et al.,* 2012; Park *et al.,* 2019a); it not only helps to complete shopping tasks but guides a more efficient purchasing pace. Consumers do not doubt the perceived security issues of mobile payment, but rather, they appreciate the advantage of the smartphone's assistance in driving a positive shopping journey.

Hedonic Gratification – Relaxed Shopping Pace & Passing Time

Not all consumers concentrated on acquiring communication and information gratifications for shopping-related tasks during their shopping journeys. Hedonic-oriented consumers pay a visit to shopping centres for leisure, relaxation and an enjoyable window-shopping experience. Some participants were observed focusing on their smartphones whilst visiting retail stores. They reported that they were watching videos and listening to music via their smartphones during the shopping journey. P43, who participated in the interview after shopping for some clothes for an event, was relaxing in a chair alone, and shared her opinions on shopping entertainment:

> "*Yes, I used my phone during shopping. But I did not use it for shopping purposes; I listened to music on Spotify all the time while hanging around. I also played games in between*" (P43, female, 30).

In similar vein, P35 also emphasized his interest in mobile games during his shopping breaks:

> *"I have many gaming apps installed on my phone, when I had to wait my girlfriend during shopping, I just relaxed myself and played some games and watch some pre-downloaded videos. Smartphone at least induces me some leisure than boredom"* (P35, male, 24).

Thus, hedonic-oriented consumers may find ways to induce relaxed feelings or moods in-store (Chaudhuri, 2002), where listening to music or watching a video via their smartphone could help them relax and balance their boredom (Yao and Liao, 2011). Furthermore, Leung (2020) recently suggested that hedonic smartphone uses are significantly associated with free-time boredom, consumers actively engaging in pleasure-seeking alternatives on their smartphones. These behaviours are helpful to derive a relaxed shopping pace, where in-store consumers can pause their shopping at some point to take a break or relax.

Hence, consumers are likely to enjoy a more leisurely shopping pace and enhance their entertainment gratification via their smartphones, which are considered appropriate tools to pass the time. P11 was observed waiting outside a coffee shop when the researcher approached him for the study. He agreed to take part in the interview and explained his smartphone checking habit:

> *"I am always on my phone. Like for today, I did shopping, but in between, I use my texting apps (WhatsApp and Messenger), I check my social media stuff… and I listen to the radio pre-recorded while we were having breaks after shopping, I just order an Uber and still wait. I also browsed lots of websites to compare the prices when I am bored at some point of shopping"* (P11, male, 29).

Therefore, smartphones are treated as consumers' inseparable companions to combat boredom and derive a relaxed shopping pace when visiting physical retailing stores. There

are several functional mobile apps installed on a smartphone which enable users to check their apps and pass the time. Besides, emerging consumers have developed the habit of continuous checking of their smartphones, regardless of whether they are also focused on browsing in-store. These entertaining smartphone uses can consequently fulfil hedonic gratifications.

Social Gratification – Continuous Online Socialising

Apart from utilitarian and hedonic gratifications, in-store consumers also showed a strong desire for social fulfilment during their shopping journeys. Social media networking has influenced the shopping journey when in-store consumers are browsing products, as it allows them to be in touch in real time beyond traditional communication approaches. Differing from conventional communication media, social media platforms enable users to share and interact with others more intensively and effectively. Therefore, recent years have witnessed a growing attraction among the younger generations to the 'short story' functions of Instagram and Snapchat (Ko and Yu, 2019), where consumers can update their shopping trips on the 'story' platforms. The aim of social posts is to socialise and obtain feedback from peers regarding a particular snapshot of the consumer's shopping journey, simultaneously maximising interpersonal socialising efficiency.

For instance, P33 had finished clothes shopping with her husband and was resting on a chair in the high street. She expressed her dependency on social media networking apps, but denied using her smartphone for any shopping-related purposes:

> "*I just try to get on with my friends and to see where they are through checking out my social apps because we planned to go shopping together. It's always convenient though to keep updated when planning things with my friends on social media because everyone is on there*" (P33, female, 28).

Consumers' socialising activities are widely recognised as they tend to nurture their relationships with others through constant smartphone use (Plume and Slade, 2018). By frequent checking updates on mobile social platforms, consumers can be informed and connected without time or geographical barriers.

In addition, P17 also reflected her heavy dependency on mobile social networking apps when shopping with her son. They had finished clothing purchases of different apparel brands and were stopped on the high street before entering a shopping centre. She said:

> "*I had a day off and spend time with my son, we had done lots of shopping today… I also have to constantly check my Snapchat and Instagram and update with my mates, because I am an independent consultant helping promotional campaigns on someone's small business, I also need to keep communication with my clients on social networking sites to exchange ideas…"* (P17, female, 44).

Among the social media platforms, Facebook, Instagram and Snapchat are most widely adopted to improve interpersonal communication performance. Such continuous human-information interaction enables consumers to be updated in real time, to express themselves, and to know what is happening on their social networks (Lee and Ma, 2012).

Social Gratification – Consumer Engagement via Online Brand Community

In fact, in-store consumers are becoming more interactive on virtual platforms such as social media platforms to satisfy their social networking gratification. Retailers have enhanced their online branded communities for brand followers to engage with fellows and access product reviews (Sheng, 2019). For instance, many retailers manage fan pages on social networking sites to nurture the online brand community (Shriver *et al.,* 2013), simultaneously increasing C2C trust and social influence to connected followers (Shoham *et al.,* 2017). Furthermore, the massive content that consumers review in a branded community has increased the relationships between firms and consumers. Consumers actively participate in the community discussion for the pleasure of engaging with like-minded people. During the interview, participants actively engaged with cohorts, recommending a product or sharing product reviews after consumption, as 'considered consumers' (Wolny and Charoensuksai, 2014). These consumers share and seek suggestions from like-minded people in order to make a purchase decision before paying. P33 further added:

> *"Sometimes when I check my social apps, there are some Facebook groups of brands and people can leave reviews about their experience. Since I'm on my social*

> *media all the time, it is unavoidable to click and read other people's reviews when I have a coffee break during shopping trip. Reviews can be useful and fake, but it is interesting to know what other people think and you can find out if you like the same products"* (P33, female, 28).

Online brand communities align consumers to create content, share and exchange additional information beyond what the retailers provide to buyers. By accessing additional product information on a virtual community of a particular brand, consumers can consider peers' suggestions and subsequently make confident purchasing decision in-store. In another example, P7 mentioned her worries of not having a smartphone with her during shopping trips. She had been shopping for a pair of shoes and some sales dresses, and shared:

> *"I need my smartphones whenever I go, like today, my smartphone kinda helped me when I decided to which products… in terms of reading product reviews, I did check a few on the retailers' website such as Topshop and Amazon. If I bought something, I would leave a review as well. It's a good way to share your stuffs and experience that other can check. I think it's a good feature, giving other people insights, so they check it out before buying stuffs just like what I expected and did today…you cannot give reviews promptly during your shopping without a smartphone in hand"* (P7, female, 20).

In-store consumers showed a strong dependency on their smartphones as they needed instant social updates with peers through all types of social media (Lima and Irigaray, 2019). Besides personal updates and posts on social media networking apps, proactive consumers nowadays seek platforms such as online brand communities to invoke connections with other fellow buyers or to check anonymous reviews as approaches to maintain social communication on brand communities (Ajiboye *et al.,* 2019). These groups value more of the overall purchasing experience, embracing diverse communication and socialising channels over transactions, in which consumers are able to derive a sense of being interactive and acknowledged by retailers and peers. Therefore, the smartphone's socialising initiatives encourage in-store consumers to be kept constantly updated and informed, and their social gratifications are realised accordingly.

However, the researcher also discovered that approximately 15 participants did not use smartphones during shopping journeys on the interview day, because they did not want to be distracted from their shopping. This implies that using a smartphone might fail to meet personal shopping needs, as some consumers do not need their phones during the purchasing process. These participants indicated their concern over any transactions taking place via a smartphone. For example, P20 was targeted after clothes shopping with his brother in a shopping centre. They were Korean tourists visiting Southampton. He said:

> *"Nope, I don't use my phones that much during shopping. Because I would like to try them on first. After that, I choose to buy or not… I prefer my own decisions on the spot instead of checking my phones for second advice."* (P20, male, 26).

Additionally, some participants indicated the negative impact that smartphones could have in undermining their shopping experience, since they might walk into people, and it was not good to concentrate on one's phone while shopping with companions. One university student (P40) participated in the study on her way to the next retail shop in the high street. She explained:

> *"I don't use my smartphone for anything while shopping. Sometimes I do use it for online shopping when I am home. But you see when I shop in these offline shops, I barely use my phone as I am used on concentrating on finishing my shopping lists of the trip"* (P40, female, 18).

Therefore, not all smartphone users decide to use smartphones during shopping journeys, preferring to focus on browsing in-store or shopping-related tasks, and aiming for a more concentrated experience without the distraction of a smartphone. Similar to the findings of Gill *et al.* (2012), smartphone overuse can lead to consumer distraction and impede the accomplishment of shopping activities.

To summarise, the empirical findings have identified a variety of smartphone usages taking place during shopping journeys in the context of physical retailing stores. Generating the first-order information on emerging smartphone uses enabled the researcher to draw the second-order themes, and further categorise a set of gratification goals. Moreover, in-store consumers generally use smartphones to achieve utilitarian,

hedonic and social fulfilments during their shopping journeys. More importantly, the analysing procedure of the qualitative data contributes to establishing the scales of the core constructs in the second study, which will be explained in depth in the sixth chapter.

4.6.2 Gratifications Vary between Using Mobile Websites and Applications

As explained in the previous section, smartphone uses create a variety of gratification goals during store visits. Drawing from emerging smartphone uses and gratifications, the U&G theory also allows the researcher to further investigate consumer preference on selecting customized mobile websites or applications, and identify how these meet their expectations. Mobile websites and applications embrace similar but different features that lead to unique usages, given different circumstances. Through the differing uses and motivations for choosing a particular media (mobile websites or apps), consumers' expected gratifications can be achieved, and the second research question will be resolved. In general, the majority of participants chose to use branded mobile applications for *communication, social media networking, multi-tasking function, mobile quick payments* and *relaxed shopping pace gratifications*. Other smartphone owners preferred to browse mobile websites to fulfil their *product information-seeking gratification*.

Mobile Applications' U&G

Customised mobile applications were regarded as efficient tools for communication drive. For example, P6 was stopped in the shopping centre while she was shopping alone for clothes. She agreed that she was continuously checking her smartphone, and showed her preference for choosing mobile applications:

> "*I tend to use more apps to be honest, especially WhatsApp for text messages. I also tend to use the most popular websites that have apps as well such as ASOS and Amazon because I am mostly on shopping apps*" (P6, female, 23).

P9 also noted her dependency on mobile social apps, when observed wandering around the stores. She answered:

> "*In general, I use apps more for Twitter, Instagram and basic social media apps; besides, I do have lots of shopping apps such as ASOS and Zara, they update their offers very often where you can check on apps…in my shopping journey today, I checked my Snapchat and Instagram all the time, it's kinda my habit now as long as I have my smartphone in hand*" (P9, female, 18).

The wide adoption of smartphones has enhanced interpersonal communication through active online engagement via social media networking platforms (Lin *et al.,* 2005). Muntinga *et al.* (2011) also emphasised that the consumer's incentive for adopting mobile social media is to be connected with friends, family and society. By accessing Facebook or Instagram, store visitors were able to update their social status and communicate with others, simultaneously realising their *communication* and *social media networking gratifications.* These are further in aligned with existing research appreciating the significance of mobile apps, as branded mobile apps enable social expression and information sharing (Lariviere *et al.,* 2013).

Apart from communication and social motivation, consumers also enjoyed the convenience of functional service-based mobile applications such as mobile banking apps. P26 was identified sitting on a chair with her friend during their shopping break, after they had purchased some clothes. She acknowledged using her phone:

> "*Yes, I checked my bank account to see how much I have spent and plan the rest… it makes my shopping experience much better… I would prefer to use apps than not... When you get the websites, it's possible to get the apps as well. So just going to an app is much easier because it memorises your card details*" (P26, female, 20).

Thus, the mobile banking application is a typical example given by in-store consumers thinking about being able to do their shopping faster. Some forms of mobile functional applications (e.g. Google Pay and Apple Pay) are the immediate choice to pay and achieve *mobile quick payment gratifications* via smartphones. In addition, other forms of information-assistance apps such as Gmail and Google Maps enable in-store consumers to accomplish other non-shopping related tasks while continuing with their shopping plans at the same time.

Branded mobile shopping applications may also be targeted by specific retailers, enhancing consumers' interaction with the brands, and expanding their broad knowledge of a brand and product specification (Huang and Korfiatis, 2015). For instance, P31 shared her clothes shopping experience while she was relaxing in a chair on the high street. She stated:

> "*I did try to use ZARA's app earlier when I was hanging around. I was looking for a dress in-store, so I checked the item stock availability online first and I could make decisions later…I do have lots of shopping apps such as RIVER ISLAND and ASOS, I do lots of browsing daily, but I would probably buy something online through my shopping apps once a week*" (P31, female, 25).

Here, branded shopping applications contribute to product information searching and decision making, and assist in completing transactions via mobile channels. Mobile channel consumers mentioned that they would visit a retailer's branded application when they had spare time. For instance, P35 participated in the interview after his grocery shopping on a Wednesday afternoon. He was in a relaxed mood and indicated the frequency with which he selected mobile shopping channels:

> "*Well, I do a little bit of browsing. I buy once a month from mobile shopping apps maybe. It really depends on my schedule, mostly after work and at the weekends when I have spare time*" (P35, male, 24).

Moreover, like-minded consumers regarded application browsing as a *relaxing* means of combating boredom. They browse shopping applications to pass the time and combat boredom when they pause their shopping journeys to take a break.

The results also disclose that participants installed and purchased apparel products from branded mobile shopping applications. Moreover, consumers would regularly browse the shopping applications (once or twice per week) to check out updated products, and subsequently buy from the applications. P27 was shopping with P26, who also joined the discussion and additionally shared her own mobile shopping experiences:

> *"I think I have got two shopping apps, ASOS and MISSGUIDED because these are only online retailers, if I want to buy clothes from these sites. I probably browse*

> *them once or twice in a week. I might buy something from the apps once a month"* (P27, female, 20).

Similarly, P9 also added:

> *"I have about five shopping apps. I browse them a lot when I am bored. Such as ASOS and ZARA, I probably buy from the apps once every two weeks"* (P9, female, 18).

Therefore, the above findings additionally support the fact that consumers tend to frequently check the branded shopping applications, being aware of apparel trends, and subsequently completing transactions via smartphones during a shopping journey. In particular, most participants had experience of browsing and purchasing via branded mobile apps when purchasing apparel items. Those who did not purchase via mobile application-based stores mainly preferred to check in-store for assured decisions due to the physical features of brick-and-mortar retail stores.

Mobile Website's U&G

Nevertheless, some participants criticised the shortcomings of downloading mobile applications, due to limited memory space on their devices, and bemoaned the restricted information displayed via mobile applications. This challenge could raise awareness among marketers and technology designers of combating the restrictions of screen size, processing capacity and various design requests, given the context in which consumers will employ mobile devices (Hussain *et al.,* 2020). Otherwise, consumers can easily switch to alternative channels to satisfy their needs. P37 gave his reasons for not installing the mobile applications:

> *"The main reason I don't use app is because of limited space. If I invest my time and effort on installing the apps from all suppliers that I consume from, it takes time and does not make any sense for me. What I slightly like more is mobile-friendly websites, they have more information that directs you to any relevant sites"* (P37, male, 34).

Despite customised applications being perceived as efficient and useful, consumers would still choose mobile-friendly websites to access rich information on their smartphones, considering it an important feature of mobile searches and browsing. P10 further noted that:

> "*It's better to use Explorer to do some research. Applications with some specific retailer brands… however, the app does not display full product ranges or enough product description, therefore I need to search online for more details*" (P10, male, 25).

Similarly, P25 was stopped while checking her phone alone during her store visit. When asked whether she preferred to use mobile websites or applications, she said:

> *"I always go to one retailer's website because it does not have a physical store in the UK. The website offers me rich choices and product information that I could browse…I prefer to go to websites because they have clear visibility and are more comfortable to use than apps.*" (P25, female, 29).

This shows that web-oriented consumers concentrate on information acquisition as an essential driver because of a website's clearer visibility and abundant information display. Mobile websites embrace information assistance so that consumers' *product information seeking gratification* is realised, which further supports the mobile website's functional performance highlighted by Liu *et al.* (2019b).

As discussed in section 2.2.4, both marketers and consumers actively adopt mobile devices for various purposes in terms of browsing mobile-friendly websites and choosing preferred mobile apps. While existing research has captured and compared the drivers for adopting mobile websites and applications in general, there is a lack of studies comparing the media differences (websites vs applications) under the U&G research stream. As discussed by Kim *et al.* (2015b), the discontinued uses of shopping apps could lead to decreased spending levels, and marketers should prioritize enhancing apps' communication uses with their customers to maximise brand experience via mobile channels. Hence, the empirical findings of this qualitative study further show that in-store consumers choose different mobile media (websites and applications) to achieve

corresponding gratifications. Consumers show the strong appeal of using mobile social and functional apps, which increases smartphone penetration in the shopping process (van Deursen *et al.,* 2015). In addition to this, branded shopping apps not only provide shopping-related information, but also occupy the consumer's time to combat boredom and derive a positive mood. Thus, these findings shed light on mobile applications' distinctive adoption by multichannel consumers, whereas branded apps browsing has nurtured habitual smartphone checking in-store. Simultaneously, the second research question has been resolved in terms of the differences in applying mobile websites/applications during shopping journeys.

4.6.3 Obtaining Second Opinions through Smartphones

The researcher has conclusively pictured emerging smartphone uses during an individual shopping journey and showed how mobile websites and applications achieve expected gratifications, respectively. Besides a variety of smartphone uses, participants mentioned their reliance on smartphones, as they often needed second suggestions in terms of choosing appropriate products and making confident purchasing decisions in busy shopping centres. Given the complexity of shopping environments, where retail shops, dining and leisure places operate in close proximity, in-store consumers may get confused owing to choice overload and distractions, which undermines their decision-making. Therefore, participants admitted that they sought various sources of information through their smartphones to acquire extra advice regarding a purchase.

In the past, in-store consumers sought the advice of store assistants on product-related questions in a simple transaction, without additional communication with peers or other stakeholders. The situation has changed, communication and shopping methods being transformed, where in-store consumers are seen actively seeking additional suggestions before making a payment. They may make a call to friends or family for second opinions, check online reviews of new products or brands, recommend a product to peers, etc. These forms of activities were identified when interviewing participants in real shopping scenarios. Thus, the researcher initialized a table illustrating possible types of consumer interactions via their smartphones during shopping journeys (see Table 4-4).

Table 4-4 Motivations of In-store Consumer Interactions (in person & via smartphone)

Interaction Stakeholder/Media	**General Contact/Communication**	**Ask for second opinion before making purchase decisions**
Accompanied friends/families		To get second opinions on products (P3, P4, P28 and P30)
Store Assistants, Cashier	Accessing general product information (size, colour, design etc.) (P3, P5, P7, P11, P18, P19, P20, P21, P29, P37, P40, P41, and P42) Making payments (P1, P14, P15, P16, P17, and P36)	
Contacting Friends/families via smartphones	To make plans (P6, P14, P22, and P29) To get updates with people (P7, P9, and P30) Feel like chatting with friends while hanging around shops (P25, 27, P33)	Take a picture of the product and send it to them (or post on social networking apps) for further purchase advice (P13, P26, and P29) Product recommendations (P20 and P43)
Checking product reviews on online brand communities via smartphones		Checking product reviews/ratings from peer buyers or anonymous reviews from online brand communities before buying (P7, P12, P14, P19, P23, P25, P26, P29, P32, P34, P35, P36, P40, P42, and P43)

Source from: empirical qualitative findings.

As shown in the table above, in-store consumers frequently contacted others to get connected and ask for opinions. Moreover, participants would only ask for a store assistant's help regarding product size and colour issues if staff were friendly and patient, according to the interviews. However, the first study does not emphasise consumer-employee interactions. Rather, it focuses on exploring consumers' interpersonal communications involved with smartphone usage in actual shopping contexts.

First, a few participants reported that they sought product advice from fellow shoppers before completing transactions in-store. When consumers were exposed to various product and brand options in shopping centres, obtaining second opinions from peers would decrease the perceived risk of making wrong decisions (Nguyen *et al.,* 2016) and alleviate their apprehension and uncertainty. P28, who was texting her friend whilst waiting for the bus after clothes shopping, mentioned that she would need a friend's advice before buying:

> "*I talked to my friends while we were shopping together. You can get a second opinion from someone when you shop on your own, just useful. That is like a benefit I guess which is very nice*" (P28, female, 21).

Second, smartphone-assisted communications were also found to take place where some consumers contacted their friends for additional suggestions. Consumers would achieve greater assurance concerning their decisions, and balance uncertainty by gaining extra advice accordingly. Participants needed second opinions if they were confused or shopping alone, often through taking a picture and sending it to others before completing their purchases in-store. In-store consumers became risk-averse when faced with plentiful choices, and attempted to avoid making poor or incorrect purchasing decisions by applying their friends' suggestions (Zhu and Huberman, 2014). P21 was shopping with her colleague after work and had bought some suits for a conference. When asked whether she had had any communication with others during her shopping journey, she acknowledged asking her friends for advice:

> "*I chatted with my friends over the phone. Sometimes they can give me another option if I want to buy something. I always need extra options in terms of pricing, designs and brands. It's really helpful to ask them, because most of my friends are particular concerning price, so they will give me another option that I can go for*" (P21, female, 26).

In addition, some participants stated that they had chatted with friends via their smartphones. They further explained that they felt like chatting and catching up with friends while shopping or browsing in physical retailing spaces. Such interactivity contributed to a comfortable and relaxing shopping journey, especially for those

consumers feeling bored or needing communication during shopping. In addition, the findings also reflect that smartphones have become an inseparable companion to emerging consumers when visiting physical retail stores. Moreover, for utilitarian-centric consumers, they need their smartphones to be updated and connected alongside their shopping process. For those hedonic-centric groups, habitual checking and communication on their smartphones may bring enjoyment, comfort and relaxation. Thus, the findings further strengthen the opinion that smartphones should be used during shopping journeys.

Besides contacting someone they knew, in-store consumers also referred to online anonymous reviews via their smartphones when considering an expensive product, or when they had less experience of a brand (Pagani and Malacarne, 2017). Online brand communities are generally advocated to encourage consumers to engage with their peers, accessing rich information in terms of others' consumption experiences (Muniz and O'Guinn, 2001). For example, P16 was in a rush to catch a train after apparel shopping, and mentioned that, on occasions, he considered online reviews before paying:

> "*It is really helpful particularly when I decide to buy something really expensive and I don't have enough information about the product. I am really careful with these reviews. For example, if I want to book a hotel, I will check the reviews first, despite the possibility that there might be fake reviews*" (P16, male, 29).

In similar vein, contemporary consumers are becoming rational decision-makers, giving serious consideration to product specifications and relevant information prior to any payment. Through accessing online peer reviews, less experienced consumers referred to peers' consumption experiences for further assurance and made decisions accordingly. Consequently, consumers' state anxiety, which is understood as a negative evaluation of the shopping experience (Compeau *et al.,* 1999) was embraced, as online peer reviews helped them make more confident decisions. However, a few participants disagreed, suggesting that some online reviews could be fake or unreliable. Thus, they would not seek mobile reviews when making shopping decisions, particularly regarding restaurant and hotel services. This suggests that individual perceptions of mobile reviews vary depending on product or service types.

However, a few store visitors had no interactive experience, indicating that they preferred to trust their own ideas when shopping. They tended to make minimum effort without consulting store assistants for help, nor searching for advice from online reviews. P34 was found visiting shops one by one in a city centre; he was carrying many shopping bags and had a smartphone. When asked if he had had any communication with other people, he explained:

> *"I have been anti-social today as I am busy shopping around, trying to escape from my phone or chat with someone. I just want to be on my own. When I decided to buy, I just need to try the clothes and see if it's fit. I am always making decisions quick when it comes to shopping".* (P34, male, 29)

Therefore, some consumers perceived a satisfying shopping experience as focusing on purchases, and avoided using smartphones when visiting brick-and-mortar shops. Alternatively, they preferred to make their own shopping decisions in an effective way, without considering extra solutions or consulting in-store sales assistants. As a result, such consumers are unlikely to be bothered with information overload or choice complexity; they make prompt purchasing decisions on the spot if the items fit. Nevertheless, the empirical findings disclosed that only a small number of participants avoided using smartphones making communication with peers during shopping journeys, due to participants' personality variance. Nevertheless, the first study advocates the positive aspects of smartphone assistance during consumers' shopping journeys.

To sum up, this section delineates the fact that consumers use smartphones to acquire additional suggestions before or during purchases to make more assured and confident purchasing decisions. Therefore, the researcher labelled this as a new type of utilitarian gratification through smartphone communication - obtaining second opinions.

4.7 Surprising Finding: In-store Smartphone Uses and Consumer's State Anxiety

The previous section outlined the emerging smartphone uses, and how consumers significantly adopt smartphones for utilitarian, hedonic and social gratifications during shopping journeys. By constant updates and habitual checking, in-store consumers can

access all sources of information at the touch of a finger, and make confident decisions accordingly. Reviewing participants' conversations, the researcher discovered that in-store consumers treated their smartphones as inseparable and essential companions, as an aid to maintain a comfortable and confident shopping experience, balance the uncertainty of new brands/products, combat boredom, enjoy a relaxed shopping pace, and have instant connection with the external world through social media, etc.

Apart from these gratifications, the researcher also noted participants' psychological feelings towards using smartphones in-store, given the complexity of busy shopping centres. Moreover, some intrinsic feelings further indicated that smartphone use might be able to reduce emotional responses such as distress, anxiety, fear of risk, apprehension, uncertainty and boredom (as quoted previously). These negative feelings are understood as an individual's temporary response towards external stimulus (busy shopping centres). After several rounds of reviewing interview transcriptions, the researcher summarised participants' psychological distress as 'consumer's state anxiety', a short-lived status distress when exposed to external contexts. More specifically, status anxiety was reflected relating to the following feelings drawn from participants' dialogues (Table 4-5).

Table 4-5 Participants' Feelings towards Smartphone Uses In-store

Participants' feelings towards smartphone uses during shopping journey	**Keywords**	**Aggregated term**
Smartphones provide confident and comfortable assistance (P9, P13, P42, P43).	Confident Comfortable	Using a smartphone can alleviate consumer's anxiety (apprehension, uncertainty, risk, doubt, boredom, worry) during individual shopping journey in busy shopping centres.
Mobile quick payment is safe and secure, faster than cash and card payment (P13, P22, P35, P38, P41).	Safe and secure Faster (more efficient)	
Smartphones enable me to enjoy entertainments such as watching videos, mobile gaming, and listening to music. I feel chilled and relaxed (P7, P8, P18, P20, P35).	Enjoyable Relaxed	By providing communication, information, functional services, quick payment, entertainment tools, socialising assistance, smartphones are expected to
I can be less worried about my other family members while I	Less worried	

am shopping outside (P19, P37, P40, P42). I constantly check my phone when I am hanging around shops, having nothing to do, spare sometime browsing my phones (P5, P7, P19, P20, P23). I need to check online reviews when I am buying a new brand or buying something very expensive, then I won't make risky decisions (P17, P19, P20, P34, P36). I called my friend or sister to ask their opinions before I bought the item, just to get more advice and make confident decisions (P21, P16, P34, P43). I feel safe when I am constantly active on social media, it gives me lots of information and keeps me connected with everyone (P33, P17, P16, P38).	Combat boredom Pass time Risk averse Confident decision-making Safe and connected	enhance and enrich consumer shopping experience in brick-and-mortar retail stores. Therefore, consumers can enjoy a more confident, comfortable, productive, relaxed and secure shopping journey owing to smartphones' assistance. In the end, consumer's status anxiety can be balanced given the dimensional gratifications achieved via a smartphone. Simultaneously, using smartphones may affect purchase decision to some extent, as multichannel consumers are enabled to choose different channels for purchases.

Source from: The researcher's initial output drawn from interview dialogues.

As demonstrated in the above table, the researcher found that using a smartphone could balance consumer's status anxiety during shopping journeys. While in-store consumers are confronted with plentiful product choices and distractions, they actively use smartphones to generate immediate assistance and achieve their own shopping needs. Thus, this surprising finding encouraged the researcher to look in more depth at anxiety-related research, given the context of shopping in brick-and-mortar retail stores (see section 5.2).

4.8 Discussion of Study 1

The first study of the thesis focuses on exploring the underlying motivations for smartphone use during shopping journeys in brick-and-mortar retail stores, highlighting that consumers pursue utilitarian, hedonic and social gratifications from using smartphones alongside their shopping journeys. By interviewing potential consumers in real shopping contexts, the researcher figures out that in-store consumers frequently ask

for additional opinions and habitually check their phones, in order to balance their state anxiety. That said, consumers nowadays are smartphone-dependent, and pay a considerable amount of time and effort searching for any sources of information before completing payments in shopping centres.

Besides, this study has insightfully disclosed differences between mobile websites and applications adoption. Among the various types of uses, branded mobile apps are most widely adopted for their immediate utilitarian and social gratifications, mobile website browsers being more concerned about achieving sufficient information through unrestricted website navigation. In addition, smartphones are considered productive media to obtain extra suggestions regarding product specifications and making assured decisions.

Since the smartphone's adoption in offline channels, consumers may experience uncertainty and anxiety during their shopping journeys when visiting busy shopping centres offering a huge assortment of products. Using a smartphone can help alleviate such concerns and achieve different forms of gratification. The wide range of smartphone uses results in various prominent means of consumer engagement, suggesting that using a smartphone has become an inevitable part of the individual shopping journey in-store. This section compares and contrasts the qualitative findings with existing studies, further discussing: (1) the benefits of smartphone's U&G and (2) how smartphone-assisted shopping patterns alleviate consumer's state anxiety.

4.8.1 Benefits of the Smartphone's U&G

The first study extends the established knowledge by developing a thorough framework that includes the corresponding in-store smartphone uses and consumers' expected gratifications in physical retail environments. Individuals select mobile websites or mobile applications based on usage purposes and perceived benefits, which can be categorised as utilitarian, hedonic and social satisfaction. Thus, the researcher has drawn a map exhibiting the key results, as shown in Figure 4-2.

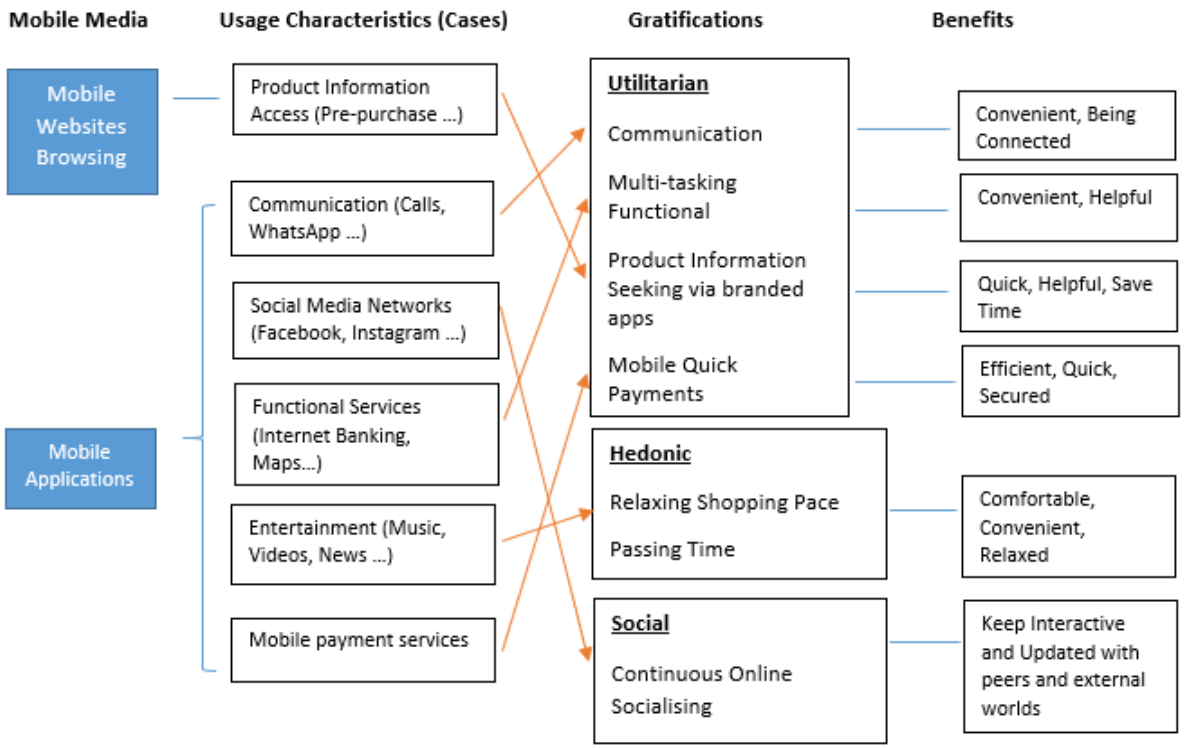

Figure 4-2 Smartphone's U&G and Consumers' Perceived Benefits

Source from: the researcher's initial summary from Study 1.

According to the results, smartphone usages vary under different settings and specific situations, depending upon individual needs and purchasing channels. In other words, contextual variance should be extraordinarily valued, being associated with usage purposes to some extent. First of all, in line with existing research, utilitarian-centric participants emphasise that they would use smartphones regularly when they have immediate need to meet communication and information objectives, regardless of personal status or situation (Lim and Kumar, 2019). In terms of communication goals, general contact (call or text messages) and continuous online socialising enables in-store consumers to be connected with people and social status. Thus, as Kaatz *et al.* (2019) suggested, communication is the immediate motivation for people to choose a preferred media. By coping with external business besides shopping, in-store consumers admit smartphone's communicative assistance during shopping journeys.

As for the information aspect, utilitarian-centric consumers acknowledge the advantages of the smartphone's pre-purchase searching assistance (Voropanova, 2015), since they prefer to gather as much information as possible before purchasing or paying a visit to

brick-and-mortar retail store (Flavian *et al.,* 2016). Existing consumer research has discussed consumers' intentions in adopting mobile devices due to technology improvements (Strom *et al.,* 2014). Nevertheless, the first study suggests that consumers predominantly pursue utilitarian values such as information-oriented access whenever they have need. Thus, utilitarian-centric consumers' shopping efficiency is enhanced when assisted by smartphones.

Similarly, mobile shopping channels have been widely accepted by omni-channel consumers, who enjoy the benefits of online, offline and social media approaches in making decisions and completing transactions (Wong *et al.,* 2016). Harris *et al.* (2018) put forward the idea that channels differ from each other because of distinctive features with regards to searching and purchasing approaches. In particular, this concept is further reflected in the first study, as in-store consumers hold distinctive views of selecting mobile websites and applications for shopping-related activities. Moreover consumers may switch channels regarding a single purchase; for example, those with experience of using smartphones for online orders explained that they would first go to the physical shops to check the brands and sales (Pozzi, 2012), try on the products, and subsequently compare pricing of similar brands/products via their smartphones to make final purchasing decisions. It is not surprising that omni-channel consumers account for a large audience which makes good use of mobile media for shopping purposes (Flavian *et al*., 2016). Besides, mobile quick payment also contributes to an efficient shopping experience, realising consumers' utilitarian gratifications (Park *et al.,* 2019a).

Second, in terms of hedonic-oriented consumers who play games and listen to music whilst on their shopping breaks, smartphones offer a comfortable and relaxing shopping process (Kim *et al.,* 2015b). On the one hand, previous studies have emphasised store interface design as an important consideration for hedonic buyers (Fiore *et al.,* 2005; Cheng *et al.,* 2019). This study further discovers that in-store consumers look for entertainment fulfilment, rather than just purchases, if shopping centres unblocked the Internet access. Moreover, good service-supplied stores would implicitly motivate potential consumers to spend a longer time in the shops, leading to potential sales and positive in-store experience. On the other hand, the findings also suggest that both window-shopping and actual-buying consumers enjoy their smartphone's entertainment

elements. In addition, consumers also browse branded mobile application-based stores for the latest product offers when they have spare time, perceiving such browsing as a means of alleviating boredom and passing the time (Gan and Li, 2018). Therefore, consumers' hedonic gratifications are achieved through using their smartphones for entertainment and leisure.

Third, apart from the utilitarian and hedonic benefits achieved from using smartphones in-store, consumers also seek social support from peers and online communities before making purchasing decisions. For example, consumers share product reviews and describe their experiences on social networks, whereby other users can access and evaluate this information (Pagani and Malacarne, 2017). Through obtaining additional opinions and recommendations, prospective consumers would feel more attached to the products and brands (Hollebeek *et al.*, 2014) which might stimulate their shopping choices. Moreover, these smartphone users also acquire social approval and perceive a satisfying shopping experience as one in which they have constant engagement with peers on social network sites (Sipe and Testa, 2018). The results show that smartphones create enjoyment and socialising gratification when in-store consumers are able to interact with peers through the media.

In conclusion, the first study voices positive aspects that smartphones can help with individual shopping. Consumers' shopping propositions and their expected gratifications are obtained by employing smartphones during shopping journeys. Moreover, for utilitarian-centric consumers, smartphones empower them with immediate access to additional product information and product advice from peers. For hedonic-centric consumers, smartphones bring them joy and a relaxing shopping experience, while social-centric consumers expect social appeal from cohorts through continuous online socialising contact via their smartphones. These shopping practices further indicate that smartphones might affect consumers' psychological feelings such as reducing their state anxiety in making assured decisions, leading to a confident and relaxing shopping journey.

4.8.2 How Smartphone-assisted Shopping Patterns Reduce State Anxiety in Busy Shopping Centres

The empirical findings disclose that in-store consumers strongly use their smartphones to maintain C2C communication as an aid to acquiring second opinions from peers before payments. It also demonstrates that contemporary store visitors are not entirely dependent on shop assistants' advice. Instead, they tend to make less effort and find solutions through searching via their smartphones.

Omni-channel shopping implications have further allowed for an innovative shopping experience that consumers are pursuing for confidence, convenience, comfort, assurance and efficiency to reduce apprehension and uncertainty in brick-and-mortar retail spaces. This is accounted for by consumers who are exposed to numerous product choices, especially when visiting busy shopping centres. In addition, their accumulated anxiety could be increased while using a mobile device in-store (Saprikis *et al.,* 2018), because extra channels prolong the information processing performance. Therefore, consumers proactively seek solutions by which to combat state anxiety through acquiring additional opinions via a smartphone.

Since the introduction of smartphones, consumers have had access to rich information and advice, so as to make confident and assured decisions in real time (Fang, 2008). Consumers can also enjoy entertaining activities such as listening to music via their smartphones whilst browsing and shopping in-store, which contributes to a relaxing shopping pace. Moreover, multi-tasking consumers' perceived anxiety could be reduced when functional mobile apps offer complementary assistance that enables in-store consumers to solve other non-shopping related issues. They may thus become less worried about other aspects of their lives, and in this sense, the mobile apps liberate busy consumers from external concerns. Hence, consumers look for approaches to alleviate their status anxiety by checking their smartphones along shopping journeys.

To sum up, the first study discloses distinctive smartphone uses and gratifications, implying that in-store consumers constantly check and depend on their smartphones to achieve utilitarian, hedonic and social gratifications during shopping journeys. Moreover, consumers were observed interacting with companions and fellow shoppers through

interpersonal and digital-driven platforms (e.g., smartphones). The significant motivation for such engagements delineates that consumers need additional opinions and recommendations to make a confident purchase decision. Consequently, obtaining a second opinion is understood as an additional utilitarian gratification of smartphone use during a shopping journey, extending the basic gratification phases demonstrated in section 4.6.1.

More interestingly, consumers use smartphones as a means to alleviate status anxiety due to the choice complexity when exposed to busy shopping centres in the U.K. Ultimately, the first and second research questions are resolved regarding emerging smartphones' U&G and different motivations for selecting mobile websites/applications. Simultaneously, as suggested by Gioia *et al.* (2012), the researcher developed Table 4-6 to demonstrate a variety of smartphone uses and gratification dimensions that may balance consumer's state anxiety when visiting busy shopping centres.

Table 4-6 Data Structure of Study 1

1st order concepts (distinctive smartphone uses during shopping journey in-store)		**2nd order themes**		**Aggregated dimensions**
Contact friends/family through dialling and texting; To make plans; To be updated with acquaintances.	→	*Being connected during shopping journey*	→	Utilitarian gratification
Checking emails, online banking accounts, train times and other functional tools; Performing non-shopping related tasks.	→	*Multi-tasking functional services*	→	
Check new products/brands, offers; Check product reviews via branded mobile apps.	→	*Product information seeking via branded mobile apps*	→	
Apple/Google Pay service to complete transactions in-store; Money transfer; Contactless payment via a smartphone.	→	*Mobile quick payment*	→	
Texting or calling acquaintances for product suggestions; Product recommendations; Check consumption experience via online brand communities.	→	*Obtaining second opinions*	→	
Watch videos and listen to music; Mobile gaming service during shopping breaks.	→	*Relaxing shopping pace*	→	Hedonic gratifications
Constant and habitual smartphone checking alongside shopping journey; Entertainment alternatives via a smartphone.	→	*Passing time*	→	
To be updated on mobile social networking apps (Facebook, Instagram,	→	*Continuous online socialising*	→	

Snapchat, WeChat); Maintain communication with virtual socialising community.				Social gratifications
Share product reviews, exchange information via online brand communities; Seek suggestions from like-minded people online; Check product reviews via retailer's online community before purchasing.	→	*Consumer engagement via online brand community*	→	
Less worry about other aspects of life apart from shopping; Extra advice/opinions before making a purchase; Secure and efficient mobile payment option; Comfortable and relaxing shopping journey obtained due to entertainment assistance; Habitual smartphone checking to combat boredom and pass time; Strong dependency on prompt smartphone access during shopping; Immediate updates with social media; Confident and comfortable shopping journey with smartphone available.	→			Consumer's state anxiety

Source from: the researcher's original summary based on the findings.

4.9 **Summary**

From conducting the qualitative research, the first study additionally specifies a variety of forms of gratification pertaining to the use of smartphones in brick-and-mortar retail environments during shopping journeys, namely *being connected during shopping, multi-tasking functional service, product information seeking, mobile quick payment, obtaining second opinions, relaxing shopping pace, passing the time, continuous online socialising, and consumer engagement via online brand community.* By borrowing the uses and gratifications (U&G) theory, several motivational constructors of in-store smartphone usages have been disclosed through open-ended interviews. Simultaneously, smartphones facilitate and maintain good relationships between consumers and retailers through mobile channels.

Theoretically, the qualitative findings extend the existing literature on the uses and gratifications by additionally highlighting contemporary smartphone uses (i.e., multi-tasking functional services, relaxing shopping pace, and passing the time) and consumers' perceptions towards using mobile websites and applications in the context of brick-and-mortar retail stores. Using a smartphone can meet the consumer's communitive and

information needs and enable multi-tasking consumers to check on the other aspects of their lives whilst browsing in-store. More insightfully, the empirical findings illustrate that consumers can gain supplementary shopping advice from peers regarding product specifications and performance through active engagement and communication via their smartphones. Given the adequacy of accessed information, consumers are likely to become more confident and less anxious about making appropriate purchasing decisions in brick-and-mortar retail stores.

Empirically, in contrast to previous examples of such studies criticising mobile device distractions during shopping (Sciandra and Inman, 2016), omni-channel retailers should encourage consumers to use smartphones in shopping centres, by facilitating in-store smartphone assistance and enabling Wi-Fi services. This would motivate consumers to resolve issues such as acquiring additional product information and advice on their phones promptly, as they pursue a more productive shopping journey and make more confident purchase decisions. Moreover, consumers could complete purchases without negative feelings due to minimum research effort and satisfying services in-store.

Apart from the theoretical and practical implications, the findings of the first study also contribute to formulating the key research constructs of a prospective conceptual framework in the second phase of the project. Before planning the quantitative study, it is necessary to confirm the types of the constructs (independent or dependent variables) and possible relationships in between. Therefore, the first study indicates that smartphone's U&G (as independent variable) may reduce consumer's state anxiety (as mediator variable) and may subsequently affect in-store purchase intention (as dependent variable). Hence, the second study was developed to detect the relationships and resolve the research questions.

Chapter 5 HYPOTHESES DEVELOPMENT AND PROPOSED CONCEPTUAL FRAMEWORK

5.1 Introduction

Due to the nature of sequential exploratory research, the second study of the thesis concentrates on examining the relationships between the key constructs derived from the qualitative findings. However, it is critical to construct a set of hypotheses and propose a conceptual framework before inspecting possible associations.

According to the findings in the previous chapter, the researcher has identified specific smartphone uses and consumer expected gratifications. In addition to that, the empirical findings suggest that consumers rely on their smartphones to derive confident shopping journeys in offline retail settings. This phenomenon is further understood as consumer's status anxiety when responding to busy shopping environments, where product choice overload and distractions impede productive decision-making during a shopping journey. Thus, the researcher is interested to examine whether in-store smartphone uses would reduce consumer's status anxiety.

The structure of this chapter is threefold. First, the researcher reviews the extant studies with respect to consumer's anxiety-related research, as anxiety is a key construct in the proposed model that needs to be discussed in depth. Second, there will be a list of hypotheses drawing proposed relationships between smartphone's U&G and consumer's state anxiety. The last part is to draw a proposed conceptual framework and explain the rationale of the model. It should be highlighted that this chapter contributes to further quantitative analysis (see Chapter 6) as it clarifies the core constructs and corresponding assumptions.

5.2 Consumer's State Anxiety in Shopping Centres

5.2.1 Defining State Anxiety

Anxiety, has been documented in psychology and marketing literature, demonstrating a negative state of distress which leads to a sense of apprehension, tension or worry that occurs when responding to a specific stimulus (Arkin and Ruck, 2007). In addition, the term is applied when a person is unsure about the situation and fears unexpected outcomes that might happen in the future (Chiou and Wan, 2006). Due to the complexity and diversity of shopping behaviours, consumers nowadays admit to living in an era of anxiety, and seek options to escape from negative consequences (Lee *et al.,* 2011). In a similar vein, this thesis explores consumer's state anxiety that might impact their purchasing behaviours.

In the literature, this anxiety has been categorised into two general spheres: state anxiety and trait anxiety (Igbaria and Livary, 1995). More specifically, the current thesis focuses on studying consumer's state anxiety, as it demonstrates short-lived personal emotional distress in response to a specific external stimulus (Gilbert *et al.,* 2003), while trait anxiety involves a type of stable personality in which an individual constantly holds negative attitudes towards an external situation. State anxiety has been addressed in recent research in terms of consumer's emotional responses (Kazancoglu and Aydin, 2018), its impact on impulse purchases (Nagar, 2016), and computer anxiety (Yao and Liao, 2011). The most recent work under the psychological domain also examines the relationship between trust and state anxiety, implying that trust mediates people's state anxiety (Kraus *et al.,* 2020). To grasp an overview of anxiety and its applications in marketing and psychology contexts, the researcher initialized a table exhibiting the extant research and findings in anxiety-related studies (see Table 5-1).

Table 5-1 Anxiety-related Literature Summary

Research Context	**Authors (Year)**	**Type of Anxiety**	**Findings**
Retail environment	Becker and Pizzutti (2017)	Social anxiety (as an experience of discomfort, affliction, fear and anxiety during	In the offline retail environment, an increased social anxiety undermines

		social situations, the avoidance of these situations and fear of negative evaluation by other people)	the effects of C2C interaction.
Mobile payment service	Park *et al.* (2019a)	Technology anxiety (an apprehensive belief describing the consumer's state of mind regarding his ability and willingness to adapt when faced with new technology for the first time)	Technology anxiety influences multiple benefits of mobile payment services.
e-commerce	Nagar (2016)	Internet shopping anxiety (the negative emotions that result from an individual's experience with online shopping in particular arising from any component of online shopping process)	Product choice overload in the online context was found to have a positive effect on Internet shopping anxiety, and this anxiety negatively impacts the patronage intentions of shoppers.
E-tailing websites	Yao and Liao (2011)	Internet shopping anxiety (is developed as a result of online shopping transactions and thus can be measured after having such experiences)	The Internet shopping anxiety has a significant positive effect on perceived risks of e-tailing service quality.
Choice servicescape in consumer decision-making	Bujisic *et al.* (2017)	Consumer anxiety (described as negative feeling in making decisions)	Inadequate utilitarian servicescape dimensions cause consumer anxiety, while consumer anxiety plays an important role in scenario-based decision-making.
Omni-channel shopping behaviour in emerging market - Turkey	Kazancoglu and Aydin (2018)	Anxiety about delivery/system of omni-channel service (anxious or emotional reactions when it comes to performing behaviour)	Anxiety towards delivery system is one of the key antecedents that affects consumer purchase intention.
Online shopping channel	Celik (2016)	Computer anxiety (the degree to which an individual temporarily experiences fear, apprehension, and	Anxiety is critical in negatively influencing customer perceptions of and intentions toward shopping

		aggression when considering use of, or actually using, an online shopping channel)	online.
Autonomous cars adoption	Hohenberger *et al.* (2017)	Technology adoption anxiety (negative effect and feelings toward adopting a new piece of technology)	The negative effect of anxiety decreased with increasing levels of self-enhancement, and technology avoidance reduces consumers' willingness to use autonomous cars.
Highly automated driving system adoption	Kraus *et al.* (2020)	State anxiety (as a momentary emotional state, which is accompanied by a conscious feeling of tension and unease and higher activity of the autonomic nervous system)	Trust in the system was significantly predicted by state anxiety and the personality characteristics of self-esteem and self-efficacy.

As shown in the table, extant marketing research often address a type of state anxiety that impacts consumers' psychological and emotional response towards an external context. For example, the Internet and computer anxiety relates to the consumer's momentary response towards online and omni-channel shopping practices (Yao and Liao, 2011; Nagar, 2016, Park *et al.* 2019). These marketing scholars demonstrate the antecedent effects of anxiety-related attributes, and disclose the user's willingness and adoption intention, suggesting that consumer anxiety derives a negative response and attitude toward an object or a marketing practice when an innovation is introduced. Hence, the common information lies in that marketing researchers emphasise exploring individual's status anxiety when responding to external stimulus (Arkin and Ruck, 2007).

In similar vein, the current thesis explores consumer's state anxiety from a cognitive angle. Moreover, the researcher posits busy shopping centres as the external stimulus. Given that shopping centres embrace complementary shopping, leisure and socialising elements, consumers' apprehension may accelerate when they choose to search on their smartphones for extra product attributes or purchasing advice. Therefore, cognitive distress, so-called state anxiety, is expected to take place and be affected while using smartphones during shopping journeys. Furthermore, consumer's state anxiety may

increase due to the uncertainty of consumption context, as the anxiety varies across different shopping channels and environments.

5.2.2 Consumer's State Anxiety

As discussed in Table 5-1, state anxiety has frequently been studied when explaining consumer behavioural studies. As demonstrated by Compeau *et al.* (1999), anxiety as an emotional response affects a person's decision to handle a task, due to undermined judgement and performance. In other words, anxiety can be the antecedent influencing consumers' decision-making. For example, Sands *et al.* (2016) indicated that ever more complicated consumer journeys have caused serious issues in determining purchasing channels in the field of omni-channel retailing. On the one hand, the advanced smartphone has expanded emerging shopping channels, and consumers are supplied with more information and product/brand options than ever before (Cao and Li, 2018). However, on the other hand, product and information overload can lead to consumer apprehension, whereby in-store consumers feel uncertain about optimising purchasing decisions.

At present, consumers may be anxious over making optimal decisions if they are only given limited options to determine; they believe that more choices and more research effort will enhance their decision-making and encourage purchases accordingly (Mochon, 2013; Nagar and Gandotra, 2016). Therefore, consumers choose to research online for abundant information to reduce their uncertainty and avoid negative outcomes. They can either access unlimited online resources or engage in live chat with customer services for further enquiries. Hence, consumers are equipped with more confidence to make positive judgement.

It should also be noted that risk-averse consumers show a lower level of consumer engagement when they are exposed to an unfamiliar shopping environment (Meuter *et al.,* 2003). Saprikis *et al.* (2018) further emphasised that smartphone users may feel sensitive and anxious in relation to mobile transactions, as they may worry about losing both money and private information. Hence, consumer's state anxiety is considered an important element when studying the consumer shopping journey in physical retailing

contexts (Celik, 2011; Saprikis *et al.,* 2018), as it may indirectly affect their use of information technology (Powell, 2013). For instance, Park *et al.* (2019a) illustrated that the consumer's level of anxiety with chosen technology/media affects purchasing decision-making in the retail industry. A higher level of state anxiety can in turn influence in-store consumer engagement, and lead to negative judgements when making purchasing decisions (Thatcher and Perrewe, 2002).

5.2.3 Consumers Use Smartphones to Combat State Anxiety

In order to combat status anxiety, consumers find approaches to reduce uncertainty that meets their ideal decision (Flavian *et al.,* 2016) such as utilising their smartphones. This is because heavy smartphone dependents rely on their phones for socialising, productivity, and information searching, amongst other things (van Deursen *et al.,* 2015; Elhai *et al,* 2016). Moreover, consumers nowadays obtain their purchasing needs through multiple channel engagement simultaneously (Verhoef *et al.,* 2015), which contributes to a more satisfying shopping journey (Harris, 2017). For instance, smartphones can provide shoppers with communicative and informative guides, product details and specifications from peers or experienced users, so that they feel more confident and assured in making the right decisions throughout their shopping journeys. Thus, Kneidinger-Müller (2019) recently reinforced that smartphones' absence can lead to psychological issues such as anxiety and apprehension, further suggesting that smartphones are able to resolve an individual's distress through immediate online checking.

In addition, Park (2019) clarified that smartphones provide consumers with joy and relaxation, and these positive moods can help to establish a good relationship with shopping environments. This is because psychological scholars recommend that individual state anxiety is closely connected with negative emotional responses and leads to decreased media usage (Wakefield and Wakefield, 2018). Alternatively, consumers search other means, such as interactions with fellow shoppers to reduce their anxiety when employing technology (Karahanna *et al.,* 1999; Park *et al.,* 2019a). For instance, they contact peers or engage with online brand communities for additional advice via a smartphone.

5.2.4 Anxious Consumers in Busy Shopping Centres

Although consumers may search for several alternatives to make desired and assured decisions, they may suffer additional anxiety due to overload options (Schwartz, 2004). The increasing diversity of information and options provided to consumers have impacted their information processing (Nagar, 2016), especially in department stores and shopping centres. In-store consumers find it difficult to compare products and make decisions owing to 'choice overload' (Diehl and Poynor, 2007), and they may revert to anxious and dissatisfied moods. This type of distress certainly discourages consumers from making prompt decisions on the spot.

Hence, retailers are committed to providing a satisfying and positive impression to potential targets (Baker *et al.,* 2002; Poon and Grohmann, 2014) to minimise consumers' state anxiety. As indicated before, consumers frequently visit brick-and-mortar stores to touch and feel products, engage with in-store interface design, and do a spot of 'window-shopping'. This is because in-store consumers are after a more interactive brand experience, such as live music playing alongside the clothing sections or pop-up events (Mintel[5], 2019). Such marketing practice particularly takes place in department stores and shopping centres in the United Kingdom. It helps encourage young purchasing power to shop more with a specific retailer. In addition, about 36% of consumers are observed researching online while browsing a product in a department store (Mintel[3], 2018). Therefore, traditional offline settings are no longer simply for consumers to see and try products, as retailers attempt to enhance brand connection by bringing consumers closer to the brands.

At the same time, consumers are confronted with complex purchasing determinants, particularly when visiting busy and crowded shopping centres. Such shopping contexts encompass most retail brands within the same space (Kim *et al.,* 2015a), offering various product choices and a convenient location, so that consumer purchasing activities are diversified (Chebat *et al.,* 2014). Besides retail brands, contemporary shopping centres also provide entertainment and dining places to attract consumers in terms of their leisure and food offerings, leading to more complex shopping conditions (Stocchi *et al.,* 2016). Hence, consumer demand has stimulated more complexity in offline purchasing

environments where consumers may risk being too distracted or confused to make confident decisions during their shopping journeys.

Therefore, the researcher first considers the qualitative findings that in-store consumers heavily depend on their smartphones to achieve different gratifications during shopping journeys. Besides, participants indicated that smartphones' assistance led a pleasant and confident shopping journey when visiting busy shopping environments. Second, according to extant studies regarding consumer's state anxiety, the current thesis proposes a scenario that in-store consumers may raise their state anxiety when facing too much information, product choices and distractions in busy shopping centres. By searching information and acquiring other people's advice via a smartphone, consumers might expect a more confident and comfortable shopping journey, and their status anxiety may be alleviated. More depth hypotheses are structured as follows.

5.3 Hypotheses Development

In theory, a hypothesis is an unproven statement or proposition about a factor or phenomenon that is of interest to the researcher. It is significantly adopted by quantitative schools as a fundamental step in determining a valued proposition based on the research questions. Nunes (2000) suggested a route for formulating a research hypothesis (see Figure 5.1). More specifically, marketing researchers should be aware of the core variables of a research phenomenon, and then set up interrogative research questions of interest based on the research aims and objectives. Developing hypotheses is a detailed procedure based on referring to extant research outcomes, while also proposing relationships between potential variables that can be evaluated empirically. Therefore, due to the nature of the research questions and data analysis, the researcher demonstrates four main hypotheses delineating the correlational relationships between smartphone's uses and gratifications, consumer's state anxiety and in-store purchase intention. Detailed arguments are present in the next section.

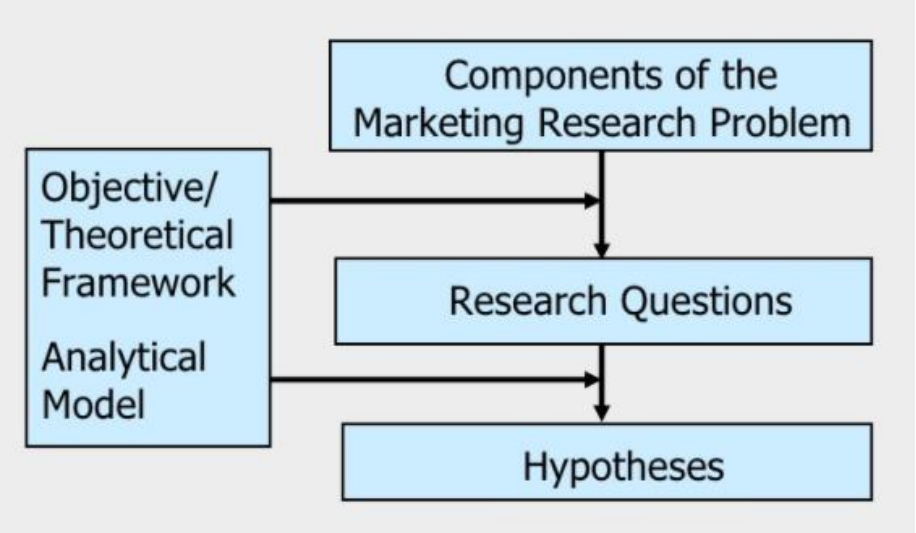

Figure 5-1 Development of Research Questions and Hypotheses

Source from: Nunes (2000); Malhotra (2007).

5.3.1 H1: Utilitarian Gratifications to Reduce Consumer's State Anxiety

Based on the uses and gratifications theory and qualitative findings, the researcher believes that in-store smartphone use could achieve utilitarian gratifications. More specifically, utilitarian gratifications can be explained as being connected during shopping, product information searching, multi-tasking functional services, mobile quick payment and obtaining second opinions. Thus, the smartphone is thought to be an effective utilitarian bridge that enhances in-store consumers' fulfilment. At the same time, the researcher expects that the smartphone's utilitarian gratifications could alleviate consumer's state anxiety in-store. It is hence necessary to specify each utilitarian use and how the uses balance individual's state anxiety.

Communication gratification is considered as the primary utilitarian motivation for smartphone use, because consumers want to be connected throughout their shopping journeys (Lim and Kumar, 2019). They need to text or call their friends or family at some point to exchange or update their situations (Dholakia *et al.,* 2009). Revisiting the existing literature relating to media usage, communication has been acknowledged as the fundamental incentive for users to choose a particular type of media, owing to the rise of information technology (O'Donohoe, 1994; Zhang *et al.,* 2015). This is because consumers who pursue ongoing communication are also considering information efficiency and symmetry. Therefore, these studies have paid significant attention when exploring

consumers' needs to determine their media usage, where communication motivation is considered a priority.

Being connected with others can also reduce the apprehension of missing out on the external world. Hence in-store consumers regularly contact their acquaintances by calling or texting messages. Despite the dynamic nature of media usage contexts, consumers constantly demand communication efficiency as part of their user experience. In this research, in-store consumers prefer timely communication with their acquaintances over different situations and purposes. Furthermore, given the research context, contemporary consumers need prompt communication to realise interactive purposes such as chatting with peers to obtain desired information (Smock *et al.,* 2011).

The second utilitarian gratification is understood as smartphones immediately enabling consumers to access information in terms of quality, pricing and product demonstration. Whiting and Williams (2013) highlighted the information gratification goals of individual motivation towards using mobile social media. Besides, consumers seek a large amount of information in addition to their purchase-related enquiries, since they need immediate information access to a variety of life perspectives (Gao and Feng, 2016). On the one hand consumers visiting offline shopping stores may lack knowledge on product specification, and information seeking practice is thus increasingly adopted to fulfil the information demand. On the other hand, in-store consumers search other sources of information that may not be shopping related. These concern timely information acquisition in terms of non-shopping related purposes through mobile website browsing. Hence, obtaining product information is thought an essential achievement during a shopping journey (Wong *et al.,* 2016).

In addition, consumers may also need search tools such as branded mobile apps to efficiently access information in terms of brand knowledge, peer reviews and other post-purchase experiences (Shang *et al.,* 2017). Branded mobile apps are designed to target specific retailers or organisations which offer specific sort of information relating to the brands (Park and Lee, 2012). For example, interviewees in the first study also indicated that they enjoyed using clothing shopping apps to access product information and when completing purchases, because physical stores could not satisfy their needs. In addition, it

is easier and quicker to access specific product information when searching on the branded shopping apps, rather than navigating mobile websites on smartphones (Lacy, 2018). With such advances of information technology, smartphones are believed to shape consumers' utilitarian gratification.

The third utilitarian gratification is the multi-tasking functional services that smartphones offer, as in-store consumers can solve non-shopping related tasks via their phones when shopping in brick-and-mortar retail stores (Dholakia *et al.,* 2009). As in-store consumers reflected, they habitually checked certain apps such as online banking accounts, Google or Gmail to achieve functional fulfilment. Moreover, the advanced mobile technologies have provided consumers with plentiful service-based apps encompassing information browsing, payment, location-based services, socialising, health, entertainment, booking systems and other public services. Users can simply conduct tasks by clicking on these functional-service apps any time they need.

Shin *et al.* (2019) recently studied media multi-tasking performance under the umbrella of the psychological angle, indicating that individual differences affect consumers' acceptance of media multi-tasking. The findings further suggest that users are seen performing several tasks (e.g. dealing with technology while browsing in-store) at the same time via their preferred media (i.e. smartphones) (Carrier *et al.,* 2015). Such technology-assisted shopping experience involves so-called multi-tasking behaviour, as consumers might be planning for a non-shopping related activity while accomplishing purchasing plans simultaneously (Atalay *et al.,* 2017). Consequently, consumers feel confident in planning their shopping trips and making decisions.

The fourth utilitarian gratification represents *mobile quick payment service*, since consumers use smartphones to conduct transaction-focused activities (Sciandra and Inman, 2016). For instance, smartphone users prefer to choose mobile quick payment to complete transactions in-store in a productive way (Grewal *et al.,* 2018). Mobile payment method has enhanced transaction efficiency and convenience during shopping trips as consumers are willing to adopt this payment alternative instead of paying with cash or card (Park *et al.,* 2019a). Thus, consumers value the utilitarian benefits as reduced time and effort in the payment process (Shin, 2010).

Unlike previous studies concerning the security and privacy related to mobile payment (Dewan and Chen, 2005), mobile payment services have been improved to optimise technological and security performance. Consumers tend to rely on mobile payment such as Apple Pay or Google Pay during their shopping in physical stores. Besides, some users adopt the mobile payment option simply due to the joy of using a new technology or system (Venkatesh *et al.,* 2012). That said, consumers nowadays have become more confident in paying with their mobile phones, not only for efficiency but also for enhanced security. In sum, the mobile quick payment service has been widely acknowledged since the general adoption of smartphones alongside shopping journeys.

Consumers currently appreciate mobile quick payment as an efficient aid to shopping because of its fast and secure features. Marketing scholars have recognised the benefits of the mobile payment approach, providing consumers with convenience and speed (Teo *et al.,* 2015), and performing secure information exchange and transactions (Leong *et al.,* 2013). Transactions are accomplished more easily because consumers' payment details have been previously stored, which enhances shopping speed. These characteristics also describe the 'smart shopping' practice (Atkins and Kim, 2012, p. 361), for "*consumers seeking to minimize the expenditure of time, money, or energy to gain hedonic or utilitarian value from the experience*". Thus, consumers can save payment time and enjoy a comfortable shopping pace. Besides, consumers nowadays no longer worry about taking out their wallet to pay, and they can receive online receipts. Such efficiency has embraced consumers' anxiety about losing things, or their confidential information being disclosed by others. Therefore, smartphone assistance in mobile quick payments combats consumers' state anxiety.

The fifth utilitarian gratification is that in-store consumers can contact their friends by calling or texting for extra advice regarding product specification and performance. Ko *et al.* (2005) suggested that consumers' interpersonal engagement increases due to their information needs. By asking for extra product information and gaining support from acquaintances or peers, consumers will be more confident in making decisions. For example, when exposed to busy shopping contexts with plentiful choices available, they tend to gather adequate product information before completing transactions. Hajli (2013, 2014) insightfully pointed out that consumers need product recommendations to

accomplish creditable purchases. Similarly, Lin *et al.* (2017) indicated that consumers nowadays are obtaining product or service information from friends with respect to their consumption experiences. Hence, obtaining second opinions from friends can alleviate a consumer's apprehension when he/she is not experienced with a brand.

Furthermore, the uses of smartphones have attracted academic attention when studying omni-channel customers' channel choices and decision-making during their shopping journeys (Barwitz and Mass, 2018). For instance, participants from the first study agreed that they habitually checked their emails, train times, online banking accounts and other functional services via their smartphones. These functional assistances indicate that in-store consumers can be multi-tasking by browsing and buying simultaneously. Despite the uncertainties about whether each consumer would choose to use a mobile shopping channel (Yang and Forney, 2013), the continued use of the smartphone is encouraged due to its advantage in enabling consumers to browse and buy at the same time. Additionally, Atalay *et al.* (2017) emphasised that consumers who tolerate stress have a higher preference for multi-tasking. This suggests that the smartphone's multi-tasking functions could reduce consumer state anxiety during shopping journeys.

Conclusively, the above arguments support the smartphone's utilitarian gratifications, and these fulfilments are able to balance consumer's state anxiety during shopping journeys, given the complexity of shopping centres. Thus, it is hypothesised that:

H1: Smartphone's utilitarian gratifications will reduce consumer's state anxiety during individual shopping journeys.

5.3.2 H2: Hedonic Gratifications to Reduce Consumer's State Anxiety

Hedonic stimuli are often compared with utilitarian stimuli when discussing consumer shopping patterns, the former concentrating on personal enjoyment while the latter highlights usefulness and functionality (Bujisic *et al.*, 2017). Unlike goal-oriented consumers, hedonic-centric consumers tend to enjoy the leisure atmosphere in department stores and shopping centres. According to Chiu *et al.* (2009), perceived enjoyment is a key element when measuring traditional shopping experience in offline stores, because consumers actively look for pleasure and entertainment such as interface

design, colour and artwork. Furthermore, Bujisic *et al.* (2017) suggested that consumers pursue enjoyment and a positive mood when encountering a physical shopping context, such as department stores and shopping centres. Therefore, hedonic fulfilments are also valued, and, in particular, this thesis demonstrates that consumers' hedonic gratifications can be achieved, as smartphone assistance facilitates a relaxed shopping journey. Moreover, the qualitative findings imply two forms of hedonic gratifications: consumers who use their smartphones for a relaxed shopping mood, or for passing the time when visiting brick-and-mortar retail stores.

In line with existing research, in-store consumers may spend relaxed time listening to music or playing mobile games during shopping breaks (Nambisan and Baron, 2007). Moreover, consumers also install mobile gaming and music apps on their smartphones so that they can enjoy the hedonic elements during shopping journeys. In addition, Alnawas and Aburub (2016) further pointed out that consumers use mobile apps to stimulate a happy mood, and proactively seek entertainment when they feel bored at any point during the purchasing process. Hedonic-centric consumers are believed to concentrate on the relaxing and comfortable shopping experience, particularly when assisted by smartphones embracing leisure services (Darke and Dahl, 2003).

In addition, Whiting and Williams (2013) also indicated that consumers engage with mobile social media to pass the time, suggesting that they use smartphones for hedonic motivations during their shopping journeys. Moreover, Lee and Ma (2012) specified that users choose mobile social media tools to combat boredom and pass the time. Andrews *et al.* (2015) also demonstrated that consumers habitually check their smartphones because they need immediate interaction with technology or mobile media. This research illustrates that technology adopters use media to occupy leisure time and combat boredom.

Hence, the compulsory checking habit of smartphones is believed to occupy an individual's spare moments (Oulasvirta *et al.,* 2012), consumers being likely to employ their smartphones in most situations to enjoy a relaxed shopping pace (Kang and Jung 2014). Thus, the current thesis anticipates that consumers are able to tolerate boredom

more when depending on their smartphones to an unlimited degree during shopping journeys.

By promoting a relaxed shopping pace and combating boredom when visiting brick-and-mortar retail stores, smartphones can help create a pleasant shopping journey for consumers. Especially in the United Kingdom, a variety of consumer behaviours take place in town centres, whereby leisure, shopping and social communications take place. This leads to more sophisticated shopping consideration (Stocchi *et al.,* 2016) as hedonic-centric consumers concentrate on gaining entertainment fulfilment, such as relaxed shopping pace. This is because anxiety or negative emotions would adversely affect their shopping mood and decision evaluations (Chaudhuri, 2002). For example, the first study reveals that hedonic-oriented consumers spend time on their smartphones for gaming and video purposes, which brings them joy during shopping breaks. Therefore, listening to music and watching a video via smartphone could help in-store consumers relax and alleviate their anxiety (Yao and Liao, 2011), so that they enjoy their shopping trips, regardless of completed transactions.

In similar vein, consumers also spend time checking their smartphones from time to time, since they treat the media as an aid to pass the time, particularly when feeling bored or taking a break during their shopping journeys (Gan and Li, 2018). In fact, previous studies have already suggested that people choose particular media to occupy the time (Papacharissi, 2002; Liu and Chang, 2016). Therefore, it is hypothesised that:

H2: Smartphone's hedonic gratifications will reduce consumer's state anxiety during individual shopping journeys.

5.3.3 H3: Social Gratifications to Reduce Consumer's State Anxiety

Social gratifications have been addressed in recent consumer behavioural studies (Gao and Feng, 2016; Shang *et al.,* 2017). In particular, the first study discloses two forms of social gratification, namely continuous online socialising, and consumer engagement via online brand communities. On the one hand, consumers actively interact on their social networking platforms to be updated, check friends' social status and express themselves (Leiner *et al.,* 2018). For instance, Gan and Li (2018) suggested that users attempt to

establish communication and connection by online chatting and 'liking' one another's social posts. Also, interpersonal interactions via virtual platforms can potentially alleviate users' distress, particularly for those who are less confident socialising in person (Xu *et al.,* 2012).

As Whiting and Williams (2013) further demonstrated, people use social media because they need social interaction and like to share opinions with others. The current thesis believes that the smartphone is the most innovative and affordable form of mobile technology; it significantly brings consumers together and enhances engagement via social media platforms (Joo and Sang, 2013). Hence, continuous online socialising gratification is complementary to the individual shopping journey.

On the other hand, apart from online socialising motivation, consumers are found using smartphones to conduct pre-searching or take part in online brand communities in order to facilitate another form of social gratification on digital platforms (Zhang *et al.,* 2015). Brand community is initially explained as "*a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand*" (Muniz and O'Guinn, 2001, p. 412). The motivation for creating online brand communities is to enable consumers (from diversified background and age variances) to access prompt sharing and exchange regarding products/brands through Internet-assisted platforms (Van Doorn *et al.,* 2010), beyond transaction-focused purposes. Furthermore, the widespread adoption of information technology has motivated consumers to make decisions using alternative approaches, such as checking product reviews generated through peer communications on a retailer's online fan page.

Another similar form of online brand community presents as branded mobile apps, where the platform exhibits products, brand identities and a customised communication forum for brand followers to engage with others (Bellman *et al.,* 2011; Noort and Reijmersdal, 2019). Moreover, branded mobile apps (on smartphones) are innovated to encourage consumers to freely share experiences and get immediate company feedback (Alnawas and Aburub, 2016). This practice necessarily reduces uncertainty and information misunderstanding toward a brand when consumers have limited information or experience regarding a purchase.

As the interviewees disclosed, mobile social media also influenced shopping journeys when in-store consumers were browsing products, as it allowed them to be in touch in real time. Social media networking has penetrated people's daily life in many aspects, and consumers need to interact with other parties through the Internet (Hennig-Thurau *et al.,* 2004) in order to obtain a sense of belongingness and peer support (Muntinga *et al.,* 2011). Moreover, during a shopping journey, consumers' socialising activities are significantly increased as they tend to develop relationships with others (Plume and Slade, 2018). The absence of a smartphone may lead to a negative shopping experience, as socialising-oriented consumers acquire instant social updates on their mobile social apps. Through continuous updates on mobile social platforms, consumers are informed and connected in real time. For example, they can post their shopping journeys in terms of where they are and what they are buying, through updating 'short stories' and status on social applications (i.e. Instagram and Snapchat). In this way, continuous online socialising via smartphones induces a planned shopping journey which may alleviate the consumer's anxiety status and boredom during shopping.

Consumers also seek social support from peers and online communities before making purchasing decisions. They refer to online anonymous reviews via smartphones when considering expensive products, or when they have less experience of brands (Pagani and Malacarne, 2017). Online discussions will also embrace misunderstandings towards new products or brands (Gao and Feng, 2016). Meanwhile, consumers interact with like-minded fellow shoppers via online brand communities and learn from others' consumption experiences. Such virtual communities also enhance the communicational performance between retailers and potential consumers, by encouraging consumer-to-consumer engagement and delivering product information to new audiences. Consequently, the consumer's state anxiety, which is considered as a negative evaluation towards shopping (Compeau *et al.,* 1999) will be embraced, since online peer reviews help consumers to make confident decisions accordingly. Therefore, it is hypothesised that:

H3: Smartphone's social gratifications will reduce consumer's state anxiety during individual shopping journeys.

5.3.4 H4: Consumer's State Anxiety Mediates In-store Purchase Intention

According to Bujisic *et al.* (2017), consumers are more likely to experience enjoyment or anxiety when visiting physical retail shops. The emotional stimulus, especially anxiety, has more informative impact for consumers making purchasing decisions (Lee *et al.,* 2011); this is because anxious consumers may raise avoidance behaviour towards purchases. In addition to that, one's status anxiety is often perceived as a feeling of tension and nerves that leads to negative judgement in responding to a context (Lee *et al.,* 2011). Therefore, this thesis posits that consumer's state anxiety evoked in busy shopping environments may influence in-store purchase intention.

Revisiting the existing research concerning consumer anxiety, recent studies mainly demonstrate consumers' anxiety towards adopting a new technology or shopping channel (Celik, 2016). For example, Venkatesh (2000) suggested that anxiety influences the consumer's attitude when using a technology. Another example implies that variety-seeking consumers can experience choice overload, arousing a sense of apprehension, which might affect their decision when adopting an online shopping channel (Nagar, 2016). Therefore, it is believed that anxious consumers consider ways to reduce the risks when making purchases in an uncertain context (Featherman and Pavlou, 2003).

As implicated from the qualitative findings, participants expressed a series of emotional responses towards shopping contexts when visiting brick-and-mortar retail stores. On the one hand, they experienced anxious moods when they were confronted with plentiful product choices and uncertainty. On the other hand, participants felt more assured while browsing their smartphones for various types of assistance and gratifications. Moreover, for those consumers who admitted the benefits of using smartphones during shopping, they enjoyed spending longer time in stores, which might stimulate potential purchases. Thus, this suggests that different levels of consumers' state anxiety may affect decisions when completing purchases in-store. Therefore, it is hypothesised that:

H4: Consumer's state anxiety mediates the relationships between smartphone's U&G and in-store purchase intention.

5.4 Proposed Conceptual Framework

The previous section provided in-depth justification for the hypotheses development of the thesis, further suggesting a set of significant constructs and relationship directions between the constructs/variables. This helps to establish a proposed research model considering the research gap and empirical findings of the first study - the so-called proposed conceptual framework. Besides, each construct and relationship direction should be supported and justified, highlighting the independent, dependent, mediator and control variables. Consequently, Figure 5.2 demonstrates the conceptual framework.

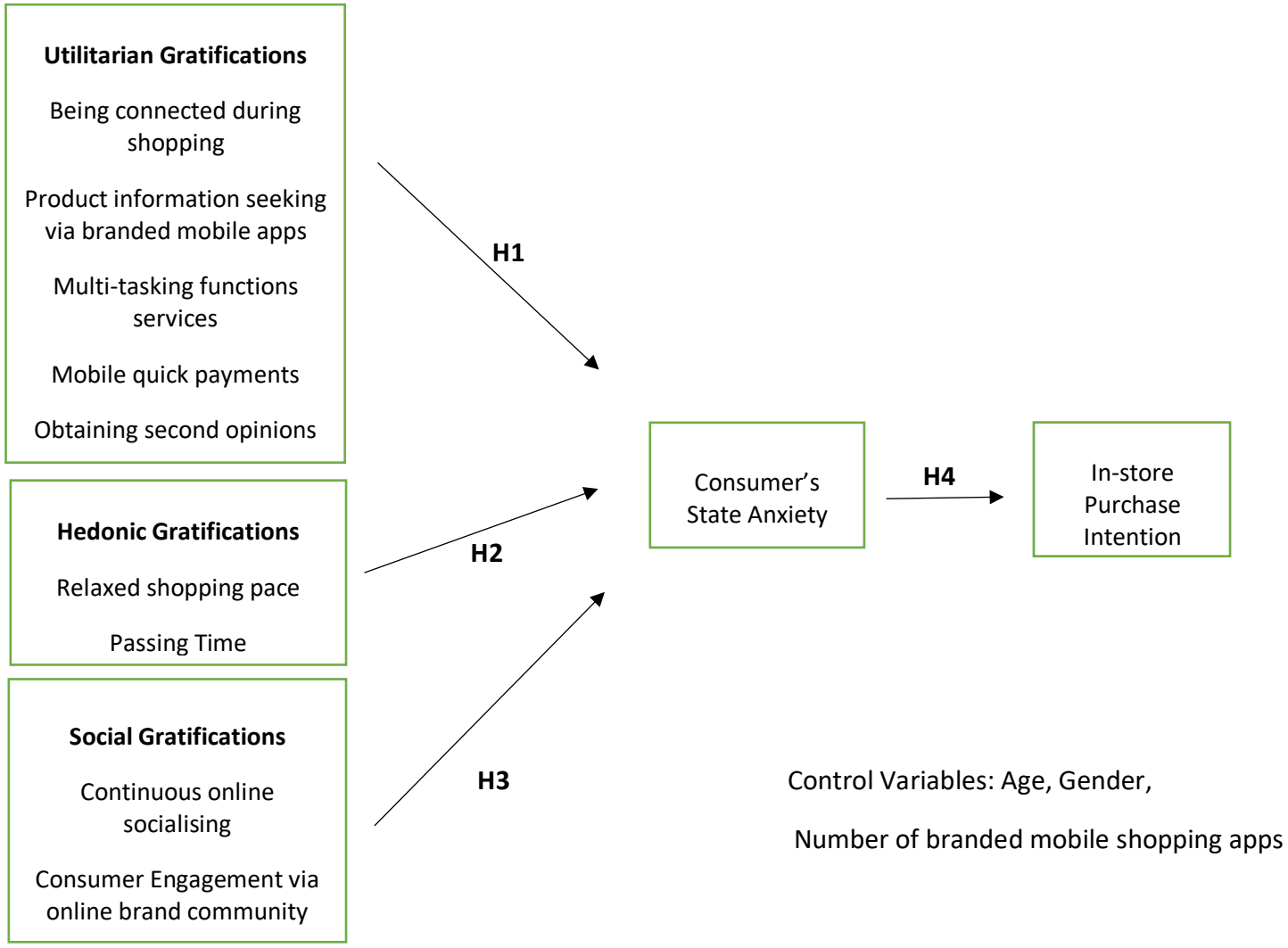

Figure 5-2 Proposed Conceptual Framework

According to the figure, there is a set of specific smartphone uses and prospected gratifications that relate to consumer's state anxiety and purchase intention. Moreover, these specific uses are regarded as indicators of corresponding gratification which need to be further examined if they demonstrate the accurate variable. Hence, the researcher additionally developed a table explaining the specific variable type, the definition and its application in the current thesis (see Table 5-2).

Table 5-2 Classifications of variables and the application in the current thesis

Variable	**Definition**	**Example in the Research**
Independent (IV)	Variable that is being manipulated or changed to measure its impact on a dependent variable	Utilitarian Gratifications, Hedonic Gratifications, Social Gratifications
Dependent (DV)	Variable that may change in response to changes in other variables; observed outcome or result from manipulation of another variable	In-store Purchase Intention
Control	Additional observable and measurable variables that need to be kept constant to avoid them influencing the effect of the IV and on the DV	Age *Gender* Numbers of Branded Mobile Shopping Apps Installed*
Mediating (MV)	A variable located between the independent and dependent variables, which explains the relationship between them (IV→MV→DV)	Consumer's State Anxiety
Moderator	A new variable that is introduced which will affect the nature of the relationship between the IV and DV	Not Applicable

Source from: Hakim, (2000); Saunders et al. (2012)

*: *variables are from the second study and will be addressed in depth in the next chapter.*

Independent Variables: Utilitarian, Hedonic and Social Gratifications

As disclosed from the qualitative findings, in-store consumers used smartphones intensively to accomplish shopping tasks, while simultaneously achieving dimensional gratification goals during shopping journeys. Moreover, each dimension of gratification could be achieved through different uses, of which there are five utilitarian functions, two hedonic uses and two social usages. The researcher posits the independent variables are smartphone's uses and gratifications evoked during an individual shopping journey.

Mediating Variable: Consumer's State Anxiety

According to the exploratory findings, the researcher additionally explored whether and how smartphone uses impacted consumer's state anxiety during an individual shopping journey. Derived from participants' dialogues, the researcher proposes that smartphones can alleviate consumers' concerns in worrying about other aspects of life, accessing any sources of information promptly, combating boredom during spare time, and facilitating communication via mobile social networking platforms. Hence, they may enjoy a comfortable shopping journey and make more confident purchase decisions. Thus, consumer's state anxiety may be considered a consequence of smartphone's U&G, and mediates the relationship between smartphone's U&G and in-store purchase intention.

Dependent Variable: In-store Purchase Intention

Owing to distinctive smartphone uses and prospected gratification goals, the researcher inspects whether different levels of consumer's state anxiety would affect in-store purchase intention. Consumers participating in the first study indicated that they felt more confident and assured shopping with their smartphones available, especially when they needed communication and information guides. By accessing the Internet via smartphones, in-store consumers can make assured decisions promptly and complete transactions efficiently. Hence, it is assumed that a higher level of state anxiety might undermine the consumer's purchase intention in-store, while a lower level of anxiety encourages in-store purchases.

Control Variables: Age, Gender and Numbers of Branded Mobile Shopping Apps (NBMA) Installed

First, it should be highlighted that these control variables will be questioned in the self-administrated survey and discussed in depth in the next chapter. In general, in terms of a survey method entailing larger sample sizes, marketing analysts are advised to employ participants' demographic details, such as age or gender as control variables to deliver more credible measurements and results. Moreover, control variables may influence the effect of the independent variables on the dependent variables. For instance, extant studies adopt gender (Dutta and Das, 2017) and age (Sorce *et al.,* 2005) as control

variables when quantifying a research phenomenon. However, the marketing researcher should be aware that too many control variables might violate analysis results.

In particular, the second study undertook self-administrated surveys, targeting consumers from various backgrounds and diversified age segments, anticipating that each participant was likely to have had different experiences with branded mobile shopping apps. Moreover, female subjects' shopping behaviour differs from that of males, which could lead to distinctive purchasing patterns when buying apparel products in offline settings. Hence, the researcher considered the respondents' age, gender and number of installed shopping apps as control variables when evaluating the structural model performance.

Last, the research model did not adopt any moderating variables due to the research objectives. The thesis aims to measure and confirm the mediated relationships between the smartphone's U&G, consumer's state anxiety and in-store purchase intention.

5.5 Summary

This chapter began with discussing in-depth literature with respect to consumer's state anxiety, as it was derived as a possible consequence of smartphone use during an individual shopping journey in the first study. Moreover, state anxiety has been applied when studying consumer and technology adoption behaviours because the psychological distress impacts consumer's acceptance of technology and decision-making processes. Therefore, the researcher proposed a series of hypotheses delineating that smartphone's U&G could reduce consumer's state anxiety. At the same time, it also suggests that the level of anxiety might reshape in-store purchase intention to some extent. These potential associations are thus reflected in the proposed conceptual framework. The next chapter will provide a comprehensive analysis of the second study, ultimately examining the decision on hypotheses and suggesting conclusive implications for marketers.

Chapter 6 STUDY 2 - THE SURVEYS: EXAMINING THE RELATIONSHIPS BETWEEN SMARTPHONE'S U&G, CONSUMER'S STATE ANXIETY AND IN-STORE PURCHASE INTENTION

6.1 Introduction

The previous chapter identified the key constructs as smartphone's uses and gratifications, consumer's state anxiety and in-store purchase intention. Followed by the sequential exploratory research design, this chapter demonstrates the quantitative study to examine the correlational associations between the constructs within a structural model, aiming to answer the third and fourth research questions. As explained in section 3.6, the second study adopted self-administrated survey distribution to collect the data. Convenience sampling method was chosen as the appropriate sampling technique, given the nature of the study context. Similarly, the researcher managed to collect sufficient responses from high streets and city centres in Southampton and Bournemouth. By collecting the data from real shopping scenarios, respondents were more likely to provide useful answers that enhanced the credibility of data analysis.

Therefore, this chapter provides in-depth quantitative analysis of the second study. First, SPSS 26 was significantly employed to examine respondents' demographics, the researcher presenting differences in terms of their age, gender, education, income and unique experiences with mobile shopping apps. This information contributed to understanding the fundamental experience of smartphone-assisted shopping journeys. Second, exploratory factor analysis (EFA) was performed to discover relationships between indicators (smartphone uses derived from the first study) and latent variables (gratification dimensions). Third, SPSS AMOS 26 was applied to conduct structural equation modelling (SEM) as the essential analysis of the second study. This is because SEM enables the researcher to detect many relationships between observed variables, parameters and constructs at the same time within the proposed research model (see Figure 5.2). In addition to SEM analysis, mediation analysis was also demonstrated to test

the mediated relationships between independent and dependent variables through Hayes' (2013) PROCESS macro. Ultimately, the researcher would be able to assess whether the proposed hypotheses are accepted or rejected.

As a result, this chapter presents the findings, indicating that utilitarian and hedonic gratifications reduce the consumer's anxiety state during store visits. Contrary to the proposed assumption and findings of Study 1, social gratifications do not have an impact on the consumer's anxiety status. In addition, it discloses that consumers' state anxiety can prevent them from making prompt purchasing decisions in-store. In acknowledging the quantitative results, the researcher compared and contrasted the differences between both qualitative results and existing literature relating to smartphone uses and emerging consumer purchasing behaviour, offering distinctive solutions for both traditional and omni-channel retailers in the United Kingdom.

6.2 Respondents' Socio-Demographic Characteristics

The researcher managed to generate 360 survey responses in actual shopping scenarios within approximately six weeks through distributing and collecting the data on the spot. During the data collection procedure, from mid-November to the end of December 2018, the researcher realised that the younger generations showed more willingness and interest towards participating in the survey, because they had more omni-channel shopping experience, particularly via their mobile devices. After screening and cleaning the data, there were 349 valid responses representing consumers' attitudes towards using smartphones during shopping journeys. Table 6-1 demonstrates a set of socio-demographic attributes of respondents, displaying each participant's demographic background and individual experience with mobile shopping apps (for apparel brands). The researcher will further explain participants' demographics according to gender difference in the following section.

Table 6-1 Socio-demographic of Respondents

Variable (N=349)	**Description**	**Number**	**Weight**
Gender	Female	193	55.3%
	Male	156	44.7%

Age	18-20	85	24.4%
	21-30	224	64.2%
	31-40	35	10.0%
	41-50	5	1.4%
Education Level	Secondary school or below	14	4.0%
	Certificate/Diploma	32	9.2%
	Bachelor	173	49.6%
	Master	98	28.1%
	Doctoral or higher	32	9.2%
Income (monthly)	£1,000/month and below	259	74.2%
	£1,001 - £2,000	67	19.2%
	£2,001 - £3,000	12	3.4%
	£3,001 and above	11	3.2%
Apparel Products Bought on the Day	Clothes	170	48.7%
	Shoes	91	26.1%
	Accessories	46	13.2%
	Nothing	38	10.9%
	Other	5	1.1%
Number of Branded Mobile Shopping Apps Installed and Used (NBMA)	Less than 2	172	49.3%
	3 - 5	120	34.4%
	5 and above	57	16.3%
Browsing Frequency of Branded Mobile Shopping Apps	Daily	54	15.5%
	2/3 times in a week	120	34.4%
	2/3 times in a month	76	21.8%
	Seldom	99	28.3%
Average Time Spent on Browsing Mobile Shopping Apps	Less than 30 minutes	206	59.0%
	31 minutes - 1 hour	106	30.4%
	More than 1 less than 2 hours	24	6.9%
	2 hours and above	13	3.7%
Feel More Confident and Comfortable after Using Smartphone In-store	Yes	273	78.2%
	No	76	21.8%

Note: the ratios highlighted in red font explain the highest proportion value to each variable.

Source from: SPSS output of Study 2.

6.2.1 Gender and Age Segmentation

As shown by the figures in Table 6-1, the number of female participants completing the survey was slightly higher than male consumers (55.3% and 44.7% respectively). Using convenience sampling technique, the researcher approached potential targets regardless of the gender difference, as the factor did not address significant results. During the data collection process in real shopping scenarios, the researcher found female consumers to be more approachable and willing to share more about their shopping experience than male respondents. In addition, it was noticed that females spent a longer time answering the questions than male consumers, some female respondents even asking more extended questions regarding the survey questionnaire in their own interests. It should be highlighted that respondents' gender was also treated as a control variable when conducting the SEM analysis, which will be explained in depth later in the chapter.

Table 6-2 Age & Gender Crosstabulation Analysis

Item	**Gender**	**Female**	**Male**	**Total**
Age Segmentation	20 and below	47 (24.4%)	38 (24.4%)	85 (24.4%)
	21-30	128 (66.3%)	96 (61.5%)	224 (64.2%)
	31-40	15 (7.8%)	20 (12.8%)	35 (10.0%)
	41-50	3 (1.6%)	1 (0.6%)	4 (1.1%)
	51 and above	0	1 (0.6%)	1 (0.3%)
Total	(with in gender)	193	156	349 (100%)

Source from: SPSS output of Study 2 (N=349).

Table 6-2 additionally exhibits respondents' age and gender variance. Millennial consumers (aged between 20 and 40) enjoyed the majority proportion (74.2%) of those taking part in the survey, females and males accounting for similar participation rate. These consumers were active smartphone and social media users (Yang and Kin, 2012), and were also considered the most significant generation experiencing omni-channel

shopping channels. Additionally, the researcher found it easy to approach millennial consumers, because the younger generation leads the mainstream of apparel product markets, and their purchasing power is adequately affordable when buying high street retail brands. They were proactive in being interviewed, sharing shopping experiences and giving recommendations of specific products/brands. They further confirmed the previous argument that younger generations are inclined to seek social support from peers. Millennial consumers, also called 'digital natives' (Bess and Bartolini, 2011) were heavy smartphone users and social networking visitors according to the data analysis. Besides, younger generations aged between 18 and 40 took up 98.6% of target respondents, which encouraged the researcher to investigate in more depth the insights of these age segments. Hence, the researcher employed age and gender as control variables when performing the SEM analysis.

6.2.2 Education and Income Profile

According to Table 6-3, almost half of the respondents (49.6%) held Bachelor's degrees, and about 37.3% of respondents had higher degree qualifications. When approaching potential respondents in shopping environments, the researcher obtained consent mainly from young consumers who were currently university students. In fact, contemporary consumers are more educated than in previous decades, leading to more demanding consumers who seek technology-assisted shopping experience, since rising digitalisation requires people to maintain technology (i.e. smartphone functions) in daily life. Therefore, well-educated consumers, especially those smartphone-dependent groups, will spend more time using smartphones as part of their shopping journeys.

Table 6-3 Education Level & Monthly Income Crosstabulation Analysis

Item	**Monthly income**	**£1,000 and below**	**£1,001-£2,000**	**£2,001-£3,000**	**£3,001 and above**	**Total**
Education level	Secondary or below	11 (4.2%)	3 (4.5%)	0	0	14 (4%)
	Certificate/diploma	30 (11.6%)	1 (1.5%)	0	1 (9.1%)	32 (9.2%)

	Bachelor	139 (53.7%)	26 (38.8%)	2 (16.7%)	6 (54.5%)	173 (49.6%)
	Master	65 (25.1%)	26 (38.8%)	5 (41.7%)	2 (18.2%)	98 (28.1%)
	Doctoral or higher	14 (5.4%)	11 (16.4%)	5 (41.7%)	3 (18.2%)	32 (9.2%)
Total count		259	67	12	11	349 (100%)

Source from: SPSS output of Study 2 (N=349).

As for the income perspective, the majority of respondents fell into the lower income bracket, with monthly income of less than £1,000 (74.2%). This may be due to younger consumers having limited earnings as full-time students, or in the early stages of their career. In addition, many respondents were purchasing clothes and shoes (48.7% and 26.1% respectively), the second study focusing on investigating apparel product lines, with only five consumers indicating that they ended up buying skincare products or cosmetics. It should be explained that respondents' education, income and types of products purchased were not considered as control variables when analysing the research model.

6.2.3 Consumer Experience with Branded Mobile Shopping Applications

Respondents were also asked to answer questions about their recent shopping experience for apparel products via branded mobile applications during the past three months. First, as shown in Table 6-4, nearly half of the respondents (49.3%) agreed that they had installed or used one or two shopping applications on their smartphones; 34.4% of respondents had used three to five shopping applications; and the remaining small group (16.3%) had preferable experience of more than five apparel retailers' shopping apps. This infers that at least half of respondents appreciated shopping via branded shopping applications. Amongst these consumers, females had installed or used more shopping apps than male respondents, suggesting that women's purchasing power has been acknowledged in mobile application-based shopping channels.

Table 6-4 Numbers of Installed Shopping Apps & Gender Crosstabulation Analysis

Item	Gender	Female	Male	Total
Number of branded mobile apps installed	Less than 2	87 (45.1%)	85 (54.5%)	172 (49.3%)
	3-5	70 (36.3%)	50 (32.1%)	120 (34.4%)
	5 and above	36 (18.7%)	21 (13.5%)	57 (16.3%)
Total		193	156	349 (100%)

Sources from: SPSS output of Study 2 (N=349).

In addition, approximately half of respondents browsed branded shopping applications on a frequent basis, including daily browsers (15.5%) and weekly browsers (34.4%). Moreover, frequent app browsers would spend about half an hour browsing every time they visited a retailer's shopping application. Respondents who had installed more than five mobile shopping apps indicated that they spent considerable browsing time (i.e. more than one hour) checking the retailer's application-based stores regularly. However, 28.4% respondents admitted to seldom seeking browsing preference or purchasing experience via a retailer's mobile application-based store.

At the end of the questionnaire, the researcher asked a question about overall satisfaction with using smartphones during shopping journeys. As shown in Table 6-5, 78.2% of respondents acknowledged that they had achieved a more comfortable and confident shopping experience when using their smartphones during the trips, female consumers, especially holding this positive opinion. In addition, approximately 69.3% of respondents aged under 30 showed significant agreement on shopping with smartphones during their shopping journeys (see Table 6-6). The remainder (21.8%) of the sample merely had purchasing experiences via a smartphone or did not depend on using smartphones during store visits. Therefore, owning a smartphone does not always meet consumer needs, due to individual diversity.

Table 6-5 Comfortableness and Confidence after Using Smartphones & Gender Crosstabulation Analysis

Item	Gender	Female	Male	Total

Comfortableness and confidence after using smartphone during shopping	Yes	154 (79.8%)	119 (76.3%)	273 (78.2%)
	No	39 (20.2%)	37 (23.7%)	76 (21.8%)
Total		193	156	349 (100%)

Sources from: SPSS output of Study 2 (N=349).

Table 6-6 Comfortableness and Confidence after Using Smartphones & Age Crosstabulation Analysis

Item	**Age segment**	**20 and below**	**21-30**	**31-40**	**41-50**	**51 and above**	**Total**
Comfortableness and confidence after using smartphone during shopping	Yes	65 (76.5%)	177 (79.0%)	27 (77.1%)	3 (75.0%)	1 (100%)	273 (78.2%)
	No	20 (23.5%)	47 (21.0%)	8 (22.9%)	1 (25.0%)	0	76 (21.8%)
Total		85	224	35	4	1	349 (100%)

Sources from: SPSS output of Study 2 (N=349).

In conclusion, the above findings regarding respondents' socio-demographic details further reinforced that the wide adoption of smartphones has affected consumer shopping patterns and choice of channels when visiting physical retail shops. In line with the qualitative study findings, the second study also noted that respondents, reflecting on a shopping journey with smartphone assistance, expressed a sense of comfort and confidence, owing to smartphone use. As indicated earlier, respondents' age, gender and number of installed shopping apps will be considered as control variables when analysing the structural model.

6.3 Measurement Scales Determination

6.3.1 Likert Scale as Essential Measuring Scale Tool

As mentioned in the third chapter, the second part of questionnaire consists of a series of Likert scaling questions to evaluate individual opinions towards smartphone use during shopping journeys. On the one hand, the Likert scale has been significantly used as a primary non-comparative scaling technique in the social sciences, marketing and management research fields. Particularly, for researchers aiming to collect respondents' perceptions, the Likert scale is considered as an ideal scaling tool to obtain a good fitness of measurement model (Henseler *et al.,* 2016). On the other hand, Dillman (2009) outlines three types of data that can be generated via questionnaires, including opinion, behaviour and attribute variables. Moreover, opinion variables are strongly adopted in a questionnaire by probing whether a subject's feelings or attitudes towards a belief are true or false, supporting the decision to employ the Likert scale.

Drawing on existing literature and empirical results from the first study, the researcher aimed to measure nine specific smartphone uses and gratifications, consumer's state anxiety, and in-store purchase intention by employing 5-point Likert scale questions. Furthermore, scales were borrowed from the extant studies in the relevant areas and further amended to fit the current research context.

6.3.2 Adapted Measurement Scales

Revisiting the literature relating to the uses and gratifications (U&G) theory, existing studies have documented rich scaling examples to measure users' perceptions/opinions on choosing particular media. Moreover, the researcher also investigated core journals in the information system and consumer research areas, such as *Computers in Human Behavior, Journal of Interactive Marketing, European Journal of Marketing, Journal of Retailing*, and so on. As a result, a set of modified scaling questions and statements were developed for consideration in the second part of the questionnaire in the second study.

Table 6-7 and Table 6-8 conclusively display the adapted measurement scales in terms of smartphone's uses and gratifications and consumer's state anxiety. The reason for

borrowing from existing scales is to enhance the revised scales' validity and reliability, as previous scholars have suggested scales' validity. More in-depth examination of constructs' validity and reliability will be explained later in the chapter when conducting factor analysis and structured equation modelling. However, it should be emphasised that the dependent variable (in-store purchase intention) of the research model was also measured through the 5-point scale, by simply asking the degree to which respondents would purchase a product after using their smartphones during shopping journeys.

Table 6-7 Consumer's Perception on Smartphone's U&G

	Construct, Scales Adapted From	**Statement**	**Coding Note**
1	Being connected during shopping journey (CON) *Gan and Li (2018), Computers in Human Behavior*	Using my smartphone enables me to maintain a daily, personal connection with friends and family during shopping.	Con1
		Using my smartphone enables me to connect with friends in my real life during shopping.	Con2
		Using my smartphone enables me to keep in touch with friends in my real life during shopping.	Con3
		I like my smartphone because I can communicate with others immediately during shopping.	Con4
		My smartphone is the easiest, most cost-effective way to communicate during shopping.	Con5
2	Obtaining second opinions (OSO) *Chu and Kim (2011), International Journal of Advertising*	I often consult other people to help choose the best available alternative from a product class.	Oso1
		If I have little experience with a product, I often ask my friends about the product.	Oso2
		I frequently gather information from friends or family about a product before I buy.	Oso3
3	Information searching via branded mobile apps (IBMA)	I think branded mobile apps help me to obtain solutions to specific product-usage related problems.	Ibma1
		I think branded mobile apps provide information that helps me make important decisions.	Ibma2

	Alnawas and Aburub (2016), Journal of Retailing and Consumer Services	I think branded mobile apps enhance my knowledge about the product and its usage.	Ibma3
4	Multi-tasking Functional service (MTF) *Yao and Liao (2011), Management & Marketing*	I think my smartphone has the functionality I need during shopping.	Mtf1
		I think my smartphone has the ability to do what I want it to do during shopping.	Mtf2
		Overall my smartphone provides the capabilities I need during shopping.	Mtf3
5	Mobile quick payment (MQP) *Oliveira et al. (2016), Computers in Human Behavior*	I think that using mobile quick payment is useful to carry out my tasks during shopping.	Mqp1
		I think that using mobile quick payment would enable me to conduct tasks more quickly during shopping.	Mqp2
		I think that using mobile quick payment would increase my productivity during shopping.	Mqp3
		I think that using mobile quick payment would improve my performance during shopping.	Mqp4
6	Relaxed shopping pace (RSP) *Nambisan and Baron (2007), Journal of Interactive Marketing*	I use my smartphone to spend some enjoyable and relaxing time during shopping.	Rsp1
		I use my smartphone to derive fun and pleasure during shopping.	Rsp2
		I use my smartphone to entertain and stimulate my mood during shopping.	Rsp3
		I use my smartphone to derive enjoyment from problem-solving, idea generation and so on during shopping.	Rsp4
7	Passing time (PT) *Gan and Li (2018), Computers in Human Behavior*	I use my smartphone because it passes the time when I am bored during shopping.	Pt1
		I use my smartphone because it is the thing to do to occupy my time during shopping.	Pt2
		I use my smartphone when I have nothing better to do during shopping.	Pt3
8	Continuos Online	I use my smartphone to keep in touch with friends and	Os1

	Socialising (OS) *Leiner et al. (2018), Computers in Human Behavior*	acquaintances even if they live far away.	
		I use my smartphone to express who I am.	Os2
		I use my smartphone to inform others about my interests.	Os3
		I use my smartphone to look at photos, videos or status updates of my friends.	Os4
		I use my smartphone to stay up-to-date.	Os5
9	Consumer Engagement via online brand community (IOBC) *Leiner et al. (2018), Computers in Human Behavior*	I use my smartphone to learn about information at first hand.	Iobc1
		I use my smartphone to encounter arguments to different reviews.	Iobc2
		I use my smartphone to share information that could be relevant for others.	Iobc3
		I use my smartphone to give good advice based on my experience.	Iobc4

Source from: Questionnaire design of Study 2.

Table 6-8 Consumer's State Anxiety

Construct, Source Adapted From	**Statement**	**Coding Note**
Consumer's State Anxiety (CSA) *Thatcher et al. (2007), Information & Management*	I feel apprehensive about using smartphone technology for purchase.	Rcsa1
	I hesitate to use smartphone technology for fear of making mistakes I cannot correct.	Rcsa2
	It scares me to think that I could lose a lot of information on my smartphone by hitting the wrong key.	Rcsa3

Note: Rcsa indicates that the negative worded statements of consumer's state anxiety have been revised appropriately for further analysis.

Source from: Questionnaire design of Study 2.

The above tables have specifically addressed the outstanding statements adapted from the existing research. As Likert scale requires, each statement is measured as 5-point, including: '1-strongly disagree, 2-disagree, 3-neither disagree or agree, 4-agree and 5-strongly agree'. Thirty-four items represent the nine indicators to evaluate smartphone's U&G, and three items measure consumer's state anxiety. Before preliminary analysis, the

researcher additionally prepared a coding list (on the right column of each statement) as a convenient way to distinguish the questions. Coding means "*assigning a code, usually a number, to each possible response to each question*" (Malhotra, 2007, pp. 431-435). This is an important step before transcribing the raw data and further data cleaning process.

In addition, the researcher undertook a pre-test to ensure the validity and readability of the questionnaire before official data distribution. Ten colleagues within the department collaborated with the questionnaire pilot test and raised potential phrasing issues, contributing to the finalised survey before it was distributed to consumers in physical shopping settings. Moreover, the researcher also sought methodological advice from experienced quantitative academics in the university, who particularly provided advice in terms of the length and adoption of measurement scales. Thus, pre-testing was considered essential before distributing questionnaires.

6.4 Data Preparation for Analysis

6.4.1 Screening and Cleaning the Data

The researcher coded all answers and responses (in the questionnaire) by assigning numerical values to each item. Hair *et al.* (2014, pp. 42-47) emphasised that data examination assesses the missing data, spots outliers and tests for hypotheses, especially regarding the multivariate methods. In addition, the initial data check undermines data violation and reduces bias from the true values.

Therefore, as highlighted by Hair *et al.* (2014), the researcher performed the data screening and cleaning process as follows:

- ✓ Evaluation of missing data
- ✓ Identification of outliers
- ✓ Determining a suitable multivariate analytical technique.

The process began with evaluating the missing data that may have resulted from data collection and data entry, or respondents' wrong answers. Missing values are treated seriously in multivariate analysis because they weaken the generalizability of the final outcomes as a substantive effect. Particularly, in the second study, the researcher

foresaw the response rate at an earlier stage when approaching the potential respondents and collecting the data on the spot, so that each respondent was obliged to complete the survey. Despite some invalid responses, the researcher input only valid answers (349 out of 360 collected responses) into the SPSS database. Thus, the entered data after the coding process did not embrace the missing data problem.

The second step involved identification of outliers, where inputted values show inconsistency or are out of fixed ranges. Out-of-range data could be defined as higher or lower, and must be revised before conducting analysis. Errors can take place during the data entry stage, if incorrectly coded. Alternatively, outliers may consist of the same values that fall within the ordinary ranges of each variable. When inputting the data into the SPSS software, the researcher unintentionally assigned the outlier answers to certain questions; these were identified and corrected, referring to the respondents' original answers. Another example drawn from invalid responses explains the outliers: respondents were supposed to answer all 37 scale questions with unique values, but some gave the same measurement to all the questions. Thus, the researcher withdrew these invalid questionnaires due to the outlier issue and kept the remaining 349 valid responses after considering the missing value and outlier issues.

The third step in preparing the data was to confirm a proper multivariate analytical tool. Theoretically, multivariate techniques are appropriate for data analysis when there are more than two items for each variable, and all variables are measured at the same time (Malhotra, 2007). First, referring to the conceptual framework, there are extant independent variables to be examined, possibly involving the mediator and dependent variable at the same time. Second, each variable consisted of multiple continuous items/indicators to measure internal consistency. This necessitates a covariance-based multivariate analysis through exploring the multiple relationships simultaneously. Figure 6-1 exhibits the diversified multivariate analytical methods.

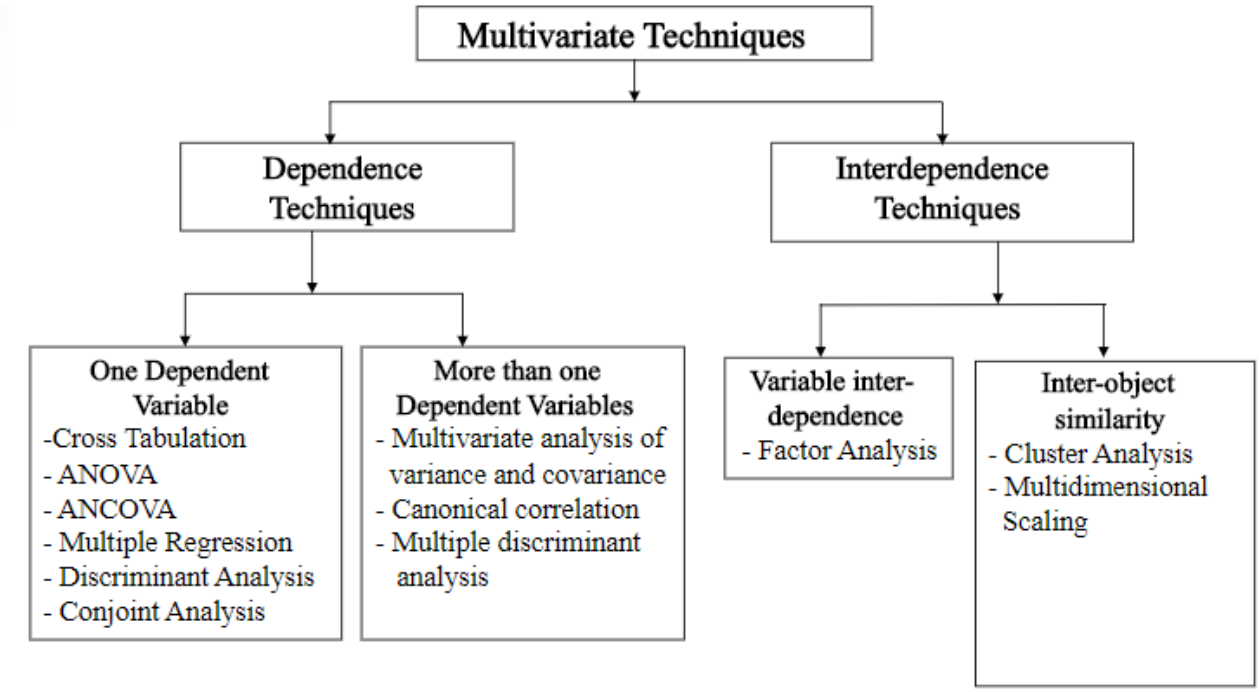

Figure 6-1 Classification of Multivariate Technique

Source from: Malhotra (2007, p. 443).

In particular, the second study of the thesis focuses on investigating a variety of variables that could be segmented into different groups based upon their similarity. Therefore, interdependence technique was considered suitable (Malhotra, 2007). Moreover, factor analysis was predominantly employed, since the current study aims to examine the entire set of interdependent associations. Here, the researcher emphasises that quantitative data analysis relies on structural equation modelling (SEM) approach by detecting and confirming the key constructs in order to discover correlational relationships.

6.4.2 Normality Check

Quantitative scholars assume the variables are normally distributed in multivariate analysis. Furthermore, multivariate normality indicates that not only are the individual variables normal in a univariate logic, but combined variables are also proposed as normal (Hair *et al.,* 2014). They further strengthen two factors that influence the multivariate normality, including shape of distribution and sample size. On the one hand, distribution shape can be interpreted from understanding the Kurtosis ('peakedness' or 'flatness' of the distribution) and Skewness (centred balanced or widely distributed on one side). The two criteria are essentially evaluated to test the normality. On the other hand,

multivariate analysis requires a sample size of over 200 because it will reduce the detrimental effects of non-normality. The current study encompasses a sufficient sample size that diminishes the concern of non-normal variables.

By using SPSS Frequency function as the normality examination tool, the researcher detected that all scales questions were normally distributed, taking the first variable (being connected during shopping - CON) as an example. Five elements measured the variable labelled as Con1, Con2, Con3, Con4 and Con5. Figure 6-2 and Figure 6-3 present the normality distribution of the first item measuring the first variable CON generated from SPSS output of Study 2.

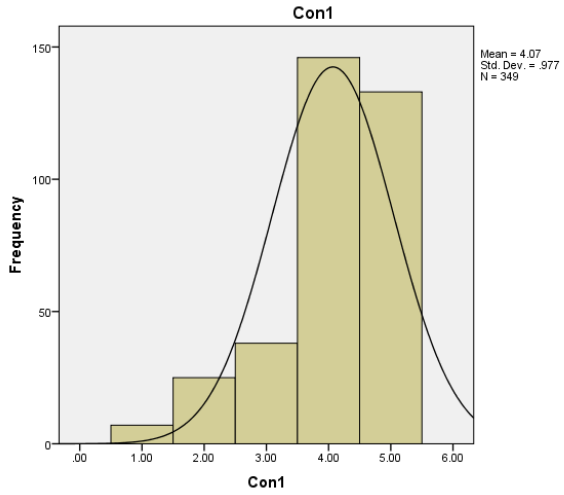

Figure 6-2 Normal Distribution of Variable – CON

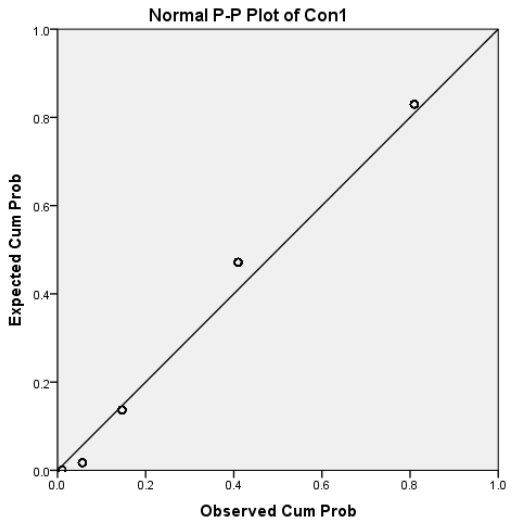

Figure 6-3 Normal P-P Plot of Variable - CON

As shown above, the histogram shows negative Skewness because of a pile-up on the right; it also indicates a positive Kurtosis index that the distribution is heavily tailed. Besides, the P-P (probability-probability) plot displaying the data falls close to the ideal diagonal line (Field, 2018, pp. 243-245). This method of detecting normality regarding the continuous variable is recommended by Field (2018). Therefore, the researcher repeated the same implementation to test the remaining variables, with results showing that all measurement items are normally distributed. Thus, the scales adopted from extant research enhance the data screening performance.

6.5 Exploratory Factor Analysis (EFA)

6.5.1 What is EFA?

As previously indicated, factor analysis was adopted as the primary multivariate analytical method. More specifically, this consists of principal component analysis and common factor analysis, aiming to evaluate the interrelationships between a large set of variables and to further explain the common principal factors (Hair *et al.,* 2014, p. 780). Principle component analysis additionally explains the total variance in the data and is encouraged for use in terms of examining the minimum number of factors that would represent maximum variance in multivariate analysis. Exploratory factor analysis is frequently used to measure the scale questions in social science research and to reduce a dataset to a more manageable size, while retaining adequate initial information. EFA also enables the researcher to obtain the inter-correlation matrix and factor loading values before more advanced analysis.

The second study additionally employs the principal component analysis as a complementary examination to ensure the ultimate constructs for conducting SEM analysis. These include five kinds of utilitarian gratifications, two types of hedonic gratifications, two forms of social gratifications, and consumer's state anxiety. Hence, the following procedures for demonstrating exploratory factor analysis should be followed:

1. Formulate the research problem
2. Construct the correlation matrix

3. Determine the method of factor analysis
4. Determine the number of factors
5. Rotate the factors
6. Interpret the factors
7. Calculate factor scores and select the surrogate variables
8. Determine the model fit.

6.5.2 Exploratory Factor Analysis Using SPSS

The present study follows the general procedure of conducting the principal component analysis addressed by Field (2018). Figure 6-4 presents the specific steps and assessment criteria of the factor analysis.

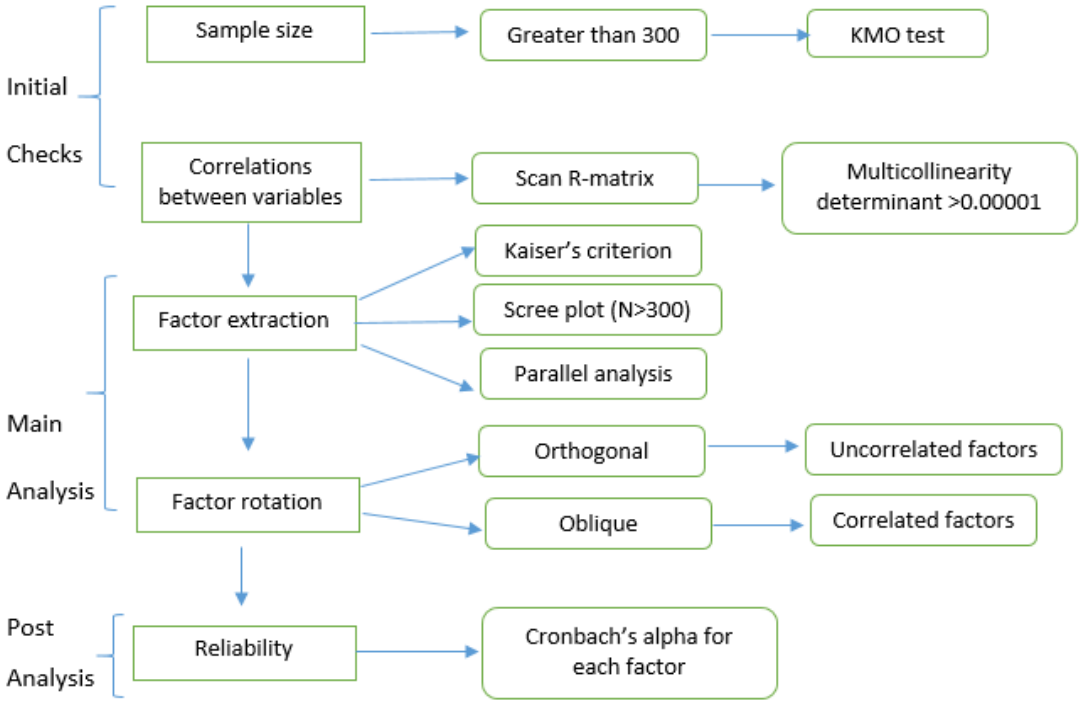

Figure 6-4 General Procedure for Factor Analysis and PCA

Source from: Field (2018).

6.5.2.1 Initial Check: Sample Size

It should be highlighted that factor analysis does not encourage a sample size of less than 100, and researchers are advised to achieve as sufficient a sample size as possible. This is because sample size (in factor analysis) is robustly connected with factor loadings and

communalities values (Field, 2018). Reviewing previous quantitative scholars, Comrey and Lee (1992) state that a sample size of 300 is good, and 1000 is even better. Guadagnoli and Velicer (1988) hold that factors with ten or more loadings greater than 0.40 are reliable if the sample size reaches 150, and that factors with much lower loading should not be retained unless the sample size is over 300. Consequently, the second study managed to generate 349 valid responses, while 37 items (of ten latent variables) were measured.

The Kaiser-Meyer-Olkin (KMO) is often adapted to measure sufficient sample size. Moreover, KMO value varies from 0 to 1, a value closer to 1 implying a distinct and creditable factor (Kasier and Rice, 1974). Table 6-9 shows the results of the KMO test. It reveals that the KMO value equals 0.866 (close to 1), indicating a meritorious sample size that achieved the threshold of 0.50.

Table 6-9 KMO and Bartlett's Test Result from SPSS

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	5687.970
	df	528
	Sig.	.000

Source from: SPSS output of Study 2 (N=349).

Besides checking the KMO value to assess the appropriate sample size, the Anti-image Correlation box (see Appendix F) also contributes to evaluating the sample adequacy for each variable if the correlation value is beyond 0.50. According to the results, the minimum value displayed in the Anti-image Correlation is 0.659 (>0.50), suggesting that adequate samples have been generated.

6.5.2.2 Initial Check: Correlations between Variables

Once the sample size is achieved, the next step is to examine the correlations between variables. Previously, the researcher has posited that there could be several items measuring one variable, and items could be correlated to some extent. As suggested by

Field (2018), if any variable holds correlation value below 0.30, then the variable should be withdrawn from the analysis. However, marketing researchers should make decisions by considering future analytical stages and the research objectives, and not entirely relying on the computer results. After two rounds of attempts at PCA analysis, the researcher deleted a few items, including Con5, Rsp4, Os1 and Iobc4, due to relatively low correlation values.

Referring to Table 6-9, Bartlett's Test of Sphericity delivered a significance value of 0.000 (<0.001), which means the results are significant, given a large sample size. After screening the correlation matrix (see Appendix G), there were a few variables owning lower but close to the threshold correlation values (<0.30), such as OSO (obtaining second opinion), RSP (relaxing shopping pace) and PT (passing time). However, as Field (2018) has suggested, withdrawing variables can be subjective if only based on the correlation matrix. The researcher decided to retain the variables because they were essential gratifications that cannot be divorced from the main research model.

Another important consideration is singularity or multicollinearity, referring to the *Determinant* value of the correlation-matrix. Conceptually, singularity explains that variables are perfectly correlated, while multicollinearity refers to highly correlated variables.

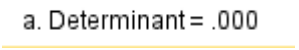

Figure 6-5 Determinant Value of Correlation Matrix

Figure 6-5 is a screenshot from the PCA output, showing a determinant value that equals 0. Ideally, factor analysis requires that the determinant value should be bigger than 0.00001; otherwise it indicates a serious multicollinearity issue. Yet, this does not influence the results proceeding from Principal Component Analysis technique, given the adequate sample size.

6.5.2.3 Main Analysis: Factor Extraction

After the initial check and preparation, we move on to the main analysis, beginning with factor extraction. In general, SPSS permits various extraction strategies, such as principal components, unweighted least squares, maximum likelihood, and image factoring.

Furthermore, quantitative academics have typically classified the common factor analysis and component analysis based on the objectives and prior knowledge about the variance in the variables (Hair *et al.,* 2014). In particular, the second study decided to use component analysis (e.g. Principal axis factoring), since such extraction technique pays attention to the data reduction, enabling the exploration of the minimum number of factors needed to represent the maximum total variance in the initial variable set.

After running the analysis on SPSS 26, the researcher needed to clarify how many factors were extracted from the following considerations. Firstly, Kaiser's criterion suggests retaining the factors with eigenvalues bigger than 1.0. Figure 6-6 presents the eigenvalues related to each factor before and after extraction, and after rotation (part of the output). All factors with eigenvalues greater than 1 were then extracted, leaving ten factors. It also indicates that factor 1 explains the maximum variance accounting for 26.24% more than the rest of the factors after the extraction process.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.037	27.384	27.384	8.659	26.239	26.239
2	2.544	7.709	35.093	2.187	6.627	32.866
3	2.375	7.196	42.289	2.011	6.093	38.959
4	1.979	5.997	48.286	1.607	4.870	43.829
5	1.811	5.489	53.775	1.454	4.406	48.236
6	1.531	4.640	58.415	1.131	3.427	51.663
7	1.271	3.851	62.265	.909	2.756	54.418
8	1.075	3.259	65.524	.740	2.242	56.661
9	1.014	3.071	68.596	.649	1.968	58.629
10	1.001	3.034	71.630	.624	1.890	**60.518**
11	.908	2.753	74.383			

Extraction Method: Principal Axis Factoring.

Figure 6-6 Factor Extraction Output (N=349)

Source from: SPSS output of Study 2 (N=349).

The second consideration is to determine how many factors should be extracted to evaluate the communalities. Field (2018) specifically put forward that the average

communalities (>0.60) should be examined if the sample size exceeds 250. The current study contained 349 responses, and the average communalities equalled 0.605, meeting the threshold (see Appendix H). Therefore, ten factors were statistically extracted, the researcher initially proposing ten latent variables (nine smartphone's U&G and consumer's state anxiety).

6.5.2.4 Main Analysis: Factor Rotation

After extracting the potential factors, it is necessary to evaluate the degree to which variables are loaded onto the corresponding variables. In short, the factor rotation procedure enables the researcher to identify the important variables based on the higher factor loadings and other variables. Field (2018) recorded two main categories of rotation, namely orthogonal and oblique approaches. The former emphasises that factors are uncorrelated and independent, while the latter allows that variables can be correlated before rotation is performed. In this research, Varimax rotation is conducted that distinguishes ten factors with a certain degree of loadings to each variable (see Table 6-10).

Table 6-10 Factor Rotation: Varimax Method

Rotated Factor Matrix[a]										
	Factor									
	1	2	3	4	5	6	7	8	9	10
Mqp3	.804									
Mqp2	.797									
Mqp1	.691									
Mqp4	.623									
Os5		.806								
Iobc1		.719								
Os4		.604								
Iobc2		.466								
Iobc3		.447								
Con3			.815							

Con2			.813							
Con1			.672							
Con4			.438							
Rsp2				.851						
Rsp1				.688						
Rsp3				.637	.323					
Pt1					.799					
Pt2					.699					
Pt3					.669					
Mtf2						.728				
Mtf3						.722				
Mtf1						.679				
Ibma2							.835			
Ibma1							.591			
Ibma3							.586			
Rcsa3								.829		
Rcsa2								.672		
Rcsa1								.512		
Oso2									.658	
Oso3									.597	
Oso1									.588	
Os3										.839
Os2										.605
Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.[a]										
Source from: SPSS output of Study 2 (N=349).										

According to the factor rotation output through Varimax method, ten factors (variables) have been further rotated and confirmed with distinctive factor loadings. Recalled from the factor extraction output, most variables were explained strongly on the first factor and the remaining factors were not distributed as balanced. The situation changed after

the rotation process; 33 items having been re-assigned to ten factors with satisfying factor loadings accordingly. Moreover, the confirmed variables were consistent with proposed factors as coded in Table 6-7. As a result, the ten factors were confirmed, which strongly supports the researcher's original proposition of determining the ten latent variables in the measurement model.

6.5.2.5 EFA Convergent and Discriminant Validity

The previous steps have specifically performed the exploratory factor analysis and provided the results interpretation. The scale's content validity is also discussed when performing EFA. Yet, quantitative researchers are required to further measure the convergent and discriminant validity (Campbell and Fiske, 1959). Convergent validity evaluates the degree to which two measures of the same concept are correlated, and discriminant validity explains the degree to which two conceptually similar concepts are distinct. On the one hand, in terms of the convergent validity, firstly, given the adequate sample size of 349, the minimum communality value was 0.309 above the acceptable level of 0.30 (see Appendix H). Secondly, the average communality value was 0.609, exceeding the acceptable threshold (0.6). Thus, convergent validity was realised. On the other hand, discriminant validity concerned the cross-loading problem by observing each factor loading shown in Table 6-11. Although there was a minor cross-loading factor such as Rsp3 falling into both Factor 4 and Factor 5, it was possible to neglect the lower factor loading (0.323). Thus, discriminant validity was examined, and the results did not affect the eventual EFA performance.

6.6 Reliability Test of Confirmed Scales

In addition to achieving measurement validity, testing of reliability should also be carried out. Reliability testing is dedicated to measuring the same construct consistently and has frequently been addressed by quantitative scholars. It is recognised as an essential assessment before conducting the confirmatory factor analysis that the researcher needs to ensure the scales' reliability.

One important problem often encountered relates to the reverse-phrased items. For example, in the questionnaire, respondents were asked about their degree of state

anxiety with regards to using smartphones during shopping journeys. The first statement was 'I feel apprehensive about using smartphone technology for purchase' and respondents were supposed to reflect their opinions as '1-strongly disagree, 2-disagree, 3-neither disagree or agree, 4-agree and 5-strongly agree'. Respondents who felt anxious would choose options 4 or 5, while those who were less worried about using smartphones would select options 1 or 2. Thus, negatively worded, so-called reverse-phrased items should be revised prior to testing reliability. The researcher revised the items regarding 'consumer's state anxiety', labelled as 'Rcsa1, Rcsa2 and Rcsa3' (as shown in Table 6-8).

SPSS 26 can be used to conduct the reliability test, which indicates the correlations between each item and the total score of the questionnaire. The threshold correlation should be above 0.30; otherwise it reveals a risk that one specific item probably does not fit well with the other pools of items. Another key criterion for determining reliability is to compare the Cronbach's Alpha value (α) if it is bigger than 0.70 (Malhotra, 2007). The researcher took one variable (CON) as an example to present the reliability test on SPSS (see Figure 6-7).

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.836	.835	4

Inter-Item Correlation Matrix

	Con1	Con2	Con3	Con4
Con1	1.000	.645	.649	.427
Con2	.645	1.000	.740	.404
Con3	.649	.740	1.000	.482
Con4	.427	.404	.482	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Con1	11.8080	6.190	.690	.493	.782
Con2	11.9628	5.864	.726	.595	.765
Con3	11.9771	5.798	.769	.621	.745
Con4	11.8825	7.064	.494	.255	.863

Figure 6-7 Reliability Test Output – Construct 'CON' (N=349)

Source from: SPSS output of Study 2 (N=349).

Referring to the output, the total Cronbach's α values were 0.836 (>0.7) of the entire sample. The table labelled 'Inter-Item Correlation Matrix' displays the correlation between items regarding the construct CON, ranging between 0.404 and 0.740 (>0.30). Besides, each item's α is around the overall value 0.836. This indicates that four items of the factor CON have high reliability. By repeating the same process, reliability testing was performed to the remaining nine variables which suggested reliable results (see Table 6-11). The results show that all constructs' Cronbach's Alpha value exceeded the threshold 0.7, with the minimum value (0.711) representing the variable 'obtaining second opinions'. Therefore, these figures signal satisfying internal consistency and reliability among all latent variables. More in-depth outputs regarding the reliability tests are supplied in Appendix I, displaying the Item-Total correlations.

Table 6-11 Reliability Test of Measurement Scales

Variable	**Retained Items**	**Cronbach's Alpha Value**
1 Being connected during shopping	Con1 – Con4	0.836
2 Obtaining second opinions	Oso1 – Oso3	0.711
3 Information via branded mobile apps	Ibma1 – Ibma3	0.802
4 Multi-tasking functional services	Mtf1 – Mtf3	0.839
5 Mobile quick payment	Mqp1 – Mqp4	0.806
6 Relaxed shopping pace	Rsp1 – Rsp3	0.854
7 Passing time	Pt1 – Pt3	0.856
8 Continuous online socialising	Os2 – Os5	0.757
9 Consumer Engagement via online brand communities	Iobc1 – Iobc3	0.716
10 Consumer's State anxiety (reverse-phrased)	Rcsa1-Rcsa3	0.742

Source from: SPSS output of Study 2 (N=349).

6.7 Common Method Bias Test

Despite the previous sections delineating the reliability of measurement scales with EFA results, it is essential to detect bias such as common method bias, owing to the same sources of independent and dependent constructs collected in the second study. At present, business research should not neglect the undermining effect of common method bias (Fuller *et al.,* 2016). The necessity of inspecting the common method bias is attributed to situations when there are non-differential responses to answer a long set of cognitive questions, and respondents may become fatigued at the end of a long questionnaire (Krosnick and Alwin, 1987). Under such circumstances, they may randomly answer the same value to both independent and dependent constructs in the same conceptual framework, due to restricted understanding of the topic and abstract questions to be answered (MacKenzie and Podsakoff, 2012). Therefore, quantitative scholars often emphasise addressing common method bias before detecting the measurement model fitness.

To date, there have been different techniques to implement common method variances through Post-hoc analysis. For example, Harman's one-factor test suggests problematic common method bias when analysing with EFA: all variables produce eigenvalues suggesting the first factor accounts for more than 50% of the variance among variables (Podsakoff and Organ, 1986). Another technique is performed through the confirmatory factor analysis (CFA), using a new latent variable in a CFA model to detect common method bias (Williams *et al.,* 2010). The current study decided to employ Harman's one-factor tactic while carrying out the EFA procedure on SPSS 26, before further measurement model detection in the CFA stage.

By applying the exploratory factor analysis without factor rotation, the researcher examined the common method bias regarding the retained items (33) at the end of the reliability analysis results (see Table 6-12). Figure 6-7 exhibits the results, explaining that there was about 25.18% of variance, explained by extracting only one factor, meeting the thumb value within 50% of the variance among all variables. This indicates that there was no common method bias when applying respondents' answers in the same questionnaire in the second study, which further enhances the reliability of measurement scales.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.037	27.384	27.384	8.310	25.181	25.181
2	2.544	7.709	35.093			
3	2.375	7.196	42.289			
4	1.979	5.997	48.286			
5	1.811	5.489	53.775			
6	1.531	4.640	58.415			
7	1.271	3.851	62.265			
8	1.075	3.259	65.524			
9	1.014	3.071	68.596			
10	1.001	3.034	71.630			
11	.908	2.753	74.383			

Figure 6-8 Common Method Bias Test Results

Source from: SPSS output of Study 2 (N=349).

6.8 Confirmatory Factor Analysis (CFA)

The previous section has confirmed and retained 33 items from the 37 original items, while explaining ten latent variables. More specifically, variables 1-5 account for utilitarian gratifications, variables 6 and 7 indicate hedonic gratifications, and variables 8 and 9 represent social gratifications. Variable 10 only infers consumer's state anxiety.

The EFA has drawn variables from the statistical results. CFA is similar to EFA in some ways, but CFA is more theory-guided, revealing the extent to which a researcher's theoretical pattern of factor loadings draw on pre-specified constructs. It is applied in this thesis to provide confirmatory examination of a measurement theory, the so-called measurement model. In other words, the measurement model is expected to specify a set of relationships that represent how measured variables imply a latent construct that cannot be evaluated implicitly. For instance, smartphone's five utilitarian uses are observed factors implying the utilitarian gratifications as the latent construct. Similar logics are applied when determining the hedonic and social gratifications owing to specific smartphone usages.

Furthermore, the measurement model is categorised as reflective and formative formats. This study adopts the reflective measurement model demonstrating the assumption that the construct causes the measurement of the indicator variables (Hair *et al.,* 2017, p. 13).

Last but not least, the primary objective of undertaking CFA is to develop a fit measurement model before structuring the research model. Both CFA and SEM were performed on IBM SPSS AMOS 26 Graphics.

6.8.1 Detecting the Measurement Model

Before explaining the factor loadings and correlation matrix between latent variables, the present study emphasises that the CFA examination presents a two-order reflective measurement model. Moreover, for example, the first-order construct demonstrates five types of smartphone uses (i.e., CON, OSO, IBMA, MTF, and MQP) reflecting consumers' utilitarian gratification goals during an individual shopping journey. The second-order factors are the specific items measuring and indicating each type of smartphone use (i.e., items con1-con4 measure the latent variable CON). Therefore, the two-order reflective measurement model is investigated first to delineate item and factor loadings (see Table 6-12).

The researcher performed a few trials in order to achieve a satisfactory model fit by significantly examining factor loadings and modification indices when performing the CFA. Moreover, the core relationships embrace the latent constructs to indicators (e.g. Utilitarian → CON) and constructs to each other (i.e. Utilitarian ↔ Hedonic). In addition to that, each item measuring a corresponding latent variable (i.e. CON → con1) was also inspected in order to check factor loadings. When obtaining a fit measurement model, some factors or indicators embracing lower loadings jeopardised the overall fitness of the measurement model, and some unexplained errors showed extreme associations between each other that affected the fitness value. Therefore, the researcher cautiously resolved these issues through adjusting modification indices and eliminating the inappropriate items.

In order to meet satisfying model fitness indices and reliable correlations, the researcher first withdrew the lower factor-loading items such as Con4 (0.492) and Os2 (0.579) that did not reach the acceptable correlation of 0.6 recommended by Hair *et al.* (2014). Second, modification indices suggest a better model fitness by spotting non-estimated parameters such as the error term correlations. Meanwhile, it is widely adopted in order

to diagnose the cross-loading issue that might exist when running the CFA analysis. When determining whether to retain or withdraw indicators, Hair *et al.* (2014) further recommended a 'three-indicator-rule' that there should be at least three indicators for each construct to meet the justified requirement. Thus, the researcher considered the above while achieving the measurement model.

Table 6-12 Factor Loading Matrix Table (CFA output)

Latent variables/indicators/items	**Factor loadings**	**Mean (standard deviation)**
Utilitarian Gratifications		**3.071 (0.499)**
Being connected during shopping journey (CON)	0.659***	3.908 (0.811)
Con1	0.773***	
Con2	0.851***	
Con3	0.861***	
Obtaining second opinions (OSO)	0.622***	3.176 (0.678)
Oso1	0.686***	
Oso2	0.634***	
Oso3	0.691***	
Information seeking via branded mobile apps (IBMA)	0.534***	2.600 (0.634)
Ibma1	0.752***	
Ibma2	0.860***	
Ibma3	0.675***	
Multi-tasking functional services (MTF)	0.733***	3.416 (0.667)
Mtf1	0.795***	
Mtf2	0.806***	
Mtf3	0.780***	
Mobile quick payment (MQP)	0.564***	2.809 (0.660)
Mqp1	0.807***	
Mqp2	0.876***	
Mqp3	0.763***	
Mqp4	0.624***	
Hedonic Gratifications		**2.663 (0.552)**
Relaxed shopping pace (RSP)	0.743***	2.987 (0.802)

Rsp1	0.777***		
Rsp2	0.855***		
Rsp3	0.791***		
Passing time (PT)		0.818***	3.562 (0.989)
Pt1	0.862***		
Pt2	0.851***		
Pt3	0.736***		
Social Gratifications			**3.380 (0.609)**
Consumer engagement via online brand community (IOBC)		0.927***	3.447 (0.651)
Iobc1	0.706***		
Iobc2	0.703***		
Iobc3	0.630***		
Continuous online socialising (OS)		0.835***	3.769 (0.767)
Os3	0.621***		
Os4	0.774***		
Os5	0.841***		
Consumer's State Anxiety			**2.987 (0.924)**
Rcsa1	0.589***		
Rcsa2	0.680***		
Rcsa3	0.866***		

*Note: (1) factor loadings are standardised regression weights drawn from CFA output; (2) *** indicates p value less than 0.001.*

Source from: the researcher's initial output from SPSS AMOS 26 (N=349).

Table 6-12 exhibits specific factor loadings and statistical information in terms of items, indicators and latent variables in the reflective measurement model. All items significantly imply corresponding smartphone uses with a minimum factor loading of 0.621. Moreover, these indicators are further reflecting latent variables known as different gratification dimensions. In terms of consumer's state anxiety, each indicator significantly correlates with the construct and the minimum correlational relationship is 0.589, suggesting that consumer's state anxiety is decently measured by these three items.

6.8.2 Measurement Model Fitness Indices

The previous section obtained an enhanced reflective measurement model, and the researcher needs to further explain the model's validity level, given the satisfactory sample size. In general, assessing a measurement model entails examining the model's levels of goodness-of-fit and constructs' validity. The following table displays the parameters' description and the corresponding results drawn from CFA analysis via AMOS 26.

Table 6-13 Goodness-of-fit Indices (CFA output)

Dimensions	**Description**	**Acceptable Fit**	**CFA Findings**
Chi-square (χ^2)	'Badness of fit measures', testing the difference in the observed and estimated covariance-based matrices.	χ^2 value increases as sample size increase, p<0.05 (or at equals to 0.05 level)	656.355
Degree of freedom (df)	Represents the amount of mathematical information available to estimate model parameters. In regression, df is the sample size minus the number of estimated coefficients, which is different in multivariate analysis.		409
Normed fit (χ^2/df)	Minimum discrepancy divided by its degree of freedom. Value close to 1 indicates a good fit but less than 1 implies overfit.	Close to 1 is good but should not exceed 3.	1.605 (p=0.000)
Goodness-of-fit index (GFI)	Sensitive to sample size; explains the overall degree of fit by comparing the squared residuals from prediction with the actual data.	Value > 0.90 implies acceptable fit.	0.903
Turker-Lewis Index (TLI)	It is the comparison of the normed chi-square values for the null and specified model, which relates to model complexity.	Typically, value close to 1 (>0.90) indicates good fit.	0.944
The normed comparative fit index	It is an incremental fit index; it is highly	Value > 0.95 means good fit, and >0.90	0.950

(CFI)	recommended for fitness of model.	implies acceptable fit.	
Root Mean Square Error of Approximation (RMSEA)	It better represents how well a model fits a population, not just a sample used for estimation.	RMSEA is between 0.03 and 0.08 is acceptable fit, with 95% confidence.	0.042

Source from: Hari et al. (2014, pp. 576-580).

As Hair *et al.* (2018) explained, extant scholars have been extending and refining the different indices to evaluate the GOF level that shapes various aspects of the model's performance to interpret the data. First, Chi-Square (χ^2) is the basic measure of differences between observed and estimated covariance-based matrices. This is followed by checking the 'degree of freedom' (DF), indicating the amount of mathematical information available to estimate the model parameters. In SEM analysis, both χ^2 and DF are treated seriously as the fundamental evaluating process of a measurement model; simultaneously, the statistical significance of χ^2 should be considered (Byrne, 1998). This probability index is often regarded as the *p*-value in statistical tests and is expected to be smaller than 0.05 showing that a significant relationship exists. In addition, the minimum discrepancy (CMIN/DF) should also be examined if the value falls in the range of 3 to 1. The value is calculated as χ^2/DF in order to complement the Chi-Square test.

The second phase of evaluating the GOF covers a set of unique fit indices. The Goodness-Of-Fit Index (GFI) is an initial and immediate way to conduct a fit analysis. The potential range of GFI values is 0 to 1, where higher index implies better fit and is typically acceptable for a value bigger than 0.90 (Tanaka and Huba, 1985). The second fit index is called Root Mean Square Error of Approximation (RMSEA), which has been widely referred to as a measure indicating how well a model fits the population rather than a sample used for estimation (Hu and Bentler, 1999). It is good to report a RMSEA value ranging from 0.03 to 0.08, and lower value explains better fit. The third index is named Turker Lewis Index (TLI), encompassing the model complexity, where values can fall from 0 to 1 and a good fit index is expected to approach 1. Similarly, Comparative Fit Index (CFI) is an incremental fit index where higher value (close to 1) shows better fit. Hu and Bentler (1999) recommended an ideal fit value of both TLI and CFI as greater than 0.95, while Hair *et al.* (2014) recommended a thumb value of 0.90.

According to Table 6-13, all the GOF indices have met the acceptable requirements, indicating that the measurement model achieves a good fit. Moreover, it shows that there is an acceptable fit between the proposed model and the data. Nevertheless, confirming a fit measurement model also needs to reach the constructs' validity.

6.8.3 Construct Validity Test

Apart from achieving satisfying model fitness, CFA also enables quantitative scholars to identify the constructs' validity in a research model before confirming the structural equation model. Theoretically, construct validity is defined as "*the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure*" (Hair *et al.,* 2014, p. 372). Hence, the present study also addresses the construct validity in terms of convergent validity and discriminant validity.

Convergent Validity

Referring to Hair *et al.* (2014), convergent validity requires that the items (of a specific construct) should share a higher proportion of variance in common. It can be assessed through several criteria. Firstly, all factor loadings should be statistically significant, with a standardised parameter of 0.5 or higher (Anderson and Gerbing, 1988). Secondly, the average variance extracted (AVE) is considered as the mean variance extracted for the items loading on a construct and is a conclusive index of convergence (Fornell and Larcker, 1981), with a suggested adequate convergence of over 0.5. The third attribute is related to the composite reliability (CR), differing from scale reliability conducted earlier in section 6.6. A thumb value of a good composite reliability is suggested as being higher than 0.7. However, CR falling between 0.6 and 0.7 might be tolerable. Table 6-14 conclusively presents the factor loadings, composite reliability and AVE values derived from AMOS output.

Table 6-14 Convergent Validity Output of CFA (N=349)

Constructs	**Loadings**	**CR**	**AVE**

Utilitarian		0.761	0.643
CON	0.659***		
OSO	0.622***		
IBMA	0.534***		
MTF	0.733***		
MQP	0.564***		
Hedonic		0.758	0.611
PT	0.818***		
RSP	0.743***		
Social		0.875	0.778
OS	0.835***		
IOBC	0.927***		
CSA		0.703	0.535
Rcsa1	0.589***		
Rcsa2	0.680***		
Rcsa3	0.866***		

*Note: *** indicates p value is less than 0.001.*

Source from: SPSS AMOS output of Study 2 (N=349).

According to the number shown above, all the items and variables have loadings above 0.50, confirming that the indicator reliability is obtained. Second, all constructs' reliability values are meeting the expected standards, exceeding the threshold of 0.7 (Henseler *et al.,* 2009). Third, each construct's AVE index is above the minimum level (> 0.5) as suggested by the quantitative schools. As a consequence, constructs' convergent validity is supported.

Discriminant Validity

In addition, discriminant validity test is applied to evaluate whether different variables can be discriminated from one another to represent different concepts. One key criterion is to measure the squared root of the AVE of a construct. The value should be bigger than the correlations between the constructs within the same proposed model (Yang and Lin, 2019). Thus, the researcher has created another table, illustrating the AVE and correlations showcasing the discriminant validity result (see Table 6-15).

Table 6-15 AVE and Correlations (N=349)

Construct	AVE	Mean	Hedonic	CSA	Utilitarian	Social
Hedonic	0.611	2.663	**0.781**			
CSA	0.535	2.987	-0.242***	**0.732**		
Utilitarian	0.643	3.071	0.694***	-0.274***	**0.802**	
Social	0.778	3.380	0.637***	-0.225***	0.689***	**0.882**

Note: (1) CSA: consumer's state anxiety; (2) The values in bold font displayed along the diagonal are square roots of AVE of each construct respectively, while other values are correlation coefficients between two constructs (p<0.001).

Source from: SPSS AMOS output of Study 2.

As shown in Table 6-15, the researcher has highlighted the square root of AVE corresponding to each construct. The results show that all highlighted values are greater than the correlation coefficients between the constructs presented in the same row or column. Hence, as suggested by Fornell and Larcker (1981), the researcher has achieved satisfactory discriminant validity among the constructs of the hypothesised model. So far, the reflective measurement model has been confirmed as reliable and valid, which leads to the main step of testing the structural model.

6.9 Structural Model Testing

As extant studies have stated, the process of implementing a SEM involves the measurement and structural models. CFA enables the researcher to determine an appropriate measurement model based upon the theory development. The next step is to test the correlational relationships between the independent and dependent variables. The reason for adopting SEM in analysis is due to its capability in examining the structural parameters between the constructs (as confirmed from the EFA & CFA results); in addition, SEM enables the researcher to further endorse the hypotheses and enhance an optimised research model by detecting the path parameters. Simultaneously, the researcher is expected to accomplish theoretical contributions by finalising the conceptual framework.

Theoretically, structural equation modelling detects a variety of dependent relationships at the same time (Hair *et al.,* 2014, p. 542). Moreover, SEM supports the examination of

dynamics when adjusting the model. For example, if one construct changes, the remaining constructs within the model would subsequently reflect the change. Another essential reason for employing SEM is that it encompasses typical multivariate steps, such as factor analysis, regression assessment and discriminant analysis (Ullman, 2001). Such inclusive technique enables the researcher to evaluate the measurement (CFA analysis) and examine the exact regression weights of the model at the same time. Schreiber *et al.* (2006) additionally emphasised that the reason for choosing SEM instead of path analysis is because path analysis faces restrictions in testing the credibility of hypotheses. Moreover, path analysis does not support a degree of interrelationship among the residuals connected with constructs in the model. Thus, to conclude, adopting structural equation modelling was considered an appropriate analysing technique to help answer the third and fourth research questions.

Hair *et al.* (2014) produced a detailed map of SEM analysis, including essential procedures (see Figure 6-9). More specifically, the researcher defined the variables and constructs through EFA at the first stage; then a measurement model was also examined thoroughly with outstanding reliability and validity by performing CFA via AMOS 26 software (stage 2-4). The next stage is to move on to the fifth and sixth steps to assess the structural model, simultaneously testing the hypotheses and refining the research model.

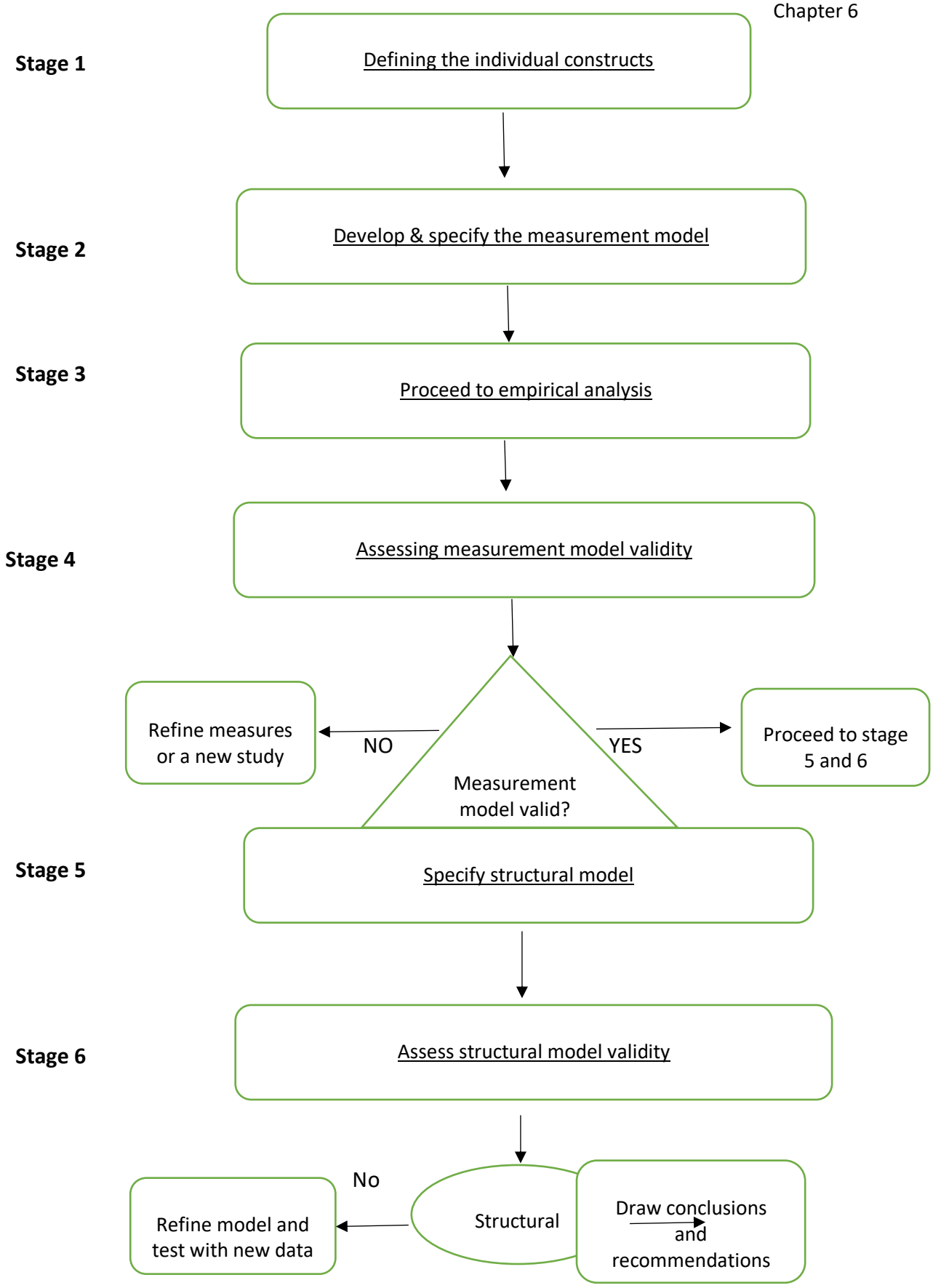

Figure 6-9 Six-Stage Process for SEM

Source from: Hair et al. (2014).

6.9.1 Exogenous Constructs, Endogenous Constructs and Control Variables

Before performing the structural model, it is necessary to clarify the exogenous and endogenous constructs of a model (Hair *et al.,* 2014). Conceptually, on the one hand, exogenous constructs are the latent, multi-item equivalent of independent variables, normally represented by factors outside of the structural model. One immediate way to distinguish the exogenous constructs is to follow the one-headed arrows from any variables. On the other hand, endogenous constructs are perceived as dependent variables as they are dependent on the other constructs. For instance, as displayed in the proposed conceptual framework, exogenous latent constructs consist of utilitarian, hedonic and social gratifications. Moreover, consumer's state anxiety serves as the mediating factor, and in-store purchase intention is treated as the endogenous construct.

Despite control variables being widely adopted in experimental design (Saunders *et al.,* 2012), the second study also concerns the impact that control variables may cause to the structural model evaluation. As explained earlier in section 6.2, given the diversified background of respondents, applying the control variables somehow reduces the substantial effects on both the independent variables and the dependent variables.

Particularly in the questionnaire, respondents provided a variety of socio-demographic information including age, gender, monthly income, education level and experience with branded shopping apps regarding apparel products. Therefore, given the research aims relating to consumer purchasing experience with smartphones, the researcher employs the control variables as the respondents' age, gender and number of branded mobile shopping apps they had experience with.

6.9.2 Structural Model Validity Test

In a similar vein to conducting CFA, examining the structural model enables the researcher to measure the correlational relationships among the constructs while considering the influences of control variables. Differing from the measurement model, one endogenous construct (in-store purchase intention) was included in order to explore whether consumer's state anxiety subsequently influenced the willingness to complete purchases in-store. Moreover, in-store purchase intention was measured through 5-point

Likert scale, asking the extent to which respondents agreed to shop with a smartphone during their shopping journeys. Nevertheless, the thesis focuses on investigating a marketing phenomenon regarding smartphone's U&G and reduced consumer's state anxiety. Additionally, the researcher aimed to discover if consumers' purchase intentions could be stimulated to complete purchases in-store after using their smartphones. Therefore, the researcher used the single item to measure the endogenous construct in a straightforward manner.

As explained by Byrne (2016, p. 167), SEM now allows quantitative scholars to inspect the relationships between measurement scales and categorical variables such as control variables. Following the 'maximum likelihood discrepancy' and 'estimate means and intercepts' instructions, the analysis processing and results are inspected as follows.

Structural Model Validity - GOF

According to the Table 6-16, the structural model shows significant relationships (p=0.000 < 0.05) with positive degree of freedom. The GFI, TLI and CFI values are above the acceptable range (>0.90); additionally, RMSEA is obtained as 0.042 (<0.07). In all, all GOF indices meet the satisfactory requirements, proving that the structural model is a good fit.

Table 6-16 Structural Model GOF Indices (N=349)

Fitness index	**χ^2**	**Degree of freedom (df)**	**CMIN/DF**	***P*-value**	**GFI**	**TLI**	**CFI**	**RMSEA**
Acceptable range			1-3	<0.05	>0.90	>0.90	>0.90	<0.07
Output	860.589	532	1.618	0.000	0.910	0.928	0.935	0.042

Note: minimum was achieved.

Source from: SPSS AMOS output of Study 2.

Significance and Regression Check

After confirming the validity of the structural model, the next step is to detect the correlational relationships between the key constructs. Derived from AMOS output, the researcher developed a table demonstrating the relationship directions and constructs

(see Table 6-17). By understanding correlations and regressions between the constructs, the researcher is able to suggest hypotheses' decisions and interpret marketing insights.

Table 6-17 Standardised Correlation and Regression between Constructs

Construct	**Relationship direction**	**Construct**	**Correlations & regression**
Utilitarian gratifications	↔	Hedonic gratifications	0.694***
Utilitarian gratifications	↔	Social gratifications	0.689***
Hedonic gratifications	↔	Social gratifications	0.637***
Utilitarian gratifications (H1)	→	Consumer's state anxiety	-0.204 (*p*=0.028)
Hedonic gratifications (H2)	→	Consumer's state anxiety	-0.074 (*p*=0.046)
Social gratifications (H3)	→	Consumer's state anxiety	-0.024 (*p*=0.087)
Consumer's state anxiety	→	In-store purchase intention	-0.125 (*p*=0.032)

Note: (1) both correlations and regressions are standardised values drawn from AMOS output; (2) p value implies the significance level of a regression (recommend p<0.05 to achieve significant difference between constructs).

Source from: SPSS AMOS 26 output (N=349).

As shown in the above table, three forms of gratifications are intercorrelated, as the researcher posited that distinctive smartphones uses were able to realise consumers' fulfilment by offering various sources of assistance at the same time. Furthermore, when performing the SEM, the researcher correlated all independent constructs, as one might impact another apart from regression associations. In practice, in-store consumers used their smartphones constantly for both shopping related and non-shopping related needs, so their expected gratifications could co-exist at some point. Besides, respondents also implied that they needed instant functional assistance while pursuing a relaxed and pleasant shopping journey in brick-and-mortar retail stores. That said, smartphone's utilitarian, hedonic and social gratifications are interchangeable and correlated in the research model.

Secondly, Table 6-17 also provides regression between exogenous, mediator and endogenous constructs. More specifically, smartphone's utilitarian gratifications significantly reduce consumer's state anxiety (β= -0.204, *p*= 0.028). Similarly, hedonic gratifications also see a negative relationship with state anxiety (β= -0.074, *p*= 0.046), despite a weaker regression. However, the finding does not suggest significant difference between social gratifications and one's state anxiety, owing to failed significance value (*p*= 0.087). This suggests that smartphone's utilitarian and hedonic gratifications could alleviate in-store consumers' apprehension in busy shopping environments. Differing from the qualitative study, social gratifications cannot predict consumer's status anxiety based on the statistical evidence. More in-depth discussion on these findings will be supplied in section 6.11.

Thirdly, the SEM output also reveals a significant negative relationship between consumer's state anxiety and in-store purchase intention (β= -0.125, *p*= 0.032). That said, consumers embracing a higher level of anxiety would be less likely to complete purchases in-store. Moreover, anxious consumers who are risk-averse would probably make negative judgements toward a transaction, given the complexity of shopping centres. This outstanding outcome also voices that consumer's psychological distress (so-called state anxiety in this thesis) would influence their purchasing decisions, given a different research context in the current thesis. More detailed discussions regarding the impact of state anxiety on purchase intention will follow in section 6.11.

6.10 Mediation Analysis – Using PROCESS Macro

As demonstrated in Table 5-2, the second study employs consumer's state anxiety as the mediator that influences the relationship between smartphone's U&G and in-store purchase intention. Moreover, when interpreting the qualitative findings and developing the hypotheses, the researcher assumed that various smartphone usages would help alleviate consumer's state anxiety and subsequently impact purchase intention. This suggests a mediation test is needed to investigate if individual state anxiety has a mediation effect. Furthermore, the researcher anticipates that reduced or increased level of state anxiety owing to smartphone use would lead to different purchase intentions during a shopping journey.

The researcher decided to utilise PROCESS macro, introduced by Hayes (2013). The PROCESS macro has received tremendous adoption by businesses and marketers as an analytical tool to predict marketing insights in recent years. The reason for and advantages of choosing PROCESS macro rather than SEM are threefold. First, there has been saturation in marketing research concentrating on using SEM for path analysis in the past decade, due to the advantage of detecting path coefficients simultaneously in one model (Hayes *et al.,* 2017). However, with the demanding complexity of the conditions in a research model, the PROCESS macro can test moderator and mediator effects in one model, and suggest conditional outcomes. Second, SEM inspects the research model and abundant regressions, while PROCESS macro can perform each equation separately and is user-friendly (Pek and Hoyle, 2016). This advantage enables marketers to investigate equations independently and sequentially. Third, the PROCESS macro embraces bootstrapping methods that further produce reliable results by evaluating extra information. Therefore, the researcher performed the mediation analysis via three rounds of PROCESS macro to explore the mediation effects of utilitarian, social and hedonic gratifications on in-store purchase intention.

When conducting the mediation analysis, it is necessary to achieve significant relationships between independent, mediator and dependent variables, respectively (Baron and Kenny, 1986). In addition, the relationships between the IV and DV should be reduced when introducing the mediating variable. Statistical results should be reported for the necessary conditions based on significance level. The researcher thus drew the outputs from PROCESS analysis as follows.

Table 6-18 Mediation Effect Analysis Result (N=349)

Mediation paths	**Direct effect without mediator**	**Indirect effects [CI]**	**Direct effect with mediator [CI]**	**T value**
UG→CSA→PI	0.348**	0.022**, CI [0.012, 0.032]	0.326**[0.110, 0.542]	3.303
HG→CSA→PI	0.254**	0.025**, CI [0.010, 0.039]	0.229*[0.033, 0.425]	2.649

SG→CSA→PI	0.243**	0.011^{ns}, CI [-0.019, 0.041]	0.223*[0.047, 0.398]	2.799

*Note: CI []: confidence interval value in the bracket means BootLLCI and BootULCI; the effect values are unstandardized; **: p<0.01, *: p<0.05, ^{ns}: no significance.*

The PROCESS macro technique provides significance value of path coefficients and recommends that the significant differences need to be achieved for all paths between IV, mediator and DV. As seen in Table 6-18, first, the direct effects without the mediator show that utilitarian, social and hedonic gratifications are positively related to in-store purchase intention (β= 0.348, 0.254, and 0.243, *p*<0.01). Second, once the mediator (consumer's state anxiety) was employed in the model, findings suggest that state anxiety partially mediates the relationships between smartphone's gratifications and in-store purchase intention (β= 0.326, 0.229, and 0.223, *p*<0.05). Compared with the direct relationships without the mediator, the latter weights show a drop in value.

At the same time, it is important to examine whether the mediating effects are statistically significant; hence, the researcher referred to the bootstrapping results with 95% confidence intervals and 5,000 iterations, and further checked the indirect effects. Moreover, mediation is supported if the indirect effect is significant and the confidence level (CI) does not include zero (Zhao *et al.,* 2010). According to Table 6-18, consumer's state anxiety significantly mediates the path of utilitarian gratifications (β= 0.022, *p*<0.01; CI= 0.012 to 0.032) and hedonic gratifications (β= 0.025, *p*<0.01; CI= 0.010 to 0.039) on in-store purchase intention. However, the indirect effect of smartphone's social gratifications on purchase intention via consumer's state anxiety is not significant (β= 0.011, *p*= 0.324; CI= -0.019 to 0.041), and the confidence level includes zero.

To conclude, this suggests that consumer's state anxiety partially mediates the relationships between smartphone's utilitarian and hedonic gratifications, and in-store purchase intention. Social gratifications cannot indirectly influence the correlations with purchase intention via the mediator since smartphone's social-driven uses fail to predict consumer's state anxiety during shopping journeys in a busy shopping centre (see Table 6-17). In addition, the researcher drew mediated paths as better explanations (see Figure 6-10) representing the key constructs in the research model.

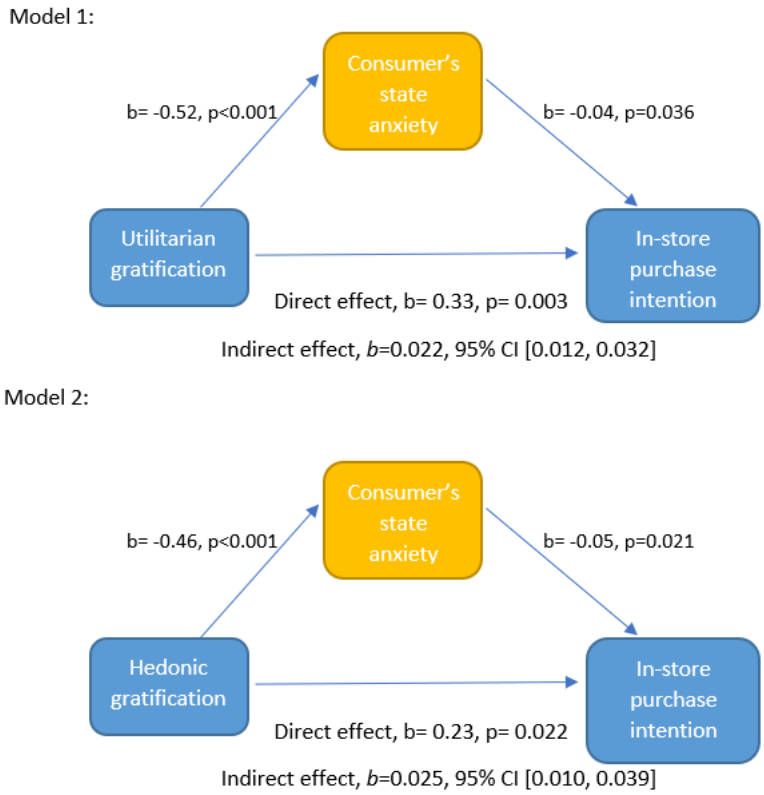

Figure 6-10 Models of Smartphone's U&G and Purchase Intention, Mediated by Consumer's State Anxiety

Note: (1) path coefficients are unstandardized values; (2) the confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.

6.11 **Findings - Hypotheses Testing**

By performing factor analysis, structural equation modelling and mediation analysis, a set of different forms of regression and path coefficients are revealed, and the third and fourth research questions are solved. After reporting the quantitative analysis in the second study, it is necessary to determine the acceptance or rejection of hypotheses developed in Chapter 5. More specifically, the first three hypotheses delineating the correlational relationships between smartphone's U&G and consumer's state anxiety will be discussed based on the factor analysis and SEM results. The fourth hypothesis assumes the mediated effect of state anxiety on the relationships between independent and dependent constructs, which will be further argued according to mediation analysis results. Table 6-19 is therefore created to give an overview of hypotheses decisions.

Table 6-19 Hypotheses Testing Result

Hypothesis	**Construct and path**	***P* value**	**Regression (standardised)**	**Hypothesis decision**
H1	UG → CSA	0.028	-0.204	Accept
H2	HG → CSA	0.046	-0.074	Accept
H3	SG → CSA	0.087	-0.024	Reject
H4	Mediation effects	*P*<0.05	N/A	Partially accept

Note: figures and results were explained in Section 6.9 and 6.10.

Source from: the researcher's initial output.

6.11.1 Research Hypothesis 1: Utilitarian Gratifications & Consumer's State Anxiety

The first hypothesis aims to test the correlational association between smartphone's utilitarian gratifications and consumer's state anxiety. Statistically viewed, the finding shows a downhill relationship between the two constructs, with a considerable significant difference (p<0.05) and a negative value (β= -0.204). In short, an increase in achieved utilitarian gratifications will lead to a decrease in consumer's state anxiety. Thus, it can be deduced that smartphone's utilitarian gratifications are able to reduce the consumer's status anxiety during store visits; hence hypothesis 1 is accepted in line with the qualitative results of Study 1.

First, the results of factor analysis (see section 6.8.1) indicate that five types of smartphone uses would significantly realise consumers' utilitarian gratifications. Moreover, smartphones provide in-store consumers with instant connection with their acquaintances and ease apprehension in other aspects of life during a shopping journey. Besides, in-store consumers largely acknowledge the information fulfilment and habitually search for all sources of information via their smartphones. When purchasing a new brand or expensive product, in-store consumers may browse websites and shopping apps for further product demonstration in order to make confident decisions. In contrast with the extant research criticising mobile payment service security concerns (Duane *et al.,* 2014), the findings show the growing adoption of mobile quick payment, which facilitates a more efficient shopping journey (Teo *et al.,* 2015). For the younger

generation (i.e., millennials and Generation Z), there is more appeal in the use of mobile quick payment or new payment alternatives via smartphone. Consumers have no need to worry about losing their personal information or taking out their wallets for payment purposes. Through Apple Pay or mobile contactless options, consumers can enjoy a more comfortable and secure shopping journey.

Second, in-store consumers significantly seek additional advice from acquaintances to avoid uncertainties or poor decisions. Smartphones thus serve as a communication and information bridge that enables consumers to obtain second opinions from others and make confident decisions. In line with existing studies, consumers tend to trust peer suggestions or reviews rather than relying on what retailers might supply (Lee and Koo, 2012). Thus, by achieving more utilitarian gratifications, in-store consumers may feel less worried about making poor decisions or missing connection with other aspects of life; they can also be multi-tasking on other non-shopping related activities during shopping journeys.

6.11.2 Research Hypothesis 2: Hedonic Gratifications & Consumer's State Anxiety

The second hypothesis expects to reveal the correlational relationship between smartphone's hedonic gratifications and consumer's state anxiety. According to the SEM output, there exists a negative relationship between the constructs (β= -0.074, *p*= 0.046), inferring that consumer's status anxiety can be reduced if hedonic gratifications are enhanced during shopping journeys. Moreover, in-store consumers nowadays pursue a relaxed and comfortable shopping pace, and they can achieve hedonic fulfilment by adopting entertainment services (i.e., music, video and games via mobile apps) on their smartphones during shopping breaks. Meanwhile, they can also release themselves from busy shopping environments by checking their smartphones to combat boredom. Therefore, hypothesis 2 is accepted based on the statistical evidence.

According to the extant literature and qualitative research outcomes, hedonic-oriented consumers nowadays visit busy shopping centres to fulfil leisure requirements (Stocchi *et al.,* 2016). Previously, consumers visited retail stores to seek hedonic fulfilment such as leisure services and enjoying the interface design in busy shopping centres. With a

growing number of demanding consumers, shopping centres have extended their services by offering complementary dining places and leisure activities to keep consumers inside the malls for longer. In addition, consumers themselves are seen finding their own means to derive a pleasant shopping journey. For example, Gan and Li (2018) suggested that smartphone-dependent consumers check their phones frequently to pass the time. In line with the existing knowledge and qualitative findings, the second study also shows that hedonic consumers consistently pursue entertainment gratification goals. At the same time, emerging consumers are searching for solutions to establish positive emotions, since being in a state of anxiety undermines their shopping mood (Yao and Liao, 2011). Hence, store visitors can manage their own anxiety and enjoy their shopping journeys with the assistance of the smartphone's entertainment features.

Furthermore, given the research context of busy shopping centres encompassing plentiful retail brands together with food and leisure services, some consumers may feel anxious and distracted because of the choice overload issue. They may decide to take a break or pause in their shopping, concentrating on their smartphones to pass the time. As Liu and Chang (2016) suggested, people use media to occupy the time when they feel bored. Therefore, smartphones' hedonic usages are treated as helpful assistance to accommodate consumer's state anxiety when visiting busy shopping centres.

6.11.3 Research Hypothesis 3: Social Gratifications & Consumer's State Anxiety

The third hypothesis addresses the proposition between smartphone's social gratifications and consumer's state anxiety. As displayed in Table 6-19, no significant relationship exists between social gratifications and consumer shopping anxiety (p= 0.087), in spite of the slightly negative correlation between the constructs (β= -0.024). According to SEM output, this explains that social gratifications obtained from smartphone uses do not significantly impact consumer's state anxiety during the shopping process, given the busy retail settings. Therefore, hypothesis 3 is rejected. The result of the hypothesis rejection does not meet the researcher's initial proposition and runs against the qualitative findings.

However, it still suggests that two forms of social gratifications could be realised via smartphone use, as interpreted from the qualitative study findings (see section 6.8.1). On the one hand, in-store consumers constantly check and update on their mobile social networking apps (e.g., Facebook, Instagram, WeChat, and Snapchat) to connect with friends. By posting real-time stories of their shopping trips, consumers are able to share and socialise during shopping journeys. In addition, they continuously activate their social apps to interact with others and the world because they do not wish to miss out. On the other hand, some consumers choose to check product reviews or post their own consumption experiences via online brand communities. Contemporary consumers are empowered to discuss product-related topics through virtual discussion forums such as a retailer's website/app. By accessing further reviews and suggestions, consumers get connected with like-minded peers, which may evoke some level of C2C engagement (Gao and Feng, 2016). For instance, consumers can follow a retailer's Instagram page and initiate conversations with other followers. The mobile social media platforms provide an opportunity for fellow shoppers to socialise and raise appeals. Thus, in short, the smartphone is considered an immediate tool to achieve social gratification during shopping journeys.

By contrast, the second study does not specify a correlational relationship between smartphones' social gratifications and consumer's state anxiety, due to non-significant differences. On the one hand, smartphones are considered as convenient tools to be connected virtually. Contemporary consumers are seen spending a considerable time checking and updating their social media, regardless of whether they are in the process of shopping or doing non-shopping related tasks. Yet, despite being constantly updated via virtual platforms, they can still feel anxious when confronted with the complexity of choices in busy shopping environments. Social gratifications enable consumers to be connected but impede them from concentrating on shopping related activities. Thus, social gratifications cannot directly predict consumer's status anxiety, since smartphone's over-dependency and external distractions may drive their attention. The researcher will further justify the potential reasons for the hypothesis rejection in section 6.12.

6.11.4 Research Hypothesis 4: Consumer's State Anxiety as the Mediator

The fourth hypothesis proposed the mediated relationships between smartphone's U&G and in-store purchase intention through consumer's state anxiety. As disclosed in section 6.10, it has been suggested that consumer's state anxiety mediates the relationships between the independent constructs (utilitarian and hedonic gratifications) and the dependent construct (in-store purchase intention). Yet, no significant evidence was spotted in detecting the mediated relationship between social gratifications and purchase intention. Therefore, hypothesis 4 is partially accepted, based on the conditional paths.

On the one hand, SEM results indicate the regression between consumer's state anxiety and in-store purchase intention (β= -0.125, *p*= 0.032, see Table 6-17). The finding suggests a significant negative relationship between the constructs; moreover, consumers who are more anxious during shopping journeys may be discouraged from accomplishing purchases in-store. This may be because their apprehension leads to negative judgment and attitudes towards buying a product, or because of the busy shopping settings that make them feel worried. Thus, the level of individual state anxiety is thought to affect purchasing intention in offline retail environments.

On the other hand, the mediation analysis also strengthens the mediation effect of consumer's state anxiety. The findings infer that the consumer's anxiety subsequently impacts their purchasing intention in physical shopping contexts, while they can achieve utilitarian and hedonic gratifications from using a smartphone. To extend this condition, due to choice overload and ongoing distractions in shopping centres, a consumer will be more willing and likely to complete purchases when he or she is less anxious. This is because smartphone's utilitarian and hedonic gratifications assist in-store consumers with a variety of information, communication, functional service, entertainment and relaxation that reduces apprehension during shopping journeys. Thus, the consumer's state anxiety conditionally mediates the relationships between smartphone's U&G and in-store purchase intention.

Moreover, the accepted hypothesis decision is in line with previous knowledge in terms of the association between anxiety and purchase intention. Extant studies explain that anxiety has a significant negative impact on choosing mobile devices for shopping

purposes (Saprikis *et al.,* 2018). In addition, Featherman and Pavlou (2003) described how anxious consumers struggle with making less risky decisions in an uncertain context. These implications underline the fact that anxious consumers find it challenging and are apprehensive about making optimal and confident decisions on the spot. Therefore, the second study investigates the situation from the consumer's psychological angle, by demonstrating the truth that consumers feel anxious when exposed to busy shopping settings, owing to complexity of choice and other distractions (see Chapter 4). Such state anxiety can be alleviated by using smartphones for utilitarian and hedonic gratification goals. Subsequently, the reduced level of state anxiety can increase consumer's confidence in making appropriate decisions, simultaneously encouraging in-store purchases.

6.11.5 Research Model Revisit

After a series of statistical analyses, all hypotheses are confirmed as being accepted or rejected. First, three streams of gratification goals are derived from a list of smartphone uses during shopping journeys, by interviewing consumers in real shopping scenarios and further examining the intercorrelations between each use and gratification. Second, according to the preliminary findings of the second study, the correlational associations between key constructs are suggested and accompanied by mediation effect analysis in the research model. Figure 6-11 revisits the proposed conceptual framework by additionally demonstrating the significance degree and hypotheses decisions based on the SEM findings.

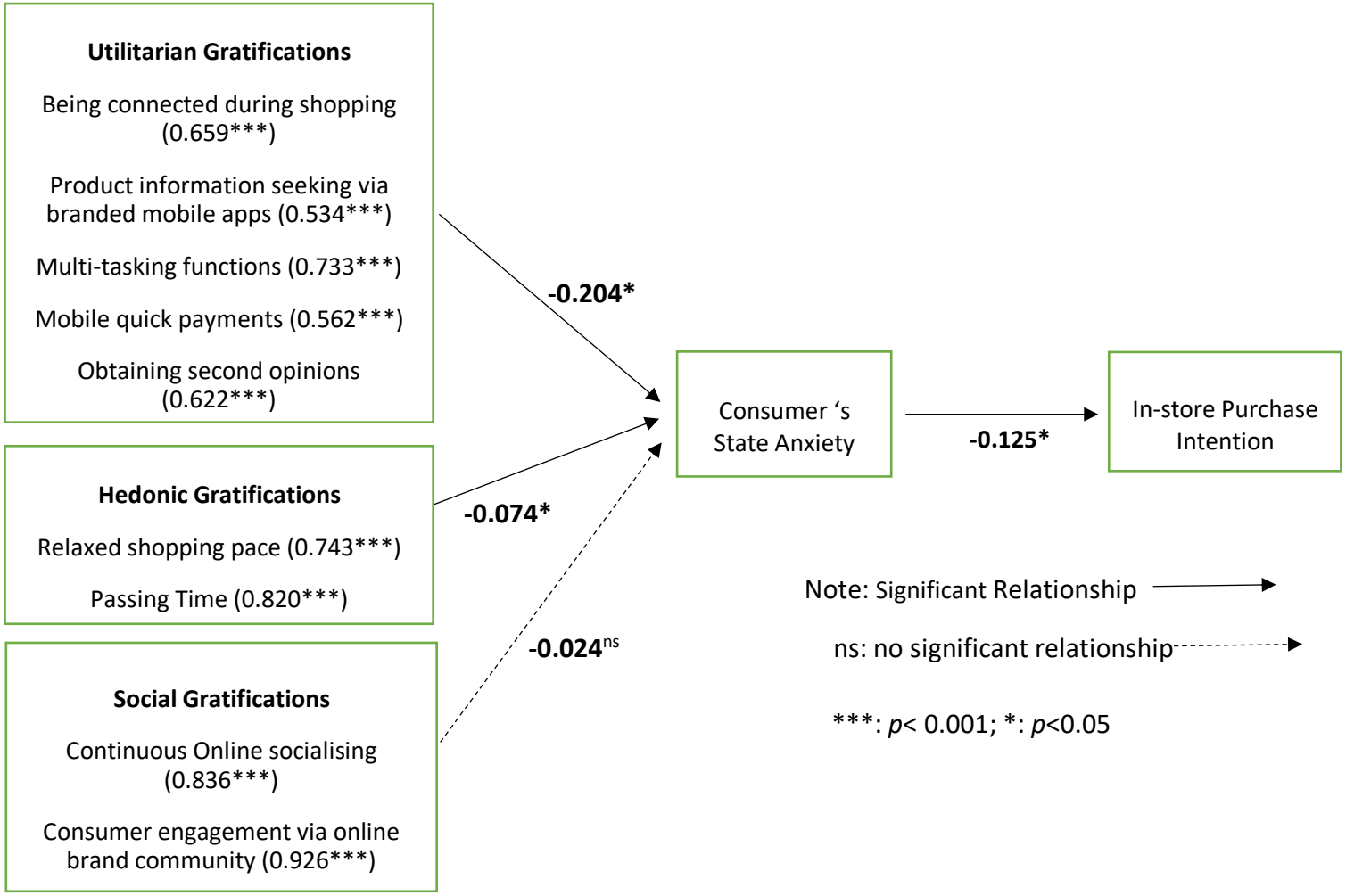

Figure 6-11 Research Model Respecification

To summarise the quantitative findings, the second study of the thesis is devoted to developing hypotheses and examining the correlational relationships between constructs of the proposed conceptual framework. According to the results, the analysis regarding respondents' socio-demographics demonstrates that younger generation consumers have had considerable shopping experience with branded mobile apps when buying apparel items. These groups are early technology adopters, and habitual smartphone users in their daily lives. They spend time browsing and purchasing from retailers' app-based stores on a weekly or monthly basis, whilst acknowledging the smartphone's inevitable companionship during shopping journeys. Thus, the researcher determined respondents' age, gender, and the number of installed shopping apps as control variables when performing the SEM analysis.

From the factor analysis and SEM, it was discovered that in-store consumers could reach their perceived utilitarian, hedonic and social gratifications during shopping journeys by enjoying the various assistances of smartphones. Respondents further indicated that smartphones induced a more comfortable and confident purchasing experience in offline retail marketplaces. The gratification classifications are in line with existing research with regards to uses and gratifications (U&G) theory, but are more diversified, given the unique research contexts, as this thesis provides implications for shopping centres and traditional channel retailers.

Smartphones' uses and gratifications are also regarded as antecedents of consumer's state anxiety and subsequently affect purchase intention. The findings further support that using a smartphone could ease in-store consumers' anxiety when confronting plentiful product choice and other distractions in busy shopping contexts. Furthermore, only utilitarian and hedonic gratifications were discovered to reduce consumer's status anxiety, while social gratifications saw nonsignificant results. Besides, consumers with a reduced level of apprehension may feel more willing and assured in making prompt purchasing decisions in-store. Such conditional practices were revealed through examining the mediated impact of consumer's state anxiety.

Compared with the first study, the second study particularly argues that, with the significant findings that extend the existing research and preliminary results, the researcher is also able to resolve the third and fourth research questions. Meanwhile, the quantitative results are then critically discussed to reflect contemporary consumers' channel choices when buying apparel products, especially when visiting physical retail stores.

6.12 Discussions of Study 2

6.12.1 To what extent would smartphone uses reduce consumer's state anxiety?

The previous section has summarised key findings drawn from conducting the quantitative study. Smartphone's uses and assistance could help achieve perceived gratifications, and the researcher evaluated the degree to which a smartphone's U&G could reduce consumer's state anxiety. Hence, the discussions are articulated addressing three gratification dimensions accordingly.

First, as Grewal *et al.* (2017) argued, the use of smartphones has transformed consumers' purchasing activities. Smartphone's utilitarian gratifications help alleviate consumer's state anxiety during shopping journeys. Ruggiero (2000) demonstrated that users or consumers choose a type of media aiming to achieve prospected gratifications. More specifically, this thesis specifies that smartphone's utilitarian gratifications consist of being connected during shopping, product information searching via retailers' mobile apps, multi-tasking functional services, mobile quick payment and obtaining second opinions that may take place during shopping journeys. In-store consumers acknowledged their needs with regards to information, communication, productive payment and a sense of shopping assurance through continuous smartphone access. The findings additionally suggest that contemporary consumers still visit brick-and-mortar retail stores as preferred and significant shopping alternatives, in line with what Mehra *et al.* (2017) illustrated about the importance of physical shopping channel.

Similar to the discussion in the first study, by accessing the Internet, consumers are supplied with immediate information and communication support by using their smartphones (Flavian *et al.,* 2016). The quantitative findings additionally argue that contemporary consumers spent time checking on their smartphones so that their status anxiety could be relieved down to a minor level. They constantly seek for additional information and suggestions to generate adequate confidence and make purchase decisions (Chen *et al.,* 2018). In addition, consumers who were found acquiring additional shopping advice from companions, or checking retailers' mobile application-based stores via smartphones purchased more than those who only focused on offline channel purchases (Deloitte, 2014). Thus, smartphones provide consumers with an increased confidence compared with other products and brands, confirming product performance, securing faster payment and accessing functional services via mobile apps. And in line with Lee *et al.* (2011), consumers proactively seek resolutions to avoid making mistakes and escape from anxiety during shopping. As a result, diversified types of utilitarian fulfilments can reduce consumer's state anxiety.

Second, achieved hedonic gratifications were also verified to reduce consumer's state anxiety when visiting brick-and-mortar retail stores. Both qualitative and quantitative findings disclose that consumer's expected hedonic fulfilments could be achieved, as smartphones not only support a relaxed shopping pace, but consumers depend on them as tools to pass the time during an individual shopping journey. In line with previous research, hedonic-oriented consumers visit physical stores to obtain enjoyment and interactions with a store (Pine and Gilmore, 2003). Moreover, consumers enjoy a pleasant shopping journey when visiting a busy shopping centre, where they can shop for products, enjoy dining and leisure services, and engage with pop-up marketing events (Bujisic *et al.,* 2017).

Extant research highlights that hedonic purchasers pay more attention to store interface design as one of the entertaining elements when visiting offline stores (Lu and Rastrick, 2014). Apart from that, smartphones also contribute to establishing consumers' entertainment and enjoyment during shopping journeys. For instance, in-store consumers were observed spending some relaxing time listening to music

or playing mobile games during shopping breaks (Nambisan and Baron, 2007). As Alnawas and Aburub (2016) voiced, consumers significantly adopt mobile apps (on their smartphones) to stimulate a happy mood; they also pursue entertainment when they feel bored at some point during the purchasing process.

In similar vein, the findings further support that consumers actively use mobile social apps as a means to combat boredom when they feel like taking a break during a shopping journey (Whiting and Williams, 2013). Due to all the distractions in a busy shopping centre, consumers may not focus on browsing or buying items, but spend time checking their phones because they pursue engagement with available mobile devices (Andrews *et al.,* 2015). Therefore, a new pattern of shopping has been nurtured, in which in-store consumers search for alternative pleasure and entertaining elements via their smartphones, in order to combat boredom, derive a positive shopping mood (Park, 2019) and balance their status anxiety (Yao and Liao, 2011).

Third, since no significant difference was detected between the smartphone's social gratifications and consumer's state anxiety, the findings suggested that accomplishing social enjoyment would not impact shoppers' distress when visiting offline retail stores. Nevertheless, social gratifications can still be achieved through two forms of smartphone uses, further supporting the propositions from the qualitative findings. On the one hand, in line with Leiner *et al.* (2018), consumers significantly adopt mobile social media networking to be updated, check the social status of others, and express themselves. Consumers admitted to their strong dependency on checking social apps in case of missing out, and to maintain timely socialising with acquaintances. As Gan and Li (2018) suggested, the second study also highlights that in-store consumers are involved with online chatting, 'liking/commenting/hash tagging' their social posts and expecting feedback. Thus, continuous online socialising helps to derive social gratification during shopping journeys in physical stores.

Similarly, some consumers find ways to achieve social gratification by actively checking and evoking discussions on online brand communities through their

smartphones during shopping journeys (Zhang *et al.,* 2015). Apart from continuous online socialising with someone they know, consumers also seek social approval from like-minded cohorts who share similar opinions and consumption experiences via virtual discussion forums (Van Doorn *et al.,* 2010). For example, some consumers who follow a brand's Facebook or Instagram page can engage with anonymous peers with respect to a topic of interest on brands or posts. Such communication and discussion forums enable consumers to obtain a sense of belongingness to brands and peer support (Muntinga *et al.,* 2011). Therefore, through continuous updates on mobile social platforms, consumers are informed and connected without time or geographic restrictions, and their social gratifications are subsequently accomplished.

However, at the same time as acquiring social gratification, the findings fail to support that smartphone's social gratifications could reduce consumer's state anxiety. The results contrast with existing arguments on user's anxiety. For example, Xu *et al.* (2012) suggested that consumer's anxiety could be reduced through interpersonal communication via virtual platforms such as social media platforms. In addition, Whiting and Williams (2013) added that people use mobile social media as reliable assistance to share opinions with similar-minded groups and to gain information from others. These scholars imply a common hint that smartphone dependents use their phones for socialising and productivity, amongst other things (Elhai *et al.,* 2016). Moreover, consumers search for social appeal and additional advice through interactions with fellow shoppers (via online brand communities) to maintain their socialising purposes and balance information asymmetries (Park *et al.,* 2019a). Yet, the second study instead suggests that social gratifications cannot reduce consumer's state anxiety in busy shopping centres.

The reason for the hypothesis rejection may be twofold. First, despite the social gratifications owing to smartphone uses, consumers are still confronted with overwhelming information and determinants in complex shopping settings such as busy shopping centres (Stocchi *et al.,* 2016). At present, shopping centres have become a place for consumers to enjoy leisure services and engage with in-store marketing activities, rather than simply to complete purchases. Such

transformation may require a higher level of consumer engagement effort in responding to the contextual innovation (Shankar *et al.,* 2011). Thus, consumers may feel more apprehensive when hanging around shops and participating in in-store activities, since some feel social anxiety in offline retail environments (Becker and Pizzutti, 2017). Consequently, this implies that achieving social gratification will not influence consumer's apprehension towards busy shopping environments.

Second, as Celik (2016) suggested, consumers may get even more anxious when adopting a new piece of technology such as mobile social apps. Venkatesh (2000) reported that anxiety impacts consumer's attitude to and adoption of a technology, and the other way around; new technology adoption may lead to user's anxiety. For example, in this study, those shoppers might become distracted and overwhelmed when constantly expressing themselves on their social networking apps, and their status anxiety may be increased due to extra distractions on top of the complex shopping determinants. Thus, despite consumers pursuing social gratifications during shopping journeys, too much distraction owing to mobile social exposure cannot decrease state anxiety.

6.12.2 Does consumer's state anxiety affect in-store purchase intention?

On the one hand, consumer purchase intention has been intensively demonstrated alongside the purchase channel extension. From traditional offline settings, to online and mobile channels, purchase intention can be encouraged or weakened due to personal traits or dynamic shopping patterns. Recently, since the introduction of smartphones, omni-channel shoppers have been empowered to complete purchases anywhere and anytime (Baker *et al.,* 2016). For instance, existing research demonstrates that the use of mobile devices will affect in-store consumers' purchase decisions (Rapp *et al.,* 2015; Nesar and Sabir, 2016), because they can switch channels easily and conduct pre-searches before and during shopping journeys in physical retail stores. Similarly, the current thesis reveals that in-store consumers frequently adopt their smartphones for a set of utilitarian, hedonic and social fulfilments to accomplish both shopping-related and non-shopping related purposes. Besides, consumer's purchase intention is affected

when a smartphone provides informative assistance during shopping journeys, as they feel more flexible and relaxed in adopting smartphones to make decisions anywhere.

On the other hand, purchase intention can also be influenced by individual physiological status. Moreover, consumers are more anxious about making optimal decisions if they are only given limited options to choose from; they believe that more choice and more searching effort will ensure their decision-making and encourage purchases (Nagar and Gandotra, 2016). However other scholars posit that plentiful product choices could increase consumers' anxiety and impede them from completing purchases in-store (Thatcher and Perrewe, 2002; Park *et al.,* 2019b). Thus, this stream of literature suggests that consumers' anxiety may prevent shoppers from making prompt purchasing decisions in-store. The findings of the current thesis suggest a significant mediation effect of consumer's anxiety on the relationship between smartphone's U&G and in-store purchase intention. More specifically, it explains that consumers are encouraged to complete purchases if their status anxiety is reduced due to the smartphone's utilitarian and hedonic gratifications during shopping journeys, given the hustle and bustle of busy shopping environments.

In consistent with existing marketing research, in-store consumers demand continuous smartphone use, as they feel anxious without smartphone access to all sources of information and assistance (Kneidinger-Müller, 2019). Consumers perceive that utilitarian and hedonic achievement (owing to smartphone usage) leads to a more satisfying and confident shopping experience (Harris, 2017). For example, the utilitarian performance lies in enabling product information research, communication and connection with the external world, mobile quick payment, and obtaining additional advice from others. These practices can reduce consumer's status anxiety and help them make more assured decisions. In a similar vein, the entertainment and enjoyment aroused from hedonic gratifications can also provide consumers with a pleasant shopping experience. This is because a positive mood helps to establish a rapport with the shopping environment and subsequently stimulates decision-making (Chaudhuri, 2002). Ultimately, given the realisation of

smartphone's utilitarian and hedonic gratifications, consumers feel less anxious and may be encouraged to purchase more products in-store.

6.13 **Summary**

This chapter demonstrates the quantitative phase of the thesis, including conducting a series of statistical analysis and confirming the proposed research model. It began by exhibiting survey respondents' socio-demographics to justify the reason for choosing control variables in the SEM stage. Besides, the analysis also presented an overview of the consumer's experience with mobile shopping apps via smartphone. Second, both EFA and CFA analysis contributed to finalising the key constructs prior to conducting SEM analysis. Moreover, the researcher further confirmed the constructs' reliability and validity to achieve appropriate structural equations. Third, consumer's state anxiety was additionally examined through conducting mediation analysis via PROCESS macro to answer the fourth research question. Finally, the hypotheses decisions were determined based on the above analysis, accompanied by extended discussion on the research questions.

In conclusion, the findings recommend that using a smartphone could enhance consumer's gratification goals across utilitarian, hedonic and social dimensions. Moreover, a smartphone's utilitarian and hedonic gratifications could relatively reduce consumer's state anxiety. However, social gratifications do not contribute to alleviating consumer's anxious feelings during shopping journeys in brick-and-mortar retail environments. Consumer's state anxiety plays a significant mediating role in predicting in-store purchase intention. Furthermore, consumers who feel less anxious after using their smartphones would be more willing to purchase apparel products in-store. The results have further strengthened consumers' purchasing patterns in contemporary traditional channels, particularly highlighting the positive aspects of using smartphones during shopping journeys in physical retail spaces. Ultimately, key contributions regarding the theoretical and practical perspectives will be demonstrated in the next chapter by comparing and combining both the qualitative and quantitative findings.

Chapter 7 CONCLUSION AND IMPLICATIONS

7.1 Introduction

This chapter summarises the significant findings accompanied by the contributions and implications of the thesis. It first summarises the distinctive findings in answering the research questions, by comparing and contrasting the results generated from both the qualitative and quantitative studies. It then sheds light on the theoretical contributions in terms of emerging consumer behaviour in-store, specified smartphone's uses and gratifications, and how these gratifications reduce consumer's state anxiety in brick-and-mortar retail stores. In addition to the theoretical constructions, the researcher will also address the managerial implications for traditional offline retailers, shopping centres (in the U.K.) and omni-channel retailers, respectively. Finally, the limitations of the thesis will be mentioned, and where the researcher could have performed differently when accomplishing the research. Simultaneously, some research alternatives are recommended for future research avenues.

7.2 Main Findings to Answer Research Questions

The thesis was initialised to investigate in-store consumer behaviours involved with smartphone usages in the apparel retailing industry in the United Kingdom. By adopting the mixed-method research design, the qualitative study empirically identified diversified gratifications goals resulting from smartphone uses during individual shopping journeys in brick-and-mortar retail stores. In-store consumers largely acknowledge the benefits of smartphone dependency, and how being accompanied by one's smartphone is necessary to accommodate one's needs and balance status anxiety in complex shopping environments (e.g. shopping centres). Thus, a further quantitative analysis was conducted in order to examine the exact extent to which gratifications would reduce consumer's state anxiety and subsequently impact in-store purchase intention.

Table 7-1 outlines the two studies by comparing and justifying each study's research method, sampling technique, target audiences, key findings and relative contributions. By comparing the similarities and differences between the two studies, the researcher aims to reinforce the essential outcomes and guide readers to recap the whole thesis.

Table 7-1 Compare and Contrast Study 1 and Study 2

Attribute	**Study 1**	**Study 2**
Research Objectives	• To explore distinctive smartphone uses and consumer perceived gratifications (RQ1) • To inspect the motivations in choosing mobile websites and applications (RQ2)	• To build up a conceptual framework illustrating the relationships between smartphone's U&G, consumer's state anxiety and in-store purchase intention • To explore whether and how smartphone's U&G affect shopping anxiety (RQ3) and subsequently influence purchase intention (RQ4)
Research Strategy	Open-ended interviews	Survey – Self-administrated questionnaire
Sampling Technique	Non-probability sampling – Purposive sampling	Non-probability sampling – Convenience sampling
Target Respondents	43 consumers approached from shopping centres and high streets in two southern cities in the United Kingdom	349 valid responses collected from high streets and town centres in the same cities as the first study
Retailing Scope	Broad retailing segments in order to collect adequate and diversified exploratory answers	Apparel retailing lines specifically
Research Context and Time Horizon	Brick-and-mortar retail stores in two southern cities (Southampton and Bournemouth) in the United Kingdom Potential respondents are smartphone users and supposed to have multichannel shopping experiences Each respondent was interviewed only once on the spot for both studies	
Data Analytical Tool	Qualitative coding via NVivo 12,	Descriptive analysis and

	referring to the aggregate dimensions suggested by Gioia *et al.,* (2012)	Exploratory factor analysis: SPSS 26 Confirmatory factor analysis and Structural equation modelling: SPSS AMOS 26 Mediation analysis: PROCESS macro by Hayes (2013)
Key Findings	• A set of nine smartphone uses implying utilitarian, hedonic and social gratification dimensions • Consumers hold unique opinions towards adopting mobile websites and applications • Consumers nowadays actively engage with peers to reduce state anxiety, combat boredom, and facilitate confident shopping journey via their smartphones Research Question 1 & 2 are answered	• Hypotheses decision: (1) nine types of smartphone uses significantly indicate three dimensional gratifications; (2) smartphone's utilitarian and hedonic gratifications help reduce status anxiety, but social gratifications do not affect consumer's anxiety • Consumer's state anxiety is regarded as an important mediator. Less anxious consumers will be more willing to purchase in-store if smartphone's utilitarian and hedonic gratifications granted Research Questions 3 & 4 are resolved
Time period for completing the study	05/2017 – 10/2017	08/2018 – 03/2019

Source from: the researcher's original summary notes.

As highlighted in the above table, there are similarities and differences between the two separate studies based on the unique research objectives. First, the thesis particularly contributes to pragmatic marketing because both studies were carried out in real shopping scenarios to obtain first-hand information regarding consumers' attitudinal and behavioural dynamics (Polit and Beck, 2012). Apart from enhanced trustworthiness, another advantage was to assure good response rates, since participants were able to recall their vivid shopping experience in the actual

purchasing settings. Second, both studies paid attention to high-street retailers when studying consumer shopping patterns with smartphone adoption alongside shopping journeys. Particularly, the second study additionally shed light on apparel product lines. Third, in both studies, participants were only interviewed once at a specific shopping scene without follow-up communication, and they admitted using smartphones at some point during their shopping trips. These common aspects were significantly justified when designing and collecting the data.

At the same time, there were certain differences, particularly regarding the research questions and data collection techniques. The first study was designed to reveal emerging smartphone uses and consumer perceived gratifications through a qualitative approach, targeting a small number of participants in real shopping scenarios. More importantly, the findings of the first study significantly contributed to establishing the conceptual framework, as key constructs were derived from interpreting the interviewees' dialogues. Second, in order to answer the third and fourth research questions examining the correlational relationships, a self-administrated survey was accomplished. Convenience sampling technique was employed to generate an adequate response rate, and the researcher achieved a satisfying sample size as well as significant results in the second study.

In addition, the researcher further emphasises the smartphone as an inseparable assistant during shopping journeys when consumers visit brick-and-mortar retail stores. Furthermore, contemporary consumers acknowledged their strong dependency on smartphones for help with communication, connection, product information, payment, shopping, entertainment, mobile socialising and other non-shopping related activities during their shopping journeys. Therefore, Figure 7-1 is dedicated to presenting the contemporary shopping activities associated with smartphone uses in a retail store, based on the qualitative findings of the thesis.

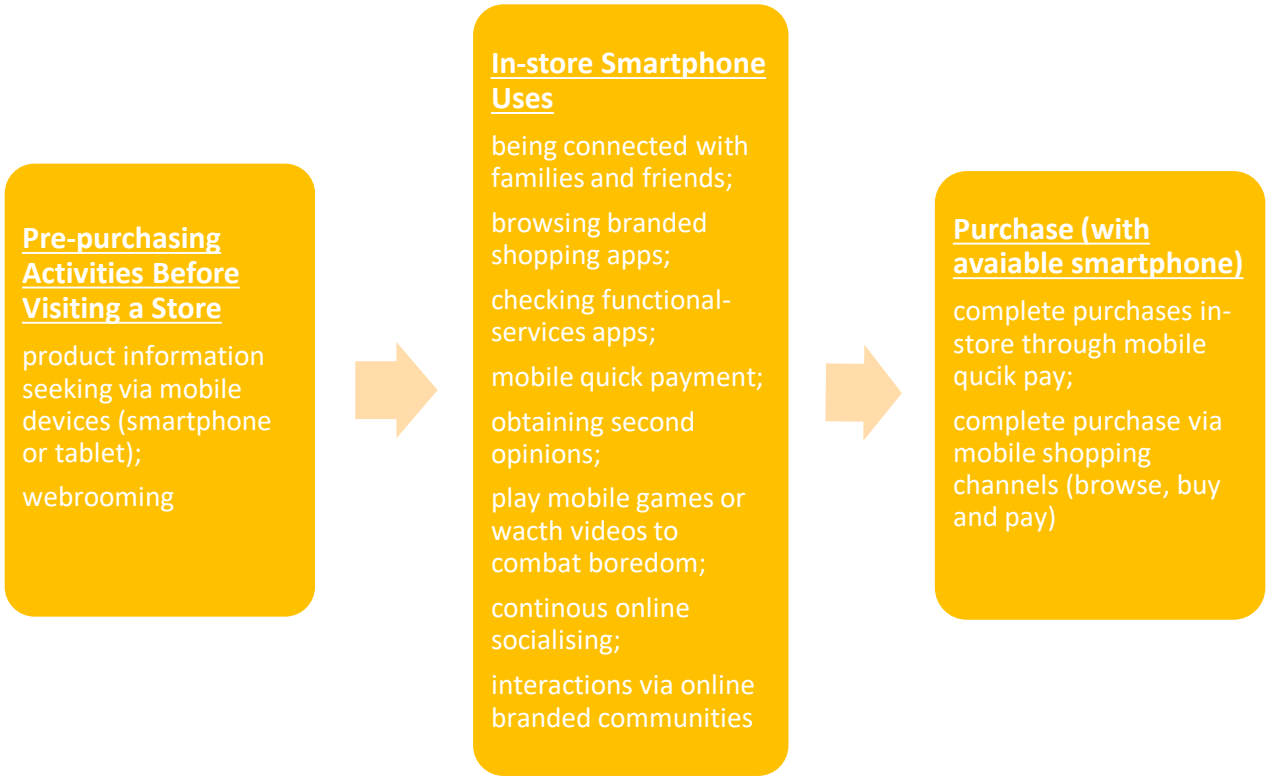

Figure 7-1 Emerging Shopping Procedures with a Smartphone

Source from: the researcher's original summary notes.

The figure consists of three phases involved with the use of smartphones alongside a shopping journey. In the first phase, the researcher explored the smartphone uses before and during shopping journeys in physical retail stores. Moreover, product information searching and 'webrooming' activities were mostly applied by smartphone users (Flavián *et al.,* 2016), as they constantly checked their phones to be updated on new arrivals and in-store stock information. Once consumers had obtained adequate information prior to visiting a physical store, this led to a specific and efficient shopping plan.

The second phase comprehensively captured smartphone uses during shopping journeys through open-ended interviews with participants. When consumers visit brick-and-mortar retail stores, they frequently depend on their smartphones, using them as a tool to resolve shopping confusion and contact the external world, rather than paying attention to consulting sales assistants (Kucuk and Krishnamurthy, 2007). As a result, a variety of smartphone uses realise consumers' utilitarian, hedonic and social gratification goals during shopping journeys. Moreover, when

consumers are exposed to complicated and busy shopping centres, their distress level might accelerate due to the choice complexity and distractions from other complementary services (Homburg *et al.,* 2017). Therefore, consumers may need to alleviate their state anxiety by enjoying the smartphone's assistance.

In terms of the purchasing phase, in-store consumers choose mobile quick payment to speed up the shopping process by simply employing the contactless service or Apple Pay. In addition to this payment method, some consumers may decide to complete their transactions later via a retailer's shopping app when they fail to make decisions in-store. These targets visit physical stores to experience products in person and to gain assurance; they then compare online prices and make subsequent decisions via mobile shopping channels (Harris *et al.,* 2018). Hence, the qualitative findings are in line with a recent study illustrating that consumers are heavily dependent on their smartphones, and would feel anxious and insecure in the absence of a smartphone (Kneidinger-Müller, 2019).

After revealing the specific smartphone uses and gratifications, the second study was developed to examine the statistical associations between the constructs. While smartphones' utilitarian and hedonic gratifications can reduce the consumer's state anxiety, social fulfilments do not have a significant effect on status anxiety. Regarding the social gratification perspective, continuous exposure to mobile social networks could somehow distract individuals from concentrating on shopping-related tasks in-store (Sciandra *et al.,* 2019). Additionally, overwhelming engagement with online brand communities may also impede consumers from making prompt purchasing decisions in physical retail stores. Thus, smartphones' social gratifications are not considered as helpful vehicles to alleviate status anxiety during shopping journeys in busy shopping centres.

In addition, the second study also confirms the mediation effect of consumer's state anxiety on the relationships between smartphone's U&G and in-store purchase intention. Furthermore, purchase intention can be increased when consumers embrace a lower level of anxiety because of smartphone's gratifications being achieved. In other words, in-store consumers become more confident and

willing to purchase apparel products if their anxiety is reduced owing to utilitarian and hedonic smartphone use.

After resolving the research questions and determining hypotheses' decisions, the thesis simultaneously offers theoretical contributions considering the following three perspectives, detailed explanation following in the next section:

1. Specifying and extending smartphone's uses and gratifications given a different research context – under the umbrella of uses and gratifications (U&G) theory
2. Disclosing the significant mediating role of consumer's state anxiety in understanding smartphone-assisted shopping journeys – in the research domain of consumer anxiety
3. Confirming the positive aspects of smartphone adoption to encourage consumer's purchase intention.

7.3 Theoretical Contribution

The conceptual framework of the thesis delineates the core constructs and literature streams known as smartphone's uses and gratifications, consumer's state anxiety and in-store purchase intention. The researcher has reviewed extant publications in the areas of technology adoption theories, consumer behaviour and psychology studies in order to highlight smartphone dependency in contemporary marketing practices. Simultaneously, these findings contribute to enriching the emerging marketing and information systems literature.

7.3.1 Theoretical Contributions to Smartphone's U&G

Recalling the existing literature with respect to U&G, the current thesis extends more specific and diversified smartphone uses and gratifications. The theory explains that goal-oriented users choose a technology or a type of media to achieve corresponding gratifications. Thus, adopting a smartphone also provides in-store consumers with nine forms of assistance, which can be further categorised as utilitarian, hedonic and social dimensions.

First, the utilitarian benefits of employing a mobile phone have been addressed dramatically (June and Lee, 2007; Joo and Sang, 2013), where functional services are thought to be the fundamental drivers for smartphone users. Yet, such studies generally categorise the utilitarian usages and motivational triggers without specifying the exact smartphone uses. Thus, the findings of this thesis identified the empirical smartphone's uses related to achieving utilitarian gratifications during a shopping journey in brick-and-mortar retail stores, namely: being connected, product information seeking via branded mobile apps, multi-tasking functional services, mobile quick payment and obtaining second opinions. Smartphones are recognised as a bridge between consumers and information technology, by empowering shoppers to communicate and exchange information immediately at the touch of a finger, rather than waiting to be served by sales assistants (Yallow, 2013).

Second, hedonic gratifications have been disclosed by extant marketing scholars with a particular focus on the enjoyment and entertainment that smartphones can bring (Jun and Lee, 2007; Lewis *et al.,* 2014; Gogan *et al.,* 2018). These scholars additionally highlight that the use of mobile apps (via smartphones) could create entertaining elements and increase user's relaxation. On the one hand, previous studies emphasised hedonic fulfilments as consumer's emotional responses toward shopping environments (i.e., store interface design, colour and services) (Kim *et al.,* 2015a). Moreover, they point out that hedonic-centric consumers are mainly window shoppers, regardless of completing purchases. On the other hand, this thesis argues the hedonic gratifications derived from using a smartphone, so-called relaxed shopping pace and passing the time. In-store consumers acknowledge the relaxation of smartphone's assistance because the media enables shoppers to enjoy mobile gaming and listen to music, simultaneously combating boredom (Darke and Dahl, 2003) during the shopping process. Previous research defined hedonic gratification broadly as leisure, entertainment and relaxation derived from mobile app usages, whereas the current thesis further extends the gratifications as relaxed shopping pace and passing the time to assist individual shopping journeys.

Moreover, it means that consumers can decide their own shopping routes, either purchasing or pausing their trips.

Third, social gratifications have been demonstrated by extant scholars concentrating on the socialisation motivation of adopting smartphones (Lee *et al.,* 2010; Lin *et al.,* 2017; Gan and Li, 2018). Moreover, mobile social apps (i.e., Facebook, Instagram, Snapchat and WeChat) enable consumers to be updated on social networking platforms (Leiner *et al.,* 2018). Apart from the socialisation purpose, the current thesis voices another form of social gratification, as consumers seek social approval and express themselves via online brand communities (Dolan *et al.,* 2016; Lim and Kumer, 2019) through their smartphones. Extant studies demonstrate that consumers engage with others via online brand communities for information purposes based on the social-driven discussion forum. With the assistance of smartphones, in-store consumers can immediately have access to online discussions regarding a brand's posts or product announcements, simultaneously communicating with like-minded anonymous peers. In this way, smartphones additionally enrich social gratifications by improving consumers' socialising diversions with both their acquaintances and online anonymous groups.

7.3.2 Theoretical Contributions to Consumer's State Anxiety

The surprising finding of the first study revealed that in-store consumers used smartphones continuously to balance their psychological distress when confronted with too much product choice and other distractions in a busy shopping centre. This distress was further recognised as consumer's state anxiety that has been raised to explore the consumer's emotional response towards an external stimulus (Arkin and Ruck, 2007). Besides, psychology schools illustrate the state anxiety where person is unsure about the situation and fears unexpected outcomes (Chiou and Wan, 2006).

When the term is applied in marketing domains, marketing researchers particularly focus on technology-adoption anxiety, where consumers feel apprehensive towards shopping via the Internet or e-commerce channels for the first time (Nagar, 2016;

Yao and Liao, 2011; Celik, 2016). These marketing scholars address consumer's status anxiety as an antecedent factor when employing a new type of technology for shopping-related activities. While the current thesis also investigates consumer's state anxiety, it differs in the contextual scenario. Moreover, the researcher posits that consumers feel anxious when confronted with choice overload and ongoing distractions in busy shopping environments (Diehl and Poynor, 2007). Assisted by their smartphones, in-store consumers can browse and shop at the same time, and their state anxiety may be alleviated through a variety of gratifications.

The thesis understands consumer anxiety from the cognitive angle, and a theoretical contribution lies in that consumer's state anxiety plays a mediation effect in using smartphones and affecting purchase intention. The findings suggest that smartphone's utilitarian and hedonic gratifications could reduce consumer's status anxiety when visiting brick-and-mortar retail stores. Smartphone assistance provides in-store consumers with increased confidence, assurance, comfort, relaxation and enjoyment, while simultaneously encouraging purchase intention.

7.3.3 Theoretical Contributions to In-store Purchase Intention

Consumer purchase intention has long been a subject of debate in which marketing scholars attempt to refer to the literature and practices. The current thesis explores consumer shopping behaviours related to smartphone uses in offline settings; thus in-store purchase intention is valued as a complementary contribution. On the one hand, considering the emerging purchasing channels, marketing academics still highlight the importance and necessity that physical shopping channels can provide to consumers (Mehra *et al.,* 2017), and consumer's purchase intention is subsequently affected when employing smartphones during shopping (Paul *et al.,* 2012; Harris *et al.,* 2018). On the other hand, regarding the consumer's state anxiety, existing scholars recommend that consumer anxiety significantly affects individual decision-making (Bujisic *et al.,* 2017) and purchase intention (Kazancoglu and Aydin, 2018; Celik, 2016).

Given the two streams of marketing insights, the findings of the thesis contribute to understanding purchase intention with an integrated approach. Previous studies disclose a straightforward impact between smartphone adoption and purchase intention in a particular shopping channel (Chen *et al.,* 2010; Martins *et al.,* 2019). This thesis distinctively delineates that in-store purchase intention can be encouraged when consumers feel less anxious due to smartphone access during shopping journeys. Moreover, it specifies that consumers will be more likely to complete purchases in-store if their state anxiety is reduced by employing utilitarian and hedonic smartphone uses. Despite Sciandra *et al.'s* (2019) suggestion that smartphone overuse distracts consumers' planned shopping tasks, this thesis justifies and advocates that consumers should be encouraged to use their smartphones during shopping journeys.

7.4 Managerial Implications

In addition to the theoretical contributions as discussed above, the current thesis also delivers managerial implications to marketing practitioners. The managerial suggestions are recommended to three stakeholders, including offline retailers, shopping centres and omni-channel retailers, respectively.

7.4.1 Implications for Traditional Offline Retailers

On the one hand, with the rapid development of omni-channel shopping alternatives, consumers' methods of shopping have changed largely alongside the technology advances. Traditional shopping channels (e.g. high street retailers) have experienced serious threats from online and mobile competition, and existing consumers are seen as 'showroomers', who browse in physical stores, but complete their transactions through digital channels (Harris *et al.,* 2018). Yet, consumers still value the physical channel and visit brick-and-mortar retail stores to experience the products in person. On the other hand, in-store consumers are observed concentrating on their smartphones from time to time when strolling around shops. Heavy smartphone dependency can also impede consumers from buying in-store. Thus, it harms traditional offline retailers and leads to reduced sales.

In order to resolve the challenge, those traditional retailers who only operate offline storefronts should be encouraged to extend their business through mobile media. Extending the store presence enables consumers to be accessed with product and information offers immediately through their preferred channel such as smartphones. This approach will generate more potential target audiences and benefit additional sales.

At the same time, offline retailers should consider introducing technology-assisted experiential events, such as Sainsbury's Smartshop service and Amazon Go's automated checkout. Advanced technology is able to cope with demanding consumers' requests by offering innovation, productivity and accuracy (Smith and Nichols, 2015). However, one priority is to train the store staff with updated technology, requiring trained staff to encourage consumers to try the new forms of service. At present, it is not about providing the best service in-store but supplying the ultimate customer experience in offline storefronts. Especially for hedonic-oriented consumers who pursue relaxation and enjoyment, they would spend longer experiencing technology-driven activities, and positive moods will be stimulated. Therefore, traditional offline retailers should prioritise enhancing the customer experience by extending mobile-based purchasing channels and enriching technology-based experiential activities in-store.

7.4.2 Implications for Shopping Centres

Shopping centres have increasingly been developed as leisure places which consumers visit for shopping, dining, entertainment and relaxation purposes. They not only offer a variety of product choices, but also introduce live marketing events to attract visitors' interests and enhance in-store consumer engagement. Not surprisingly, consumers visit shopping centres with their smartphones available and use them frequently during a shopping journey.

However, some shopping centres (especially in the United Kingdom) have tried to restrict mobile phone reception to encourage consumers to focus on browsing and buying products, rather than actively engaging with their smartphones. Shopping

centres may try to block the Internet as an approach to enhancing sales. Yet, they neglect the downhill nature of such a policy, as consumers are not satisfied without Internet access throughout their shopping journeys, and may choose to leave stores without making any purchases. Thus, Internet-restricted shopping centres may face the risk of losing consumers and subsequently undermine the relationship between retailers and consumers.

Change is inevitable to meet consumers' rising demands. It is highly recommended that shopping centres should reconsider both retailers' and consumers' benefits by improving free Wi-Fi services, 4G and 5G access, and other technology-assisted services in-store. Based on the ultimate Internet access, shopping centres should further promote their image on social media platforms like individual retailers, in order to maximise consumers' engagement. Current shopping centres have not invested much on branding the malls, which neglects the downside of enhancing consumers' satisfaction toward shopping experiences in the proximity spaces. Since consumers already check mobile social media from time to time (Gan and Li, 2018), they should be encouraged to comment on what they like and what they do not like about the products or infrastructures presented in shopping centres. If shopping centres listen and respond by having a digital presence and maintaining instant communication with smartphone users, this will win them a long-term relationship with prospective consumers due to increased communication performance.

7.4.3 Implications for Omni-channel Retailers

Derived from the empirical findings, this thesis has extraordinary outlined smartphone's penetration and its positive impact during individual shopping journeys. Consumers continuously use their phones to facilitate a satisfying shopping experience and achieve prospected gratifications. Therefore, omni-channel retailers should keep on investigating cross-channel consumers' needs and further amend their marketing tools to accommodate consumers' demands. Omni-channel strategies embrace new capabilities, new processes and new business models that reflect what, how and where consumers want to make purchases. Furthermore, consumers pursue more personalisation balanced with privacy when

their purchasing data is tracked. Thus, omni-channel retail should give consumers a 360-degree shopping experience.

First, some omni-channel retailers already diversify their in-store services by offering virtual reality experiences so that in-store consumers can enjoy the in-store engagement, and their perceived hedonic gratifications are achieved owing to innovation adoption. Besides, the innovation of a virtual store is also suggested so that consumers can benefit from a vivid shopping journey through online or mobile platforms. For example, the online apparel retailer, ASOS has launched a virtual shopping experience on their mobile app. It enables consumers to browse and try out the real items through virtual catwalks on their smartphones at any time, without additional virtual reality products support. Such strategy increases buyers' confidence and non-buyers' interest so that more purchases are inspired.

Second, omni-channel retailers should learn from Alibaba's process of introducing integrated purchasing channels in offline storefronts. They pioneered the new grocery shopping tool known as 'Freshippo' that allows consumers to scan items in-store, check product details and view associated information such as recipes. Customers can do self-checkout and pay digitally via the app or pay with WeChat. 'Freshippo' has won popularity due to its competency in providing fresh food and a productive shopping pace so that consumers can enjoy an ultimate in-store experience by integrating with the mobile channel. By making excellent use of mobile apps, omni-channel retailers are capable of bringing together online and offline sales in a smart, logical and powerful manner. Consequently, consumers enjoy a great purchasing experience and retailers generate better sales in return.

7.5 Limitations and Future Research Directions

Although the research questions and objectives have been answered and resolved by implementing the sequential exploratory approach, the findings suggest a set of future research avenues that may convey more insightful implications. One possible issue may question those consumers who do not use smartphones, as they were not valued in the data collection. The thesis predominantly interviewed consumers

who were smartphone dependent and constantly used smartphones during shopping journeys. Non-smartphone users may get more distracted or anxious after acquiring additional information via their phones. The dilemma indeed posits a potential research avenue and encourages the researcher to further compare smartphone users and non-users during shopping journeys in retail marketplaces. Furthermore, experimental design is suggested to compare two groups with different treatments toward smartphone-assisted shopping journeys. By comparing group variances and examining causal relationships, this will provide more comprehensive insights, given the different research contexts.

Another doubt may be raised about the credibility of evaluating the consumer's state anxiety. Consumers from the first study indicated that they felt more confident, comfortable, and were less worried due to smartphone's assistance when visiting busy shopping centres. Thus, the researcher pre-determined a scenario in the second study where in-store consumers generally felt anxious because of choice overload and external distractions, and where using a smartphone was examined to reduce state anxiety and subsequently increase purchase intention. However, this scenario may not be applicable to each customer who uses a smartphone alongside the shopping process. Besides, it is vague to determine if consumers embrace higher or lower levels of state anxiety before collaborating with the study, due to individual diversities. This suggests a valuable insight that future research may consider experimental designs by segmenting several groups with different levels of anxiety and exploring behavioural variances accordingly.

Apart from developing experimental designs, the thesis also embraces mild limitations in that it could contribute differently regarding target selections, industry selection and research context. These attributes could impact data collection procedure and the development of a research framework. Details are listed as follows.

7.5.1 Target Audience Selection

For both studies in the thesis, the researcher specifically identified in-store consumers who had smartphones and were spotted purchasing items. As explained in the Methodology chapter, the researcher selected potential respondents based on purposive and convenience sampling techniques on the spot, and the majority of participants confirmed their positive attitudes in using smartphones when visiting brick-and-mortar stores. Yet, other consumers who might have been performing multichannel shopping activities were disregarded, which may affect the representativeness of the research.

Future research might look at more diversified consumer segments beyond in-store groups, as other consumers' outreach to physical shopping settings could also contribute to unique behavioural variances. Moreover, retailers would be able to extend different types of purchasing patterns based on smartphone's availability and absence.

7.5.2 Retailing Industry Selection

The first study of the thesis focused on collecting a broad range of smartphone uses in general retailing segments, including supermarkets, department stores, warehouse stores and shopping centres. The second study took a particular look at the apparel retail industry to discover whether consumers should use smartphones during shopping journeys when purchasing fashion apparels. However, the results might vary across different retailing segments.

For example, male and female consumers may hold distinct opinions when buying fashion apparel or electronic products; they also perceive differently when purchasing utilitarian or hedonic products. Besides, service-based retails such as high street bank retailers embrace different systems that lead to distinctive behavioural differences. Therefore, a research guide in the future might be that broader retail industries should be considered and compared in depth through designing comparative research.

7.5.3 Research Context Identification

The present thesis investigates in-store smartphone uses and consumers' behavioural diversity in the apparel retailing segment in the United Kingdom. Moreover, British residents and consumers based in the U.K. have been interviewed significantly, despite cultural background variances. Consequently, the findings are limited to presenting shopping preferences and providing marketing implications to western societies.

Thus, a further research direction regarding the research context is suggested. Given the diversified consumer culture and demographics, comparative research should be carried out to compare the similarities and differences between nations, aiming to deliver an overview of different insights in terms of smartphone uses and consumer's state anxiety. Additionally, this may disclose unique cross-cultural purchasing patterns.

Appendix A Interview Guide

Interviewing Questionnaire

I would like to talk to you about your experiences of shopping today:

1. Can you tell me about what you have been shopping for today (including any transactions through your mobile phone)?
2. And whilst you were shopping, did you use your mobile phone?
3. Can you tell me more about what you used your phone for? (Prompt for any websites or apps used)
4. What do you think you could benefit from that use? (E.g. any useful tools or information accessed). And how did you feel about using your phone in store? (Please explain your evaluation of the use).
5. What other functions did you use your smartphone? Did you focus on browsing websites or installed mobile applications more? Please give examples with respect to different circumstances.
6. Did you speak to anyone (e.g. relatives, friends, or anonymous groups) via smartphone (e.g. social media networks or relevant online communities) during your shopping journey? If yes, could you please provide details?
7. How do you think about online reviews? Have you ever referred to the reviews or left any comments of your consumption experience to the others before?
8. Did you speak to a store assistant today?
9. Previously when shopping, have you used your phone? Can you tell me more about it please?
10. What mobile phone do you have? How many shopping apps have you installed and used? When and how often do you use them? Can you please give a specific example?

Please indicate: Age ___ Gender ___ Occupation _____

City _____

Appendix B Participant Information Sheet of Study 1

Participant Information Sheet

Study Title: Understanding how smartphone's usage shapes in-store consumer experience: An empirical study of contemporary mobile retailing in the U.K. fashion apparel markets

Researcher: JING LYU **Ethics number**: 25822

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

I am a postgraduate research student from Southampton Business School, and I am carrying out the interview to collect data for my PhD research project. Participants will be asked a series of questions mainly addressed with consumer purchasing behaviour without any privacy invasion or harm. The University of Southampton remains supportive to the research campaign and would be corresponded for further enquiries if needed.

Why have I been chosen?

As the research intends to explore consumer's feeling and understanding of using their smartphones during their store visits of a specific shopping journey; and participants should be from 18 to 60 years old segments. I assume you meet the criteria and hope you could participate the study to provide insightful opinions.

What will happen to me if I take part?

Targeted respondents should answer a few questions based upon the research objectives. You are free to contribute your opinions with respect to listed questions.

The interview takes less than 10 minutes to finish and it will only be conducted once without further follow ups.

Are there any benefits in my taking part?

There is not any significant explicit benefit to the individual, but your collaboration will potentially contribute to current knowledge.

Are there any risks involved?

There will not be any harm or risks participating the research.

Will my participation be confidential?

All of information you have provided will be used as research purposes only and the data will be kept on a password protected computer. However, your details (e.g. age and gender) may be applied for research coding procedure if permitted.

What happens if I change my mind?

You may feel free to withdraw from the study at any time if you sense discomfort.

What happens if something goes wrong?

It is less likely to raise concern or complaint during the interview. If you feel like to discuss any potential issues, please contact Dr Jennifer Sarha (risethic@soton.ac.uk) or Head of Research Governance (02380 595058, rgoinfo@soton.ac.uk).

Where can I get more information?

Should you need further information related to the study and research project, please contact the supervision team as following:

Dr. Mike Molesworth (02380 594481, M.R.Molesworth@soton.ac.uk) OR

Dr. Ioannis Krasonikolakis (02380 597443, I.Krasonikolakis@soton.ac.uk)

Appendix C Survey Questionnaire

Questionnaire

Based on your shopping experiences in physical retailing stores, please indicate your answers to the following questions regarding the smartphone uses during your shopping journey.

Q1. Have you ever used your smartphone (for any reasons) during your shopping journey in a physical retailing store? Yes/No

Q2. If yes, please tick (√) the specific smartphone uses that may take place when you visit an apparel retailer store:

1. Basic contact/communication with people (i.e., calling or texting) [ ]
2. Acquiring second opinions before making purchase decisions [ ]
3. Entertainment functions (i.e., gaming, music, videos) [ ]
4. Functional uses (i.e., online banking, Google Maps, e-mails checking) [ ]
5. Product information searching (i.e., price, performance, and other information needs) [ ]
6. Mobile quick payment [ ]
7. Mobil shopping activities (i.e., mobile shopping list, buying from mobile shopping apps) [ ]
8. Social media networking [ ]

Q3. The following items relate to the distinctive motivations that drive your smartphone uses during shopping journey. ***Considering you are visiting a physical apparel retail shop, please indicate the extent to which you agree by circling the appropriate answer.***

	Statement	**1-Strongly Disagree**	**2-Disagree**	**3-Neither Disagree or Agree**	**4-Agree**	**5-Strongly Agree**
1	Using my smartphone enables me to maintain a daily, personal connection with friends and family during shopping.	1	2	3	4	5
2	Using my smartphone enables me to connect with friends in my real life during shopping.	1	2	3	4	5
3	Using my smartphone enables me to keep in touch with friends in my real life during shopping.	1	2	3	4	5
4	I like my smartphone because I can communicate with others	1	2	3	4	5

	immediately during shopping.					
5	My smartphone is the easiest, most cost-effective way to communicate during shopping.	1	2	3	4	5
6	I often consult other people to help choose the best available alternative from a product class.	1	2	3	4	5
7	If I have little experience with a product, I often ask my friends about the product.	1	2	3	4	5
8	I frequently gather information from friends or family about a product before I buy.	1	2	3	4	5
9	I think branded mobile apps help me to obtain solutions to specific product-usage related problems.	1	2	3	4	5
10	I think branded mobile apps provide information that helps me make important decisions.	1	2	3	4	5
11	I think branded mobile apps enhance my knowledge about the product and its usage.	1	2	3	4	5
12	I think my smartphone has the functionality I need during shopping.	1	2	3	4	5
13	I think my smartphone has the ability to do what I want it to do during shopping.	1	2	3	4	5
14	Overall my smartphone provides the capabilities I need during shopping.	1	2	3	4	5
15	I think that using mobile quick payment is useful to carry out my tasks during shopping.	1	2	3	4	5
16	I think that using mobile quick payment would enable me to conduct tasks more quickly during shopping.	1	2	3	4	5
17	I think that using mobile quick payment would increase my	1	2	3	4	5

	productivity during shopping.					
18	I think that using mobile quick payment would improve my performance during shopping.	1	2	3	4	5
19	I use my smartphone to spend some enjoyable and relaxing time during shopping.	1	2	3	4	5
20	I use my smartphone to derive fun and pleasure during shopping.	1	2	3	4	5
21	I use my smartphone to entertain and stimulate my mood during shopping.	1	2	3	4	5
22	I use my smartphone to derive enjoyment from problem-solving, idea generation and so on during shopping.	1	2	3	4	5
23	I use my smartphone because it passes the time when I am bored during shopping.	1	2	3	4	5
24	I use my smartphone because it is the thing to do to occupy my time during shopping.	1	2	3	4	5
25	I use my smartphone when I have nothing better to do during shopping.	1	2	3	4	5
26	I use my smartphone to keep in touch with friends and acquaintances even if they live far away.	1	2	3	4	5
27	I use my smartphone to express who I am.	1	2	3	4	5
28	I use my smartphone to inform others about my interests.	1	2	3	4	5
29	I use my smartphone to look at photos, videos or status updates of my friends.	1	2	3	4	5
30	I use my smartphone to stay up-to-date.	1	2	3	4	5
31	I use my smartphone to learn about	1	2	3	4	5

	information at first hand.					
32	I use my smartphone to encounter arguments to different reviews.	1	2	3	4	5
33	I use my smartphone to share information that could be relevant for others.	1	2	3	4	5
34	I use my smartphone to give good advice based on my experience.	1	2	3	4	5
35	I feel apprehensive about using smartphone technology for purchase.	1	2	3	4	5
36	I hesitate to use smartphone technology for fear of making mistakes I cannot correct.	1	2	3	4	5
37	It scares me to think that I could lose a lot of information on my smartphone by hitting the wrong key.	1	2	3	4	5

Q4. After using your smartphone during shopping, would you feel more comfortable or confident to buy a product in the store? Yes/No

Q5. To what extent would you buy a product in-store after using your smartphone during your shopping journey?

Statement	**1-Strongly Disagree**	**2-Disagree**	**3-Neither Disagree or Agree**	**4-Agree**	**5-Strongly Agree**
I would definitely buy a product after using my smartphone during shopping journey	1	2	3	4	5

Q6. Gender: Female ( ) Male ( )

Q7. Age: 20 and below ( ) 21-30 ( ) 31-40 ( ) 41-50 ( ) 51 and above ( )

Q8. Occupation:

Student ( ) Employed ( ) IT-related jobs ( ) Non-IT related jobs ( ) Unemployed ( )

Retired ( ) Others, please specify: _____

Q9. Education Level:

Secondary school or below ( ) Certificate/Diploma ( ) Bachelor ( ) Master ( ) Doctoral or higher ( )

Q10. Income:

£1,000/month and below ( ) £1,001-£2,000/month ( ) £2,001-£3,000/month ( ) £3,001/month and above ( )

Q11. What type of apparel products did you buy since the last time you visited physical retailing stores?

Clothes ( ) Shoes ( ) Accessories ( ) Nothing ( ) Other, please specify: _____

Q12. How many branded mobile shopping apps (for apparel retailers) have you installed and used on your smartphone?

2 or less ( ) 3-5 ( ) 5 and above ( )

Q13. How often do you browse branded mobile shopping apps?

Daily ( ) 2/3 times in a week ( ) 2/3 times in month ( ) Seldom ( )

Q14. How long do you spend browsing branded mobile shopping apps each time you use them?

Less than 30 minutes ( ) 31 minutes – 1 hour ( ) More than 1 less than 2 hours ( )

2 hours and above ( )

Thank you very much for your collaboration and your insights indeed help the marketing research.

Appendix D Consent Form of Study 2

CONSENT FORM

Study title: Exploring the gratifications affecting consumer shopping anxiety and purchase intention to use smartphones during shopping journey – An empirical research in brick-and-mortar retailing stores in the United Kingdom

Researcher name: Jing Lyu **ERGO number**: 45791

Please initial the box(es) if you agree with the statement(s):

I have read and understood the consent information and have had the opportunity to ask questions about the study.	
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	
I understand my participation is voluntary and I may withdraw (at any time) for any reason without my participation rights being affected.	

Signature of participant……

Date……..

……..

Name of researcher (print name)……JING LYU……

Signature of researcher …… JING LYU ……

Appendix E Debriefing Form of the Survey

Debriefing

Study Title: Exploring the gratifications affecting consumer shopping anxiety and purchase intention to use smartphones during shopping journey – An empirical research in brick-and-mortar retailing stores in the United Kingdom

Researcher Name JING LYU **Ethics Number**: 45791

Thank you so much for participating in this study. Your participation was very valuable. It has been acknowledged that you are very busy and very much appreciate the time you devoted to participating in this study. There was some information about the study that could not be discussed with you prior to the study, because doing so probably would have impacted your actions and thus skewed the study results. This form explains these things to you now.

What is the research about?

Through distributing quantitative surveys, this study aims to explore the extent to which whether in-store smartphone uses would reduce consumer shopping anxiety and their purchase intention. The researcher assumes that reduced consumer shopping anxiety would increase consumer purchase intention to some extent, in the context of multi-channel shopping.

The Research does not Use of active deception or misleading participants.

We hope this clarifies the purpose of the research, and the reason why we could not tell you all of the details about the study prior to your participation. If you would like more information about the research, you may be interested in the following:

Juaneda-Ayensa, E. Mosquera, A. and Murillo, Y. S. (2016) "Omnichannel Customer Behavior: Key Drives of Technology Acceptance and Use and Their Effects on Purchase Intention", *Frontiers in Psychology*, Vol. 7, pp. 1-11.

Wong, T. Y. T. Peko, G. Sundaram, D. and Piramuthu, S. (2016) "Mobile environments and innovation co-creation process & ecosystems", *Information & Management*, Vol. 53, pp. 336-344.

If you have any questions or concerns, you may contact me:

Appendix E

JING LYU (jl1r15@soton.ac.uk)

It is very important that you do not discuss this study with anyone else until the study is complete. Our efforts will be greatly compromised if participants come into this study knowing what is about and how the ideas are being tested. Once again results of this study will not include your name or any other identifying characteristics.

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Research and Integrity Governance Manager, University of Southampton, Southampton, SO17 1BJ. Phone: 02380 595058, Email: rgoinfo@soton.ac.uk

Appendix F Anti-image Correlation in EFA Analysis

Anti-image Correlation	Con1	.918[a]	-.323	-.209	-.070	-.047	.026	-.058	.068	-.050	-.141	-.056	-.060	-.066	-.037
	Con2	-.323	.837[a]	-.524	-.058	.015	.099	-.044	-.083	.094	-.001	.125	-.013	.064	-.026
	Con3	-.209	-.524	.860[a]	-.214	.092	-.058	.070	-.055	-.057	.086	-.097	-.095	-.040	.016
	Con4	-.070	-.058	-.214	.912[a]	-.119	-.189	.052	.110	-.067	-.070	-.121	.104	-.020	.029
	Oso1	-.047	.015	.092	-.119	.879[a]	-.261	-.235	-.060	-.032	.064	.039	-.115	-.090	.160
	Oso2	.026	.099	-.058	-.189	-.261	.827[a]	-.286	-.022	.017	-.007	.006	-.023	.088	-.110
	Oso3	-.058	-.044	.070	.052	-.235	-.286	.873[a]	-.137	.018	.010	-.115	.019	.011	-.031
	Ibma1	.068	-.083	-.055	.110	-.060	-.022	-.137	.879[a]	-.463	-.060	-.063	.005	.003	-.062
	Ibma2	-.050	.094	-.057	-.067	-.032	.017	.018	-.463	.852[a]	-.392	.088	-.049	-.022	-.061
	Ibma3	-.141	-.001	.086	-.070	.064	-.007	.010	-.060	-.392	.878[a]	-.124	.047	.012	.014
	Mtf1	-.056	.125	-.097	-.121	.039	.006	-.115	-.063	.088	-.124	.884[a]	-.339	-.299	.042
	Mtf2	-.060	-.013	-.095	.104	-.115	-.023	.019	.005	-.049	.047	-.339	.880[a]	-.335	-.037
	Mtf3	-.066	.064	-.040	-.020	-.090	.088	.011	.003	-.022	.012	-.299	-.335	.895[a]	-.169
	Mqp1	-.037	-.026	.016	.029	.160	-.110	-.031	-.062	-.061	.014	.042	-.037	-.169	.879[a]
	Mqp2	-.019	-.044	-.001	-.026	-.097	.026	-.002	-.013	.086	-.123	-.056	-.042	.090	-.474
	Mqp3	.017	.045	.020	-.059	-.001	-.005	.025	-.005	-.089	.057	.058	-.043	.041	-.171
	Mqp4	.046	-.017	-.056	.025	-.013	-.007	.004	-.084	-.006	-.075	-.038	.084	-.062	.016
	Rsp1	-.059	.028	.005	-.034	-.099	.085	-.006	-.036	-.016	.113	-.043	.089	.008	-.044
	Rsp2	-.006	-.058	-.011	.008	.054	.056	-.049	.053	.006	-.041	-.066	.051	-.024	.034
	Rsp3	.031	.076	.037	-.044	-.047	-.009	.052	-.054	-.051	-.042	.075	-.142	-.013	-.014
	Pt1	.077	-.100	.035	-.005	.053	-.119	.036	.052	-.014	-.064	-.054	.043	-.078	.013
	Pt2	-.048	.014	-.051	.040	-.059	.033	.000	-.066	.077	.064	.035	-.108	.037	-.072
	Pt3	-.004	-.009	-.033	-.048	-.068	.047	-.043	.075	-.032	-.022	-.080	.008	.094	.052
	Os2	.129	-.117	.106	-.075	-.018	-.058	-.043	.070	-.004	-.032	-.036	.057	-.009	-.123
	Os3	-.110	.044	.022	.089	.110	-.052	.002	-.110	-.014	.033	-.017	-.024	.007	.089
	Os4	.003	-.021	-.038	-.092	-.106	.103	.005	-.057	.072	.000	.153	-.061	-.049	.055
	Os5	-.079	.019	.031	-.049	.050	-.065	-.018	.009	-.009	.084	-.143	.090	-.014	-.056

Appendix F

-.005	-.007	.085	.056	-.009	-.119	.033	.047	-.058	-.052	.103	-.065	-.040	.105	-.052	-.017	.047	.119
.025	.004	-.006	-.049	.052	.036	.000	-.043	-.043	.002	.005	-.018	.109	-.142	.015	-.085	.018	.127
-.005	-.084	-.036	.053	-.054	.052	-.066	.075	.070	-.110	-.057	.009	.015	.067	-.038	.046	.119	-.132
-.089	-.006	-.016	.006	-.051	-.014	.077	-.032	-.004	-.014	.072	-.009	.009	.019	-.057	.072	-.029	.116
.057	-.075	.113	-.041	-.042	-.064	.064	-.022	-.032	.033	.000	.084	-.116	-.003	.025	.073	.038	-.009
.058	-.038	-.043	-.066	.075	-.054	.035	-.080	-.036	-.017	.153	-.143	-.015	.035	.019	-.047	-.034	-.014
-.043	.084	.089	.051	-.142	.043	-.108	.008	.057	-.024	-.061	.090	-.040	-.115	.068	-.039	-.095	.060
.041	-.062	.008	-.024	-.013	-.078	.037	.094	-.009	.007	-.049	-.014	-.031	.024	.010	-.054	.015	.014
-.171	.016	-.044	.034	-.014	.013	-.072	.052	-.123	.089	.055	-.056	-.083	-.001	.040	-.025	-.027	-.045
-.358	-.080	-.039	.060	.023	-.018	.043	-.032	.112	-.066	-.029	.019	.061	-.007	-.144	-.082	-.072	-.003
.861[a]	-.452	.051	-.036	-.015	.008	-.007	.023	.015	.003	-.133	.110	.025	-.007	-.003	.081	.055	.026
-.452	.899[a]	-.123	-.010	-.002	-.001	.016	.043	-.149	-.008	.129	-.090	-.007	-.027	-.006	.019	-.034	-.005
.051	-.123	.878[a]	-.465	-.086	.033	-.135	-.075	.139	-.111	-.042	.106	-.135	-.005	.051	.067	-.029	.003
-.036	-.010	-.465	.841[a]	-.492	-.005	-.030	.092	-.117	.060	-.082	.040	.057	-.026	-.110	.034	-.034	.015
-.015	-.002	-.086	-.492	.885[a]	-.139	-.020	-.094	-.008	-.030	.089	-.093	.026	-.012	.030	-.062	.117	-.075
.008	-.001	.033	-.005	-.139	.876[a]	-.505	-.296	.047	.062	-.047	-.035	-.028	.046	-.068	.068	-.032	.000
-.007	.016	-.135	-.030	-.020	-.505	.885[a]	-.229	-.098	-.045	.103	-.022	.068	-.068	.029	.010	-.014	.058
.023	.043	-.075	.092	-.094	-.296	-.229	.905[a]	-.086	.031	-.177	.059	-.052	.079	-.064	-.032	.066	-.049
.015	-.149	.139	-.117	-.008	.047	-.098	-.086	.808[a]	-.546	.009	.105	-.091	.002	-.071	-.022	-.041	.113
.003	-.008	-.111	.060	-.030	.062	-.045	.031	-.546	.831[a]	-.254	-.073	.168	-.136	-.088	.064	-.025	.022
-.133	.129	-.042	-.082	.089	-.047	.103	-.177	.009	-.254	.824[a]	-.506	-.101	.141	-.025	-.096	.065	-.031
.110	-.090	.106	.040	-.093	-.035	-.022	.059	.105	-.073	-.506	.835[a]	-.349	-.107	-.097	-.014	-.101	.109
.025	-.007	-.135	.057	.026	-.028	.068	-.052	-.091	.168	-.101	-.349	.875[a]	-.304	-.070	.013	-.011	.001
-.007	-.027	-.005	-.026	-.012	.046	-.068	.079	.002	-.136	.141	-.107	-.304	.882[a]	-.248	.087	-.025	.017
-.003	-.006	.051	-.110	.030	-.068	.029	-.064	-.071	-.088	-.025	-.097	-.070	-.248	.938[a]	.097	.005	-.063
.081	.019	.067	.034	-.062	.068	.010	-.032	-.022	.064	-.096	-.014	.013	.087	.097	.880[a]	-.136	-.164
.055	-.034	-.029	-.034	.117	-.032	-.014	.066	-.041	-.025	.065	-.101	-.011	-.025	.005	-.136	.659[a]	-.528
.026	-.005	.003	.015	-.075	.000	.058	-.049	.113	.022	-.031	.109	.001	.017	-.063	-.164	-.528	.732[a]

Appendix G Correlation Matrix

		Con1	Con2	Con3	Con4	Oso1	Oso2	Oso3	Ibma1	Ibma2	Ibma3	Mtf1	Mtf2	Mtf3	Mqp1	Mqp2
Correlation	Con1	1.000	.645	.649	.427	.254	.149	.223	.288	.300	.327	.400	.405	.375	.301	.303
	Con2	.645	1.000	.740	.404	.158	.096	.168	.242	.189	.203	.248	.291	.232	.244	.252
	Con3	.649	.740	1.000	.482	.180	.146	.156	.268	.249	.215	.389	.408	.349	.262	.264
	Con4	.427	.404	.482	1.000	.307	.296	.186	.167	.227	.249	.346	.255	.275	.223	.250
	Oso1	.254	.158	.180	.307	1.000	.432	.449	.279	.244	.170	.281	.329	.282	.165	.235
	Oso2	.149	.096	.146	.296	.432	1.000	.472	.238	.224	.183	.194	.176	.128	.227	.196
	Oso3	.223	.168	.156	.186	.449	.472	1.000	.318	.239	.183	.280	.236	.203	.209	.201
	Ibma1	.288	.242	.268	.167	.279	.238	.318	1.000	.661	.458	.253	.247	.236	.368	.351
	Ibma2	.300	.189	.249	.227	.244	.224	.239	.661	1.000	.607	.217	.232	.227	.344	.310
	Ibma3	.327	.203	.215	.249	.170	.183	.183	.458	.607	1.000	.282	.209	.220	.314	.334
	Mtf1	.400	.248	.389	.346	.281	.194	.280	.253	.217	.282	1.000	.637	.626	.304	.282
	Mtf2	.405	.291	.408	.255	.329	.176	.236	.247	.232	.209	.637	1.000	.642	.341	.300
	Mtf3	.375	.232	.349	.275	.282	.128	.203	.236	.227	.220	.626	.642	1.000	.356	.254
	Mqp1	.301	.244	.262	.223	.165	.227	.209	.368	.344	.314	.304	.341	.356	1.000	.713
	Mqp2	.303	.252	.264	.250	.235	.196	.201	.351	.310	.334	.282	.300	.254	.713	1.000
	Mqp3	.206	.168	.187	.208	.206	.198	.179	.384	.386	.312	.168	.208	.185	.594	.682
	Mqp4	.216	.198	.219	.198	.215	.194	.205	.405	.385	.344	.237	.191	.231	.479	.536
	Rsp1	.281	.220	.231	.221	.281	.054	.171	.251	.226	.157	.261	.210	.229	.232	.232
	Rsp2	.252	.221	.214	.209	.221	.056	.174	.224	.234	.206	.267	.220	.241	.186	.168
	Rsp3	.204	.140	.158	.215	.269	.127	.166	.270	.285	.243	.266	.293	.265	.212	.182
	Pt1	.268	.291	.278	.270	.267	.219	.181	.176	.185	.207	.322	.295	.276	.212	.197
	Pt2	.292	.294	.297	.227	.296	.182	.217	.204	.162	.140	.304	.331	.257	.229	.189
	Pt3	.270	.270	.265	.286	.290	.161	.189	.134	.148	.164	.281	.244	.186	.135	.160
	Os2	.106	.156	.077	.156	.194	.248	.255	.210	.213	.189	.171	.126	.140	.234	.179
	Os3	.234	.181	.149	.131	.183	.201	.242	.304	.249	.182	.199	.187	.174	.217	.241
	Os4	.312	.273	.264	.304	.259	.124	.160	.185	.123	.118	.219	.240	.253	.191	.228
	Os5	.323	.240	.256	.289	.234	.197	.194	.169	.141	.135	.335	.272	.306	.237	.210

Appendix G

Mqp3	Mqp4	Rsp1	Rsp2	Rsp3	Pt1	Pt2	Pt3	Os2	Os3	Os4	Os5	Iobc1	Iobc2	Iobc3	Rcsa1	Rcsa2	Rcsa3
.206	.216	.281	.252	.204	.268	.292	.270	.106	.234	.312	.323	.270	.228	.260	-.182	-.079	-.111
.168	.198	.220	.221	.140	.291	.294	.270	.156	.181	.273	.240	.218	.218	.196	-.147	-.100	-.157
.187	.219	.231	.214	.158	.278	.297	.265	.077	.149	.264	.256	.220	.215	.176	-.150	-.042	-.149
.208	.198	.221	.209	.215	.270	.227	.286	.156	.131	.304	.289	.229	.144	.162	-.065	-.038	-.084
.206	.215	.281	.221	.269	.267	.296	.290	.194	.183	.259	.234	.236	.257	.252	-.185	-.080	-.152
.198	.194	.054	.056	.127	.219	.182	.161	.248	.201	.124	.197	.153	.130	.200	-.140	-.189	-.295
.179	.205	.171	.174	.166	.181	.217	.189	.255	.242	.160	.194	.128	.255	.213	-.121	-.172	-.284
.384	.405	.251	.224	.270	.176	.204	.134	.210	.304	.185	.169	.161	.179	.282	-.268	-.190	-.160
.386	.385	.226	.234	.285	.185	.162	.148	.213	.249	.123	.141	.175	.180	.277	-.322	-.202	-.241
.312	.344	.157	.206	.243	.207	.140	.164	.189	.182	.118	.135	.221	.167	.232	-.252	-.153	-.158
.168	.237	.261	.267	.266	.322	.304	.281	.171	.199	.219	.335	.298	.241	.195	-.016	.070	-.061
.208	.191	.210	.220	.293	.295	.331	.244	.126	.187	.240	.272	.284	.287	.170	-.023	.073	-.080
.185	.231	.229	.241	.265	.276	.257	.186	.140	.174	.253	.306	.294	.227	.171	-.008	.051	-.061
.594	.479	.232	.186	.212	.212	.229	.135	.234	.217	.191	.237	.262	.236	.275	-.077	.038	-.046
.682	.536	.232	.168	.182	.197	.189	.160	.179	.241	.228	.210	.203	.232	.336	-.076	.056	-.023
1.000	.676	.241	.222	.224	.164	.175	.114	.246	.261	.196	.134	.152	.206	.293	-.206	-.082	-.129
.676	1.000	.327	.294	.271	.193	.211	.127	.338	.313	.153	.195	.208	.264	.315	-.217	-.052	-.132
.241	.327	1.000	.702	.571	.395	.466	.376	.230	.301	.274	.214	.273	.267	.284	-.215	-.047	-.085
.222	.294	.702	1.000	.708	.406	.441	.337	.315	.304	.266	.218	.224	.272	.326	-.204	-.074	-.111
.224	.271	.571	.708	1.000	.480	.471	.408	.283	.282	.236	.239	.226	.243	.282	-.160	-.115	-.099
.164	.193	.395	.406	.480	1.000	.734	.648	.259	.232	.315	.311	.287	.220	.310	-.175	-.073	-.143
.175	.211	.466	.441	.471	.734	1.000	.613	.330	.305	.258	.256	.231	.269	.286	-.189	-.084	-.177
.114	.127	.376	.337	.408	.648	.613	1.000	.280	.252	.382	.290	.273	.173	.286	-.114	-.093	-.112
.246	.338	.230	.315	.283	.259	.330	.280	1.000	.655	.279	.237	.229	.295	.361	-.181	-.118	-.261
.261	.313	.301	.304	.282	.232	.305	.252	.655	1.000	.446	.371	.232	.357	.421	-.214	-.100	-.220
.196	.153	.274	.266	.236	.315	.258	.382	.279	.446	1.000	.680	.466	.260	.359	-.041	-.034	-.101
.134	.195	.214	.218	.239	.311	.256	.290	.237	.371	.680	1.000	.618	.410	.411	-.066	.022	-.137

lobc1	.270	.218	.220	.229	.236	.153	.128	.161	.175	.221	.298	.284	.294	.262	.203	.152	.208	.273
lobc2	.228	.218	.215	.144	.257	.130	.255	.179	.180	.167	.241	.287	.227	.236	.232	.206	.264	.267
lobc3	.260	.196	.176	.162	.252	.200	.213	.282	.277	.232	.195	.170	.171	.275	.336	.293	.315	.284
Rcsa1	-.182	-.147	-.150	-.065	-.185	-.140	-.121	-.268	-.322	-.252	-.016	-.023	-.008	-.077	-.076	-.206	-.217	-.215
Rcsa2	-.079	-.100	-.042	-.038	-.080	-.189	-.172	-.190	-.202	-.153	.070	.073	.051	.038	.056	-.082	-.052	-.047
Rcsa3	-.111	-.157	-.149	-.084	-.152	-.295	-.284	-.160	-.241	-.158	-.061	-.080	-.061	-.046	-.023	-.129	-.132	-.085

.224	.226	.287	.231	.273	.229	.232	.466	.618	1.000	.500	.394	-.118	.014	-.102	lobc1	.270	.218	.220
.272	.243	.220	.269	.173	.295	.357	.260	.410	.500	1.000	.477	-.221	-.017	-.155	lobc2	.228	.218	.215
.326	.282	.310	.286	.286	.361	.421	.359	.411	.394	.477	1.000	-.252	-.057	-.123	lobc3	.260	.196	.176
-.204	-.160	-.175	-.189	-.114	-.181	-.214	-.041	-.066	-.118	-.221	-.252	1.000	.341	.364	Rcsa1	-.182	-.147	-.150
-.074	-.115	-.073	-.084	-.093	-.118	-.100	-.034	.022	.014	-.017	-.057	.341	1.000	.594	Rcsa2	-.079	-.100	-.042
-.111	-.099	-.143	-.177	-.112	-.261	-.220	-.101	-.137	-.102	-.155	-.123	.364	.594	1.000	Rcsa3	-.111	-.157	-.149

Appendix H Communalities in EFA Analysis

Communalities

	Initial	Extraction
Con1	.581	.618
Con2	.636	.730
Con3	.664	.769
Con4	.392	.361
Oso1	.416	.478
Oso2	.404	.523
Oso3	.390	.461
Ibma1	.538	.537
Ibma2	.596	.824
Ibma3	.459	.465
Mtf1	.571	.624
Mtf2	.580	.666
Mtf3	.534	.632
Mqp1	.603	.609
Mqp2	.661	.737
Mqp3	.644	.724
Mqp4	.554	.544
Rsp1	.585	.614
Rsp2	.664	.832
Rsp3	.598	.606
Pt1	.645	.779
Pt2	.642	.691
Pt3	.535	.589
Os2	.542	.532
Os3	.582	.866
Os4	.601	.509
Os5	.639	.734
Iobc1	.516	.592
Iobc2	.438	.359

Appendix H

Iobc3	.424	.413
Rcsa1	.314	.309
Rcsa2	.440	.498
Rcsa3	.481	.747

Extraction Method: Principal Axis Factoring.

Note: value in read font indicates the smallest communalities, meeting the threshold of 0.3

Appendix I Reliability Test of Measurement Variables

Reliability Tests for Variable Obtaining Second Opinion (OSO)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.711	.711	3

Inter-Item Correlation Matrix

	Oso1	Oso2	Oso3
Oso1	1.000	.432	.449
Oso2	.432	1.000	.472
Oso3	.449	.472	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Oso1	6.8510	3.777	.514	.264	.641
Oso2	6.7135	3.762	.531	.283	.620
Oso3	7.0143	3.675	.544	.297	.603

Reliability Tests for Variable Information via Branded Mobile Apps (IBMA)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.802	.803	3

Inter-Item Correlation Matrix

	Ibma1	Ibma2	Ibma3
Ibma1	1.000	.661	.458
Ibma2	.661	1.000	.607
Ibma3	.458	.607	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Ibma1	6.8252	3.277	.624	.442	.756
Ibma2	6.7536	3.031	.743	.554	.628
Ibma3	6.5186	3.452	.584	.374	.796

Appendix I

Reliability Tests for Variable Multitasking Function (MTF)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.839	.839	3

Inter-Item Correlation Matrix

	Mtf1	Mtf2	Mtf3
Mtf1	1.000	.637	.626
Mtf2	.637	1.000	.642
Mtf3	.626	.642	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Mtf1	7.5817	2.761	.697	.486	.782
Mtf2	7.5186	2.865	.710	.504	.770
Mtf3	7.5587	2.856	.700	.491	.778

Reliability Tests for Variable Mobile Quick Payment (MQP)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.806	.733	5

Inter-Item Correlation Matrix

	have used smartphone during shopping journey	Mqp1	Mqp2	Mqp3	Mqp4
have used smartphone during shopping journey	1.000	-.048	-.041	-.022	-.019
Mqp1	-.048	1.000	.713	.594	.479
Mqp2	-.041	.713	1.000	.682	.536
Mqp3	-.022	.594	.682	1.000	.676
Mqp4	-.019	.479	.536	.676	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
have used smartphone during shopping journey	14.2894	13.591	-.039	.003	.863
Mqp1	11.5645	8.258	.681	.532	.739
Mqp2	11.6074	7.768	.753	.614	.712
Mqp3	11.7593	7.758	.769	.610	.707
Mqp4	12.0287	8.160	.640	.470	.755

Appendix I

Reliability Tests for Variable Relaxing Shopping Pace (RSP)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.854	.854	3

Inter-Item Correlation Matrix

	Rsp1	Rsp2	Rsp3
Rsp1	1.000	.702	.571
Rsp2	.702	1.000	.708
Rsp3	.571	.708	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Rsp1	6.6877	4.284	.688	.504	.829
Rsp2	6.8338	3.892	.796	.633	.727
Rsp3	6.7765	4.168	.694	.512	.825

Reliability Tests for Variable Passing Time (PT)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.856	.856	3

Inter-Item Correlation Matrix

	Pt1	Pt2	Pt3
Pt1	1.000	.734	.648
Pt2	.734	1.000	.613
Pt3	.648	.613	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Pt1	6.9226	4.951	.769	.602	.760
Pt2	7.2149	4.991	.741	.571	.786
Pt3	6.8653	5.243	.677	.461	.846

Reliability Tests for Variable Online Socialising (OS)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.757	.762	4

Inter-Item Correlation Matrix

	Os2	Os3	Os4	Os5
Os2	1.000	.655	.279	.237
Os3	.655	1.000	.446	.371
Os4	.279	.446	1.000	.680
Os5	.237	.371	.680	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Os2	11.2951	6.588	.503	.429	.735
Os3	11.0401	5.993	.657	.507	.639
Os4	10.2521	7.275	.572	.506	.695
Os5	10.1261	7.576	.511	.468	.724

Reliability Tests for Variable Interactions via Online Brand Community (IOBC)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.716	.716	3

Inter-Item Correlation Matrix

	Iobc1	Iobc2	Iobc3
Iobc1	1.000	.500	.394
Iobc2	.500	1.000	.477
Iobc3	.394	.477	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Iobc1	7.1834	3.380	.520	.281	.646
Iobc2	7.5903	3.059	.584	.342	.565
Iobc3	7.5989	3.270	.504	.260	.666

Appendix I

Reliability Tests for Variable Consumer Shopping Anxiety (CSA)

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.742	.696	3

Inter-Item Correlation Matrix

	Rcsa1	Rcsa2	Rcsa3
Rcsa1	1.000	.341	.364
Rcsa2	.341	1.000	.594
Rcsa3	.364	.594	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Rcsa1	6.6103	4.417	.396	.157	.762
Rcsa2	5.9799	4.106	.568	.370	.704
Rcsa3	6.2751	3.608	.579	.382	.712

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