EXAMINING THE ANTECEDENTS OF IMPULSE PURCHASE AMONG FACEBOOK COMMERCE (F-COMMERCE) USERS

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FACULTY OF BUSINESS AND ACCOUNTANCY
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Field of Study: Business Information Systems

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ABSTRACT

Nowadays, Facebook commerce or f-commerce has become a new paradigm in e-commerce. Even though there is a huge business potential in f-commerce, the purchase behaviour in f-commerce is still not well-studied with only a few studies are related to impulse buying through f-commerce and yet the studies are not from a holistic and integrated point of view. The theoretical framework development of this study is based on Social Impact Theory, Theory of Web Usage and Trust Transference Theory. This study investigated the antecedents of trust motivation; the predictors of participation, browsing, f-commerce usage intensity; and their influence on urge to impulsively purchase and impulse purchase from the context of f-commerce. The effect of urgency towards urge to impulsively purchase and impulse purchase were also determined. All items in the questionnaire were adapted from past studies and have been rigorously tested during the pre-test and pilot test. Based on purposive sampling technique, 1000 f-commerce users from Klang Valley who have spending power was selected and their responses were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM). The model can explain 46.4%, 31.6%, 52.6%, 47.1%, 33.4% and 42.1% variance in browsing, f-commerce usage intensity, impulse purchase, participation, trust motivation and urge to impulsively purchase respectively. The result also showed that urge to impulsively purchase partially mediates the relationship between urgency and impulse purchase. These findings will be beneficial to the online retailers, marketers and other f-commerce stakeholders in terms of formulating their marketing strategies and policies as well as providing novel insight in understanding impulsive behaviour in f-commerce.

ABSTRAK

Kini, perdagangan Facebook *(Facebook commerce)* atau f-perdagangan *(f-commerce)* telah menjadi satu paradigma baru untuk e-perdagangan. Walaupun terdapat potensi perniagaan yang besar dalam f-perdagangan, tingkah laku pembelian dalam f-perdagangan masih tidak dikaji sepenuhnya dan hanya terdapat beberapa kajian yang berkaitan dengan pembelian impulsif melalui f-perdagangan tetapi bukan dari sudut pandangan yang holistik dan bersepadu. Kerangka teori kajian ini dibentuk berdasarkan Teori Impak Sosial, Teori Penggunaan Web dan Teori Pemindahan Kepercayaan. Kajian ini menyiasat latar belakang motivasi kepercayaan; peramal penyertaan, pelayaran, intensiti penggunaan f-perdagangan; dan pengaruh mereka ke atas keinginan membeli secara impuls dan pembelian impuls dari konteks f-perdagangan. Kesan desakan ke arah keinginan membeli secara impuls dan pembelian impuls juga telah dikaji. Semua item dalam soal selidik telah disesuaikan berdasarkan kajian oleh penyelidik lain dan telah diuji secara menyeluruh semasa ujian pra dan ujian perintis. Berdasarkan teknik persampelan bertujuan, 1000 pengguna f-perdagangan dari Lembah Klang yang mempunyai kuasa membeli telah dipilih dan respons mereka telah dianalisis menggunakan *Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Model ini dapat menjelaskan 46.4%, 31.6%, 52.6%, 47.1%, 33.4% dan 42.1% perbezaan dalam pelayaran, intensiti penggunaan f-perdagangan, pembelian impuls, penyertaan, motivasi kepercayaan dan keinginan membeli secara impuls. Hasil kajian juga menunjukkan bahawa keinginan membeli secara impuls mempunyai hubungan pengantaraan separa antara kesegeraan dan pembelian impuls. Penemuan ini akan memberi manfaat kepada peruncit dalam talian, pemasar dan pihak berkepentingan f-perdagangan lain dari segi merangka strategi dan dasar pemasaran mereka serta menyediakan wawasan baru dalam memahami tingkah laku impulsif dalam f-perdagangan.

ACKNOWLEDGEMENTS

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LIST OF SYMBOLS AND ABBREVIATIONS

-	:	Negative Effect
+	:	Positive Effect
2FCBA	:	Two-Factor Cost-Benefits Accessibility
AB	:	Actual Behavior
AMOS	:	Analysis of Moment Structure
ANOVA	:	Analysis of Variance
ASV	:	Average Shared Variance
ATT	:	Attitude
Ave	:	Average
AVE	:	Average Variance Extracted
BFF	:	Belief in Friends Who Like Facebook Page
BI	:	Behavioral Intention
BPF	:	Belief in People Who Like Facebook Page
BPP	:	Belief in People Who Like a Photo in an Item
BR	:	Browsing
C2C	:	Consumer-to-Consumer
CEO	:	Chief Executive Officer
CET	:	Cognitive Emotion Theory
CL	:	Closeness
CM	:	Communication
CMB	:	Common Method Bias
CR	:	Composite Reliability
CSN	:	Company Social Networks
CVI	:	Content Validity Index
DP	:	Disposition

DV	:	Dependent Variable
e-commerce (EC)	:	Electronic Commerce
EFA	:	Exploratory Factor Analysis
EJ	:	Enjoyment
FCI	:	F-commerce Usage Intensity
f-commerce (FC)	:	Facebook Commerce
FL	:	Fornell-Larcker's Ratio
FM	:	Familiarity
HM	:	Hedonic Motivation
HBR	:	Hedonic Browsing
IB	:	Impulse Buy
ITB	:	Intention to Buy
I-CVI	:	Item-level Content Validity Index
IGR	:	Instant Gratification
IM	:	Impulsiveness
IP	:	Impulse Purchase
IQ	:	Information Quality
IU	:	Intention to Use
IV	:	Independent Variable
ISSM	:	Information Systems Success Model
LST	:	Latent-State-Trait
MA	:	Merchandised Attractiveness
MATH	:	Model of Adoption of Technology in the Household
MCI	:	Membership Continuance Intention
MCMC	:	Malaysian Communications and Multimedia Commission
MSV	:	Maximum Shared Variance

NA	:	Negative Affect
NEFE	:	National Endowment for Financial Education
NEV	:	Normative Evaluation
NGOs	:	Non-Government Organizations
ns	:	Not Significant
OSL	:	Ordinary Least Squares
PA	:	Positive Affect
PBC	:	Perceived Behavioral Control
PE	:	Perceived Ease of Use
PI	:	Purchase Intention
PLS	:	Partial Least Squares
POPAI	:	Point-of-Purchase Advertising International
PSS	:	Perceived Social Support
PTR	:	Perceived Trust
PTC	:	Participation
PU	:	Perceived Usefulness
RI	:	Referral Intention
RO	:	Research Objective
RP	:	Reputation
RQ	:	Research Question
SA	:	Sensory Attribute
s-commerce (SC)	:	Social Commerce
S-CVI	:	Scale-level Content Validity Index
S-CVI/Ave	:	Average Scale-level Content Validity Index
SE	:	Standard Error
SEM	:	Structural Equation Modeling

SIT	:	Social Impact Theory
SN	:	Subjective Norm
SNS	:	Social Networking Sites
SOR	:	Stimulus-Organism-Response
SPSS	:	Statistical Packages for Social Sciences
SRMR	:	Standardized Root Mean Square Residual
STDEV	:	Standard Deviation
SVC	:	Sense of Virtual Community
SZ	:	Size
TAM	:	Technology Acceptance Model
TM	:	Trust Motivation
TPB	:	Theory of Planned Behavior
TR	:	Trust
TRA	:	Theory of Reasoned Action
TS	:	Transaction Safety
TTT	:	Trust Transference Theory
TWU	:	Theory of Web Usage
UA	:	Universal Agreement
UB	:	Use Behavior
UBI	:	Urge to Buy Impulsively
UBR	:	Utilitarian Browsing
UGCs	:	User Generated Contents
UM	:	Utilitarian Motivation
UP	:	Urge to Impulsively Purchase
UR	:	Urgency
USA	:	United States of America

USD	:	US Dollar
VIF	:	Variance Inflation Factor
VS	:	Variety of Selection
WCS	:	Website Communication Style
WEOU	:	Website Ease of Use
WMI	:	Word of Mouth Intention
WMR	:	Word of Mouth Referrals
WOM	:	Word of Mouth
WQ	:	Website Quality

LIST OF APPENDICES

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The world wide acceptance of social networking sites (SNSs) as an interaction platform has facilitated virtual communication for many people ranging from companies workers to teachers and students, be it young and old. As defined by Ellison (2007), SNSs are confined to a web-based system which utilized public or semi-public information to create a connection for interaction with other users. This is further emphasized by Ellison and Boyd (2013) that SNS users are able to share their new content in the online community. The tremendous growth of SNSs has opened up opportunities for a novel electronic commerce or e-commerce exemplar. Popularly known as social commerce or s-commerce (Stephen and Toubia, 2010), it is deemed as a supporting tool for e-commerce in the near future (Curty and Zhang, 2011) and also as a tool to foster better customer relationship. E-commerce is referred as "a business model in which transactions take place over electronic networks, mostly the Internet. It includes the process of electronically buying and selling goods, services, and information" (Turban et al., 2015, p. v). Nonetheless, s-commerce is defined as a subcategory of e-commerce (Stephen and Toubia, 2010) which refers to "the delivery of e-commerce activities and transactions through social networks and/or via social media" (Vasant, 2013, p. 388)

In the past, consumers tend to do random searching for information and reviews of product prior to purchase of products or services. They may be referring to unknown sites or any reviews posted by unknown or anonymous consumers. However, the trend has changed whereby social sharing is becoming the source of getting valuable advice and trustworthy information from friends and associates on social networking sites thus

differentiating it from the traditional customer reviews (Liang et al., 2011). As a matter of fact, a survey done by Marsden (2009) revealed that about 83% of online shoppers had the tendency to share shopping information while 67% of the participants made their purchase decision at the advice of their online acquaintances. Following these, several social commerce properties were derived by Marsden (2009a) which include trusted advice, word-of-mouth and purchase with the assistance from friends.

The growth of social commerce is influenced a lot by the bargaining power of consumer and also due to the fast development in information technologies especially the Web 2.0 (Ng, 2013). As mentioned by Liang et al. (2011), there are three trends in social commerce. The first trend is to integrate commercial characteristics into SNSs, secondly is to enhance e-commerce sites with social networking attributes and thirdly is to augment the social media usage in conventional brick-only companies for the purpose of managing customer relationship, social shopping, brand communicating and promotion of product. S-commerce utilizes social media for interaction and communications; to produce user-generated content which include reviews and ratings, blogs, and microblogging (Ng, 2013); to share product and service related information and online shopping experiences (Kim and Park, 2013); to search for services and goods (Olbrich and Holsing, 2011; Shen, 2012) as well as to provide assistance in online selling and buying of services and products. S-commerce is a place where people may work together online, obtain trustworthy advice, search and purchase goods and services, and hence become the uniqueness of s-commerce (Kim & Park, 2013). It serves not only as an online referral site, but being regarded as social shopping and group purchasing or selling as well (Shin, 2013). In short, s-commerce can be summarized by three key characteristics namely community interactions, commercial activities and social media technologies (Liang & Turban, 2012).

A survey by Ng (2013) using 1787 subjects to examine the effect of social media towards e-shopping revealed that the craving for direct purchase via social networks seems strong: 1/3 of shoppers said they were likely to make a direct purchase from Facebook (i.e. 35%) and Twitter (i.e. 32%). Furthermore, Bailey (2010) found that only 1/4 of buyers who are associated to brands on Facebook did so to obtain discounts. Due to these low purchase percentages, there is huge potential for improving the purchasing rate for f-commerce. "All these developments suggest that the era of s-commerce will become the mainstream much quicker than expected, following the success of social networking sites" (Stephen & Toubia, 2010 as cited in Shin, 2013, p. 52).

eMarketer (2015) forecasted that global SNS spending to reach 29.91 billion in 2016 and continue to achieve 35.98 billion (i.e. 16% of the global digital advertisement expenditure) in 2017. Due to its high accessibility and low costs, Facebook fan pages have been the main platform whereby consumers can interact and communicate with various brands (Martínez-Navarro & Bigné, 2017). McKinsey also reported that over 300 million Chinese shoppers utilize social media to gather product information (Akman and Mishra, 2017). Furthermore, 85% of Asian marketers choose social media as a main source of business disclosure and 48% of them are able to lower down their expenditures through SNSs while 45% of big and small traders registered on social media to promote sales (Akman and Mishra, 2017).

Facebook, one of the famous SNSs, is a vital platform to perform s-commerce by inheriting the word-of-mouth marketing capabilities. In this study, Facebook commerce (f-commerce) is defined as a subset of s-commerce in which business and commercial activities are performed using Facebook to support online selling and buying of products and services whereby transactions can be done on the Facebook page or by

using third-party websites. It links every transaction to the social graph and the social experience of having discussion before, during and after purchase of products within the Facebook environment which distinguishes it further from the e-commerce.   This has become increasingly important as customers have the tendency to download discount coupons or watch movie trailers via Facebook itself rather than being redirected to other external websites (Harris & Dennis, 2011).   According to Brock et al. (2011, p.2), Facebook collects sensitive data that is usually not available for e-retailers that may increase consumers' risk perception of the purchase process; the consumer is acting in his personal life and initially does not intend to purchase anything; and more parties are involved in the provision of the online offer namely Facebook and the e-retailers, thus making assessment of the offering more complex.

Almost all large, medium, and many small companies are on Facebook.   By establishing their own online brand communities, companies will be able to nurture communications with customers besides offering a platform for gathering with people who share the same interest with their products or services (Muniz & O'Guinn, 2001). According to Marsden (2010), 67% of all companies surveyed already used Facebook to drive customers to their e-commerce (EC) sites, 44% use Facebook apps for product launches and promotions, and 26% build EC application (e.g. webstore) on Facebook itself.   Leggat (2010) found that there were over 0.7 million small businesses with Facebook Fan pages and almost 0.85 million in February 2011, while LinkedIn's network surpasses 90 million memberships. Nearly 70% of all global corporations adopt certain social networkings and it is a phenomenon that no companies should overlook (Kim et al., 2013).   This phenomenon has been proven as Api2cart (2017) indicated that Facebook's ad revenue has increased by more than 42% since 2014 and is anticipated to reach nearly 27 billion USD by 2017 year end.   It also revealed that 73% of users who

have attempted social buy buttons said they would repeat the act. The worldwide social media spending has doubled from 16 billion in 2014 to 31 billion in 2016 and Facebook continues to lead the ad revenue in 2016 with a 67.9% of social media ad spending (Oursocialtimes, 2017).

Nevertheless, there have been limited empirical studies on social commerce, particularly f-commerce. Unlike the conventional e-commerce or m-commerce, the special social media features of f-commerce such as social interactivities, communications and user-generated contents (UGCs) like reviews and ratings, blogs and micro-blogging in facilitating online purchase, marketing and selling of services and products are significantly different. The unique features of providing opportunity for consumers to interact, connect and listen, understand and engage other consumers pertaining to the purchasing experiences may lead to better-informed purchasing decision and shopping experience (Ng, 2013). Together with the most powerful drivers of the viral marketing capabilities or word-of-mouth marketing inherent on f-commerce, these have make f-commerce quite different than the e-commerce or m-commerce predecessors. Due to these huge differences, the findings from the past related studies which focused on the traditional e-commerce and/or m-commerce that do not utilize social media may not be applicable in the context of f-commerce.

On the other hand, impulse buying or impulse purchase is defined as "any purchase which a shopper makes but has not planned in advance (Stern, 1962, p. 59)." The importance of studying impulse purchase can be seen from the related past studies which showed that unplanned purchases accounted up to 60% of all buyings (Mattila and Wirtz, 2008; Inman and Winer, 1998) while impulse purchase contributed between 40% to 80% of buyings subject to the kind of product (Kacen et al., 2012; NEFE, 2012).

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Hausman (2000) opined that retail sales generated from impulse purchase ranged from 30% to 50% whereas about 90% of buyers tend to perform impulse purchase occasionally. As for the money spent on e-commerce sites, almost 40% of them were credited to impulse purchase (Verhagen and van Dolen, 2011). In addition, 68% of online purchases are made impulsively (Li & Wang, 2015 as cited in Xi et al., 2016). Scholars assert that online shopping setting is more conducive for impulse purchase behavior compared to the offline counterpart (Eroglu et al., 2001) since the online setting can free consumers from various constraints such as limited operating hours, inconvenient store locations and social pressure from sales persons and other buyers that they would encounter in brick-and-mortar stores (Chan et al., 2016). Nevertheless, impulse purchase could be further stimulated in the s-commerce setting since it facilitates social networking and provides more chances for consumers to influence each other (Huang & Benyoucef, 2013 as cited in Xi et al., 2016).

Thus far not many theories have been used to study f-commerce, for instance Theory of Reasoned Action (TRA), Cognitive Emotion Theory (CET), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB) and Stimulus-Organism-Response (SOR). Since Facebook is a social media which involve social interaction among the Facebook users, the impact of familiarity and closeness among the users would probably influence their intention to use the Facebook. Furthermore, these users are also affected by the hedonic and utilitarian motivation such as the sense of pleasure and enjoyment and the use of the Facebook social media as a means of professional and social communication. Moreover, the trust motivation on Facebook usage is anticipated to have some influence on the usage of Facebook. Hence, in this study, the influence of the Social Impact Theory, Theory of Web Usage and Trust Transference Theory on f-commerce were investigated as the integration of these theories would be able to

provide a holistic understanding pertaining to impulse purchase among f-commerce users. These theories will be explained further in Section 2.6.1 (Social Impact Theory), Section 2.6.2 (Theory of Web Usage) and Section 2.6.3 (Trust Transference Theory).

There are several motivations that warranted the need to conduct this study. Firstly, since study on f-commerce impulse purchase is very limited and not well established, therefore, it is necessary to conduct a more in-depth and comprehensive investigation on f-commerce consumers' impulse purchase and this study is among the first to integrate the Theory of Web Usage (i.e. hedonic and utilitarian motivation), Trust Transference Theory (i.e. trust motivation), Social Impact Theory (i.e. closeness and familiarity), Facebook users participation, urgency, consumers' urge to impulsively purchase and impulse purchase in a single model in order to give a holistic understanding of f-commerce impulse purchase. Secondly, the study has further advanced our understanding on the previous works by establishing several new relationships in f-commerce context based on empirical evidence. Thirdly, the study has further expanded the validation of the existing relationships in the new f-commerce context. Fourth, this is perhaps the first f-commerce study that explores the role of psychological traits (i.e. urgency) in consumers' impulse purchase. Fifth, instead of focusing on specific context (e.g. apparel, rice, travel package, fashion items and etc.), this study was conducted in a broad f-commerce context. Finally, unlike previous studies, this study has engaged rigorous survey instrument development and validation processes via expert panel review for face and content validity whereas content validity index and 2-round Q-sort classifications are performed by working professionals to validate construct validity based on Cohen's inter-rater reliability (i.e. Kappa).

1.2   PROBLEM STATEMENTS

The integration of social media in business has gained much attention from company marketers and executives who realized the business values that can be offered by these platforms (Tancer, 2007; Li, Bernoff, Feffer and Pflaum, 2007). In fact, it was stressed by Grensing-Pophal (2009) that failure to use social media may cause companies to be lagging behind and have lesser chances to reach out to wider group of consumers. Nielsen (2011) opined that s-commerce is a new online paradigm and social media-associated activities that are progressively growing in terms of the ratio of all time spent online. However, according to Mikalef, Giannakos and Pateli (2012), research which focuses on conducting business through social media websites a.k.a social commerce is still in its infancy stage. Despite of the popularity of s-commerce, studies on it remain scarce and there is a necessity for scholars to further explore the academic insights of the economic success of s-commerce (Xi et al., 2016). Furthermore, according to Ng (2013), social commerce may have lower barriers to penetrate market and be more likely to succeed in East Asia compared to Latin America region. This may lead to the need to conduct a research on social commerce in South East Asia countries such as Malaysia and hence warranted the need for this study to fill the research gaps as mentioned.

The year 2001 has witnessed over 300 registered s-commerce Korean companies which have generated sales ranging from $300 - 500 million (Kim, 2011). It was predicted by Booz & Company (Anderson et al., 2011) that s-commerce market would value $30 billion in yearly trades by the year of 2015. A company which is able to tap into s-commerce world successfully can gain various commercial advantages which include the monetization of social media, e-commerce sales optimization, and innovative business models (Marsden, 2010a). However, Booz & Company's

marketing report in 2010 stated that 73% of online shoppers will ended up without any purchase on Facebook or via other SNSs. Therefore, this has led to the curiosity to learn more about the factors that would produce better understanding of users' motivation in commercial social media environments and subsequently lead to purchase on f-commerce to contribute to the prosperity of Facebook in years to come.

According to The Wall Street Journal (2013), Facebook is the most extensively used SNSs, with more than 1 billion registered members worldwide. The drastic growth of Facebook usage has facilitated companies in adopting online advertising and marketing to penetrate a larger segment of consumers worldwide. Of a population of 33 firms randomly chosen from the 2009 Fortune-100, 73% were represented on Facebook (Horton, 2009). As of January 2011, 84% of the 200 fastest-expanding private firms in United States uphold a Facebook presence (Van Sack, 2011 as cited in Dekay, 2012). Furthermore, in 2013, the percentage of total Fortune 500 companies that used Facebook was 70% with specialty retailers in Fortune 500 which use Facebook recorded 96% for the same time (Barnes et al., 2013). Furthermore, Facebook pages permit their members to post, comment and sharing content with others (Koh, Kim and Kim, 2003; Muniz and O'Guinn, 2001). These Facebook pages owners are hoping that users will continuously participate in Facebook by posting favourable comments, share the products' links or useful information with others and eventually buy their products. Even though there is a trend for companies to utilize Facebook pages as a tool for marketing, it is still remain unclear on how Facebook pages can be used effectively. In fact, with suitable applications, vendors can create a system on Facebook that enables business transaction to be finalized without referring to the vendor's own website or a physical store (Miranda et al., 2016). Nevertheless, it was reported by SocialMediaExaminer (2015) that despite 93% of marketers are using Facebook, 68%

of them are interested to learn more about Facebook while 62% of them are inspired to increase Facebook activities in their companies. It is imperative for companies to understand the motivation behind users' interaction with Facebook to secure continuous support from them and eventually become profitable customers. Thus, this research is indeed imperative to provide pertinent information on how companies' sales can be improved by understanding impulse purchase among Facebook commerce users.

The importance of SNS can be seen from a number of studies conducted to gain understanding and insight pertaining to the social networks, especially Facebook. For instance, Ellison et al. (2007) on social capital gains through Facebook; Strano (2008) on presenting oneself through profile images; Ross et al. (2009) on Facebook users and their personalities; Swamynathan et al. (2008) and Dwyer et al (2007) on trust and privacy issues concerning SNS users. Other researches related to social networks include Suki et al. (2012) on technology acceptance; Simon et al. (2013) and Gummerus et al. (2012) on brand communities and experiences; Toma and Hancock (2013) on underlying usage with regards to psychological factors; Yaakop et al. (2013) on Facebook advertising and its credibility; Junco (2013) on Facebook usage and its differences in demographic perspective; Peters,Winschiers-Theophilus and Mennecke (2015) on cultural influences between college students in Namibia and the US and last but not least Ng (2016) on consumer adoption of Facebook. As a matter of fact, there have been some discussions pertaining to social commerce such as intention to purchase on s-commerce websites (Ng, 2013), consumers' trust on s-commerce (Kim and Park, 2013), consumers' behaviours in SNSs (Gao, 2014), advancement of s-commerce networks in big online marketplace (Stephen and Toubia, 2010) and dissimilarities between s-commerce and e-commerce (Bansal and Chen, 2011). Yet, very few published empirical researches were done to identify the prime determinants that

influence the impulse purchase on f-commerce and hence warranted the need to conduct this study.

Besides, the unplanned and more specifically the impulse purchase which accounted for a substantial percentage of all purchases has been supported in recent studies. For example, a research by Point-of-Purchase Advertising International (POPAI, 2012) reported that 76% of all buying decisions are done in the shop whereas the research by the National Endowment for Financial Education (NEFE, 2012) revealed that 87% of American adults admit to making impulse purchases. Babin and Attaway (2000) assert that a Canadian grocery chain noticed that profitability may surge by more than 40% if every buyer bought an extra product on impulse. Likewise, Muhtar Kent, the CEO of Coca Cola asserts that 70% of Cokes' deals are attributed to impulse purchases (Karmali, 2007). Another research by Coca Cola showed that impulse purchase accounted for more than 50% of all grocery purchases (CNBC, 2009). Retailers knowing that consumers often make impulse purchase; are interested in the impulse purchase phenomenon particularly consumers' impulsive propensities (Kacen et al., 2012; Pentecost and Andrews, 2010). This claim is further verified by a recent study, which stated that the millennial generation is 52% more inclined to make an impulse purchase to pamper oneself than any other generation (Tuttle, 2012).

However, previous studies on impulse purchasing have focused on traditional "brick and mortar" shops and very few researches have been conducted on impulse purchase in e-commerce (Jeffrey and Hodge, 2007) and not to say the newly emerged f-commerce. If online sellers are able to obtain a better insight of the drivers that trigger online impulse purchases, even a 1% rise in deals from impulse purchases may bring about an extra USD 690 million in proceeds (Jeffrey and Hodge, 2007, p. 368). "The majority of

e-commerce studies have viewed consumers' decision making as a rational process based on cognitive problem solving and information processing and these studies have failed to provide insight into situations where decision making is spontaneous, unreflective, immediate and dominated by emotions, that is, in impulse buying (Verhagen and van Dolen, 2011, p. 320)". Due to the fact that most of the previous studies have concentrated on the impulse purchase of "brick-and-mortar" and e-commerce models, the findings from these studies may not be applicable to the f-commerce contexts due to the obvious differences between these business models.

Furthermore, despite the regularity of online impulse purchase, Liu et al. (2013) had brought to the attention that very little knowledge is accessible about the underlying psychological mechanism in online impulse purchase. Most of the researches in e-commerce perceived decision making by buyers as a rational process that involving processing of information and cognitive problem solving. They may have overlooked the situation in which purchase decision making process can be impulsive which is unplanned, unreflective, instantaneous and controlled by emotions (Verhagen & van Dolen, 2011). In fact, according to Xu et al. (2012), the psychological factors predicting the usage of SNS have yet to be determined. Thus, the need to conduct this research pertaining to online buying behavior inclusive of impulse purchase is deemed important.

As a conclusion, with the growing statistics which implies the popularity of conducting business via Facebook, more insights about f-commerce are necessary as there is huge potential to improve companies' online sales through s-commerce, which is considered still in its infancy stage. Even though there are numerous studies conducted either from the e-commerce or m-commerce, however due to the substantial

differences among f-commerce, e-commerce and m-commerce, the previous findings may be different and may not be applicable in the newly emerged f-commerce context. Moreover, the role of Facebook pages as an effective and profit making business model is still indistinct. As of today, there are only a handful of empirical studies on s-commerce, in particular f-commerce. Despite the numerous past researches on the conventional e-commerce and its related applications, these findings may not be applicable as they do not utilize social media, which is the key platform for s-commerce. There are not much empirical studies, in particular the underlying psychological mechanisms that investigate the influence of impulse purchase on f-commerce and it is something that should not be ignored since a little increase in sales from impulse purchases can actually cause a great increase in revenues. More attention should be given on online impulse purchase that can be complicated since it is unplanned, unreflective, instantaneous, and controlled by emotions (Verhagen & van Dolen, 2011).

In a nutshell, this research is indeed imperative to understand better motivational factors which lead to f-commerce usage and then urge to impulsively purchase and subsequently impulse purchase through f-commerce. Hence, this research is indeed timely to provide much needed insight for the benefits of various parties such as researchers, online marketers, and other business stakeholders as well.

1.3   RESEARCH GAP

The extant of literature on social commerce has mainly concentrated on studying the intention to purchase and normal purchase instead of purchase behaviour of f-commerce. This is further elaborated in Chapter 2 (Table 2.1) and it can be observed that factors that lead to impulse purchase on f-commerce were less investigated. In

addition, since f-commerce involves social media as the platform that is based on the Web 2.0 technology, it is indeed a motivation to uncover the roles of Social Impact Theory, Trust Transference Theory and Theory of Web Usage in f-commerce so as to close the research gap. Additionally, the influences of these theories will provide much needed understanding and insight on how familiarity and closeness may influence the propensity to use f-commerce. It will also allow us to understand the effects of hedonic and utilitarian motivation on the tendency of f-commerce usage. Most importantly, the findings of the existing studies on purchase in f-commerce are scarce and scatter (Please refer to Appendix A).

For many years, researchers have been conducting studies on impulse purchase extensively (Xiao and Nicholson, 2013; Amos et al., 2014) but only a few studies were related to the online environment (Turkyilmaz, Erdem, & Uslu, 2015). Nevertheless, in these recent years, several studies have been done to determine the effect of online impulse purchase on various aspects from the perspective of e-commerce. For instance, website attributes (Liu, et al., 2013), website atmospheric cues (Floh and Madlberger, 2013), website quality (Wells, Parboteeah and Valacich, 2011), online store beliefs (Verhagen, and van Dolen, 2011), website ease of navigation (Lin and Lo, 2015) and last but not least system design (Ning Shen & Khalifa, 2012). Not many studies have been conducted with regards to impulse buying through social commerce, particularly f-commerce. Even so, these studies did not examine the purchase behavior from a more holistic and integrated point of view. Since the purchase behavior of the consumers may be influenced by various factors, it is important to further investigate it in an integrated manner instead of studying them as isolated entities. Most importantly, a meta-analysis by Amos et al. (2014) advocated that impulse buying among Asia countries is a significant phenomenon that should not be overlooked. Thus, this

research is proposed to understand the motivation factors towards purchase behavior on f-commerce as to fill up the research gap in the extant literature.

According to the related past studies, it was found that majority of the prior works concentrate on specific contexts like apparel (Anderson et al., 2014; Kang and Johnson, 2015; Park et al., 2012),), travel packages (Pöyry et al., 2013), rice (Sukrat et al., 2015fashion items (Ng, 2013; Verhagen and van Dolen, 2011), group shopping (Hsu and Hsu, 2012; Liu et al., 2013; Tsai et al., 2011) and SNS virtual products (Gao, 2014). In addition, several studies have used control experiments (Ng, 2013; Parboteeach et al., 2009) or simulation (Gefen et al., 2003a) whereby participants' behaviours may not be natural as they already knew that they are in an experimental setting. Hence, a study from the f-commerce context would be able to advance our understanding on the previous works by providing a holistic picture on factors that influence consumers' impulse purchase in f-commerce.

Finally, the popularity and proliferation of mobile internet-enabled devices such as smartphones and tablets has offer new opportunities for online marketers and retailers to reach the huge potential buyers who are browsing Facebook stores or pages. As a matter of fact, according to TNS's recent survey, 94% of Malaysians discovered brands and products on Facebook and 62% make purchase decision after the discovery (thestar.com, 2016). It is obvious that f-commerce will become the new paradigm of e-commerce in the years to come with a huge potential of generating new revenues and markets to all stakeholders. Although there are numerous studies done on e-commerce, very less attention has been given to the new f-commerce context. Furthermore, the focus of the existing studies on e-commerce and f-commerce has been on purchase

intention rather than impulse purchase and thus paucity in the research of f-commerce in comparison to s-commerce do exists.

In a nutshell, there is indeed a need to study f-commerce and s-commerce to narrow down the knowledge gap. The results of the study can provide new practical and theoretical implications to practitioners and scholars while advancing the existing knowledge in social networking sites. Due to the huge business potential of f-commerce as well as the huge number of Facebook users, it is really imperative for both scholars and practitioners in f-commerce to gain more understanding and insight about the antecedents of impulse purchase. By having such understanding and insight, they will be able to make better decisions in formulating policies, strategies and plans to tap into the new f-commerce market and open new business horizons.

1.4   RESEARCH QUESTIONS AND RESEARCH OBJECTIVES

As highlighted in the problem statements above, there is a rising need to investigate the factors that are contributing to the changing phenomenon in the usage of social media for business activities. This will allow the SNSs providers and business stakeholders to have more information and insights pertaining to users' motivation in interacting and purchasing from f-commerce, which is a specific scope of social commerce through Facebook and eventually increase their profitability. As such, this research was conducted as currently there is a lack of understanding pertaining to the motivations behind purchase through f-commerce and hence leading to the following questions and their respective research objectives:

RQ1: What are the antecedents that lead to impulse purchase in f-commerce?

RO1: To identify the effects of hedonic, utilitarian and trust motivation on participation, browsing and usage intensity in f-commerce.

RO2: To determine the effect of closeness and familiarity on trust motivation in f-commerce.

RO3: To examine the influence of participation, browsing and usage intensity on urge to impulsively purchase in f-commerce.

RQ2: How does urge to impulsively purchase affect impulse purchase in f-commerce?

RO4: To investigate the mediating effect of urge to impulsively purchase on urgency and impulse purchase in f-commerce.

RO5: To determine the influence of urge to impulsively purchase on impulse purchase in f-commerce.

1.5   SCOPE OF STUDY

The scope of this research is the Malaysian context limited by the geographical area of 329,758 sq km with a population of 31.7 millions with a composition of 68.6% ethnic Bumiputera, 23.4% ethnic Chinese, 7.0% ethnic Indian and 1.0% of other ethnics. 69.4% of the population are working adults within the age bracket of 15 to 64 years old, while 6% is age 65 and above and 24.6% is age below 15 years old (Department of Statistics, 2016). Social media and online community serve as the second main purpose of Internet use with a percentage of 87.1% while 86.8% of Internet users have Facebook account (MCMC, 2014). In addition, Malaysia has an overall of 70.4% broadband penetration rate per 100 households for first quarter of 2015 (MCMC, 2015).

Hence, the scope of this research is limited to Malaysian f-commerce users who are working adults aged between 15 to 64 (Department of Statistics, 2016). In other words, this research did not involve f-commerce consumers who are not working adults and/or age less than 15 or older than 64 years old. More specifically, this scope of this research is limited to only s-commerce conducted through the Facebook social media platform and did not involve s-commerce that is conducted using other social media platforms. With regards to the payment issue, for those f-commerce users aged between 15 to 18 years, they may choose to opt for other payment mode such as bank-in account, online money transfer, cash on delivery, etc since they are not eligible to hold a debit/credit card yet. Nevertheless, if there is a need to make payment through debit/credit card, it can always be done under the control of someone eligible such as parents or elder siblings. In terms of consumers and their behavior, the scope of the research only focus on impulse purchase behaviour among f-commerce consumers and did not investigate their intention to purchase, continuance intention to purchase, post-purchase evaluation and other consumer behaviours.

1.6   RESEARCH METHODOLOGY

This research engaged a non-experimental quantitative survey methodology to identify the determinants of impulse purchase among f-commerce consumers. The survey instrument was rigorously developed and validated in the pretest that involves an expert panel and a group of f-commerce users who are working professionals. Pilot test was conducted by administering the questionnaires to 50 f-commerce consumers in Klang Valley, Malaysia to validate the construct reliability of the questionnaire. Non-probability sampling technique via criterion or purposive sampling was used in gathering the data for this research which involves 1000 respondents in the Klang Valley as this area has high Internet penetration rate. Harman's single factor analysis

and common method factor are conducted to ensure the problem of common method bias does not exist. The data set collected was analyzed using Structural Equation Modeling through Partial Least Squares (PLS-SEM). Further details of the research methodology utilised in this research is explained in Chapter 3. An overview of the key activities leading towards the completion of this research is as depicted in Figure 1.1.

1.7   SIGNIFICANCE OF THE STUDY

Significance of the study is reflected in the following contributions. First of all, a research on users' motivation towards purchase on Facebook is warranted to contribute practically and theoretically to the commercial social media environments, specifically f-commerce. Due to the stiff rivalry among online business competitors, it is vital to attain deeper understanding of usage motivations and behaviors towards purchase on f-commerce, thus Facebook can enhance its services and able to formulate more business models.

Secondly, online marketers and advertisers will find the findings from this study very useful as they will be able to know how to attract more users to discover and continuously promote their products and services through SNSs such as Facebook, Twitter, MySpace, LinkedIn, etc. Generally, the success of f-commerce will surely benefit all e-commerce players since greater traffic and higher number of users will normally contribute to the increase in revenue.

Third, business organizations as well as government and non-government organizations (NGOs) will be able to tap in the spill-over effects of the potential traffic increase of f-commerce usage when Facebook have successfully improvised and enhanced their services by taking into their considerations the factors motivating

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purchase on f-commerce. Last but not least, findings from this study may be used by various stakeholders such as e-commerce players, e-learning providers, Web 2.0 users and practitioners as well as government and private agencies in their research, development, marketing and planning strategies.

1.8   STRUCTURE OF THE THESIS

The thesis is divided into 6 chapters with the first one explicating on the research background, research domain and scope, problem statements, research gap, questions and objectives, an outline of the research methodology and its research assumptions. This is followed by Chapter 2 which emphases on the literature review on social commerce and f-commerce as well as their past related studies, theories and models used in online impulse purchase studies, theoretical underpinnings on the current research, definition and justification of variables understudy.

In addition, Chapter 3 concentrates on the research methodology and covers discussion on the research paradigm, theoretical framework and hypothesis development, research design and approach, data gathering procedure, population and sampling technique, operationalization of constructs and instrumentation, questionnaire design and administration, pre-test and pilot test, unit of analysis, validity and reliability of the survey instrument and also descriptions of the statistical tests to be performed. Subsequently, Chapter 4 focuses on data analysis which encompasses explanations on data editing, coding, cleansing and screening, common method bias, multivariate assumptions, measurement and structural models, hypothesis testing, mediating effects and effect sizes.

On the other hand, Chapter 5 focuses on discussing the findings from the data analysis and also relating them to previous studies. All the research questions and research objectives have been revisited to ensure they have been completely covered in this research. Finally, Chapter 6 concludes the research findings by providing several useful theoretical and managerial implications to researchers and practitioners and the research limitation and forthcoming direction.
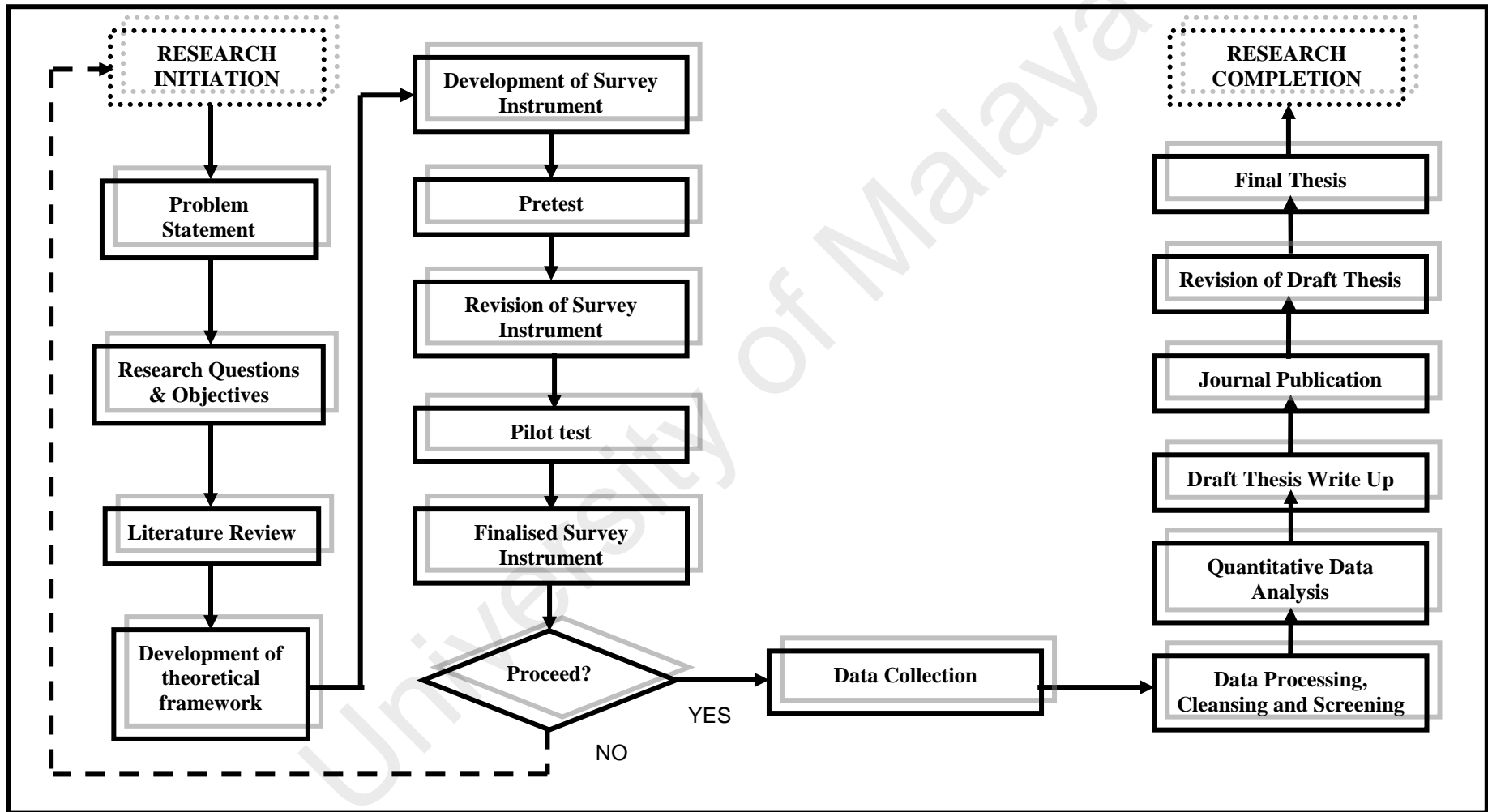
Figure 1.1: Key research activities

CHAPTER 2: LITERATURE REVIEW

2.1   INTRODUCTION

In this chapter, a comprehensive literature review was presented. It starts with the evolution of e-commerce to f-commerce which is then followed by overview of social commerce and f-commerce. Next is the discussion of selected past related studies followed by brief explanations on the theories and models used in online impulse purchase studies. The theoretical underpinning of the study namely the Social Impact Theory, Theory of Web Usage and Trust Transference Theory together with their related constructs used in this study were discussed next. The discussion on other variables that are used in this study as well as the corresponding related past studies were included as well. Besides that, a synthesis of the findings from past studies together with the construct analysis was also presented and this chapter ends with justifications for the variable used in this study.

2.2   EVOLUTION OF E-COMMERCE

The growth of social media has triggered the establishment of Web 2.0 technology which had altered e-commerce into a platform that is customer-oriented (Huang & Benyoucef, 2013). Social media is referred as a collection of applications that are based on Internet and exploited the ideology and technology fundamentals of the Web 2.0 (Baghdadi, 2016). Social media can be categorized into many categories and the six main types of social media as defined by Grahl (2016) are social networks (i.e. LinkedIn, Facebook); bookmarking sites (i.e. Delicious, StumbleUpon); social news (i.e. Digg, Reddit); media sharing (i.e. Flickr, YouTube); blog forums and comments (i.e. Blogger, WordPress) and microblogging (i.e. Tumblr , Twitter).   These social media have been used worldwide in the recent years and the population of individuals

and businesses who are engaged in social media activities has been on the rise (Edelman, 2010). Edelman (2010) also emphasized on the novelty idea of using social media as an enabler for customers to engage with brands and suggested that companies should improvise their marketing strategies to cover the pre-purchase level of raising customers' awareness to the post-purchase level of connecting with customers. Besides, the growth of the Internet environment has also triggered the evolution in e-commerce which has greatly increased its economic values and also transformed the lifestyle of human being (Wu, Shen & Chang, 2015). Further development of Web 2.0 and social media has transformed the roles of companies and consumers through the popularity of electronic word-of-mouth (eWOM) in the novel social media environment (Zhang, Craciun, & Shin, 2010). This transformation has eventually triggered the birth of a new online business concept referred as s-commerce (Huang & Benyoucef, 2013).

In US, almost 74% of business organizations have engaged SNSs (Awareness.com, 2015) and nearly 88% of them have the willingness to spend more on social media integrations (Constantinides et al., 2008). This is important as a study showed about 83% of respondents are prone to share purchase information with online friends and nearly 67% of them would make buying decision according to the recommendations from these friends (Marsden, 2009). It is reported that 10% to 15% of buyers in developed nations may go to SNSs (e.g. Facebook) between the year 2011 and 2015 (Ng, 2013). On the other hand, Statista (2017) mentioned that among all the SNSs, Facebook has 1.968 billion users trailed by *WhatsApp* (1.2 billion), *Youtube* (1 billion), *Messenger* (1 billion), *WeChat* (998 million), *QQ* (868 million) and *Instagram* (600 million). Being a potential profit-making model, the social web shopping has been used by many companies (Gao, 2014). McKinsey further reported that 70% of business organizations use SNSs to boost their business and 90% of them are able to attain

benefits (Chen et al., 2014). In fact, the worldwide revenue generated by SNSs is anticipated to achieve USD 30 billions in 2015 and USD 80 billions in 2020 (Chen and Shen, 2015).

Facebook commerce (f-commerce) is a subset of s-commerce originated from e-commerce in which Facebook is used as a platform for selling and buying of products and services. Due to the popularity of Facebook, some online retailers have begun to include social elements in their websites while others which are currently conducting e-commerce via Facebook have used the Facebook Apps on their Facebook Fan pages (Brock et al., 2011). With more than 1 billion of active users, Facebook being the top social commerce platform has driven more than 2/3 of mobile e-commerce traffic and boosted social media's fast expanding share of e-commerce traffic (Smith, 2015). F-commerce has developed so fast and has even generated a huge marketplace within Facebook with a forecasted size of USD 30 billion worldwide by the year 2015 (Anderson et al., 2011). As a matter of fact, Facebook has accounted for 1/2 of total social referrals and 64% of total social revenue for the year 2015 as reported in Business Insider by Smith (2015).

2.3 OVERVIEW OF SOCIAL COMMERCE

The progress of social networking sites (SNSs) has brought about the emergence of a unique e-commerce business model known as s-commerce (Kim and Park, 2013). S-commerce refers to a type of online business that integrated social media with e-commerce (Kim and Park, 2013) such as social networking sites, virtual world, group buying and video sharing sites. The application of social media has facilitated consumers to socially interact with each other and attain relevant information about a product or service (Qiang et al., 2017). From the traditional advertising through

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television, radio, magazines or journals, companies have started to move to social media for a change in influencing the consumers' consumption decision (Wu et al., 2015). Social commerce has extended Web 1.0 supported type of business-to-consumer (B2C) e-commerce through the utilization of social web sites which included social network and social media for creating and sharing of user generated content (Baghdadi, 2016). The popularity of social commerce is so immense and the term "Big Five" has emerged to describe the top social media websites which include YouTube, Pinterest, Twitter, Facebook and LinkedIn (Marsden and Chaney, 2012).

The term "s-commerce" was introduced in 2005 on Yahoo! (Wang & Zhang, 2012). Marsden (2010) has referred s-commerce as a combination of e-commerce and SNSs which enables the buying and selling of services and products through diverse internet technologies. On the other hand, Yadav et al. (2013, p. 312) defined s-commerce as "exchange-related activities that occur in, or are influenced by, an individual's social network in computer-mediated social environments, where the activities correspond to the need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange". According to Liébana-Cabanillas and Alonso-Dos-Santos (2017), s-commerce is a substantial enhancement of the traditional commerce with several distinct characteristics. First of all, s-commerce helps and promotes social media users to interact directly with each other through exchange of opinions and purchase advices and experiences. Second, it enables users to access and browse through a wide variety of products that is impossible to be attained within the offline setting. Third, s-commerce uses the improved technological accessibility through a wide variety of tools such as the traditional mobile phones, smartphones, tablets and etc. Finally, it also provides payment facilities through the social networks.

S-commerce is able to enhance customers shopping experience through customer reviews and ratings, user referrals and recommendations, and discussion boards by utilizing various social technologies (Cecere, 2010) such as wikis, blogs and social networks. Hence, s-commerce is also termed as "social shopping" by Hsiao et al. (2010) since it integrated social networking with shopping, and involves more collaboration, creativity and socialization among consumers in the marketspace (Parise & Guinan, 2008). Dennison, Bourdage-Braun and Chetuparambil (2009) opined that due to its business nature, social commerce is also being labelled as application of WOM in e-commerce.

In a comprehensive perspective, s-commerce is a type of online media that integrated Web 2.0 technologies with the psychology of social shopping contained by a virtual community (Kim and Srivastava, 2007; Marsden, 2009a) that covers the aspects of sociology, psychology, computer science and also marketing, hence provides a more diversified meaning based on its context of usage (Constantinides et al., 2008). S-commerce can refers to either SNSs which integrate commercial features for transactions and advertisements purposes or traditional e-commerce sites which include social tools for social interaction and sharing purposes (Huang and Benyoucef, 2013; Liang & Turban, 2012). As such, Indvik (2013) classified social commerce sites into seven main categories which include platforms for social network-driven sales (for example Facebook) or peer to peer sales (for example eBay) and also websites for peer recommendation (for example Amazon), group buying (for example Groupon), social shopping (for example Motilo), user-curated shopping (for example Lyst) and also participatory commerce (for example Kickstarter). In short, social commerce can be characterised by using two important elements namely social media and commercial activities (Yadav et al., 2013; Liang et al., 2011).

The priority of sellers who participated in s-commerce is to transform buyers into brand supporters, where the goal of the consumer is to have better buying decision based on the feedback and information obtained from the online communities which are spread through word of mouth (womma, 2016). Kelman (1958) has classified social influence into three namely compliance, identification, and internalization. Social networking and commerce falls into the category of internalization whereby someone recognizes and consents to other person viewpoints and actions both publicly and privately due to the rewarding outcome derived from the influential content shared among the communities' members. Social commerce members interact; participate in online activities; and not only write, send and read freely but also voluntarily those product recommendations and reviews shared by other members.

2.4   UNDERSTANDING F-COMMERCE

The phenomena arising from the popularity of using social networking sites (SNSs) for business purposes has brought about the development of a novel form of e-commerce known as social commerce (s-commerce) and specifically, if it is conducted through the Facebook platform, the term "Facebook commerce" (f-commerce)" is used. Currently there are several definitions for f-commerce. Shin (2013) defined f-commerce as a subgroup of s-commerce that utilizes Facebook, a social network service that supports user contributions and social interaction, to support online selling and buying of services and products. However, Chen et al. (2014) referred f-commerce as commercial and business activities using Facebook to support social interactions and promote consumer contributions in facilitating online business transactions.   In addition, Menon et al. (2016, p. 1) opined that f-commerce is "a form of social commerce that uses Facebook as a platform to facilitate and execute sales transactions". According to Market Business News (2017), f-commerce is a term used in the online

business world that focuses on developing and designing storefront sites and content within the Facebook social networking site i.e. selling services and goods within Facebook.com. On the other hand, Technopedia (2017) perceived f-commerce as e-commerce that is supported by the Facebook and transactions may happen on a Facebook page or by using Facebook Open Graph (i.e. a tool for blending third-party websites with Facebook). Last but not least, Gartner (2017) defined f-commerce as the retail transaction capability provided within the Facebook that is facilitated through application of Facebook APIs to enable the retailers to show products, information and deals to consumers while allowing consumers to complete transactions within Facebook. Hence, in this study, f-commerce is defined as a subset of social commerce in which business and commercial activities are performed using Facebook to support online selling and buying of products and services whereby transactions can be done on the Facebook page or by using third-party websites.

This revolutionary advancement in online business setting has further broadened the consumer markets by tapping into the huge population of the social media users. From marketing perspective, the focus of e-commerce is to maximize shopping efficiency by offering product catalogues, advanced search, product recommendations and one-click purchasing while f-commerce focuses on direct social activities like networking, collaboration and sharing with a secondary focus on online shopping (Huang & Benyoucef, 2013). In terms of consumer control, in e-commerce, consumers normally interact exclusively with the e-commerce websites independent from other consumers and have limited or no control as messages and exchanges are controlled by the companies. However, in f-commerce that engages real time involvement, consumers are empowered with control and hence reducing the distance between companies and the consumers (Constantinides and Fountain, 2008) since their preferences and

decisions not only rely on information provided by the companies but also the user generated content (UGC) by other consumers which carries its own economical value to companies (Hajli, 2015; Hajli & Sims, 2015).

From the context of system interaction, e-commerce normally offers one-directional browsing as user's information is seldom shared with other consumers. Unlike e-commerce, f-commerce provides a more interactive social collaborative online experience as collective intelligence will be accumulated and employed to assist other consumers in their purchase decision making process. Essentially, the value added by the consumers will be strengthened tremendously via the collaborative efforts of the consumer networks in Facebook that ultimately lead to better decision making. Consumers' recommendations, referrals and conversations occur within f-commerce will create huge impact compared to the conventional marketing messages.

The enormous growth of Facebook for the past decade can be attributed to social interaction which leads to word-of-mouth marketing, social capital building and advocacy of product brand (Jin, 2013). Companies are utilizing Facebook for various purposes which include community building to generate conversations and increase fan base; for marketing and promotion to increase awareness of upcoming events or sales; and also for advertising to increase brand awareness. According to Ng (2013), f-commerce can be categorized into two groups (Please refer to Appendix B). The first group refers to firms that connect to Facebook with fan pages and apps which bring prospective consumers to their online-shops (e.g. Gap, TripAdvisor, Levis, Mazda, Amazon, etc). The second group refers to firms that link to Facebook via fan pages and apps and enable potential consumers to purchase straight from their Facebook stores (e.g. Watson Malaysia, Groupon USA, Pantene North America, Hallmark and etc). For

these firms, the main goal is to use Facebook for consumer engagement, special offer promotions and to foster more social interactions among consumers and their friends.

Renowned retailers like Macy's, Express, Hallmark and Delta have started to sell their products via Facebook pages that enable consumers to purchase products within their Facebook page and news feed while interacting and sharing product information (Kang and Johnson, 2015). Moreover *Soldsie*, the social shopping service also allows sellers to upload their product photo images, available quantities and prices on Instagram and Facebook (Cohen, 2014). Consumers will be able to comment with the tag "*sold*" and the bought items can be included into their virtual shopping carts before they finalize the transactions. Likewise, the *Shopify* Facebook store app also provides the service for sellers to trade their goods via Facebook directly. According to Tsukayama (2015), the Facebook *Messenger* app has also allowed buyers to query company's extra product information and obtain swift responses, make extra orders and get online order confirmation via the *Messenger* accounts. Another app, *TheFind* is able to discover and extract buyers' social profiles and purchase habits to facilitate a custom-made purchasing experience (Koh, 2015). With the "buy" button, sellers will be able to sell their products within Facebook ads. When sellers upload an update of the novel product, buyers will be able to receive notifications on the updates and can proceed to buy it with just a simple click of the button that will bring them to the credit card payment interface. Hence, it can be concluded that f-commerce has further revolutionalized e-retailing, e-marketing, e-advertising and e-commerce on the whole.

2.5   SELECTED PAST RELATED STUDIES

According to Zhang and Benyoucef (2016), consumers' behaviour is being notably influence by social commerce despite the fact that research on this area is still considered as novel and fragmented.   This is in agreement with Friedrich (2017) who had conducted an empirical literature review on social commerce and found that these studies are scattered across the literature base, not transparent on occasionally, and not easily to compare with others. Even though there are some articles on consumer behaviour in s-commerce (Zhang and Benyoucef, 2016), however only limited studies have been done with regards to f-commerce and furthermore these studies were scattered across various countries. In this study, the criteria of selection are, first the context of the study must be f-commerce or s-commerce or secondly the study is related to businesses conducted via social media or social networking sites.

One of the recent studies was performed by Liébana-Cabanillas and Alonso-Dos-Santos (2017) who investigated the role of social networks in influencing purchase decision making among individuals and also the moderating effect of age in social commerce sales development, in particular Facebook. Another study was done by Mamonov and Benbunan-Fich (2017) with regards to gift-giving service who assert conflict may arise between the expectations of effort related to the procurement of a gift and the general perception of technology as reducing the needed effort.   Hence, technology-mediated gift service in the perspective of a social networking site (i.e. Facebook gift) is against the social norms of traditional gift exchanges. Nevertheless, these related studies were scattered across various countries and contexts as explained in the following paragraphs.

In Thailand, Suraworachet et al. (2012) has performed a research on the effects of Facebook attributes which covers beliefs in selected Facebook's feature, attitude towards f-commerce, buying intention in f-commerce and perception on ease of use in fan page. It was found that both perceived ease of use and attitude positively influenced buying intention in f-commerce. Their finding on attitude is similar to Gao (2014) in which attitude has positive significant relationship on behavior intention of virtual products in SNS. In another research on online group buying, Tsai et al. (2011) discovered that perceived ease of use influenced perceived usefulness that in return has significant effect on online group buying intention. Besides, Gefen et al. (2003a) also found similar finding that perceived ease of use has substantial relationship on perceived usefulness.

In addition, Suraworachet et al. (2012) also found that belief in people who like a Facebook page, fan page and a photo of an item posted by others have substantial effect on f-commerce buying intention respectively. In fact, the closeness of relationships of Facebook friends will lead to dissimilar belief in friends who like a Facebook fan page. According to the researchers, at the time of their research, less Thai people are aware of f-commerce and Facebook pages are mostly used for promotion and news sharing. Since no complete transactions can be performed thorough Facebook pages, orders are usually done via message and usual transactions methods. Thus, in their research, scenarios and mock-ups were designed to reflect the online buying of clothing since it was the most willing-to-buy online product. Nevertheless, the findings may not be accurate since no real Facebook pages were used to reflect the actual situations and feeling involved and again proven the need to conduct another research to reconfirm how closeness plays it roles in f-commerce.

In another research on Facebook, Sukrat, Papasratorn and Chongsuphajaisiddhi (2015) performed a pilot study to verify the usage of Facebook as a platform to sell organic rice by farmers in Thailand. In their research, factors of trustworthiness (perceived competence, perceived benevolence and perceived integrity) were posited to have positive effect on trust in farmers while both information quality and system quality were posited to have positive effect on trust in Facebook Trust in farmers was then believed to positively affect trust in Facebook and finally both type of trust will influence purchase intention to buy organic rice through Facebook. However, it was just a pilot test which involved 41 respondents and only 37 responses were usable. The findings from this study revealed that for factors of trustworthiness, only perceived benevolence had positive influence on trust in farmers. Between information quality and system quality, only the former positively influenced trust in Facebook. Even so, there was a significant association between trust in farmers and trust in Facebook but surprisingly both type of trusts had no influence on purchase intention of organic rice through Facebook. Therefore, it was concluded that trust is not the leading factor to augment purchase intention online. Even though it was just a pilot study, it has provided understanding of e-commerce through Facebook via examination of the trust constructs to purchase intention of organic rice. However, due to the small sample size, it may not be appropriate to generalize the results to other customers and the reliability of the findings can be dubious. Therefore, a more comprehensive study which includes trust as one of the factors using bigger sample size is indeed warranted and hence further justifies the need to perform this research.

Besides, in the USA, a research to study the apparel online shopping intention in Facebook has been conducted by Kang and Johnson (2015) using purposive sampling in which the participants were Facebook users aged between 18 to 44 years with online

shopping experience. The researchers used multiple personality traits in the development of their theoretical model originated from "Meta-Theoretic Model of Motivation and Personality - 3M model" (Mowen, 2000). The four traits are elemental traits (related to personality traits i.e. material resources needs, openness to experience, arousal needs); compound traits (associated to consumer psychographic characteristics i.e. value consciousness, social browsing, market mavenism); situational trait (associated to gratifications i.e. socializing, information seeking); and surface trait (i.e. intention). By using SEM analysis, it was found that both tie-strength and homophily had moderation effects on the two kinds of gratifications and online social shopping intention respectively. The "trait hierarchy" concept in the 3M Model has been empirically supported with the following results revealed. Information seeking gratification and socializing gratification were found to have positive relation with online social shopping infection. Social browsing and market mavenism were associated to online social shopping intention and socializing gratification with social browsing also positively associated to information seeking gratification. Besides, value consciousness was positively related to online social shopping intention and information seeking gratification. Openness to experience was found to have positive relationship with market mavenism while arousal needs was associated to social browsing. On the other hand, material resource needs was associated to social browsing market, value consciousness and also mavenism.

The findings of the above study are particularly beneficial to marketing managers in terms of planning strategies with regards to promotion, price, product and place to satisfy their targeted markets and produce good responses from consumers. Nevertheless, non-social shoppers' feedbacks were not being included and valuable insights might have been overlooked in this study. Hence, future research should

include non-social shoppers to understand their problems, motivations and suggestions on how to improve the usage of Facebook for online shopping. While a comprehensive study based on 3M Model has been performed with regards to personality traits, their research has ignored the role of psychology traits such as urgency and impulse buying in influencing online purchase behavior. As such, the need to study consumer online purchase behavior from the psychology view has been duly considered in this research.

In another research on Facebook commerce initiated by Wu et al. (2015), the criteria of electronic service quality on f-commerce commercial activities have been identified by using a few processes. Firstly, the dimensions and factors of electronic service quality were identified by referring to the most cited social sciences papers of electronic service quality found in Web of Science and Google. Next, the Analytic Hierarch Process (AHP) questionnaires were being administered on 50 experienced Facebook users in commercial activities to identify the top dimensions of electronic service quality and the results showed reliability, responsiveness, information, security, ease of use and trust dominated the list. Subsequently, the Fuzzy Analytic Hierarch Process (FAHP) for analysing the weightage of assessment criteria was performed and the following results in ascending order were identified: security, trust, reliability, ease of use, responsiveness and information. Lastly, VlseKriterijumska Optimizacija I Kompromisno Resenje (VIKOR) technique was utilized to ascertain the various type of brands or Facebook commercial activities that are considered satisfactory by users. The top ten preferred brands by the 50 participants were Facebook, Coca-Cola, IBM, American Express, Microsoft, Toyota, Louis Vuitton, Gilette, Prada, and Google. The study also revealed that in terms of collaborative learning, the participants have learnt new aspects of electronic service quality and there exists differences between local and foreign participants with regards to their priorities of the electronic service quality

dimensions in f-commerce. Nevertheless, the dimensions identified may not be comprehensive enough to include all the attributes of social commerce. It was suggested by the researchers that the findings from the study to be further investigated using exploratory factor analysis (EFA) and SEM to develop a novel electronic service quality specifically for social commerce. Even though this past study is not in the same context with this study itself, however, the fact that Facebook being the top preferred brand is a subject that is worth to be investigated in some kind of aspects such as purchase behaviour in f-commerce as to enrich the body of knowledge in social commerce.

On the other hand, in South Korea, the way s-commerce characteristics influence consumers' trust and trust performance have been examined by Kim and Park (2013). The seven characteristics are transaction safety, reputation, size, economic feasibility, information quality, word-of-mouth (WOM) referral and communication. WOM intentions and purchase intention using trust as a mediator have been examined as well. Their findings revealed that firm's size and reputation as well as transaction safety, information quality and WOM have positively affect trust whereas trust has significantly influence purchase intention and WOM intention. The research has contributed significantly to the research field of s-commerce since its research framework has provided understanding whether there is a likelihood of development of buyers' trust towards s-commerce. However, to enhance the future research framework, the researchers have recommended to examining other characteristics such as social characteristics, social norms or shopping experiences to improve the variance explained by trust and trust performance.

In Korea, Shin (2013) had focused his research on consumer behaviours towards s-commerce, in particular, the role played by social influence. He highlighted that consumer trust appears to be a barrier in the development of s-commerce as they may not trust s-commerce or just perceived it as another form of online services or rather a gimmick or an immature service (Rad and Benyoucef, 2010). On top of that, people's opinions and view about company services and products also play an important role in determining company sales. Hence, Shin (2013) integrated cognitive and behavioral attitudes in his research model to examine the determinants of user intention to accept s-commerce. It was found that subjective norm is the main antecedent to use s-commerce. The findings further revealed that perceived enjoyment, perceived usefulness, subjective norm and attitude influence intention to use while perceived trust and perceived social support significantly influence use behavior. Although the study has greatly benefited s-commerce marketers in understanding users' opinion of s-commerce and their contribution towards adoption and usage of s-commerce, the findings cannot be generalized to other contexts due to the data collected were from a few online communities linked to s-commerce. As such, there is a need to understand clearly user's behavior in a more specific context of f-commerce as to benefits the f-commerce players themselves who can be more focused in their marketing efforts.

Besides research by Kucuk and Krishnamurthy (2007), having to know the benefits and increasing popularity of online group buying, Tsai et al. (2011) had also performed a related research in Taiwan. Instead of focusing their research on individual buying behavior, this group of researchers had opted to study the behavior of consumers while buying in group whereby an item can be purchased only upon achieving the desired amount in terms of monetary or quantity. They found that perceived usefulness, trust in virtual community and sense of virtual community influenced consumers' purchase

intention while website quality and perceived ease of use affected perceived usefulness. On the other hand, perceived usefulness had shown significant influence on consumers' online group buying intention. Their finding was different from Gefen et al. (2003a) in which perceived usefulness has no significant relationship on purchase intention from online bookstore.

On top of that, trust in the virtual community was found to be an antecedent of the sense of virtual community which in turn, affects online group buying intention (Tsai et al., 2011). These results implied that the easiness to use online group buying website, the usefulness of the website and trust formed in virtual community (i.e. online group buying website) will greatly influence the purchase intention of group buyers. This finding is similar to Gefen et al. (2003a) in which trust also has positive significant relationship on intention to purchase books online. Even though the research has successfully integrated technology acceptance variables and social factors in the theoretical model, it can only provide insights on the intention to purchase online in group. It would be more valuable if future researches can be performed to understand the actual consumer behavior in online group buying or perhaps in another context such as f-commerce as what has been done in this study.

Nevertheless, Gao (2014) was interested in investigating China consumers' purchasing behaviour of virtual products in SNS. He explained his findings from the perspective of two types of consumer namely passionate export-oriented consumers and low profile self-supporting consumers. For the former, the attitudes of SNS virtual products, subjective norms and perceived behavioral control have effect on behavioral intentions. Besides a strong relationship with attitudes, perceived behavioral control has significant effects on final real purchase behavior. They tend to buy virtual products

when the SNS they are interacting with is able to generate a positive attitude on them. As for the low profile self supporting consumers, perceived behavioral control and attitude again are the main influence of behavior intentions. However, final purchase behavior was not significantly influenced by perceived behavioral control while subjective norms only showed low level of influence on behavioral intention. This may be explained by the reality that this group of buyers is more rational, have proper plans and self reliance who like to resolved their own problems. As this research was done using Theory of Planned Behavior, it can only explain individuals buying behavior from a planned purchase perspective. It is not sufficient to explain consumers buying behavior from an impromptu or impulsive purchase behavior perspective. Hence, it has become a research gap that worth to be investigated and has been duly explored in this study.

In addition, Gefen et al. (2003a) carried out a simulation experiment regarding the intention to purchase books from Amazon.com to compare the level and relative importance of consumer trust in online stores; in relation to the Technology Acceptance Model constructs for the website, between new customers and experienced customers. This is a crucial factor to determine participation in e-commerce regardless of whether they are potential or recurring customers (Jarvenpaa, Tractinsky & Saarinen, 1999). In fact, trust is deemed as a very important factor in various types of business relationships and transactions (Gulati, 1995; Fukuyama, 1995) and eventually become the determinant for the nature of businesses and social relationships (Luhmann, 1979; Blau, 1964). For online stores, familiarity with e-vendor and ways of using a website are also important as familiarity builds trust and reducing misunderstandings on e-vondor's purpose of using the website (Gefen, 2002b). However, this finding contradicts with

Ng (2013) who found that familiarity has no significant relationship on intention to purchase from s-commerce websites.

Besides, according to Gefen et al. (2003a), disposition to trust is also equally crucial for online customers towards trust building since social cues such as voice, appearance and reputation are generally not available in online environment (Gefen, 2002b). The results of the study highlighted that trust, familiarity and perceived usefulness influence purchase intention while trust was influenced by familiarity and disposition. In particular, it was further suggested that there could be a trust-barrier in the e-commerce acceptance which widen the gap between potential and repeat customers. The study is important as it has successfully integrated a model of customer purchasing intentions that includes both trust and perceived IT usefulness. As an improvement to the research model, the researchers have suggested including social norms since near-peers, family and friends have been empirically proven to have influence on one's behaviors. With regards to this aspect, how individual trust can be influenced by closeness and familiarity with their associates has been investigated in this study.

In addition, Hajli (2017) has examined the role of trust on social commerce buying intention in social networking sites (SNS). The study revealed that trust in SNS may lead to information seeking and ultimately trigger familiarity with the social commerce platform as well as the sense of social presence. It was also found that familiarity and social presence may promote purchase intentions. On the other hand, Liu et al. (2016) studied the determinants that drive information sharing behaviors on social commerce sites (SCS). The finding showed that personal factors such as reputation and pleasure of helping others and social capitals such as in-degrees' feedback and out-degrees' post

and customer reciprocity and expertise have significant effects on consumers' information sharing.

However, Lin et al. (2016) applied latent semantic analysis and text mining approach to summarize the present state of social commerce and the finding showed that there are three key research themes namely advertisement, organization and word-of-mouth with two key trends namely corporate reputation, innovation and user-generated content as well as trust, online review and e-word-of-mouth. Moreover, Lu et al. (2016) examined the effects of institution-based trust within s-commerce marketplaces and found that perceived social presence (PSP) and perceived effectiveness of institutional structures (PEIS) significantly affect trust in marketplace that ultimately triggers transaction intention in social commerce.

Nevertheless, Xiang et al. (2016) investigated the influence of parasocial interaction theory (PSI) on creation of impulse buying behavior in *Mogujie*, a well-known image-sharing social commerce platform in China. The results indicated that PSI has direct influence on perceived enjoyment and urge to impulsively purchase whereas perceived enjoyment and impulse buying tendencies significantly influence urge to impulsively purchase. Furthermore, impulse buying tendencies directly influences urge to impulsively purchase.

Besides that, Chen et al. (2016) have studied the effects of latent-state theory, textual information quality and the amount of "likes" on buyers' urge to purchase impulsively. The results showed that textual information quality and the amount of "likes" significantly influence urge to buy impulsively. Last but not the least, Lu et al. (2016a) have studied the effects of social presence theory on online purchase behaviors in

Taobao, a popular China online marketplace. The study showed that social presence of interaction, social presence of web and perception of others significantly affect trust in sellers that eventually triggers consumers' purchase intention.

2.5.1 A critique on selected literature of f-commerce/s-commerce studies

Currently there is very limited literature of f-commerce (e.g. Chen et al., 2016; Hajli et al., 2017; Liébana-Cabanillas & Alonso-Dos-Santos, 2017; Moser et al., 2017), therefore this study has also include literature of s-commerce since f-commerce is a subset of s-commerce. A major critic on these literatures is that the studies are scattered across the literature base, occasionally not transparent and not easily comparable to other studies (Friedrich, 2017). Though there are several studies on consumer behavior in s-commerce, however, very limited research has been done pertaining to the specific f-commerce context (Friedrich, 2017).

The study by Hajli et al. (2017) only focused on the role of trust on purchase intention in social networking site via Facebook. They examined the effects of social commerce information seeking, social presence and familiarity with the platform on behavioral intentions among the consumers. However, the sample size is relative small with just 201 participants and these participants are not common f-commerce users but only involved postgraduate and undergraduate students of a public university. This has triggered the question on the validity of the sample and the generalizability of the findings. Although common method bias was examined with un-rotated EFA, however, no tests on multivariate assumptions and non-response bias were performed. This has greatly reduced the validity of the research findings.

Another study by Liébana-Cabanillas and Alonso-Dos-Santos (2017) on factors that influence adoption of Facebook commerce concentrated on the effect of social networks on purchase decision and how age can affect the development of sales via Facebook. Nevertheless, the sample size is rather small with just 205 Facebook users. Hence, the findings should be carefully interpreted when projecting to bigger population sizes. In addition to that, respondents were constrained to just viewing a video and a text about the functioning of the tool in measuring their intention to use and this has compromised the actual behavior of the respondents. The study also lack in terms of assessment of multivariate assumptions, non-response bias and common method bias. Besides, the instrument was not rigorously developed and validated through expert panel reviews, pre-test and pilot test. These have significantly reduced the validity of the statistical results and findings.

Moser et al. (2017), however, focused on examining how trust can be established in Facebook Groups' selling and buying within the community. Nevertheless, they have used semi-structure interviews with only 18 members of two active Mom-to-Mom Facebook sales groups based in the suburbs of a large Midwestern city. More problematic is that the study is likely to suffer from selection bias since members who normally trust other members will most likely to participate in an interview advertised on their sale group. In addition to that, the study only interview active members and less active members such as admins would exhibit different behaviors and responses, hence, the findings is very much limited to the active members and cannot be generalized to represent the whole population. Finally, the study focused on sales groups for moms and they are more or less trusting than other populations. Likewise, the sample was drawn from suburbs community and therefore, the findings cannot be extended to represent urban or high income communities.

Besides, Suraworachet et al. (2012) conducted a study on Thai consumers' buying intention in f-commerce. The study aimed to examine the relationships between attitude towards f-commerce, beliefs in the number of selected Facebook's features, perception of ease-of-use in Facebook fan page and purchasers' buying intention. Even though 340 respondents were involved in this study, however, due to the absence of instrument validation, the validity and reliability of the survey instrument were questionable. On top of that, there were also no pre-test and pilot test as well as tests of multivariate assumptions. More importantly, the findings were subjected to common method bias and non-response bias. This study engaged factor analysis and regression analysis and therefore the statistical results are not as robust as SEM analysis.

On the other hand, Sukrat et al. (2015) examined the effect of customer trust on buying intention in organic rice via Facebook. In their pilot study, only 37 respondents were involved. This very small sample size has become a major hindrance for generalization of results to the entire population. Furthermore, the study only focused on organic agriculture consumers who stay and live in urban area and are middle-class citizen. Hence, the findings cannot represent whole population. Moreover, only two constructs from ISSM (i.e. system and information quality) were used in this study. The construct of service quality has been omitted. This has rendered the findings incomplete and impaired. In addition, the instrument did not go through rigorous test and there were also no pre-test and pilot test prior to the fieldwork study. Similar to other previous studies, the major problem that leads to unconvincing and perhaps invalid statistical results is the absence of assessment on multivariate assumption, CMB and non-response bias. The study only focused on organic rice and not more than that. Therefore, the findings are merely limited to the scope of the pilot study and cannot be further extended.

Focusing on online apparel social shopping, Kang and Johnson (2015) applied the Meta-Theoretic Model of Motivation and Personality (i.e. 3M model) to investigate whether shopping intention in f-commerce is influenced by consumers' psychographic characteristics, personality traits and gratifications. Just as Sukrat et al. (2015), this study only focused on online apparel social shopping and not more than that. This has substantially reduced the generalizability of the findings as it cannot be extended to other types of products. The survey instrument has not been scientifically developed and validated. Other than that, there were also no evaluations of multivariate assumptions, CMB and non-response bias. Thus, the statistically results are therefore not reliable and therefore becoming less convincing.

Kim and Park (2013) have investigated the influences of numerous characteristics of s-commerce on trust performance and buyers' trust. However, since there is no rigorous validation on the survey instrument, therefore, there might be some degree of misspecification of the variables used in the study. Like other previous studies, no multivariate assumptions and non-response bias tests were performed. Hence, the validity of the findings is arguable. On the other hand, Shin (2013) focused on examining the role of social influence in s-commerce. Nevertheless, the study has gathered data that is heavily weighted towards educated and young consumers who would likely to be the early adopters. This has raised the questions of how serious the respondents take s-commerce in this research and to what degree is the samples may represent the population presently engaged in s-commerce activities. Furthermore, the study involved restricted aspects of buyers' s-commerce experiences in an experimental setting. Hence, user behaviours and attitudes depend on their impending expectations and possible experiences because a complete market diffusion of s-commerce has yet to happen.

Gao (2014) concentrated on examining the drivers that affect consumers' intention to purchase SNS virtual products. However, one major problem is the sample of study which involved only university students and this has greatly reduced the generalizability and validity of the research outcomes because the sample cannot represent the entire population understudy. Furthermore, there were also no evaluations on CMB and nonresponse bias as well as the criteria for multivariate assumptions. On top of that, the survey instrument did not go through rigorous validation processes, pre-test and pilot test and this has triggered the questions on the reliability and validity of the instrument.

Di Pietro and Pantano (2012) conducted a research to investigate the level of Facebook's influence on consumers' purchasing decisions. The main problem with this study is the use of university students as the sample that is mostly in the age of below 25 years old. Therefore, the sample cannot represent the whole population. Other problems are lack of verifications on CMB, non-response bias, multivariate assumption, pre-test and pilot test. Again, the instrument has not been scientifically validated. Hence, the research findings are not convincing and may lead to problems of reliability and validity.

Finally, Chen et al. (2016), however, have conducted a research on C2C Facebook "buy and sell" groups. Nevertheless, since the study used online field experiment, the participants may not demonstrate their actual behaviors because they know that they are being experimented in a virtual environment. Moreover, since the study used urge to buy impulsively as a substitution for consumers' real impulse buying, therefore, the results of the study cannot accurately reflect consumers' actual impulse buying. More importantly, the study engaged experimental Facebook accounts to create the amount of "likes" to differentiate the influence between respondents' friends clicking "like" and

the amount of "likes" itself. Even though it may be likely that no one of the respondents' friends could have clicked "like" on the advertising posts and thus this circumstance cannot precisely reflect the actual scenario and leading to the question of "who" actually clicked the "likes".

2.5.2 Cultural differences in social media and information system studies

The cultural dimensions (Hofstede, 1997) have been integrated into the TAM model in the work of Zakour (2004) who assert that the masculinity/femininity moderates the association between intention to use and subjective norms. Furthermore, individuals with high degree of uncertainty avoidance tend to use IT less compared to those who have lower degree of uncertainty avoidance. Uncertainty avoidance also moderates the association between intention to use and subjective norms. On the other hand, individuals in low power distance cultures have higher acceptance toward IT over individuals in higher power distance cultures. In addition to that, power distance also moderates the association between subjective norms and behavioral intention. Finally, individualism/collectivism moderates the association between subjective norms and intention to use.

Leidner and Kayworth (2006) found that among the 15 national-level studies on culture and information technology adoption and diffusion, 10 mention at least one of Hofstede's (1997) values to explain the association between IT adoption and use and national culture. Uncertainty avoidance has been the most adopted dimension trailed by power distance, individualism/collectivism and masculinity/femininity. Uncertainty avoidance plays an imperative role in ascertaining how individuals are likely to adopt and diffuse information and communication technologies. Thatcher et al. (2003) found that pupils from nations high in uncertainty avoidance were less eager to experiment

with novel information technologies. Galliers et al. (1998) opined that lower uncertainty avoidance was related to slower rate of IT adoption. Hence, there appears to be an overall support to hypothesize that greater uncertainty avoidance will be linked to lower adoption and diffusion of IT (Leidner & Kayworth, 2006).

Besides that, Vreede et al. (1998) assert that there is a positive association between power distance and GSS acceptance. Hasan and Ditsa (1999) found that fruitful adoption of IT is more probable to happen in low power distance setting. On the other hand, Leidner et al. (1999) opined that the acceptance of executive information systems is more favorable in nations with lower uncertainty avoidance and power distance.

In the perspective of social networking sites, Pookulangara and Koesler (2011) have integrated Technology Acceptance Model 3 and Hofstede's cultural dimensions to investigate the cultural effect on SNS and purchase intention. According to this research, individualistic societies exhibit looser bonds among the members and therefore, it is expected that the social interactions between these members will not be strong and thus reduce the significance of influence of referents. Whereas in collectivistic cultures, individuals will have stronger bonds and therefore they are highly affected by other members of the society. On the other hand, in societies that are high in uncertainty avoidance, individuals will constantly feel the inherent uncertainty in life whereas societies in low uncertainty avoidance are more easily to accept uncertainty. Hence, it is anticipated that based on the degree of uncertainty avoidance, individuals will react differently towards SNS (Pookulangara & Koesler, 2011). Furthermore, people in short-term orientation cultures are expected to see fast outcomes whereas individuals in long-term orientation cultures favor long-term goals. Hence, people in

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short-term orientation cultures will experience materialist consumption pressures and adopt new technology rapidly.

Finally, Kim et al. (2011) assert that the role of culture in communication has been constantly studied through the comparison of two prototype culture namely individualism and collectivism. In individualistic societies, individuals consider themselves to be independent where self-reliance, distance from in-groups, competition and hedonism are valued whereas collectivistic societies are characterized by in-group membership, family integrity and strong solidarity and place emphasis on interdependence among the members of the society. Western cultures such as US exhibit high level of individualism whereas Asian cultures such as China, exhibit the Confucian background (Kim et al., 2011). The study found that American students' networks in an online social venue are far greater than their Korean counterparts due to the cultural difference between the two nations with respect to the development and management of social relationships.

2.6   THEORIES OR MODELS USED IN ONLINE IMPULSE PURCHASE STUDIES

Studies on impulse purchase had been conducted using various theories. Numerous scholars have proposed theoretical frameworks for examining impulse buying in online context and among the first to do so is LaRose (2001) who examined online unregulated buying. This is followed by Koufaris et al. (2001) who investigated factors that trigger unplanned online buying. Then, Adelaar et al. (2003) adopted the environmental psychology approach to examine the impact of 3 dissimilar media formats of web pages on impulse buying intention while Dutta et al. (2003) studied how the implementation characteristics of online payment processes influence impulse buying. In addition,

Koufaris (2002) and Zhang et al. (2007) used TAM to examine unplanned purchases on the Internet. Nevertheless, there are also more contemporary theories being used and these include the theory of reasoned action (TRA), browsing model, cognitive emotion theory, latent-state-trait (LST) theory and heuristic information processing, Stimulus-Organism-Response (SOR) and flow theory, Two-factor Theory, Social Capital Theory and multidisciplinary framework.

As mentioned in the paragraph above, it can be observed that three theories namely Social Impact Theory, Theory of Web Usage and Trust Transference Theory have received little attention thus far. Since Facebook is a social media which involves social interaction among the Facebook users and the impact of familiarity and closeness (variables in Social Impact Theory) among the users would probably influence their intention to use the Facebook. Hence, this theory is suitable to be integrated into the theoretical framework as f-commerce depends a lot on the social communication and influence among Facebook users and their goodwill to share information about products, services and offers by f-commerce sellers.

Furthermore, these users are also affected by the hedonic and utilitarian motivation, which are variables in Theory of Web Usage, for instance the sense of pleasure and enjoyment and also Facebook social media as a type of professional and social communication. Moreover, the trust motivation which is a variable in Trust Transference Theory is anticipated to have some influence on the usage of Facebook since there can be uncertainties involved during online interactions. Hence, the influences of the Social Impact Theory, Theory of Web Usage and Trust Transference Theory on f-commerce have been investigated in a holistic manner in this study. With

this integrated research framework, this study will contribute to the existing theory significantly. These theories are deliberated in length in the next sub-sections.

2.6.1   Social Impact Theory (SIT)

Latané (1981) has referred social impact as any effect on behaviour, individual feelings or thoughts that is exerted by the imagined, implied, real presence or actions of others. Latané 's theory is a meta-theory which tries to "characterize how the many ways in which individual influencing each other are subjected to the constraints of space and time, and specifically, how impact is moderated by the immediacy, strength and number of other people in the social setting" (Nowak et al., 1990, p. 364).

Following the Social Impact Theory (SIT), the effect of any source of information could be due to the number of people who formed the source, the closeness of the source to the receiver during the period of the influence attempt and the tie power between the source and the receiver (Latané, 1981). This theory states that the possibility that a person responses to social influence will increase with the growing number of people that comprise the group; the immediacy of the group to him/her in space and time; and also in terms of the strength of influence of the group to him or her.

SIT suggests that the quantity of social influence on an individual on one another is a multiplicative function of strength (i.e. components that make an individual more persuasive or resist to persuasion like personality, physical attractiveness and expertise), immediacy and number. Immediacy is referred as closeness in social space constrained by physical space (Latané and Liu, 1996) but not entirely equivalent to it. Latane´ et al. (1995) assert that influence decreases exponentially as social space rises. Number on the other hand is the number of people being influenced or doing the influencing and is also

a power function. Every additional individual gives a little less unique influence. For instance, a person will be more affected by two individuals arguing a position than one individual but the 301st individual probably will not have much influence beyond the 300th.

Immediacy also has effect on influence. For example, zoo patrons obey more willingly to demands made by an experimenter who is physically close to them than to an individual in another room (Sedikides and Jackson, 1990), and citizen in China and the United States report more influence from those who live closest with them (Latané et al., 1995). In fact, number has most empirical attention. For example, empirical evidences showed that individuals endorsing a specific restaurant choice (Wolf and Latané, 1983), selecting an answer over another (Asch, 1955) or contributing money to cancer studies (Jackson and Latané, 1981) affect social influence.

SIT has been applied to numerous social processes such as persuasive communication (Latané & Wolf, 1981; Wolf & Latané, 1983), social loafing (Latané et al., 1979) and diffusion of responsibility (Latané and Nida, 1981; Latané and Darley, 1970). It has been verified in various experiments and re-analyses of previous gathered data (Nowak et al., 1990). The appeal of SIT is the application of mathematical model that makes it suitable for computer simulation. SIT emphasizes the magnitude of the impact of one or more individuals have on another individual and it is a static theory about how social processes function at the individual level at a specific point in time. A portion of the theory addresses how much impact is experienced by an individual expressed as a function of number of sources, immediacy and the strength of the impact.

Latané (1981) has also offered intuitions that social impact adheres to rules analogous to those influencing physical forces such as the electromagnetic forces. SIT consists of two core constructs of Familiarity and Closeness. SIT is currently extensively cited in textbooks and literature in social psychology as it offers useful outline for understanding how an individual is influenced by her or his social setting. For instance, in Taiwan, Ng (2013) focused her research on s-commerce websites across cultures by using culture as the moderator and trust as the mediator in social network community to investigate the association between purchase intention and social interactions (closeness and familiarity). The results showed that both closeness and familiarity developed through social interactions in a social network community positively affect trust and also impulse buying. On the other hand, trust mediated the association between social interactions and the intention to buy from the s-commerce site while culture differences between regions moderated the said relationship. Culture differences between regions also moderated the mediating role of trust in a social network community in the association between the intention to buy and social interactions.

The subsequent sub-sections will elaborate in more detail the concepts of Familiarity and Closeness as well as studies which have engaged these constructs.

2.6.1.1 Familiarity

In physical interactions, familiarity may be considered as an emotional word for using the term "feeling" (Kelley and Jacoby, 1998). The phrase "feeling of familiarity" was used by Ramachandran et al. (1998) and Ratcliffe (2002) to describe familiarity as an affective concept to justify it as an emotional feeling linked to a identified object. On the other hand, Brown and Reingen (1987) defined the strength of ties as the

familiarity of an individual with another while familiarity is one of the prerequisites to intimacy (Williams, 2001). Gobbini et al. (2004) opined that familiarity accumulates naturally with years of social interaction and James (1992) argued that familiarity needs time to grow and is influenced by the amount of previous interactions and happens via repetitive interaction (Rindfleisch and Inman, 1998). Many previous studies (e.g. Colombo and Morrison, 1989; Raj, 1985) have identified the positive association between long-term relationships and familiarity and consumers' reuse behaviour through good feelings like liking.

From the context of consumer perception, consumer familiarity with a service or product is the primary constituent of consumer knowledge (Philippe and Ngobo, 1999; Alba and Hutchinson, 1987). Familiarity is referred as "the number of product-related experiences that have been accumulated by the consumer" (Alba and Hutchinson, 1987, p. 411). Familiarity has received numerous attentions in the literature of consumer behavior (Mäenpää et al., 2008). It influences consumer decision making and information processing and therefore is the key construct that can explicate consumer choice processes (Johnson and Russo, 1984; Park and Lessig, 1981; Punj and Staelin, 1983; Rao and Monroe, 1988; Shehryar and Hunt, 2005). A number of researches have investigated the impacts of familiarity on consumers' behavior, brand evaluations and behavioral intentions (e.g. Arora and Stoner, 1996; Coupey et al., 1998; Dahl et al., 2001; Söderlund, 2002). Familiarity is also a topic of interest in researches pertaining to branding and advertising (e.g. Allen, 1994; Campbell et al., 2003; Hardesty et al. 2002; Kent and Meyers-Levy, 1989).

Previous studies on familiarity have suggested that its influence on other relevant variables and constructs is likely to be context specific and ambiguous (Mäenpää et al., 2008). The function of familiarity differed based on the characteristic of decision processes; increasing in a judgment task but depicted an inverted U-shaped curve in a choice task (Johnson and Russo, 1984). However, Punj and Staelin (1983) did not find support for a curvilinear association between previous memory structure and quantity of external information search. Nevertheless, Rao and Monroe (1988) reported a curvilinear association between price-quality association and familiarity. Aurier et al. (2000) on the other hand, found association between consideration set size and product familiarity where there is an inverted U-shaped association between depth of familiarity and consideration set size but a positive linear association between breadth of familiarity and consideration set size.

Moreover, past researches have also validated the impacts of familiarity on consumers' decision making on evaluation of country of origin (COO) products (Moorman et al., 2004; Park and Lessig, 1981; Samiee, 1994). Buyers may not consider purchasing an unfamiliar foreign brand since they may make unfavorable inferences about the quality of the products (Han, 1990). Likewise, Flavián et al. (2006) considered the studies done on individuals' buying behavior to be particularly relevant because of the significant effect of familiarity on buyers' decision making processes (e.g. Bettman and Park, 1980; Gefen and Straub, 2004; Park and Lessig, 1981; Ratneshwar et al., 1987). According to Luhmann (2000), familiarity may be regarded as what the knowledge individuals have of a service or product according to their prior contacts and experiences. Hence, familiarity can be referred as the amount of experiences linked to a product that have been accrued by the consumers (Alba and Hutchinson, 1987).

On the other hand, from the online perspective, Komiak and Benbasat (2006) defined familiarity as an individual's understanding of technologies that is frequently based on prior experience, interactions and learning of who, what, how and when of what is occurring. Familiarity is influenced by the amount of previous interactions and happens via repeated interactions (Gefen, 2000). Gefen (2000) has studied the degree to which the levels of familiarity with a particular e-commerce seller and its procedures boost a consumer's readiness to buy the products. Likewise, Van Slyke et al. (2006) stressed that buyers' familiarity with a web merchant is associated to their readiness to perform transactions with the merchant.

In fact, familiarity which is frequently referred as user experience has attained attention from the perspective of e-commerce and Internet. In the perspective of Internet (Gefen, 2000; Corbitt et al., 2003; Miyazaki and Fernandez, 2001; Pechtl, 2003; Rodgers et al., 2005; So et al., 2005), familiarity has been roughly operationalized to denote experience in utilizing the Internet. The scholars argued that more experienced users are likely to search less and will be more confident when operating online (Ward and Lee, 2000). Familiarity in the context of Internet is referred to as some particular activities e.g. whether or not the consumers have prior experience in purchasing on the Internet (e.g., Lee and Lee, 2001; Park and Stoel, 2005; So et al., 2005) or whether they feel familiar with the particular website or seller (e.g. Flavián et al., 2006; Gefen, 2000; Gefen and Straub, 2004).

Studies on familiarity in the perspective of Internet have also examined the influence of trust in acceptance of various online services (Mäenpää et al., 2008). Gefen (2000) opined that trust is significantly influenced by familiarity with an Internet seller and its procedures for conducting businesses. When familiarity with the seller surges, trust will

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also increase and the buyer is more eager to make online product inquiries or to buy products from the seller website (Gefen, 2000). Familiarity with the Internet as a communication technology has been recommended as the most essential factor favoring online shopping adoption (Pechtl, 2003), and previous online shopping experiences are likely to significantly influence future online shopping intentions (Shim et al., 2001). The more experienced buyers will have more positive attitude toward websites in general (Bruner and Kumar, 2000) and there is a strong positive correlation between e-commerce participation and users' web experiences (Corbitt et al., 2003).

From the perspective of Internet banking, familiarity is mostly examined as one of the various constructs leading to adoption of Internet banking (Mäenpää et al., 2008). Familiarity in utilizing new technology and computers has been found to have positive influence on consumers' attitudes towards adoption of e-banking (Karjaluoto et al., 2002) and online banking adoption (Laforet and Li, 2005). Besides that, task familiarity in using Internet banking also has significant effect on perceived usefulness (Chau and Lai, 2003).

From the context of online journalistic services (Flavián et al., 2006), buyer familiarity with a service or product is regarded as a field of study that has enticed the focus of numerous marketing scholars (e.g. Alba and Hutchinson, 1987; Bettman and Park, 1980; Desai and Hoyer, 2000; Johnson and Russo, 1984; Luhmann, 2000). In addition, Black et al. (2002) argued that the deficiency of experience and familiarity may lead to higher perception of risk with Internet in comparison to other channels. Gefen (2000) also opined that familiarity manages to simplify relationships with others and minimize uncertainty by creating a knowledge structure. Familiarity also helps to reduce cognitive efforts in decision making, making them easier and in some instances

automatic (Alba and Hutchinson, 1987). Last but not least, it may also increase the degree of trust toward a website (Gefen, 2000) and the extents of interest for a product (Baker, 1999; Chakravarthi and Sen, 1983; Paswan and Ganesh, 2003; Shimp, 1997).

2.6.1.2 Closeness

The term "intimacy" was adopted to describe a particular kind of feeling (Cordova and Scott, 2001) and the nature of intimacy warrants a feeling of closeness beyond "embodiment of commodities", something emotional which is possibly profound and "real" rather than purely situational or superficial participation and a commitment to wanting to identify with the other (Trauer and Ryan, 2005).   Marsden and Campbell (1984) proposed that the paramount signs of the strength of a tie with another individual are those having to do with the time spent together and the deepness of the relationship. Jourard (1971), Altman and Taylor (1973) opined that the nature of intimacy embroils a person's deepening familiarity with a subject.

Lowenthal and Haven (1968) stressed that intimacy is a crucial variable for adaptation and interaction. Cordova and Scott (2001) assert that intimacy is not founded on a sole event but instead on an accrual of events over time and Bagarozzi (1997) argued that intimacy will evolve over time. This is further supported by Moss and Schwebel (1993) who found that intimacy has dominant importance in enduring relationships. Schaefer and Olson (1981) stressed that intimacy has an integral role to play in solidifying relationships.

Among the examples of intimacy, the most common one is the sharing of private thoughts and self-disclosure or feelings (Prager, 1995). Self-disclosure includes sharing unpleasant feelings like hurt or sadness or thoughts like worries, fears, anxieties,

failures, embarrassments, confusions and disappointments (Cordova and Scott, 2001). Self-disclosure has been long considered by scholars as a means for individual to establish intimate relationships (Jourard, 1964). Altman and Taylor (1973) placed self-disclosure at centre stage in the social penetration theory. According to them, relationships will become more intimate when partners intensify the depth of their disclosures to each other. When the breadth (i.e. the number of topics unveiled) and depth (i.e. the extent to which the topics are personally pertinent) of disclosures increase, the relationship between interacting partners tend to become more intimate.

Though self-disclosure has been referred in numerous ways (Derlega et al., 1993; Perlman and Fehr, 1987; Rosenfeld, 2000), majority of the scholars concur that it entails interactions in which a person willingly discloses personally related info to others (Greene et al., 2006). The revelation of personally related information may be either verbal or non-verbal but its power to generate feelings of intimacy is referred more in terms of quality (i.e. personal relevance) rather than quantity (i.e. number of topics). For instance, the propensity of spouses to express feelings is more closely linked to relational satisfaction than the propensity to communicate facts (Fitzpatrick, 1986). However, a person revealing personally related information to others does not encompass an intimate relationship (Vangelisti and Beck, 2007). Reciprocal disclosures are assumed to be especially vital to the creation of intimacy early in relationships.

On the other hand, Reis and Shaver (1988) defined intimacy as an interpersonal process that entails communication of personal information and feelings to another person who responds sympathetically and warmly. Their integrated model of intimacy comprises of several components that include partner responsiveness, self-disclosure, reaction to partner responsiveness and both partners' needs, fears, motives and goals.

Reis and Shaver (1988) opined that the process of intimacy starts when a person discloses personal info to another and this revelation can be verbal or non-verbal and it can be either intentional or unintentional. Conversely, Prager and Roberts (2004) proposed that intimate interactions are denoted by self-revealing behaviour, shared understandings and positive involvement with the others. They also noted that self-revealing behaviour include the disclosure of private, personal info and it may be either verbal or non-verbal and argued that intimate interactions need individuals to be positively engaged with each other.

Besides, Cusinato and L'Abate (1994) assert that there seems to be something exclusively intimate about sharing personal pain. Sharing positive experiences is normally regarded as intimate as sharing negative experiences (Cordova and Scott, 2001). Sharing secrets and sharing cherished memories or simply being with another person in an atmosphere of ease and comfort are also regarded intimate and intimacy is referred not only to the act of self-disclosure but also to the interaction in which self-disclosure is corroborated and reciprocated (Cordova and Scott, 2001).

In addition to verbal behaviours, non-verbal behaviours are also common intimacy and sex is the most often instance but other may encompass hugging, hand holding, approaching for solace, grooming, interacting with children and crying on somebody's shoulder (Cordova and Scott, 2001). Intimacy is used to decribe a particular kind of feeling such as warmth, closeness as well as loving and generally intimacy is referred to as individual behaviour (e.g. self-disclosure), interaction between partners, types of special feelings and relationships. Moreover, intimacy is one of the crucial factors in enhancing consumers' continuance intention in web-based services (Lee and Kwon,

2011). Similar studies also have been carried out in examining the role of this factor in consumers' intention (Kempf, 1999; Kim and Srivastava, 2007).

2.6.2 Theory of Web Usage (TWU)

According to the Theory of Web Usage (TWU), the advantages derived from the Web usage may be generally classified into hedonic consumption and utilitarian consumption (Cotte et al., 2006). Hedonic consumption advantages are frequently explained using the experiential view, which stated that consumers seek sensory stimulation, enjoyment, fun and to obtain expending resources like money and time. This view regards consumption as the experience itself instead of the object of consumption (Hirschman & Holbrook, 1982). Utilitarian advantages are founded on a more coherent view from the perspectives of consumer behavior. The utilitarian consumer behavior is regarded to be task-focused in which the final satisfaction comes from achievement of task rather than from the experience itself (Babin et al., 1994). In view of Facebook users' participation in f-commerce can be either for leisure and enjoyment or with a need to purchase or look for some kind of products or services, therefore, this theory is indeed relevant to be integrated in the theoretical framework.

Studies have revealed that enjoyment-oriented consumers normally enjoy interacting with the Web only for the sake of interaction (Childers et al., 2001). Hence, interaction with the Web has become a kind of consumer play particularly in Web-based games or in lesser degree, with chat or email (Grayson, 1999). Hedonic benefits from Web usage are positively associated to exploratory and entertainment usage as well as electronic shopping behaviour (Cotte et al., 2006). On the other hand, Mikalef et al. (2012) found that hedonic motivation is associated with trend discovery and adventure in social media product browsing. Hedonic benefit is defined as the search of emotions like

enjoyment, fantasy experience and happiness during the shopping process where consumers with strong hedonic motivation will look for pleasure of the process instead of the utility of the bought product as they will gain satisfaction form such experiences and the emotions that it created (Mikalef et al., 2013).

Different from the implicit hedonic benefits of playfulness and enjoyment, utilitarian benefits are founded on a more rational view of consumer behavior. The utilitarian consumer behavior is assumed to be task-focused, with eventual satisfaction obtained from task achievement instead of the nature of the experience itself (Babin et al., 1994). Consumers looking for utilitarian benefits will be more probable to utilize the Web for objective reasons and frequently preconceive the expectations of what they want to achieve when they go online. Utilitarian benefits were negatively associated with exploratory and entertainment usage behaviour but positively related to information search and electronic shopping behaviour (Cotte et al., 2006). However, Mikalef et al. (2012) found that utilitarian motivation is linked to convenience and product selection in social media product browsing. Utilitarian benefit is defined as goal oriented and rational (Batra and Ahtola, 1991; Hirschman and Holbrook, 1982) where shopping process is initialized by a mission that ought to be accomplished and the benefit that is perceived by the consumer depends on the efficiency and completeness of the process (Babin et al., 1994).

The utilitarian and hedonic shopping motivations were also included by Anderson, Knight, Pookulnagara and Josiam (2014) in their research to investigate the influences of these two motivations on consumers' loyalty and intention to purchase from Facebook apparel retailers and also to determine whether association between loyalty and purchase intention exists. The researchers had classified time savings and

information access as utilitarian motivations while bargain perception and experiential shopping as hedonic motivations in their study. Findings from the study confirmed that experiential shopping affects loyalty, but not intention to purchase. Surprisingly, bargain perception was found to have no influence on purchase intention and loyalty. Additionally, information access was confirmed to have influence on time savings and loyalty while loyalty on the other hand had impact on purchase intention. Nevertheless, the findings cannot be generalized as it focused on apparel retailers and is not applicable to other business areas or products.

Even though the Theory of Web Usage has generally categorized web usage into two categories of "hedonic" and "utilitarian" motivations, however there is another type of motivation known as "social" motivation (Kim & Kim, 2016). Social motivation consists of two entities namely pro-social and pro-self (Bălău & Utz, 2017). Nevertheless, since the study has already included another social factor (i.e. participation) and to avoid overlapping as well as to keep the model simple and parsimonious, "social" motivation was not included in the model. The following sub-sections will elucidate in more detail the concepts of utilitarian and hedonic motivations as well as related studies which have engaged the Theory of Web Usage.

2.6.2.1 Utilitarian Motivation

Babin et al. (1994) have referred utilitarian shopping motivation as obtaining the benefit of the product wanted or obtaining the product more effortlessly through the shopping process. To et al. (2007) categorized utilitarian value into information availability, selection, convenience and deficiency of sociality according to the work of Wolfinbarger and Gilly (2001) and argued that when consumers consider the website as having more utilitarian value and function, they will have higher purchase intention. To

et al. (2007) found significant effects of utilitarian motivation on search and purchase intention.

Holbrook and Hirschman (1982) state that utilitarian consumers are rational decision makers who are more concerned about benefits of product. Prominent scholars in marketing concurred that discovering utilitarian motivation is a valuable approach to understand consumers' behaviour (Hirschman and Holbrook, 1982; Batra and Ahtola, 1991; Crowley et al., 1992; Van der Heijden, 2004). Blake et al. (2005) recommended that utilitarian values have strong influence on e-commerce. Utilitarian consumers shop online only when it meets their purpose (Dholakia et al., 2004). These consumers are those who purchase thoughtfully and buy their needing product without any deviation (Wolfinbarger and Gilly, 2001). Utilitarian consumers' behaviour has been described as task related, rational and ergic (Batra and Ahtola, 1991). It was also found that online buyers are more concerned about utilitarian value (Bernardo, 2012; Beldona et al., 2011; Blake et al., 2005; Martínez-López et al., 2014). Utilitarian motivated consumers tend to seek specific info (Paden and Stell, 2010) and this has been examined in various online contexts (Alba et al., 1997; Bridges and Florsheim, 2008; Donthu and Garcla, 1999; Martinez-López et al., 2006, 2014; Overby and Lee, 2006; Swaminathan et al., 1999; To et al., 2007; Verhoef and Langerak, 2001; Wolfinbarger and Gilly, 2001).

Utilitarian motivation is mission or goal oriented and in the context of shopping will resulted in a procurement of a product or service (Xu et al., 2012). The benefits obtained from utilitarian shopping rely on the efficiency of the acquisition process (Batra and Ahtola, 1991; Hirschman and Holbrook, 1982). It also involves less emotion in making decision, meticulous planning and deliberation of the purchase choices and optimization of cost feature (Batra and Ahtola, 1991; Dhar & Wertenbroch, 2000). To

et al., (2007) and Bridges and Florsheim (2008) assert that consumers are more gratified on shopping sites which provide high utilitarian value like good value for money (i.e. offers, discounts, deals), broad selection (i.e. comparing products with various websites) and availability (i.e. products which are unavailable locally may be ordered online), convenience (i.e. no physical risk involved, fast delivery), information availability (i.e. all information associated to the services and products from various websites are obtainable), lack of sociability (i.e. no sales person interaction), customized services or products (i.e. products may be tailored and modified based on consumers' requirements). In addition, the utilitarian value also depends on convenience and price (Chandon et al., 2000).

On the other hand, Martinez-López et al. (2014) have proposed the utilitarian motivation dimension which consists of desire for control, availability of information, economy, convenience, payment services, assortment, anonymity, absence of social interaction and adaptability/customization. Desire for control is associated with consumer's perception with regards to her ability to control the online consumption setting and expect the outcome of the online consumption processes that she plans to perform. Following Social Learning Theory, the yearning for control is referred to as the consumer's interest in taking direct control over the instant environment (i.e. browsing environment) and it is the extent to which individual may control the sequence of information presented, the length of time and the content (Bezjian-Avery et al., 1998; Ariely, 2000) which provide them with higher degrees of power to ascertain the outcome of the browsing processes (Hoffman et al., 2003). Once consumers perceive that they have a high level of control, they tend to bring sustained attention, interest and enthusiasm to the task in question; the opposite occurs if the online shopping process does not accomplish fruitfully or compels the buyer to go backwards in the online

buying process (Kamis et al., 2010). Cheshire et al. (2010) opined that assuming control is a vital factor to manage the ultimate risks related to online shopping. Domina (2012) further stressed that the perception of control over the shopping process positively affects consumer's commercial intentions and attitude. Wu and Lin (2012) also agreed that high level of control may lead to a more positive valuation of the outcome and to more decision makings in the online shopping processes. Contrary, a deficiency in the perceived control over browsing can bring about the desertion of the online shopping on a specific commercial website (Kamis et al., 2010).

Convenience has been referred as a ratio of inputs to outputs; effort and time being the related inputs (Seiders et al., 2000). According to McDonald (1994), time plays an important role among buyers to select shopping channels. However, utilitarian consumers select non-traditional shopping channel like online shopping (Monsuwé et al., 2004) and catalogue retailing (Eastlick and Feinberg, 1999) due to the high benefits. Online shopping is regarded as convenient only if it reduces consumers' effort and support fast response (Ganesh et al., 2010; Wolfinbarger and Gilly, 2001). Shopping convenience has garnered substantial focus in the literature of consumer behaviour in physical stores and various researches (Bellenger and Korgaonkar, 1980; Darden and Ashton, 1974; Gehrt and Shim, 1998; Eastlick and Feinberg, 1999; Williams et al., 1978). It is considered as a main factor in buying decisions in e-markets (Bhatnagar et al., 2000; Forsythe et al. 2006; Chiang and Dholakia, 2003; Morganosky and Cude, 2000; Srinivasan et al., 2002; Thomas, 2002). This is because online consumers may save a lot of energy and time by eradicating the requirement to physically travel to make the purchase hence evading frustrations related to taking the vehicle, running into traffic congestion or unable to find a parking lot (Childers et al., 2001). Besides that, they

need not struggle with having to wait in long queues or visit a stall that is crowded with customers (Ganesh et al., 2010; Rohm and Swaminathan, 2004).

Assortment reflects the consumers' interest in having a varied and wide offering of services and goods within their grasp when they carry out online shopping. The interest in obtaining a wide option is associated to the economy of information principles (Hauser and Wernerfelt, 1990; Ratchford, 1980; Stigler, 1961) and to the thought that consumer's utility increases when the amount of purchase alternatives (e.g. products, retailers, brands) to which they have easy access rises. Similarly, the degree of an assortment could be in keeping with utilitarian motivation known as "selection" by Wolfinbarger and Gilly (2001), Srinivasan et al. (2002) and To et al. (2007). Generally, online stores are capable of offering much more option than physical store since they are free of constraints like storage or inventory (Alba et al., 1997). Consumers' satisfaction would be higher when they can select from among an extensive range of option without getting lost (e.g. Endo et al., 2012; Herrero Crespo and Rodríguez del Bosque, 2010).

Economy refers to the accessibility of price comparison tools that drive buyers to purchase online (Anckar, 2003; Martínez-López et al., 2014) and also trigger them to divert to other shopping channels (Waldfogel and Chen, 2006). Buyers normally favour online shopping channels more since they offer better price than offline channels (Martínez-López et al. 2014; Noble et al., 2005). Price consciousness is the extent to which buyers concentrate specifically on paying low prices (Beldona et al., 2011) and cost saving is a crucial factor for buyers in online shopping (Monsuwé et al., 2004). Economy is related to the search for competitive prices and this includes consumers'

interest in getting the best value for the price paid and the interest in taking advantage of sales and promotions (Martínez-López et al., 2014).

With regards to the above, the economic motivation in online shopping has been studied ever since the starting of the online market (e.g., Anders, 1998; Jarvenpaa and Todd, 1997; Korgaonkar and Wolin, 1999; Mathwick et al., 2002). It is considered especially imperative in explicating online consumption (Sajjad et al., 2011). Since e-markets are commercial environments that are extremely rich in info, buyers are capable of identifying substitutes which provide substantial savings (Brynjolfsson and Smith, 2000; Lee and Gosain, 2002; Clemons et al., 2002; Strader and Shaw, 1999; Zettelmeyer et al., 2006). The quest for better economic or value utility leaves the online buyers feeling more content when they attain better prices for the products bought via the Internet (Mathwick et al., 2002; Herrero Crespo and Rodríguez del Bosque, 2010). Utilitarian value integrates more cognitive perspectives of attitude like economic "value for the money" (Zeithaml, 1988) and judgments of time savings and convenience (Teo, 2001; Jarvenpaa and Todd, 1997). For instance, buyers can purchase online due to the convenience of comparing and locating merchants, assessing price or quality ratios, and saving psychological and temporal resources (Grewal et al., 1998; Mathwick et al. 2001).

Availability of information is referred as the benefits sought out in attaining useful info that enables the consumers to perform online consumption processes (Martínez-López et al., 2014). The role of availability of information has been studied in physical shopping settings (Bellenger and Korgaonkar, 1980). Nevertheless, these sought-after benefits are even more pertinent in online shopping setting (Korgaonkar and Wolin 1999), very rich in info and armed with instruments that significantly lessen the costs

entailed in looking for and assessing the substitutes obtainable to buyers (Bakos 1997; Chen et al. 2009; Brynjolfsson and Smith 2000; Lynch and Ariely 2000). This factor enables buyers to effortlessly compare prices for a large amount of purchase selections which respond to their search interests (Smith et al. 1999, Bakos 1991). Numerous studies have provided empirical evidences to validate the role of information availability as a utilitarian motivation for online shopping (Wolfinbarger and Gilly, 2001; To et al., 2007).

Adaptability or customization describes buyers' interests in the personalization of their inquiries to satisfy their wants and preferences (Martínez-López et al., 2014). Numerous research have examined the effects of personalization processes in e-markets and the role and primary effects of the said processes in the experience and value as perceived by the consumers (Ansari and Mela, 2003; Randall et al., 2005; Miceli, 2007; Vesanen and Raulas 2006; Wind and Rangaswamy, 2001). There are observations which indicate that advanced types of personalization permitted for by e-commerce technologies favour the predisposition to consume and shop online (Srinivasan et al., 2002; Wind and Rangaswamy, 2001). Personalization enables buyers to exercise their favourites and identities more proficiently than the substitutes provided by the physical stores. Companies' capabilities to substantially fulfil this kind of consumer motivation may positively affect its competitive position and eventually competitive advantage in the e-markets (Gilmore and Pine, 1997; Levav et al., 2010; Pine and Davis, 1999; Pine, 2010).

Payment services reflect ease of payment and buyers' interest in getting an assortment of payment options obtainable that is extensive enough and that caters for their favourites (Martínez-López et al., 2014). Eastlick and Feinberg (1999) have

examined the significance of payment services. From the context of e-commerce, substantial attention has been given to online payment systems and buyers' perception of the risks in online payment (Bhatnagar et al., 2000; McKnight et al., 2002; Liebermann and Stashevsky, 2002; Swaminathan et al., 1999). Hence, payment services play an imperative role in e-commerce and has been one of the most essential factor sin e-business success (Cotteleer et al., 2007; Linck et al., 2006; Kousaridas et al., 2008; Peha and Khamitov, 2005; Stroborn et al., 2004).

Absence of social interaction is related to the advantage of evading social interaction with other individuals and of consuming online free from embarrassment or shyness (Martínez-López et al., 2014). This motivation has been examined in previous studies (Joerding and Meissner, 1998; To et al., 2007; Wolfinbarger and Gilly, 2001). Buyers who shop via the Internet may favour to browse by visualizing products of interest without being bothered and this kind of buyers generally prefer to evade interaction with sales person during shopping. In the online consumption process which is free of sales person, strangers or companions, buyers do not have to bother about dealing with the sales person, about other individuals who may be nearby or about whether their companions are bored (Wolfinbarger and Gilly, 2001). Forsythe et al. (2006) assert that nonappearance of sociability is a perceived benefit in online shopping.

Lastly, anonymity referred to consumers' interest in protecting their privacy while doing online shopping (Martínez-López et al., 2014). In online shopping, buyers have even more interest in upholding their anonymity (Hoffman et al. 1999, 1999a; Korgaonkar and Wolin 1999). It is because companies may easily collect, transfer and make use of the info about buyers for commercial purposes and also because of the prospective resulting from the collective use of the Internet with CRM intelligence and

marketing systems. Provision of types of interaction between buyers and companies that support anonymity is a valuable strategy since it permits for the safeguard of the online shopper's privacy and a means for buyers to have control over the amount of transactional info shared with the e-vendor (Hoffman et al. 1999a).

2.6.2.2 Hedonic Motivation

Hirschman and Holbrook (1982) introduced the concept of hedonic motivation as consumption behaviours in seeking enjoyment, happiness, awakening, fantasy and sensuality. The advantage of hedonic motivation is emotional and experiential and the cause that hedonic buyers love to shop is because they love the shopping process and not about getting the physical objective or accomplishing the mission. Thus, the research of hedonic motivation is actually the research of shopping pleasure where shopping behaviour is no longer only a lacklustre activity or a mission to accomplish (Babin et al., 1994; Bloch and Bruce, 1984; Sherry, 1990).

To and Sung (2015) asserted that hedonic motivations stemming from shopping include selecting gifts for others to satisfy one's peer or familial role (role); searching the enjoyment of bargaining through negotiations with vendors (pleasure of bargaining); receiving fresh information at the store front (learning trends); enjoying the feeling of superiority when getting service from a seller (status); and looking for sensory stimuli from the retail setting (stimulation). On the other hand, Arnold and Reynolds (2003) have recommended several hedonic motivations like shopping for the adventure of the shopping trip (adventure) and sheer excitement; shopping as an opportunity to socialize (social) and also shopping as a special treat to oneself (self-gratification).

Hedonic motivation positively affects consumers' attitude towards online shopping (Childers et al., 2001) and virtual shopping technology (Kim and Forsythe, 2007). It also positively affects consumers' attitudes toward social network advertising (Anderson et al. 2014). Scholars also pointed out that the research of hedonic motivation has become progressively imperative due to the identifiable motivations enticing consumers to visit the storefront or websites (To et al., 2007). It was found that experience is itself imperative for consumers who are motivated by hedonic values (Babin et al., 1994) as they love the experience without the necessity to make a purchase but the purchase is in fact the outcome of the experience.

As matter of fact, experiential shopping, curiosity, sociability and bargain perception are identified as hedonic values (Babin et al., 1994; Childers et al., 2001; Ho and Dempsey, 2010; Kwon and Jain, 2009; Kim and Forsythe, 2007; Taylor et al., 2011; To et al., 2007). Experiential shopping is a hedonic value that refers to the longing for an entertaining and enjoyable shopping experience (Babin et al., 1994; Kwon & Jain, 1994). Hedonic values may also include escapism and the yearning for entertainment (Babin et al., 1994; To et al., 2007; Childers et al., 2001) or the intention to look for a good deal and the pleasure of the search for a good bargain (Babin et al., 1994). Scholars have referred hedonic value under various names including enjoyment, experiential, adventure and entertainment (Babin et al., 1994; Childers et al., 2001; Kim and Forsythe, 2007; Kwon and Jain, 2009; To et al., 2007; Taylor et al., 2011; Yang & Kim, 2012).

The study by Babin et al. (1994) found empirical evidence to support the influence of hedonic shopping value on unplanned shopping behaviour whereas the work of Dhar and Wertenbroch (2000) verified the effect of hedonic motivations on the decision-

making behaviour of consumers. Falk (1997) asserts that hedonic motivation is very important in Internet or storefront shopping because the liberty to search and sensual stimulation are the main shopping motivations for buyers. This is further supported by the claim by Kim and Shim (2002) who mentioned that buyers who go online to shop are not just doing so for information gathering and product purchasing but also to satisfy their needs of experience and emotion.

According to Murray (1964), hedonism put emphasize on the fundamental philosophy of life enjoyment and evading unhappiness. It also refers to the searching of emotions, for instance fantasy and enjoyment, happiness and experience gained during the shopping process (Parsons, 2002). In the context of hedonic shopping, the emotional change varies according to the types of product, services, experience encountered and motives involved. This opinion is supported by Tauber (1972) and Babin et al. (1994) who perceived shopping as an activity that is more than just buying a product. However, it contradicted with Bloch et al. (1989) who maintained that in addition to regard shopping as buying a product, it involves also gathering of information about the product and prices, and pleasure seeking.

Overby and Lee (2006) defined hedonic value as a general assessment (i.e. judgement) of experiential sacrifices and benefits (e.g. escapism and entertainment). Babin et al. (1994) argued that consumers normally shop for a gratitude of the experience rather than just for the accomplishment of a task. The dimensions of hedonic value have been the subject of discussion in many in-store shopping studies (Darden and Reynolds, 1971; Babin and Attaway, 2000) and have started to be recognized as an imperative element of online shopping (Hoffman and Novak, 1996; Burke, 1999). Kim (2002) and Mathwick et al. (2001) opined that just like off-line

shopping, it is anticipated that online shoppers will also shop for out-of-routine experiences and for entertaining purposes.

Hedonism stresses the fundamental philosophy of taking enjoyment in life and evading sorrow and unhappiness (Murray, 1964). Hedonic shopping has been described as the fantasy and various kinds of emotional experience resulting from purchasing a product (Hirschman and Holbrook, 1982). Baumeister et al. (1998) assert that consumers may have fantasies about owning a product after experiencing emotional arousal arising from hedonic shopping experience. Gültekin and Özer (2012) proposed that hedonic shopping comprises of emotions such as passion and joy, cheer, jealousy and fear. This is further supported by Hirschman and Holbrook (1982) who said that emotional arousal is an elementary consumer motivation in certain product categories like food, games, apparel, books, sport activities and can lead to hedonic shopping and that retailers should emphasis on the pleasure side of shopping due to the significance of buyers' hedonic experiences in attaining competitive advantage. Hedonic shopping is also related to shopping experience quality and buying intention (Wakefield and Baker, 1998) and consumers may go shopping with hedonic motives and purchase products without previous intention (Tauber, 1972). Even though sellers try to distinguish themselves by means of pleasure, however, academically there is scarcity in research on consumers' shopping activities for hedonic reasons and motives (Arnold and Reynolds, 2003). Arnold and Reynolds (2003) also claimed that the mission of hedonic motives is to make buyers having sensory arousal, fantasy, fun and enjoyment.

Besides that, Piron (1991), Rook (1987) and Hausman (2000) assert that hedonic desires may satisfy impulse purchase which is consistent to Ramanathan and Menon (2006) who claim that the cause for impulse purchase is hedonic gratification. The

significant relationship between impulse purchase and hedonic motives has been validated by Herabadi et al. (2009). However, Arnold and Reynolds (2003) suggested that there ought to be research concentrating on the association between the intensity and types of hedonic motives and impulse purchase. So far there have been some conceptual studies which supported the association between impulse purchase and hedonic motives (Cobb and Hoyer, 1986; Rook, 1987; Hausman, 2000; Peck and Childers, 2006; Rook and Fisher, 1995; Ramanathan and Menon, 2006; Thompson et al., 1990).

Moreover, shopping enjoyment may be defined as the extent to which a buyer views shopping as being an emotional-driven and enjoyable activity (Konuş et al., 2008) that relates to a pattern trailed over a longer period of time and refers to issues like enjoying shopping or experiencing joy while shopping as an end in itself. Haas and Kenning (2014) opined that shoppers are driven by pleasure of the shopping process and may be anticipated to consult with salesperson as a means to intensity the pleasure obtained from the shopping trips. Previous studies have validated the intrinsic enjoyment which buyers experience during the process of shopping as an imperative shopping motivation and has linked to enjoyment to the social experience of shopping (Arnold and Reynolds, 2003; Cox et al., 2005). The more the consumers are driven by the pleasure of the shopping process, the more they will appreciate such hedonic returns anticipated from consultations and therefore the more the consumers' motivation to consult with the sales assistant (Haas and Kenning, 2014).

2.6.3 Trust Transference Theory (TTT)

The basis for transfer of trust is originated from attribution theory in which individuals who attributed an event actually make inference from the existing knowledge (Kelley, 1973). According to the Trust Transference Theory (TTT), trust in an individual can be transferred to another individual and trust can also be transferred between various contexts. Basically, trust transfer happens when ''the unknown target is being perceived as associated to the source of the transferred trust'' (Rahimniaa & Hassanzadehb, 2013, p. 6). There are three actors involved in the trust transfer process, namely the trustor who decides whether to trust on others; the trustee whose trustworthiness is evaluated by the trustor; and a third party who is the middleman in trust transfer process (Stewart, 2003). In other words, when the trustor trusts the third party and an intimate relationship exists between the third party and the trustee, eventually the trustor's trust in the third party tend to be transferred to the trustee as well. In such situation, the third party acts as the source of trust transfer while the target of trust transfer is the trustee (Wang, Shen, & Sun, 2013). This trust transfer process is important in f-commerce as normally consumers have tendency to listen or buy products or services based on recommendations from someone they trust. Eventually, they may also develop trust on transactions through f-commerce and will higher chances to participate more in future. Hence, the Trust Transference Theory is deemed appropriate to be integrated in the theoretical framework.

In terms of f-commerce, buyers make purchase decisions founded on the advice of family and friends in a social network community that they trust or know (LeeRaito, 2007). Besides, initial trust can be formed among social network community members when they receive social support from community members (Shanmugam et al., 2016). Following the idea of relatedness (Wilder and Simon, 1998), trust in this community is

anticipated to be transferable to other relevant sources. Therefore, potential buyers may believe that the online setting is well managed and safe and everybody including the sellers is trustable (Ng, 2013, p. 611).

Trust transfer is a cognitive process that can develop from a particular familiar context to a novel context or from a specifically trusted entity to an unfamiliar entity (Lin et al., 2011) or when one domain influences perceptions and attitudes in another domain (Lu et al, 2011; Stewart, 2003). Trust transfer can come from various types of sources such as an industry association (Milliman and Fugate, 1988) or a place (Henslin, 1968) to a person. Based on Trust Transference Theory, it is anticipated that consumer trust in social commerce websites can be transferred to their associated sources (Kim, 2008; Ng, 2013). Following this, a consumer's trust in a company's social commerce website may be transferred to their trust in the company. Nevertheless, in the context of s-commerce, the understanding of how trust transfer process is influenced by consumers' conditions is very much restricted (Chow & Shi, 2014).

In addition, Trust Transference Theory has been tested in various contexts of study including multichannel retailers (Badrinarayanan et al., 2012) who found that attitude towards the physical shop of a seller (i.e. source of trust) is positively associated with attitude towards the online shop (lesser-trusted). Likewise, Stewart (2003) found that perceptions of Web site which has a hyperlink have positive effect on perceptions of the linked site. Lee et al. (2014) has provided empirical evidence to support that trust can be transferred to locations and institutions such as country in the context of tourism and event marketing. Hsu (2012) found that consumers' trust in group-buying may be transferred to the e-vendor associated with the site.

E-commerce and marketing research investigate both inter-channel and intra-channel trust transfers (Lin et al., 2011). Intra-channel trust transfer refers to consumer trust in one entity (e.g. organizations or products) being transferred to another relevant entity in the same channel and this includes online to online (Steward, 2003) and off line to off line (Perks & Halliday, 2003). The online to online intra-channel trust transfer is about how trust is moved within the online channel (Giovannini et al., 2015). Stewart (2003, 2006) opined that trust is moved from trusted to unfamiliar B2C websites based on hyperlinks to each other. Moreover, an unknown online brand may improve consumer trust and intention to purchase by linking itself with a known online brand (Delgado-Ballester & HernáNdez-Espallardo, 2008). Offline to offline trust transfer on the other hand investigates trust transfer within offline channel. For instance, buyers who trust Apple computers product bought in a retail store may trust a newly-released Apple product sold in another retail store (Lin et al., 2011).

Inter-channel trust transfer denotes to transference of trust from a particular context to another context, mostly from offline to online or from online to mobile channels. For instance, consumer trust in a firm's offline business can affect the perceptions of the same firm's online business. A lot of offline firms have migrated online since the late 1990s (Lin et al., 2011). One imperative issue is whether buyers transfer their trust in a firm across channels to establish more favourable perceptions about its online services or products. Many research suggested that consumer trust in an offline firm positively influences perceptions of the firm's online business (Kuan and Bock, 2007; Hongyoun Hahn and Kim, 2009; Lee et al., 2007). Likewise, Verhagen and Dolen (2009) suggested that perceptions of an offline store directly affect perceptions of the same company's online store. These studies are related to trust transfer from the offline to the

online channels. Nevertheless, there is very less studies on trust transfer from the online to the mobile channels as it is comparatively novel.

The next sub-section will explain in more detail the concept of trust motivation and the related past studies that used this construct.

2.6.3.1   Trust Motivation

Trust has been broadly studied for years and is considered as a dominant element in relationships between individuals and/or organization (Hong and Cha, 2013) such as buyer-seller relationships, labour-management negotiations and strategic alliances (Lee and Turban, 2001), social media communication (Cheng et al., 2017) and social commerce purchase intentions (Hajli et al. 2017). Trust is a crucial ingredient for successful long-term business relationship with consumers (Agustin and Singh, 2005; Bhattacherjee and Premkumar, 2004; Doney and Cannon 1997; Garbarino and Johnson 1999; Kim 2008; Kim et al. 2009; McKinney et al., 2002; Moorman et al. 1993; Morgan and Hunt 1994; Pavlou and Gefen, 2004). It signifies buyers' readiness to be dependent on an exchange partner in whom they have confidence in (Moorman et al., 1992).

McKnight et al. (2002) categorized trust into two wide-ranging categories namely trusting intentions and trusting beliefs and conceptualized trust as a group of specific beliefs which include ability (i.e. competency), integrity and benevolence. This is similar to Chen (2006) who categorised perceived trust into two categories namely (1) trust as a behavior of reliance or behavioral intention and involving uncertainty and vulnerability and (2) trust as confidence, belief, attitude or expectation about another party's trustworthiness. McCole (2002) further abridged the ten dimensions cited most

often in literature which include consistency, availability, fulfillment, loyalty, competence, openness, fairness, integrity, promise and discreteness.

Trust has been investigated in various scopes of fields, including psychology, sociology and economics (Kim and Park, 2013) and it is perceived as a strong indicator in determining behavioural intentions before real transactions occurs (McKnight, Cummings & Chervany, 1998). Hence, various definitions of trust have emerged to fit the context of study by the researchers (McKnight, Choudhoury and Kacrmar, 2002) which range from personal characteristics of trust to institutional aspect of trust (Das & Teng, 2004). For instance, from the perspective of economics, trust can be measured from someone's expectation of interactions or weakness acceptance and exposure (Beldad, Jong & Steehouder, 2010).

Prior studies have focused on the role of trust in quality perception (Teo et al., 2009) and trust is regarded as a primary factor influencing consumers' quality perception and satisfaction (Hsu et al., 2014). Ba (2001) opined that trust is an ongoing computation of benefits and costs and trust will be formed when positive benefits are anticipated. Trust may be considered as an individual's belief that others in an exchange will not act opportunistically by taking advantage of the situation (Beldad et al., 2010; Koller, 1988; Qureshi et al., 2009).

According to Bigley and Pearce (1998), interactions can lead to the development of trust. For instance, through social relations and networks belonging to an individual in which he/she may not has any previous encounter with them (Granovetter, 1985). Generally, trust refers to the anticipation that no party will be exploiting each other

upon given the chance and the level of trust can varies depending on one's experience with the issue or object dealing with.

Generally, there are two main aspects of trust which cannot be overlooked in social commerce. These two aspects refer to cognitive trust and emotional trust (Lewis and Weigert, 1985; McAllister, 1995). According to Moorman et al. (1992), cognitive trust is explained by the degree to which consumers have faith in or agreeable to rely on a service provider's capability and stability. Cognitive trust can be further described by these three dimensions; integrity, competence and benevolence (McKnight et al., 2002). Competence refers to the proficiency allegedly belong to another party (Coulter and Coulter, 2002), integrity is being regarded as consumers' confidence in a company's truthfulness and capability to honour what has been agreed on, and benevolence can be explained by the beliefs about a company formed in consumers based on the actions taken by the company (Doney and Cannon, 1997).

Several studies have proposed that trust may have direct effects on consumers' willingness to transact with Internet vendors (Bhattacherjee, 2002; Gefen, 2002a; McKnight and Chervany, 2002). Trust may be conceptualized as either cue-based or experience-based (Wang et al., 2004). Experience-based trust is obtained via repetitive interactions while cue-based trust refers to the cues obtained from a sole encounter (e.g. online review message or a website). Some studies have highlighted that the key to lasting success for e-retailers is to establish consumer trust (Pavlou and Fygenson, 2006; Suh and Han, 2003; Vos et al., 2014), however trust is negatively affected by perceived risks (Hong and Cha, 2013; Kamarulzaman, 2007) and is related to both the web-vendors (Jiang et al., 2008) and the products (Ward and Lee, 2000).

From the perspective of Direct-to-Consumer (DTC) website, trust has been largely defined as one party's willingness to rely on another party when there are risk and uncertainty (Doney and Canon, 1997; Mayer, Davis, and Schoorman, 1995) and has been regarded as one of the most imperative determinants that facilitates sustainable interpersonal relationships, online interactive communication and commercial transactions especially when there is high level of uncertainty and risk involved (Doney and Canon, 1997; Fukuyama, 1995; Mayer et al., 1995; McKnight et al., 2002a). More specifically, consumers' perceived trust in a website or website trust is defined as trust between websites and consumers (Corritore et al., 2003) or consumers' beliefs that a website will perform anticipated activities according to the consumers' confidence (Gefen, 2000a; Pavlou & Gefen, 2004). Website trust has drawn great attentions from marketing and advertising scholars as a primary variable that influences consumers' preliminary engagement with a website and interaction continuance due to the higher degree of uncertainty and risks in the online environments in comparison to the offline (Aiken and Boush, 2006; Chen and Dhillon, 2003; Corritore et al., 2003; Lee & Turban, 2001). A lot of management information systems, communication and e-commerce scholars have argued that buyers are likely to experience greater extents of uncertainty and risks in online setting due to the relative anonymity in online interactions, spyware, dubious websites, spam problems, and various online security and privacy issues associated to sharing and gathering of personal information by e-marketers (Bargh and McKenna, 2004; Lu and Yu, 2005; Liu, Marchewka, Metzger, 2006; Schlosser, White, & Lloyd, 2006). Hence, trust may probably play an imperative role in buyers' interactions with and responses to brand websites or information websites that do not sell products (Huh & Shin, 2014).

Trust has a number of commonalities and is essential in e-commerce settings (Bhattacherjee, 2002). According to Wang et al. (2016), trust varies at different group or individual levels and therefore cannot be used across all settings. With regards to the attributes of e-commerce consumers' behaviours, McKnight and Chervany (2002) have proposed an interdisciplinary typology of trust which consists of four concepts namely institution-based trust, disposition to trust, trusting beliefs and trusting intention. Disposition of trust is referred to an individual's trust in general others and institutional-based trust refers to individual's trust in context specific and the feeling of trust regardless of the particular individuals in that context (See-To and Ho, 2014). Hence, both institutional-based trust and disposition to trust are not entity specific. Nevertheless, trusting intentions and beliefs are individual specific and cross-situational indicating that individual trusts a specific individual or entity across numerous contexts or situations (McKnight & Chervany, 2002). Consistently, both institutional-based trust and disposition to trust are better assumed as drivers of trusting intentions and beliefs and hence assists researchers properly examine how online consumers' trust in an online vendor or a specific website affects their interactions with the vendor or website across various different e-commerce contexts or situations.

There are many uncertainties involved when interacting in an online business environment. Since online transactions basically requires no face-to-face communication between sellers and buyers (Jones and Leonard, 2008), no platform for "touch and feel" of products prior to purchase, originality and quality of products as claimed by online sellers may be questionable, doubts on the security of payment gateway and the efficiency level of the delivery services; all these issues may hinder the development of online businesses such as s-commerce. When such uncertainties exist,

the feeling of trust between buyers and sellers is very crucial for an online transaction to take place amidst the uncertainties in e-commerce environment (Ba and Pavlou, 2002).

Even though e-commerce may offer a wide variety of advantages that is attractive enough for massive interest, however recent studies have shown that a fundamental problem in the e-commerce setting is trust (Lee, 2009; Liao, Liu, and Chen, 2011; Shandan, Dan, Yunyun, & Yonghai, 2012). A general deficiency of trust in vendor is a critical factor which inhibits online transactions (AlGhamdi et al., 2011). The lack of trust has emerged as one of the significant barriers for successful Internet shopping (Alshehri et al., 2012) and e-commerce (Wang and Emurian, 2005). Studies have revealed that high degree of consumer trust promotes online purchase intentions and assists in retaining online consumers (Gefen, 2000; Reichheld and Schefter, 2000) and deficiency of trust is the primary cause for individuals not to shop online (Hoffman et al., 1999).

While trust plays an imperative role in online business, there is a curiosity also to find out the antecedents that leads to consumers' online trust. A number of research have concentrated on a variety of issues regarding trust in e-commerce (Awad and Ragowsky 2008; Bhattacherjee 2002; Brynjolfsson and Smith 2000; Choudhury and Karahanna 2008; Gefen 2002; Kim et al. 2008b; Kim et al. 2005; Lim et al. 2006; McKnight et al. 2002; Nicolaou and McKnight 2006; Stewart 2006; Urban et al. 2000; Vance et al. 2008; Xu et al. 2007). For instance, the firms' characteristics which include reputation of the firm, scale, offline existence, and experience with online businesses (Walczuch and Lundgren, 2004) and a study by Koufaris and Hampton-Sosa (2004) who acknowledged websites' characteristics such as quality of information and service, perceived usefulness and website design, social existence, and security of personal

information as the antecedents of trust. Besides, Teo and Liu (2007) have attributed the antecedents as individual characteristics of trust propensity, experiences, and Internet expertise.

In Taiwan, Hsu and Hsu (2012) conducted a study on the role of trust, trust conformity and transference in affecting consumers' attitude and online group-buying intention. The authors further classify trust into four dimensions namely, trust in buyers, trust in e-vendors, trust in web sites and trust in organizers. Conformity, which is also known as social influence (Burnkrant and Cousineau, 1975) plays an imperative role in group-buying according to the rationale that buyers tend to follow others to reduce the risk that might incur in online shopping (Pavlou and Fygenson, 2006). Trust transference is equally salient in online shopping since the parties involved are sometimes unknown or only limited knowledge with the exchange party (Kimery and McCord, 2002). The research model was tested on members of a popular online-group buying site in Taiwan known as ihergo (at www.ihergo.com). As expected, the four dimensions of trust have significant influence on attitude towards online group-buying while attitude and conformity have positive effects on group-buying intention. However, conformity was found to have no positive association with intention which implies that social influence has no effect on intention to purchase in group-buying. This multifaceted concept of trust to predict group-buying intention has undeniably contributed to the body of knowledge in purchase behavior. Nevertheless, future research should be extended to other countries to provide insight into culture differences as to enhance the robustness of the research model.

From the context of online repurchase intention (Fang et al., 2014), trust is a dominant predictor for customer retention (e.g. Flavián et al., 2006a; Gefen, 2002a; Qureshi et al., 2009) because of its crucial capability in promoting risk-taking behaviour in the existence of interdependence, fear of opportunism and uncertainty (Mayer et al., 1995; McKnight et al., 1998). Trust is a belief that trusted parties will act in accordance with the trusting party's expectation confidence by showing integrity, benevolence and ability (Luhmann, 1979; Mayer et al., 1995). It is a primary mechanism that governs the exchange relationships characterized by vulnerability, dependence and uncertainty (Bradach & Eccles, 1989). It also promotes transaction success by reducing social uncertainties which would otherwise be too complicated if not impossible to figure out on a rational basis (Luhmann, 1979). Alternatively, it may lessen risk perceptions to a more manageable level by enabling consumers to exclude subjectively the potential of unwelcome behaviours by the party they trust (Mayer et al., 1995). Based on this justification, trust is assumed to be a principal predictor of initial and repeat online purchase (e.g., Flavián et al., 2006a; Gefen, 2002a; Li et al., 2006; Lim et al., 2006; Qureshi et al., 2009).

In the social commerce context, trust is regarded as a central perspective in numerous transactions (Fukuyama, 1995; Mayer et al., 1995). Since social environment cannot be regulated through customs and rules, consumers will incline to adopt trust as a reducer of social complexity (Luhmann, 1979) caused by the absence of effective regulation over the opportunistic behaviours of e-vendors (Keen et al., 1999) and thus trust is regarded as one of the critical success factors of e-commerce (Wang and Emurian, 2005). Before this, e-commerce studies have focused mainly on finding the main determinant of trust or unveiling the trust building mechanism (e.g., Lu et al., 2015; Ou & Sia, 2009). However, these researches are more on the effects of functionality (e.g.

ease of use, usability, usefulness) and institutional structures (e.g. feedback mechanisms, structural assurance and situational normality) and pay less focus to social factors (Kim and Park, 2013). Moreover, trust is a multifaceted and complicated construct (Gefen et al., 2003) and it has been conceptualized in a diversified ways.

From the context of e-marketing, trust refers to the assurance and depth of feeling based on inconclusive evidence (Rahimnia & Hassanzadeh, 2013). Risk and uncertainty are prerequisite conditions that disclose the value of trust (McKnight & Chervany, 2002). When an individual believes in another individual's trustworthiness and honesty in a transaction, trust can be developed and thus trust is an essential factor for formation, growth and protection of long-standing relationships between consumers and sellers (Rahimnia & Hassanzadeh, 2013). This is further supported by Wu et al. (2008) who found that trust plays an imperative role in e-commerce since it can reduce consumers' uncertainty and motivate them to visit and purchase from the website.

In the context of C2C e-commerce, trust is referred as "the willingness of a party to be vulnerable to the actions of another party according to the expectation that other will perform a specific action imperative to the trustor, irrespective of the ability to monitor or control that party" (Mayer et al.,1995, p. 712). Trust may be conceived as the reliance upon another individual under uncertain ecological conditions and in risky situations (Boon and Holmes, 1991). From the perspective of B2B e-commerce, trust has been validated as a primary factor (Hart and Saunders, 1998; Klein et al., 2007; Lee and Lim, 2003; Soliman and Janz, 2004; Son et al., 2005; Tung et al., 2001; Zaheer and Venkatraman, 1994). For example, Zaheer and Venkatraman (1994) found that insurance agencies' trust in a carrier increases their business towards the carrier over electronic channels. Hart and Saunders (1998) also found that suppliers' trust in

consumers surges the suppliers' adoption of electronic data interchange (EDI) for various functions. Klein et al. (2007) stressed that mutual trust between trading partners will increase IT customization for supply chain coordination and improves strategic information sharing.

There are two kinds of trust namely particularized trust and generalized trust (Nannestad, 2008; Nooteboom, 2002). Particularized trust may be considered as a property of an interpersonal relationship that may occur in dyads and refers to a specific individual whereas generalized trust is the faith that consumers have in people in general (e.g. foreigners, fellow citizens, neighbors). Particularized trust grows over time via interactions between two parties in a relationship (Zucker, 1986). In contrary, generalized trust is a belief that individuals have about others and frequently emerges from an individual's cultural and institutional environment (Nooteboom, 2002).

In terms of social shopping, Hsiao et al. (2010) revealed that perceived quality, perceived institutional assurance and website's reputation have significant positive influences on trust. Landon and Smith (1997) claimed that the amount of consumer's trust signify the reputation of any s-commerce company and become a positive influence on the bonding of association between the s-commerce company and its buyers (Park et al., 2012a). Besides, an online company with huge market share will have positive influence on trust (Jarvenpaa et al., 2000; Lu et al., 2006) and also to assist a trustworthy bond between the company and its clients (Teo and Pian, 2003). Other factors that lead to development of trust include safety of transactions, quality of information, benefits of price, active communication, and effects from word of mouth (Kim et al., 2008; Lu et al., 2006; Bock et al., 2012; Cheung and Lee, 2006). It has been further confirmed in a study done by Liao et al. (2006) that information about

services and products that is of high-quality will have a positive influence on trust in online retailing and firms such as e-commerce firms.

Chang and Chen (2008) highlighted the importance of consumers' trust as a mediator between intention to purchase and online environmental cues. The online environmental cues such as the brand image and quality of a website considerably affect perceived risk and trust and subsequently on the consumers' intention to purchase. Trust as a mediator also has been investigated by Swanson et al., (2007) to test its role in individual's WOM intentions and psychological motives and other supportive behaviours. The findings revealed that trust not only mediated the two relationships but also significantly influenced WOM intentions.

Gefen (2000) also found that the key influence in buyer's purchase intention from online bookstores is trust. On the other hand, Kim et al. (2008) emphasized the significant role of trust in online purchase decision while Park and Kang (2003) asserted that buyers who are occupied in continuous communication with online companies are more prone to develop the feeling of trust and dependency on those companies. Besides, Kim (2012) mentioned that majority of scholars concur that e-commerce may only be successful if consumers trust the sellers and products that they cannot touch or see and the new virtual channel of commerce which they have no previous experience. Last but not least, Kim et al., (2012) proved that in online shopping, trust is indeed important in influencing an individual purchase intention and also purchase decision for potential customers. Hence, the issue of trust would be of more importance in e-commerce than traditional commerce because Internet business is founded on the consumers' trust in the processes in contrary to the traditional business in brick-and-

mortal shops where trust is founded on personal relationships and interactions between the consumers and the merchants (Kim, 2012).

2.7   ONLINE PARTICIPATION

Several theoretical models have tried to explain why users join and participate in online community and these include among others technology adoption model (Teo et al, 2003), theory of planned behavior and goal-oriented behavior (Bagozzi and Dholakia, 2006), social capital theory (Chiu et al., 2006; Wasko and Faraj, 2005; Wiertz and Ruyter, 2007), trust theory (Porter and Donthu, 2008; Wu et al. 2010), social influence model (Dholakia et al., 2004), social cognitive theory (Hsu et al., 2007), commitment theory (; Bateman et al., 2010; Jang et al., 2008) and social network theory (Martinez-Torres et al., 2010; Toral et al., 2010) to investigate online community user participation (Hsu and Lu, 2004; Koh et al., 2007; Ridings et al., 2002). These theories support that determinants like trust, commitment, perceived usefulness, outcome expectation and self-efficacy have substantial effect on online community user participation (Zhou, 2011). Online community is consisting of members who share common interests and they interact with each other to exchange ideas, discuss topics and find support (Zhou, 2011).

Participation in community either off-line or on-line is conventionally used to nurture consumer loyalty and mutual interests of the community (Algesheimer et al., 2005; Andersen, 2005; McAlexander et al., 2002; Muniz et al., 2001). Some scholars have proposed that an important outcome of community participation is the purchase intention and the imminent use the host-company's products or services (Algesheimer et al., 2005). More habitual participation will increase awareness of the services and products (Casaló et al., 2010). AIMC (2009) states two major consequences related to

participation in on-line communities are development of emotional ties to the brand or host-company which stimulate continuance intentions to use the company's products (Algesheimer et al., 2005; Bagozzi and Dholakia, 2006; Muniz et al., 2001) and the possible effect of information gained in the network (e.g. comments and posts by other members) on consumers' decisions (Kozinets, 2002; Sen and Lerman, 2007). In particular, participation has significant positive influence on consumers' intentions to utilize the host-company's services and products (Casaló et al., 2010).

Burnett (2000) and Preece et al. (2004) categorized community participations as active and passive. Passive members browse an online community and take advantage of the benefits provided but do not contribute to community activities and such members are referred as "free riders or lurkers" (Preece et al., 2004). Active members on the other hand, are highly enthused to join in an online community by taking part in activities like providing emotional support to others, creating messages and disseminating information (Casaló et al., 2007). Active participants may enrich members' brand knowledge (Muniz and O'Guinn, 2001) therefore enabling them to assist others to resolve problems with product usage and to make informed buying decisions (Flavián and Guinalíu, 2006). In addition, Shang et al. (2006) and Tung et al. (2001) have studied the importance of active member participation in brand community. Preece (2000) opined that a brand community with substantial number of active participants may entice new members and attract current members to visit the community for longer periods or more often. Furthermore, social exchange theory supports that active participations in online communities may be promoted through a great extent of member interactions (Blau, 1964) and member involvement is considered as a precondition for success of a brand community (Kim, 2000; Inversini and Masiero, 2014).

Previous studies on marketing have distinguished various degrees of member participation in online communities using varied approaches (e.g., Äkkinen and Tuunainen, 2005; Kozinets, 1999; Ridings et al., 2006). Several researches have validated the co-creation of economic, relational values and enjoyment through customer participation (Chan et al., 2010; Yim et al., 2012). Voluntary participation from members in interactive marketing activities indeed may contribute to the sustainability and prosperity of a brand community (Hagel and Armstrong, 1997; Preece, 2000). Besides that, researchers in tourism and hospitality have mentioned that member participation is the foundation for establishing strong brand relationships with consumers (Paris et al., 2010; Yoo and Gretzel, 2008).

Commitment to a company is normally manifested in the active participation of its members (Casaló et al., 2010; Jang et al., 2008). It is obvious that participation in company-hosted Facebook brand community can be a sign of the member's loyalty to the brand and affective commitment that is regarded as a determinant of consumer referral intention, e.g. mentioning good things regarding to the company (Zeithaml et al., 1996) as well as intention to purchase (e.g., Malthouse and Blattberg, 2005). These types of emotional ties have significant positive effects on intentions to purchase and use the host-company's products (Algesheimer et al., 2005; Bagozzi and Dholakia, 2006).

From the context of online airline check-in system (Chen and Wang, 2016), customer participation may reflect the relevant efforts in co-producing a service (Chan et al., 2010) and this participation will enable businesses to establish more profitable and closer relationships with their clients (Bendapudi and Leone, 2003; Payne et al., 2008). Specifically, customer participation is a crucial constituent of value creation process in

the self-service technologies context (Chen and Wang, 2016) because of the atributes of a high user activity level but low provider activity level (Wünderlich et al., 2013). Customer participation has been found to deliver value to both firms and customers (Auh et al., 2007; Chan et al., 2010; Dong et al., 2008; Yim et al., 2012) and customers who perceive more value via their co-producing a service are more likely to feel more content (Chan et al., 2010; Dong et al., 2008; Ouschan et al., 2006; Yim et al., 2012).

Numerous exploratory researches have been done to examine why people participate in SNSs and keeping in touch with others seems to offer the key rationale (Carla Sofia Martins & Lia Patrício, 2013). Many studies have reported that people participate in SNS to interact with whom they share an offline connection rather than to meet new people (Ellison et al., 2007; Raacke and Bonds-Raacke, 2008; Urista et al., 2009). Other factors that drive participation may include self-presentation (Nadkarni and Hofmann, 2012), filling free time or entertainment (Barker, 2009; Ellison et al., 2007; Pempek et al., 2009) and learning new information about other users (Pempek et al., 2009; Urista et al., 2009). Moreover, according to Johnson and Yang (2009), Twitter members utilize it primarily as a content aggregator so that members they follow mostly represent information sources.

In addition, from the perspective of social networking sites (SNS) environment (Chae and Ko, 2016), consumer participation needs a different type of understanding than the off-line site of interaction where participation is restricted to customer and brand versus customer and customer (Chae et al., 2015; Domagk et al., 2010). By application of the interaction theory to the social media context, consumer participation in social media is divided into customer-brand, customer-media/system and customer-customer participation based on the subject of participation (Chae and Ko, 2016). The consumer

participation process in an online environment may range from accessing SNS via one's mobile device, searching for and gathering information about services and products provided by the brand, product evaluation on a bulletin or customer service center and proactive word-of-mouth (WoM) activity of a coveted product to one's network (Chae and Ko, 2016).

Whereas, from the perspective of company social networks, literature on online communities has mainly focused on two key concepts namely members' participation goals and online community attributes that motivate them to participate (Sofia Martins and Patrício, 2013). Consumer participation is led by goals related to the benefits that they anticipate to gain whereas attributes are the characteristics of the online community that influence the participation (Sofia Martins and Patrício, 2013). For instance, members may begin to participate in an online community to collect info about a disease (goal) and then their perceptions of the online community's trustworthiness (attribute) would influence their eventual level of participation (Sofia Martins and Patrício, 2013). Studies concerning the goals of participation depends on uses and gratifications theory (Katz et al., 1973) which argues that people use media to achieve their goals and gratify their needs by participating in the online community to attain useful info to resolve a problem, understand and develop salient aspects of themselves, create and maintain contact with others and gain social reputations or have enjoyment, relaxation and fun (Dholakia et al., 2004).

Last but not least, from the perspective of restaurant Facebook fan pages (Kang et al., 2014); it is assumed that through active participation in online communities, customers will build commitment and trust towards brands (Flavián & Guinalíu, 2006). Facebook fan page is a mixed info warehouse co-created by both consumers and the business

(Hsu, 2012). The comprehensive info accessible on a fan page may help members to make more objective decisions about the business and its services and products (Flavián & Guinalíu, 2006). When consumers consistently obtain positive feedback and information from an online community, they will be more probable to show trust and confidence in the brand (Deighton, 1992). The feelings of trust may further enhance members' psychological attachment to a brand (Mattila and Wirtz, 2002), which may eventually create brand commitment (Ha and Perks, 2005). Hence, the degree of member participation may play an imperative role in establishing consumer-brand relationships on restaurant Facebook fan pages (Kang et al., 2014).

2.8 ONLINE BROWSING

Moe (2003) proposed the term "hedonic browsing" to describe consumers who have no intention to purchase but merely motivated by the hedonic advantages obtained from their shopping occurrences. This is supported by Xu, Ryan, Prybutok and Wen (2012) who reasoned that people do shopping out of the love for the process and not necessarily involved purchase of a product or service. Utilitarian browsing on the other hand seeks to obtain products through the use of risk reduction strategies, goal-oriented behavior, achievement of information search goals and heuristics.

Browsing researchers have proposed a conceptual model with two factors namely consumer characteristics and retail environment that influence consumer browsing which eventually influences the level of the achievements of the recreational and informational reasons for browsing activity (Bloch et al., 1989). Generally, there are two kinds of searches categorized as browsing namely hedonic and utilitarian browsings. Hedonic browsing focuses on entertainment, fun and the more enjoyable aspects of shopping whether or not a purchase has occurred (Babin et al., 1994;

Janiszewski, 1998; Moe, 2003). Utilitarian browsing on the other hand seeks to obtain products through the use of heuristics, risk reduction strategies, achievement of information search goals and goal-oriented behavior. However, hedonic and utilitarian browsing is different from hedonic and utilitarian motivation based on their conceptual definitions. Hedonic and utilitarian browsing are defined based on the act of browsing from a general context. However, in this study, hedonic motivation is defined as searching for fun, enjoyment and entertainment from the f-commerce experience itself (Pöyry et al., 2013). Moreover, utilitarian motivation is defined as seeking for achievement of certain goal through the f-commerce, such as looking for useful information before making a purchase decision or purchase planning with no time wasted (Pöyry et al., 2013).

Utilitarian and hedonic browsing also influence impulse purchase (Novak et al., 2003). Impulse purchase and other forms of searching are less effort feelings (Sharma et al., 2010). For certain products, impulse purchase is due to emotional and hedonic browsing (Joo Park et al., 2006). Consumers normally act impulsively when making online decisions which start with easy access to products, easy buying (e.g. click order), less social pressures and absence of delivery efforts. The effects of hedonic and utilitarian browsing on impulse purchase behaviour were supported by the work of Gohary and Hanzaee (2014), Kim and Eastin (2011), Park et al. (2012), Verhagen & van Dolen (2011).

However, Arnold and Reynolds (2003) highlighted the scarcity in academic research that investigated hedonic motivation and rationale in shopping activities because there are many similar studies which investigated only the relationship between hedonic motives and impulse buying (Bloch and Richins, 1983; Hausman, 2000; Herabadi et al.,

2009; Piron, 1991) or focused only on hedonic motives and browsing (Bloch et al., 1989; Cox et al., 2005; Jarboe and McDaniel, 1987). Previous studies related to browsing activity have presumed that consumers are browsing in physical shops; however browsing in online stores may be dissimilar from browsing physical shops (Bloch et al., 1989). Consumers browse online to gain pleasure in seeking info about a wide range of products irrespective of whether they make any purchase (Rowley, 2002; Smith & Sivakumar, 2004). While browsing the websites, consumers may come across a special offer, a desirable design, a different color, etc. which may trigger them to purchase the products (Rowley, 2002). Iyer (1989) found that the quantity of purchase they made and consumers' allocated time for browsing are positively correlated and the time spent for browsing will increase the volume of exposure. Once the duration of exposure rises, the likely stimulation affect of the product will surge and the consumers may feel how much they really want that product (Jarboe & McDaniel, 1987).

The main concern of web browsers is the buying of products in a timely and efficient manner so as to attain their goals of convenience and price savings with least efforts (Overby & Lee, 2006). Web browsing is the first phase of online shopping that engages consumers skimming for info and making selections through the Internet (Rowley, 2002). A lot of consumers greatly emphasize browsing and info gathering when shopping online (Choi et al., 2005; Smith and Sivakumar, 2004). Since browsing has a longer flow state, it allows buyers the chance to reduce or eliminate risks related to shopping tasks (Park et al., 2012).

The creation of contemporary transportation systems and the surge in the quantity of consumers' spare time have resulted in the increase in consumer mobility (Tauber, 1972). Thus, consumers may wish to go for shopping in their free time. Quite a

number of consumers without any intention to buy go for shopping only because they need to get out of their office or house (Berman and Evan, 2007). In this perspective, Bloch et al. (1989) opined that though shopping is considered as only purchasing a product, it may also be described as pleasure, buying and info gathering. Thus, besides buying, consumers also go for shopping to spend time by browsing so as to get info regarding the products and prices, etc. (Bloch et al., 1989).

Janiszewski (1998) assert that browsing through a diversity of products is regarded as an outcome of either a goal-oriented or an exploration-oriented behavior. The goal-oriented behaviour is assumed to be the main reason for consumers that need to gather info before buying a particular product which they have in mind whereas an exploration-oriented behaviour stresses on consumers that have no particular task to accomplish regarding the purchase of a product (Stone, 1954). These types of general types of consumer attitudes may be found on both electronic platforms and conventional stores, however, via the Internet, exploration-oriented behaviour is boosted in comparison to conventional stores as the convenience and the 24-hour availability that online stores provide enable consumers to browse through a list of services or products on their own time (Mikalef et al., 2013). Moe (2003) asserts that purchase intention may be associated with both exploration-oriented and goal-oriented browsing behaviour with the key difference between the two behaviours is that goal-oriented consumers will buy when they discover the product they are searching for whereas exploration-oriented consumers are more probable to make an unplanned purchase.

Browsing can also be a reason for sudden unplanned behaviour. Once consumers browse, they will sense a strong and sudden urge to purchase (Rook, 1987). Bellenger et al. (1978) asserted that browsing may be a cause for abrupt unplanned behaviour.

Rook (1987) further stressed that once consumers browse; they may sense a strong and sudden urge to purchase. Nevertheless, browsing and impulse buying can be related to each other. When consumers spend more time browsing a product, there can be likeliness they grow fond of the product and perform impulse buying based on the feeling of excitement they experienced at that moment. Even if it may not be impulsive feeling, it can also trigger the feeling of sudden and strong urge to buy (Rook, 1987).

In Finland, Pöyry et al. (2013) conducted a research on company-hosted Facebook pages to differentiate utilitarian and hedonic motivations particularly on participation and browsing (Casaló et al. 2010, Cotte et al. 2006, Novak et al. 2000); the two most well-known usage behavior in Facebook community. Based on the data gathered from the members of a travel agency's Facebook page, the analysis indicated that utilitarian motivations influence strongly merely Facebook browsing while hedonic motivation leads to higher tendency of Facebook participation. On the other hand, browsing affects membership continuance intention, purchase intention and referral intentions. However, even though participation influenced membership continuance intention but it does not relate to purchase intention. The results obtained from this study may not truly reflect the usage behavior as Mitra et al. (1999) pointed out the relevancy of browsing and information may not be so evident for goods that can be assessed easily prior to purchase as compared to the context of experience and credence goods, such as travel. Knowing the importance of user's participation, future research should also look into the quantity and also the quality of the user-generated content in Facebook on how it can influence the consumers' purchase decision.

Similar to Suraworachet et al. (2012) who had chosen clothing categories for their research on online buying, Park et al. (2012) has examined the relationship among web browsing, apparel product attributes (price, variety of selection and sensory attributes) and e-impulse buying. From the study, utilitarian and hedonic were being confirmed as the two types of web browsing. It was revealed that variety of selection has positive influence on utilitarian web browsing while price positively influences hedonic browsing and utilitarian web browsing negatively affect impulse buying. Besides, sensory attributes and varieties of selection also have direct impacts on impulse buying. In the study, presentation of product attribute on a website is important due to the touch and feel factor for products like apparel in which no touch or try-on apparel is possible when online shopping is concerned. Therefore, it is important for online retailers to pay attention to utilitarian and hedonic browsing as a way to entice more online buyers. Instead of focusing on apparel only, it should be broadened to other categories of online products as well. On top of that, the study has contributed to the research world by strengthening an expanded theory of impulse buying behavior, which stated that web browsing is a mean to affect online impulse buying of apparel products from the perspectives of hedonic and utilitarian (Baumeister, 2002; Bellenger et al, 1978). Nevertheless, it was recommended by the researchers that future researches will control the flow of web browsing and make an approximation on how browsers can be transformed into purchasers regardless of planned purchase or impulse purchase (Park et al., 2012).

2.9   FACEBOOK USAGE INTENSITY

In 2016, the number of Facebook users in Malaysia was anticipated to touch 10.6 million, surge from 8.9 million in 2014 (Statista, 2016). As of April 2016, there are more than 1.65 billion monthly active Facebook users (MAUs) which is a 15% increase

year by year and 4.5 billion Likes are generated daily as of May 2013 (zephoria.com, 2016). Besides that, 1.09 billion users log onto Facebook daily for March 2016 which signifies a 16% increase year by year and on average and five new profiles are created every second with the Share and Like buttons being viewed across almost 10 million websites daily (zephoria.com, 2016). The average time spent per Facebook visit is 20 minutes and there are 300 million uploads of photo daily or 136,000 uploads of photo per minute with 510 comments posted and 293,000 statuses updated every minute (zephoria.com, 2016). Moreover, 4.75 billion pieces of content are shared daily and 16 million business pages were created as of May 2013 (zephoria.com, 2016).

The construct of Facebook usage intensity has been adopted in many studies including student's academic performance (Ainin, Naqshbandi, Moghavvemi and Jaafar, 2015; Naqshbandi, Ainin, Jaafar and Shuib, 2017), online privacy (Jordaan & Van Heerden, 2017), personalized advertising (Wirtz, Göttel and Daiser, 2017), conspicuous consumption (Taylor et al., 2016) and Facebook gratifications (Dhir and Tsai, 2017) and addiction (Błachnio et al., 2016). Ellison et al. (2007) have created a Facebook intensity scale to gauge Facebook usage and this scale comprises of average time per day, the number of friends and six extra items about users' engagement and connection with Facebook. The scale created by Ellison et al. (2007) has provided the foundation for many other further studies (Cavallo et al., 2012; Kalpidou et al., 2011; Kwan and Skoric, 2013).

Facebook usage has been measured using various dimensions. For example, Facebook usage can be measured using three dimensions based on the frequency of user log-ins, Facebook group memberships and some of the Facebook activities like writing and reading posts by using unidimensional measures (e.g. Bijari et al., 2013; Kirschner

and Karpinski, 2010). In addition, Ross et al. (2009) have also created a three dimension instrument with 28 items about Facebook usage, user profiles and attitudes while Ryan and Xenos (2011) have developed a two dimension instrument with 18 items about Facebook usage and preferred Facebook features.

With reference to Ellison et al. (2007), in this study, a two dimension f-commerce usage intensity is defined as the average time per day, and an additional of 6 attitudinal items about users' proudness, feeling out of touch, sense of belonging and disappointment in their connection and attachment with the f-commerce in their daily routine or activity (Kuo and Tang, 2014). The first dimension of f-commerce usage intensity is about the approximate average time spent on f-commerce in the past week. This scale ranges 1 (less than one hour) to 7 (more than 4 hours). The second dimension is related to attitude towards f-commerce. The dimension includes f-commerce as a part of respondent's every day activity, feeling proud to tell people that respondent is on f-commerce, f-commerce has become part of the respondent's daily routine, feeling out of touch when respondent do not log onto f-commerce for a while, feeling that respondent is part of f-commerce community and feeling sorry if f-commerce is shut down. The scale ranges from 1 (strongly disagree) to 7 (strongly agree).

2.10   IMPULSIVE BEHAVIOUR

Researches done in the psychology and consumer behaviour areas for the past six decades have gathered quite a number of proofs which confirmed that stimulation from the environment is actually strong and causes a strong temptation on buyer's purchase decision even without their realization (Liu et al., 2013). The following sections expain three behaviours that were linked to impulsive behaviour.

2.10.1 Urgency

Scholars have suggested that impulsivity consists of at least five aspects (Cyders et al., 2007; Whiteside & Lynam, 2001). Founded on the factor analysis on the measures of impulsivity (Whiteside and Lynam, 2001), four different but associated constructs were extracted, each of which relates to a facet of one of the five factors of personality measured by the Neuroticism-Extraversion-Openness Personality Inventory-Revised (NEO-PI-R) (Costa and McCrae, 1995). These four constructs were lack of deliberation (i.e. tendency to act without thinking: the deliberation facet of conscientiousness), lack of persistence (i.e. inability to remain focused on a task: the self-discipline facet of conscientiousness), urgency (i.e. tendency to act rashly in response to distress: the impulsivity facet of neuroticism) and sensation seeking (i.e. tendency to seek out novel and thrilling experience: the excitement-seeking facet of extraversion).

Compulsive buying refers to the repeated purchasing that is so excessive that it creates personal and interpersonal problems (Kellett & Bolton, 2009). A number of personality traits correlate with compulsive buying and one of the best established personality traits is impulsivity (e.g., Billieux et al., 2008; Davenport et al., 2012; DeSarbo and Edwards, 1996). From the context of compulsive buying (Rose and Segrist, 2014), urgency has been categorized into negative and positive urgency (Cyders et al., 2007a; Cyders and Smith, 2007; Fischer et al., 2005; Smith et al., 2007; Whiteside and Lynam, 2001, 2003; Whiteside et al., 2005). Negative urgency is the propensity to act rashly while in negative moods whereas positive urgency is the propensity to act rashly while in positive moods (Rose & Segrist, 2014). Out of the five impulsivity facets in NEO-PI-R, Billieux et al. (2008) tested four of them and found that only negative urgency is a significant predictor of compulsive buying. However,

Williams and Grisham (2012) found that both negative and positive urgency correlate with compulsive buying.

Billieux et al. (2010) postulated that high urgency is associated with difficulty in taking into consideration the upcoming consequences of an action in emotional contexts (i.e. people may have an inclination to make detrimental selections in those situations). High levels of urgency that was evaluated with urgency, premeditation, perseverance and sensation seeking (UPPS) impulsive behaviour scale (Whiteside and Lynam, 2001) are linked to the happening of a broad range of problematic behaviours such as drug and alcohol abuse (e.g., Anestis et al., 2007; Verdejo-García et al., 2007); a rise in the yearning for cigarettes (Billieux et al., 2007; Doran et al., 2009); eating disorders (e.g., Fischer, Anderson, and Smith, 2004); problem gambling (e.g., Smith et al., 2007); compulsive buying (Billieux et al., 2008); alcohol abuse (Whiteside and Lynam, 2003); aggressive behaviours (Miller et al., 2003); problematic use of the mobile phone (Billieux et al., 2007; Billieux et al., 2008) tobacco craving (Billieux et al., 2007); and borderline symptoms (Miller et al., 2003). Most of the urgency items in UPPS are explicitly referring to acting without consideration of upcoming consequences in negative emotional contexts (Billieux et al., 2010).

Last but not least, Bechara and Van der Linden (2005) argued that a high degree of urgency can be associated to a poorer capability to purposely suppress prepotent (i.e. automatized) responses. Higher levels of urgency may lead to incapability to act by taking into consideration somatic markers (Billieux et al., 2010). In fact, this kind of inhibition has been regarded as the paramount to the existence of unplanned and impulsive behaviours (e.g., Enticott and Ogloff, 2006; Logan et al., 1997) and also has been found to be compromised in various psychopathological states characterized by

high urgency levels like alcohol dependence (Noël et al., 2001) or pathological gambling (Goudriaan et al., 2006). As such, urgency-associated behaviours are often linked to elevated focus on the current moment (e.g. the longing to attain relief from a negative emotion) and a reduction in the focus on long-term consequences, that eventually lead to risky or maladaptive behaviours (Cyders and Smith, 2008).

As can be seen from the past studies mentioned in this section, urgency is not a construct in the information system and social media literature, rather, its origin is from the psychological literature. Therefore, in this study, the construct of urgency is derived from the psychological context and this is one way to create theoretical contribution to the information and social media literature. Even though there is a scarcity of studies in the Information System or social media context which investigated urgency, nevertheless, a study by Kim, Shin and Lee (2009) has shown that time-sensitivity (e.g. urgency) do have some effect on initial trust and usage intention in mobile banking. Another study by Billieux, Gay, Rochat and Van der Linden (2010) indicated that urgency has certain role to play in problematic behaviour in mobile phone usage while Torres and Gerhart (2017) assert that individuals with time urgency personalities are more probable to perceive mobile devices as useful. In the context of social media, Park, Kee and Valenzuela (2009) found that under-classmen are driven to use Facebook Groups with different purposes and to take part in political and civic activities more actively and often compared to upperclassmen who normally have little spare time and encounter high pressure levels due to urgency and pace of their studies. On the other hand, Chen (2013) found that extroversion which is defined as positive emotion, urgency and tendency to seek out stimulation has significant effect on perceived enjoyment in SNS.

2.10.2 Urge to impulsively purchase

The fundamental justification resulting in the linkage between the 'urge to buy impulsively' and the eventual behaviour of 'impulse purchase' has been credited to the physical proximity as a result from in-store browsing (Beatty and Ferrell, 1998), that in turn, has been regarded to trigger or instigate the urge and eventually the urge has been associated to impulsive purchase (Beatty and Ferrell, 1998; Foroughi et al., 2012). It shows that urge to impulsively purchase precedes the eventual impulsive consumption (Beatty and Ferrell, 1998) and is therefore anticipated to be positively linked to the real impulsive purchase.   When consumers are browsing around in a shop, they will experience more and more urges and the tendency of performing an impulse purchase would increase (Beatty and Ferrell, 1998).

Hirschman (1985) opined that consumers' own train of thoughts was assumed to trigger the craving to make unexpected purchase and when triggered; the urge apparently becomes so strong and tenacious that it requires spontaneous action. Therefore, the urge to impulsively purchase may be assumed to be the phase preceding to and leading toward the phase of real impulse purchase (Badgaiyan & Verma, 2015). According to Beatty and Ferrell (1998), it is very imperative to differentiate between the constructs of 'urge to buy impulsively' and the 'actual impulsive purchase'. As such, the construct of urge to impulsively purchase has been claimed to be a suitable, effective and accurate substitution for impulse purchase (Betty and Ferrell, 1998; Wells et al., 2011a) used in some studies (i.e. Betty and Ferrell, 1998; Parboteeah, et al., 2009; Wells et al., 2011a).

Urge to impulsively purchase has been labelled as a condition which is hedonically complex, sometimes sudden, persistent and irresistible (Piron, 1991). Due to the difficulty and problems in measuring actual impulse purchase behaviour, numerous scholars have used urge to impulsively purchase to evaluate various factors that are probable to affect actual impulse purchase and as posited by Beatty and Ferrell (1998), urge to impulsively purchase is a more precise proxy of impulse behaviour and other scholars (e.g. Adelaar et al., 2003; Dutta et al., 2003; Parboteeah et al.; 2009, Phau and Lo, 2004) have also discovered that this surrogate measurement is very reliable and robust in online contexts. In addition, many studies have validated that urge to purchase impulsively is positively associated to impulsive purchase in many studies (Beatty and Ferrell, 1998; Foroughi et al., 2012; Hanzaee and Taherikia, 2010; Mohan et al., 2013).

In a recently published article by Chen, Su and Widjaja (2016), they had focused their study on urge to purchase impulsively in C2C Facebook's "buy and sell" groups in Taiwan, which involves users themselves as sellers or consumers and by relating it to the impact of information quality, the trait of impulsiveness, and the total number of "likes" and the interaction effects. The research framework was based on a psychology theory namely the latent state-trait (LST) theory proposed by Steyer, Schmitt and Eid (1999) that asserted behaviours of human beings are dependent on three aspects which are situations/environmental cues (i.e. the amount of "likes" for a post and information quality in a post), individual factors (i.e. consumers' impulsiveness) and also interplay (i.e. interaction effect of consumers' impulsiveness on the association between 1) textual information quality and 2) amount of "likes" for advertising posts and consumers' urge to purchase impulsively) between the determinants. While it is hard to

capture the real impulse buying behaviour, the researchers have decided to measure consumers' urge to buy impulsively instead.

Their view was supported by Luo (2005) who asserted that measuring real impulsive behaviour in a controlled environment may cause problems and hence urge to buy impulsively has been adopted in some researches pertaining to online impulse buying (Parboteeah, Valacich and Wells, 2009; Phau & Lo, 2004). To avoid biasness from the researchers' Facebook friends, six new dissimilar experimental Facebook accounts were openned for their research purpose and these accounts were used to post manipulated advertisements to sixteen newly created experimental Facebook pages. Invitations were sent out to members of twenty real C2C Facebook "buy and sell" groups in Taiwan to partake in this online field experiment to see whether those advertisements uploaded on the twenty selected C2C Faebook "buy and sell" group will have influence on their urge to purchase impulsively. Altogether 316 responses were gathered and just 277 responds were usable. Their findings revealed that all the six text information quality dimensions of currency, completeness, relevance, accuracy, ease of understanding and format had significant and positive influence on consumers' urge to purchase impulsively. This implied that high qualities of textual information in advertisements are able to increase consumers' urge to buy impulsively. Besides, highly impulsive consumers were found to have higher tendencies to buy impulsively than less impulsive consumers. In terms of the number of "likes" received, advertisements with more "likes" received were able to increase the consumers' urge to purchase impulsively. Unfortunately, insignificant result was obtained for the interaction effect of consumers' impulsiveness on the association between the amount of "likes" and consumers' urge to buy impulsively. However, there was a significant interaction effect between how current and well formatted information in advertisement in increasing consumers' urge to buy

impulsively. There are also significant interaction effects among consumers'
completeness; impulsiveness and format of advertisements; and consumers' urge to
purchase impulsively.

On the whole, their research findings were in agreement with the LST theory. They
have successfully validated that a person urge to purchase impulsively can be affected
jointly by the interaction between his/her state of mind and personality traits (Wells,
Valacich, & Hess, 2011a). Nevertheless, their research was an experimental study and
may not be able to reflect the real scenario accurately. Furthermore, the focus of the
research was on C2C Facebook groups and it is hard to generalize the findings to B2C
Facebook groups. Their study has provided much insight on consumers' online impulse
purchase with regards to the environmental cues and individual differences. However, a
real f-commerce study with different context of variables have been used in this study
itself to provide more valuable findings for the body of knowledge in social commerce
context, particularly in f-commerce.

2.10.3 Impulse purchase

The definitions of impulse purchase before the year 1982 mainly concentrated on the
product instead of the consumers as the motivator of impulse buying (Hausman, 2000).
For example, Stern (1962) offers the basis for defining impulse purchase behaviour who
categorizes the act as planned, unplanned, or impulse. Following this classification,
planned purchase behaviour entails time-consuming info seeking trailed by rational
decision making (Piron, 1991; Stern, 1962) whereas unplanned purchase refers to all
purchases made without any prior planning and comprises impulse purchase that is
differentiated by the comparative speed with which the purchase decision occurs
(Hausman, 2000).

After the year 1982, scholars started to re-focus their attentions on impulse purchase behaviour by examining the behavioural dimensions of impulse purchase (Hausman, 2000). Scholars seem to concur that impulse purchase comprises hedonic or affective component (Cobb and Hoyer, 1986; Piron, 1991; Rook, 1987; Rook and Fisher, 1995; Weinberg and Gottwald, 1982). For example, Rook (1987) reported account from buyers who felt that the product is "calling" them and nearly demanding they buy it. Another well-known research conducted by North et al. (1997) has proven that more customers buy French wine once French music was played in a shop, while German music played causes the increase in the German wine sales. In addition, other in-store features that can trigger impulse purchase include promotion price (Blattberg, Briesch and Fox, 1995), location of retail shelf (Patterson, 1963), shelf space allocation (Cox, 1964) and product displays (Peak & Peak, 1977).

Impulse purchase or impulse buying is defined as "any purchase which a shopper makes but has not planned in advance" (Stern, 1962, p. 59). It refers to consumers who are not vigorously searching for the product and have no past intention or plan to buy (Beatty and Ferrell, 1998; Weun et al., 1998). Impulse purchase is identified by descriptors like spontaneous, exciting, intense, urge to purchase with the buyer frequently overlooking the consequences (Rook, 1987). During the process of impulse purchase, consumers is unable to build cognitive-structured intentions or attitudes and are incapable of resisting attraction to the product due to their feelings of direct buying behaviour (Verhagen and van Dolen, 2011). Nevertheless, impulse purchase would not happen if objective conditions in the environment do not permit it from happening (Taylor & Todd, 1995). For instance, frustration may occur if consumers unable to locate items they are attracted to and eventually can weaken the feeling to buy impulsively. In other words, impulse purchase may be illustrated as having a sudden

and unplanned purchase decision that is stimulated from particular environmental cues or stimuli on the spot and are supplemented by strong sense of excitement and pleasure (Wu et al., 2016). In contrary, planned purchase is an intentional behaviour that is motivated by the creation of cognition-structured intentions and is probable to be measured through attitude or intentions models like Theory of Planned Behaviour or Technology Acceptance Model (Verhagen and van Dolen, 2011).

From the perspective of online shopping, impulse buying was defined by Verhagen and van Dolen (2009 p. 321) as "a sudden and immediate online purchase with no pre-shopping intentions; it is unplanned, spontaneous, and decided on the spot". According to Piron (1991), impulse purchase can be described by following features: an unplanned decision, the outcome from the response of being stimulated and a decision that is made right when the stimulation occurs. Stimulation itself can influence the probability of impulse buying to happen and increases its magnitude. This further implies the higher the magnitude, the more impulsive it can be based on the higher amount of money spent (Jarboe & McDaniel, 1987). However, impulsive urges are not all being acted upon. Nevertheless, chances of impulse purchase to happen can be higher when the feeling of urges experienced is stronger (Rook, 1987).

Impulse purchase can be categorized into either desires or behaviour. Beatty and Ferrell (1998) stressed that buyers should first sense the spontaneous urge to purchase something prior to really performing the impulsive purchase behaviours. An urge to buy impulsively is a condition of craving that is experienced upon meeting an object in the setting and the real purchase behaviour is likely to be spontaneous and fulfils the urge or desire (Beatty and Ferrell, 1998). Impulse purchase happens once consumers

have an urge to purchase a particular product without prudently considering the consequences of and reasons for the purchase (Verhagen and van Dolen, 2011).

In addition, impulse buying is typically characterized by two key aspects. Firstly, impulse buying process is unintended, involved less cognitive consideration, stimulated by product stumbled upon when browsing through the online store and does not trigger behaviours or intentions that can be logically explained. Secondly, impulse buying is mainly under controlled of emotions although processing of information is not ruled out in the process. Emotions itself can be positive emotions that leads to instant gratification through the purchase of product or negative emotions which resulted in impulse buying that assist in improving customers' feeling (Laros & Steenkamp, 2005).

Basically there are four kinds of impulse purchase (Madhavaram and Laverie, 2004). Firstly, pure impulse purchase is an escape or novelty purchase that halts a normal buying pattern. For instance, a buyer who rarely purchases any magazines may come across a National Geographic magazine at the checkout while waiting in line at a shop and wants to buy it based on the cover pictures or story. In this circumstance, the buying of the magazine will be regarded as pure impulse as it is outside of the usual purchase behaviour and it fulfils an instant desire instigated by an emotional appeal (Jeffrey and Hodge, 2007). Secondly, reminder impulse purchase occurs when a buyer sees an item and recalls advertisement or other info about the items or recalls that the stock at home is low (Jeffrey and Hodge, 2007). It happens when a purchase is made based on something reminding the buyer to make the purchase. In contrary to the pure impulse purchase, the item of reminder impulse purchase is something that the consumer usually purchases but is not essentially on their present shopping list. For instance, consumers may walk down the cereal aisle and realize that they are almost out

of Nestle Cheerios and if the consumers decide to buy Cheerios then it would be technically be an impulse purchase since it was unplanned but it is something that is usually bought by the consumers (Jeffrey and Hodge, 2007). Thirdly, suggestive impulse purchase often occurs when a buyer sees merchandise for the first time and visualized a necessity for it. It is not a pure impulse since the consumer has determined a functional or rational purpose for the item while for pure impulse transaction; the consumer is satisfying an emotional desire. Last but not least, planned impulse purchase occurs when the buyers make particular purchase decisions for services or products dependent of couple offers, price special and the like (Wu et al., 2016). For instance, a consumer who consumes a big deal of orange juice will see a special price on it and purchase them albeit it was not an intended item for purchase for the trip to the shop (Jeffrey and Hodge, 2007).

Impulse purchase or unplanned purchase has long been regarded important by scholars and practitioners (Hostler et al., 2011). A wide range of possible factors has been examined and this includes the psychological and shopping environmental determinants (Park and Lennon, 2006); amount of dollar spent on other items (Jeffrey and Hodge, 2007); individual consumer tendency and gender (Aggarwal and Vaidyanathan, 2005; Bressolles et al., 2007; Coley and Burgess, 2003); website quality (Bressolles et al., 2007); product descriptions and navigation aids (Parboteeah et al., 2009) and individualism, age and income (Mai et al., 2003). In addition, the association between urge to buy and impulse purchase has been validated by Wells et al. (2011). Song et al. (2015) further demonstrated the significance of emotion in impulse purchase and the mediating effect of urge to buy in the social commerce context.

With the proliferation of e-commerce and emergence of the Internet age, online impulse purchase has attained more attention and studies on online impulse purchase have emerged (Ozen and Engizek, 2014). Many academic studies have been done pertaining to impulse purchase in the online setting (LaRose, 2001; Parboteeah et al., 2009; Zhang et al., 2008). Eroglu et al. (2001) assert that impulse purchase in online setting offers prospective research opportunities as online purchase may reduce the restrictions of space and time faced by buyers in the conventional shops. Study results associated to impulse purchase indicates that online buyers are more probable to be impulsive judged against conventional buyers (Donthu and Garcia, 1999) because they perform more unplanned purchases than those in conventional stores due to the tendency for them to make overspending while online shopping caused by the characteristics features of online transactions (Dittmar et al., 2004). This is further supported by the fact that online atmosphere is an imperative factor that influences the degree of impulsivity, in-store browsing and incident of impulse purchases (Costa and Laran, 2003).

Liu et al. (2013) opined that impulse purchase refers to when a buyer is experiencing a frequently persistent, powerful and sudden, urge to purchase something immediately. It is normally resulted from a particular stimulus during shopping (Floh and Madlberger, 2013). Generally, impulse purchase is affected by various personality, economic position, location, social visibility, time pressure and even cultural factors (Yu and Bastin, 2010). From the perspective of psychology, impulse purchase is sometimes irresistible due to the onset of a psychological impulse normally happens not just suddenly but also spontaneously (Piyush et al., 2010). Highly impulsive consumers are more probable to experience spontaneous buying and their shopping lists are more open for unanticipated buying purposes (Park, Kim, Funches, & Foxx, 2012).

Numerous researches have particularly stressed on the effects of impulsiveness in online purchase (Liu et al., 2013; Floh and Madlberger, 2013).

Mattila and Wirtz (2008) proposed that over-stimulation (i.e. higher than preferred excitement) may lead to a temporary loss of self-control which may enhance the tendency of impulse purchases. Previous studies in psychology have indicated that self-regulation is lessened when the self's crucial resources have been exhausted (Baumeister et al., 1998; Muraven et al., 1998). Baumeister (2002) also suggested that buyer's capability to withstand temptation is at its lowest point at the end of the day as the self's resources become gradually exhausted during the day. Mattila and Wirtz (2008) argued that the high degree of excitement in a shop may enhance the loss of self-control as prior studies have shown that high arousal decreases consumer's capability to think through the consequences of their actions (e.g. Leith and Baumeister, 1996; Tice et al., 2001). Studies in online shopping also suggest that highly interactive websites may undermine self-regulation and therefore resulting in the impulse purchase (Kim and LaRose, 2004; LaRose, 2001; LaRose and Eastin, 2002).

Impulse purchase can takes place in both conventional stores and online business environment (Donthu and Garcia, 1999). However, most of the extant studies on impulse purchase have focused mainly on brick-and-mortar shops (Bayley and Nancarrow, 1998; Cobb and Hoyer, 1986; Iyer, 1989; Jones et al., 2003; Kollat and Willet, 1967; Phillips and Bradshaw, 1993; Verplanken and Herabadi, 2001) and television infomercials (Agee and Martin, 2001). Previous studies on e-commerce have conventionally concentrated on enhancing the consumer experience (Palmer, 2002), advertising (Kumar et al., 2000; Ling and Lawler, 2001) and ascertaining factors that result in a preliminary purchase on a website (Lee, 2002). Very limited effort has been

put on impulse purchases in online setting and any outcomes pertaining to impulse purchases were indecisive (Koufaris et al., 2001; Madhavaram and Laverie, 2004). Even though the literature review pointed out that impulse buying is linked to less rationality or alternative assessment, it was not in favour of Hawkins, Best and Coney (2010) who asserted that a logical decision is involved in the process. This was supported by (McNeal, 1973; Rook and Fisher, 1995) who claimed that impulse purchase is an outcome from a cognitive deliberation process and thus not essentially irrational (Bayley and Nancarrow, 1998) as it is linked to cognitive information processing (Ning Shen & Khalifa, 2012; Verhagen and van Dolen, 2011; Xiao and Nicholson, 2013).

For instance, Parboteeah et al. (2009) argued that enjoyable online shopping environment can cause consumers to have higher possibility to encounter impulsive urge to purchase. A simple study by Wells et al. (2011) signified a strong direct effect between the website and online impulse purchase. However, the study has ignored the emotions factor and actual impulsive behaviour was not truly measured. Another study which has excluded the emotions factor was performed by Jeffrey and Hodge (2007) that considered the influence of total of money spent and its probability on consumers to buy product impulsively. A significant but small effect relationship was found and it was also come to the awareness that consumers tend to buy impulsively if a portion of the spent money was for charity purpose.

In their study using a modified TAM model, Zhang et al. (2008) obtained a similar result of small but significant direct effect on the impact of buyers' common propensity to buy impulsively on buyers' online buying intention. Another study which investigated the effect of media format and emotions on impulse purchase for music

CDs was done by Adelaar et al. (2003). The findings show insignificant impact of media format on both emotions and impulse buying intention but a strong influence of arousal as emotional antecedent in impulse buying. In a research by Bressolles, Durrieu and Giraud (2007), functional buying impulsivity has been used as the moderator and the result shows the moderating effect exists on the effect of website quality dimensions on satisfaction and on impulse buying. Another factor that may influence impulse buying is presence of peers (Luo, 2004; Cho, Ching & Luong, 2014).

On the other hand, in the USA, Parboteeah et al. (2009) have investigated the effect of website characteristics on online impulse buying to answer the call by Koufaris et al. (2001) on how better perceptive on the human-computer interface for online environments can be best in increasing impulse buying. The characteristics of websites which are categorized into mood relevant cues (i.e. website's pleasantness, visual appeal) and task-relevant cues (i.e. download delay, security, navigation aids) are used as the environmental stimulus to trigger online impulse buying. The task- and low relevant cues were also described as high- and low-task-relevant cues by Eroglu et al. (2001). The proven importance of high-quality of task relevance cues and mood relevance cues in website design has provided valuable insights on effective website design in improving or maintaining a company's market share. Their research has benefited the body of knowledge in IS by validating a model for online impulse buying to provide a better understanding of consumers' online behavior and also by using environmental psychology to justify theoretically the integration of various Web features as online cues. The utilization of the urge to buy impulsively and its magnitude across various situations in an online environment has further improved the scarcity of research in this area. For future research, it was suggested by the researchers that

measure should be taken to investigate whether task relevance cues or mood relevance cues is more important in influencing online consumer behavior.

Moving on, Gültekin and Özer (2012) conducted a study on impulse purchase of Turkish customers from a store-based retailer and discovered that hedonic motives (i.e. idea, adventure and gratification shopping) have significant effect on impulse purchase while hedonic motives (social, role and value shopping) did not have effect on impulse buying. Besides positively influenced impulse buying, browsing was also a mediator between impulse buying and hedonic motives. Since the research only focuses on hedonic motives, the authors proposed that future studies may put more emphasis on factors such as brand influence, product packaging, psychological pricing, period of promotion, product display and shelf allocation to investigate how these could relate to impulse buying and improve the company investment and marketing strategies.

From the perspectives of online stores beliefs in Netherlands, Verhagen and van Dolen (2011) have looked into its relationships with consumer online impulse buying behavior. The online stores beliefs are pertaining to representational delight (website communication style and enjoyment) and functional convenience (ease of use and online store merchandise attractiveness). The findings revealed that for functional convenience only merchandise attractiveness but not ease of use loaded significantly and heavily on both negative and positive affects. Besides, the urge to buy was quite heavily influenced by positive affect moderately by browsing, but quite weak by negative affect. Nevertheless, urge to buy was proven to have a significant and strong effect on impulse buying. Overall, the study performed by these two researchers had contributed extensively towards a better understanding of online buying by providing insights into the online impulse buying processes, the crucial role of consumers'

emotions in buying impulsively and lastly, the function of online store beliefs as cognitive antecedents of online impulse buying. In particular, the significant role of representational delight and merchandise attractiveness in impulse buying environment has been validated. Lastly, the study focused only on one online apparel store and the respondents were mainly women. Thus, the issues of lack of product variations and gender bias had become the limitations of the study. While their research has focused on the attractiveness and ease of use of a typical online store, this research itself is more focus by looking into the individual's motivational aspects in influencing f-commerce usage and eventually leading to urge to impulsively purchase and finally buying impulsively in f-commerce.

Liu et al. (2013) had performed similar research as Verhagen & van Dolen (2011). However, they focused their studies in impulse purchase but from the perspective of marketing being applied to information systems environment in the perspective of online group buying. The study was conducted to measure the way website cues namely visual appeal, website ease of use and product availability influence consumer personality behavior based on organic variables which include normative evaluation, instant gratification and impulsiveness to urge the impulse purchase online. Their findings revealed that visual appeal, perceived website ease of use and product availability are imperative online indications to prompt impulse purchase. In particular, website ease of use and perceived product availability affect organic variables through the mediating effect of perceived visual appeal. This implies when an online store is easy to use and offers various interesting products; it is deemed more visually appealing. Hence, consumers will find the online store more enjoyable and have a tendency to make unexpected purchase, and augment the feeling to buy impulsively. In addition, normative evaluation and organic variables of instant gratification also

mediated the effects of website cues on urge to buy impulsively. This study has further enriched the literature review by bringing in personality traits from in-store marketing literature to fill in the IS research gap in particular, impulse buying in online group shopping market. However, the findings may not be easily generalized since convenient sampling was deployed to gather feedback from respondents who were university students instead of from diversified background to obtain more valuable insights. Hence, in this study, criterion sampling was used on wider age range of f-commerce users to minimize the issue of generalization as mentioned above.

2.11   SYNTHESIS OF LITERATURE REVIEW

Facebook commerce, which started in 2009, is a relatively new phenomenon in s-commerce. As a matter of fact, there is a scarcity of researches related to impulse purchase through Facebook. A content analysis was conducted to obtain better understanding of related past researches. In order to identify the relevant articles, a thorough search on many reputable databases such as Emerald Intelligence, Science Direct, Association for Computing Machinery (ACM), Scopus, SpringerLink, Business Source Premier @ EBSCOhost and Association of Information System (AIS) e-library was conducted. A few combinations of keywords were used to search the articles in the databases mentioned. The combinations of keywords used were as follows:

- Facebook (AND) online impulse buying

- F-commerce (AND) impulse purchase

- Facebook (AND) online buying intention

- Social commerce (AND) impulse purchase

- Social commerce (AND) online impulse buying

- Social commerce (AND) online buying intention

Only a handful of relevant articles were obtained in the searching process and the important details of these articles are presented in Table 2.1, Table 2.2 and Table 2.3. By referring to Table 2.1, with regards to the research theme, it is obvious that 10 of the 16 studies have focused on intention to purchase, buying intention or purchase behavior and only 4 focused on impulse purchase. From the context of study, only one study examined consumers' behavior in f-commerce and s-commerce respectively. Thus, there is a dearth of study especially in examining consumers' behavior in f-commerce and has become one of the great motivations to conduct the current study.

Secondly, it can be seen that 4 of the 16 past related studies have engaged hedonic and utilitarian motivations, 3 used Technology Acceptance Model (TAM), 2 deployed Theory of Planned Behavior (TPB) and there is only one study which applied Latent State Theory (LST), Theory of Reasoned Action (TRA), Cognitive Emotion Theory (CET), Stimulus-Organism-Response (S-O-R) and Trust Transference Theory (TTT) respectively. There are also 2 studies which did not engage any theories. Nevertheless, there are deficiencies in terms of theories that may predict or explain consumers' purchase intention or impulse purchase as the previous theories did not encompass social psychological theory or web usage theories thus limiting the predictive power of the research models. However, since the use of f-commerce involves social media interactions, the researcher argued that it is important to examine the role of Social Impact Theory (SIT) in affecting consumers' impulse purchase decisions. Furthermore, it is also argued that the Theory of Web Usage is relevant to the context of f-commerce due to the fact that f-commerce is conducted through the Web 2.0 technology. More importantly, since trust may be moved from the context of social media to the context of f-commerce, it will be imperative to include Trust Transference Theory into the research model.

In addition to that, Facebook usage behaviors such as browsing and participation have been overlooked in the previous studies. Due to the fact that f-commerce involves common Facebook activities such as browsing and participation, the research argued that these variables ought to be included in the research model. Another weakness of the existing studies is the absence of psychological trait theory or personality theories. Thus, in this study, urgency has been included as an independent variable in predicting urge to impulsively purchase and impulse purchase.

From the perspective of research methodology, only 4 of the 16 studies have examined the existence of CMB whereas for the non-response bias, none of the studies has performed any test to assess the existence of non-response bias. Thus, it is arguable that the findings of these studies may have been influenced by non-response bias rendering the generalizations being unreliable and invalid. Besides that, only 1 of the studies has conducted pre-test and only 3 of the 16 studies have conducted just pilot test. Hence, there may be issue of quality of the survey instruments since respondents are not having the opportunities to give their feedbacks and suggestions regarding clarity and ambiguity of the instruments. To eradicate these deficiencies, the present study has assessed CMB using Harman's Single Factor analysis and Method Factor Analysis as well as non-response bias using independence Chi-square test.

Moreover, in terms of face validity, only 3 out of 16 studies have engaged expert panels to review the face validity of the survey instruments. With regards to Content Validity Index (CVI), none of the 16 studies have used CVI to assess the content validity of the items and scales in the survey instruments. Similarly, none of the studies has deployed Q-sort procedure by practitioners to evaluate the construct validity of the survey instruments. Therefore, it can be argued that there are issues of content and

construct validity in the existing studies. Hence, to address these deficiencies, the current study has engaged an expert panel and practitioners to assess face validity, content validity and construct validity of the survey questionnaire to ensure a pre-test and pilot test have been properly conducted before the actual field works commenced.

Finally, for multivariate assumptions, only 2 of the 16 studies have examined the normality of distribution and none of the studies has examined other assumptions such as linearity, multicollinearity and homoscedasticity. Moreover, since 15 out of the 16 studies engaged the linear SEM models, hence the researcher argued that the findings and generalizations from the SEM analysis may be invalid and unreliable. Thus, as a remedial for these weaknesses, the current study has examined each of the multivariate assumptions to verify statistically that all assumptions have been fulfilled before further statistical analyses were performed.

A summary of selected past related studies in the area of social commerce as well as their respective relationship analysis is shown in Table 2.2 while the details of the findings can be found from Appendix A. On the other hand, Table 2.3 shows construct analysis of the independent variables used in the related past studies with purchase intention (PI) or intention to purchase (IP) as the dependent variable. The details of the construct analysis performed are further shown Appendix C.

In a nutshell, from the past related studies (please refer to Table 2.2), it can be seen that only a handful of studies pertaining to f-commerce have been performed and yet the factors being investigated were scattered across various context. Although there are a number of studies which have studied the impulse purchase, however these studies did not examine the purchase behavior from a more holistic and integrated point of view in

particular from the f-commerce perspective. There is also a scarcity in social commerce research that look into the psychological perspective. Hence, to fill the research gap identified thus far, this study is warranted to identify the reasons why consumers engage in f-commerce and also to determine the influence of urge to impulsively purchase on f-commerce users' purchase behavior.

Table 2.1: Synthesis of literature review on related past studies

Researcher(s)	Anderson et al. (2014)	Hsu and Hsu (2012)	Chen et al. (2016)	Kim and Park (2013)	Verhagen & van Dolen (2011)	Suraworachet et al. (2012)	Shin (2013)	Park et al. (2012)	Gao (2014)	Liu et al. (2013)	Gültekin & Özer (2012)	Ng (2013)	Tsai et al. (2011)	Pöyry et al. (2013)	Gefen et al. (2003a)	Parboteeah et al. (2009)
Research theme	Purchase intention in Retailer Facebook Pages	Online group buying intention	Impulse buying in C2C Facebook groups	Consumers' trust in s-commerce	Online impulse buying	Intention to buy on f-commerce	Actual behavior in s-commerce	Online apparel purchase	Online purchase behavior	Online impulse purchase	Online impulse buying	Purchase intention in clothes	Online group buying intention	Purchase intention in a travel agency's Facebook page	Online purchase intention	Online impulse buying
Country of study	USA	Taiwan	Taiwan	South Korea	Netherlands	Thailand	South Korea	South Korea	China	China	Turkey	Taiwan & Thailand	Taiwan	Finland	USA	USA
Theory/Model	Utilitarian & Hedonic values	none	LST	TRA	CET	Modified TAM	TPB, TAM	Hedonic and Utilitarian web browsing	TPB	S-O-R	Hedonic motives	Trust transference theory	TAM	Hedonic & Utilitarian motivations	TAM	none
Scale	4-point Likert	5-point Likert	9-point Likert	7-point	7-point Likert	4-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	7-point Likert	9-point Likert
Expert panel	No	No	No	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No
Content validity index (CVI)	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Q-sort classification	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Pre-test/ Pilot test	No	No	Only pilot test	Only pilot test	Yes	No	Yes	No	No	No	No	No	No	Only pre-test	Yes	Only pilot test
CMB test	No	No	No	No	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes
Non-response bias test	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Normality test	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes
Linearity test	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Homoscedasticity test	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Multi-collinearity test	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	Yes
Statistical model	SEM	SEM	Descriptive analysis	SEM	SEM	SEM	SEM	SEM	SEM	SEM	SEM	SEM, MGA	SEM	SEM	SEM	SEM

Note: SEM=Structural Equation Modeling, MGA=Multi Group Analysis, CET=Cognitive Emotion Theory, LST=Latent State Theory, TRA=Theory of Reasoned Action, TPB=Theory of Planned Behavior, S-O-R: Stimulus-Organism-Response, TAM=Technology Acceptance Model

Table 2.2: Findings of the relationship between independent and dependent variables

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Pöyry et al. (2013)	Travel industry	1162 Facebook users	One-way ANOVA, SEM	Hedonic motivation	Browsing	Sig. +
				Utilitarian motivation	Browsing	Sig. +
				Browsing	Membership continuance intention	Sig. +
				Participation	Membership continuance intention	Sig. +
				Browsing	Purchase intention	Sig. +
				Participation	Purchase intention	ns
				Hedonic motivation	Participation	Sig. +
				Utilitarian motivation	Participation	ns
				Browsing	Referral intention	Sig. +
				Participation	Referral intention	ns
Kim & Park (2013)	S-commerce characteristics	338 Korean s-commerce users	SEM	Trust	Purchase intention	Sig. +
				Communication	Trust	Sig. +
				Economic feasibility	Trust	ns
				Information quality	Trust	Sig. +
				Reputation	Trust	Sig. +
				Size	Trust	Sig. +
				Transaction safety	Trust	Sig. +
				Word-of-mouth referral	Trust	Sig. +

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Table 2.2 continued

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Verhagen & van Dolen (2011)	Online fashion store	532 Dutch online consumers	SEM	Negative attractiveness	Browsing	ns
				Positive affect	Browsing	Sig. +
				Urge to buy impulsively	Impulse buy	Sig. +
				Enjoyment	Negative attractiveness	ns
				Merchandised attractiveness	Negative attractiveness	Sig. -
				Perceive ease-of-use	Negative attractiveness	ns
				Website communication style	Negative attractiveness	Ns
				Enjoyment	Positive affect	Sig. +
				Merchandised attractiveness	Positive affect	Sig. +
				Perceived ease-of-use	Positive affect	Ns
				Website communication style	Positive affect	Sig. +
				Browsing	Urge to buy impulsively	Sig. +
				Negative attractiveness	Urge to buy impulsively	Sig. -
				Positive affect	Urge to buy impulsively	Sig. +
Ng (2013)	S-commerce websites	284 Taiwan Facebook fans	SEM	Closeness	Intention to purchase	ns
				Familiarity	Intention to purchase	ns
				Trust	Intention to purchase	Sig. +
				Closeness	Trust	Sig. +
				Familiarity	Trust	Sig. +

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Table 2.2 continued

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Suraworachet et al. (2012)	F-commerce	340 Facebook users	Factor analysis, Regression analysis	Belief in friends who like Facebook	Attitude	Sig. +
				Belief in people who like Facebook	Attitude	Sig. +
				Belief in pole who like a photo in an item	Attitude	Sig. +
				Attitude	Intention to purchase	Sig. +
				Perceived ease-of-use	Intention to purchase	Sig. +
Shin (2013)	S-commerce consumer behaviour	329 Korean consumers	SEM	Behavioral intention	Actual behavior	Sig. +
				Perceived social support	Actual behavior	Sig. +
				Trust	Actual behavior	Sig. +
				Enjoyment	Attitude	Sig. +
				Perceived usefulness	Attitude	Sig. +
				Attitude	Behavioral intention	Sig. +
				Enjoyment	Behavioral intention	Sig. +
				Perceived usefulness	Behavioral intention	Sig. +
				Social norm	Behavioral intention	Sig. +
Park et al. (2012)	Apparel impulse buying	356 Korean undergraduates	SEM	Price	Hedonic Browsing	Sig. +
				Hedonic browsing	Impulse buy	Sig. +
				Sensory attribute	Impulse buy	Sig. +
				Utilitarian browsing	Impulse buy	Sig. -
				Value consciousness	Impulse by	Sig. -
				Variety of selection	Utilitarian browsing	Sig. +

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Table 2.2 continued

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Gao (2014)	Virtual products	226 Shanghai undergraduates	SEM	Behavioral intention	Actual behaviour	Sig. +
				Perceived behavioural control	Actual behaviour	Sig. +
				Attitude	Behavioral intention	Sig. +
				Perceived behavioural control	Behavioral intention	ns
				Social norm	Behavioral intention	ns
				Attitude	Perceived behavioural control	Sig. +
Liu et al. (2013)	Online group buying	318 Zhejiang Normal University students	SEM	Normative Evaluation	Instant gratification	Sig. +
				Visual appeal	Instant gratification	Sig. +
				Website ease-of-use	Instant gratification	ns
				Impulsiveness	Normative Evaluation	Sig. +
				Visual appeal	Normative Evaluation	Sig. +
				Instant gratification	Urge to Buy Impulsively	Sig. +
				Impulsiveness	Urge to Buy Impulsively	Sig. +
				Normative Evaluation	Urge to Buy Impulsively	Sig. +
				PAV Product availability	Visual appeal	Sig. +
				Website ease-of-use	Visual appeal	Sig. +
Tsai et al. (2011)	Online group buying	346 Taiwan online group buying users	SEM	Perceived usefulness	Purchase intention	Sig. +
				Sense of Virtual Community	Purchase intention	Sig. +
				Trust	Purchase intention	Sig. +
				Perceived ease-of-use	Perceived usefulness	Sig. +
				Website quality	Perceived usefulness	Sig. +
				Trust	Sense of Virtual Community	Sig. +

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Gefen et al. (2003a)	Amazon.com book sales	317 US undergraduates	SEM	Familiarity	Perceived ease-of-use	Sig. +
				Familiarity	Purchase intention	Sig. +
				Perceived usefulness	Purchase intention	ns
				Trust	Purchase intention	Sig. +
				Perceived ease-of-use	Perceived usefulness	Sig. +
				Disposition	Trust	Sig. +
				Familiarity	Trust	Sig. +
Anderson et al. (2014)	Apparel online retailer	250 online consumers	SEM	Bargain Perception	Loyalty	ns
				Experiential Shopping	Loyalty	Sig. +
				Information access	Loyalty	Sig. +
				Transaction safety	Loyalty	ns
				Bargain Perception	Purchase intention	ns
				Experiential Shopping	Purchase intention	ns
				Information access	Purchase intention	ns
				Loyalty	Purchase intention	Sig. +
				Transaction safety	Purchase intention	Sig. +
				Information access	Transaction safety	Sig. +
Chen et al. (2016)	C2C Facebook group buying	277 participants	SPSS	Information Quality	Urge to Buy Impulsively	Sig. +
Hsu & Hsu (2012)	Online group buying	239 online group buying users	PLS	Trust	Attitude	Sig. +
				Attitude	Group Buying Intention	Sig. +
				Conformity	Group Buying Intention	ns

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Table 2.2 continued

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Kang & Johnson (2015)	Apparel online shopping	601 respondents	SEM	Market mavenism	Information seeking gratification	ns
				Social browsing	Information seeking gratification	Sig. +
				Value consciousness	Information seeking gratification	Sig. +
				Openness to experience	Market mavenism	Sig. +
				Arousal needs	Market mavenism	ns
				Material resource needs	Market mavenism	Sig. +
				Market mavenism	Online social shopping intention	Sig. +
				Social gratification	Online social shopping intention	Sig. +
				Social browsing	Online social shopping intention	Sig. +
				Information seeking gratification	Online social shopping intention	Sig. +
				Value consciousness	Online social shopping intention	Sig. +
				Openness to experience	Social browsing	ns
				Arousal needs	Social browsing	Sig. +
				Material resource needs	Social browsing	Sig. +
				Market mavenism	Social gratification	Sig. +
				Social browsing	Social gratification	Sig. +
				Value consciousness	Social gratification	ns
				Material resource needs	Value consciousness	Sig. +

Table 2.2 continued

Reference	Context	Sample	Statistical analysis method(s)	Independent variable	Dependent variable	Result
Sukrat et al. (2015)	Organic rice purchase	41 online users	SPSS	Trust in Facebook	Purchase intention	ns
				Trust in farmer	Purchase intention	ns
				Trust in farmer	Trust in Facebook	Sig. +
				Information quality	Trust in Facebook	Sig. +
				Service quality	Trust in Facebook	ns
				Perceived competence	Trust in farmer	ns
				Perceived benovolence	Trust in farmer	Sig. +
				Perceived integrity	Trust in farmer	ns

Note: Sig. + = Significant positive relationship; Sig. - = Significant negative relationship; ns= not significant

Table 2.3: Construct analysis

Researcher(s)	RP	SZ	IQ	TS	CM	WMR	CL	FM	BPF	BFF	BFP	AT	PEOU	SN	PBC	TR	SVC	PU	WQ	DP
Pöyry et al.[#] (2013)																				
Kim and Park (2013)	X*	X*	X*	X*	X*	X*														
Verhagen & van Dolen[#] (2011)																				
Ng (2013)							X	X												
Suraworachet et al. (2012)									X*	X*	X*	X	X							
Shin[#] (2013)																				
Park et al.[#] (2012)																				
Gao (2014)												X		X	X					
Liu et al.[#] (2013)																				
Tsai et al. (2011)													X*			X	X	X*	X*	
Gefen et al. (2003a)								X*					X*			X		X		X*
Anderson et al.[†] (2014)																				
Chen et al.[#] (2016)																				
Hsu & Hsu[#] (2012)																				
Kang & Johnson[#] (2015)																				
Sukrat et al.[†] (2015)																				
Wu et al.[#] (2015)																				

Note: X=significant effect, DV=Intention to purchase or purchase intention, [#] indicates DV is not Intention to purchase or purchase intention, [†]=no significant variables, *=Indirect Effect, RP=Reputation, SZ=Size, IQ=Information Quality, TS=Transaction Safety, CM=Communication, WMR=Word of Mouth Referrals, CL=Closeness, FM=Familiarity, BPF=belief in people who like Facebook page, BFF=belief in friends who like Facebook page, BFP=belief in people who like a photo in an item, AT=attitude, PEOU=Perceived Ease of Use, SN=Social Norm, PBC=Perceived Behavioural Control, TR=Trust, SVC=Sense of Virtual Community, PU=Perceived Usefulness, WQ=Website Quality, DP=Disposition

2.12   CHAPTER SUMMARY

In this chapter, the evolution of e-commerce and a comprehensive literature review on social commerce was presented in detail. Theories and models used in similar past studies to investigate online impulse buying were explained as well. Specifically, the three theoretical underpinnings (i.e. Social Impact Theory, Theory of Web Usage and Trust Transference Theory) and the variables understudy were also discussed with the support from related past studies. A synthesis of the literature review, findings of association between independent and dependent variables and a construct analysis were also included. The following chapter will describe the research methodology used in this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1   INTRODUCTION

A good research design assists researcher to ensure that the evidence acquired from the study may enable researcher to answer the initial question as correctly and as clearly as possible (Berends, 2006; De Vaus, 2005). This chapter discussed in great detail the research methodology of this study which include discussion on the hypotheses development which underlie the theoretical framework, the research design, research population and sampling technique, operational definition, instrumentation, data collection procedures, scales of reliablities and unit of analysis. A description for data analysis and data presentation was included as well.

3.2   RESEARCH PARADIGM

Ticehurst and Veal (2000) referred research paradigm as the beliefs and philosophies which may offer a road map of how the study is going to be conducted. According to Deshpande (1983), a research paradigm may be specified as a set of assumptions, which the investigation begins with and denotes a set of individuals' views which may define the original opinions about how the phenomenon operates. Paradigms manifest what practitioners consider as imperative, reasonable, and legitimate and they may create a group of principles to guide what should be carried out (Patton, 1990).   Hence, paradigms will ascertain what problems are worth studying and what approaches are used to obtain the solution (Deshpande, 1983). Bonoma (1985) categorized inquiries into quantitative and qualitative paradigms whereas Guba and Lincoln (1994) categorized the various kinds of paradigms into four clusters, namely constructivism, critical theory, realism and positivism.

3.2.1   Justification for selection of research paradigm – positivist paradigm

Hussey and Hussey (1997) assert that positivist paradigm is grounded on the method applied in the social and natural sciences. Positivists discover the real world from a unidirectional perspective (Guba and Lincoln, 1994) and they refute that their presences will affect the phenomenon. Generally, the positivist paradigm is founded on the presumption that the world is a noticeable reality where theoretical propositions regarding this reality may be established and verified. Hence, logical questioning is engaged in the study in order to obtain rigor, objectivity and accuracy replacing initiation and experience as the approaches of examining research problems (Hussey and Hussey, 1997). Moreover, hypotheses are deduced from principles which are then verified statistically. This is followed by exploration of human behaviour using only data collection (Perry et al., 1999). Furthermore, the epistemology of positivist paradigm mainly concentrates on current theories to discover the truth stead of establishing fresh theory (Perry et al., 1999). For this reason, questionnaires and experiments are the most common approaches used by positivists (Hussey and Hussey, 1997).

In the present study, a positivist paradigm is undertaken as the most appropriate research paradigm because this study aims at theory testing instead of building a fresh theory (Guba and Lincoln, 1994). The study attempts to examine the influence of Social Impact Theory, Theory of Web Usage and Trust Transference Theory towards consumers' impulse purchase in Facebook commerce. Similar to Perry et al. (1999), Hussey and Hussey (1997), quantitative data were gathered using surveys and the process involved quantitative method and statistical tests based on deduction. Guba and Lincoln (1994) assert that survey samples were used by the scholar to validate whether the proposed hypotheses are supported or not. Positivist paradigm is appropriate for

this study because a quantitative method encompasses determination of a population, surveying a sample of the population and statistically analysing the relations between the variables (Perry et al., 1999).

3.3 THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

This research is based on positivist paradigm in which hypotheses are developed and tested statistically. The theoretical framework used in this research to investigate the factors leading to impulse purchase in f-commerce is shown in Figure 3.1. The three theories utilized in this theoretical framework including Social Impact Theory, Theory of Web Usage and Trust Transference Theory. Furthermore, three usage constructs namely participation, browsing and usage intensity have been combined in a group known as f-commerce usage as the three constructs are similar and overlapping to some degree. The justifications for developing the theoretical model and all the hypotheses developments underlying the theoretical framework are elucidated in the next sub-sections.

3.3.1 Hedonic and utilitarian motivation

Browsing was categorized into two by Babin et al. (1994), Janiszewski (1998) and Moe (2003) as utilitarian and hedonic. Prior to purchase of product, utilitarian browsing is normally goal-oriented, focuses on heuristics, equipped with plans to lower the risk and aspire to achieve the objectives of information searching. On the other hand, hedonic browsing emphasizes on enjoyment, leisure and the fun side of shopping regardless of whether the purchase materialised at the end of process. There is also sufficient evidence which indicate consumption behaviour can be affected by utilitarian and hedonic motivations (Arnold and Reynolds, 2003; Babin et al., 1994; Batra and Ahtola, 1990; Dhar and Wertenbroch, 2000; Holbrook and Hirschman, 1982). As a

matter of fact, hedonic and utilitarian values are created based on the type of usage activities and information systems and the level of enjoyment it provides for users (Pöyry et al., 2013).
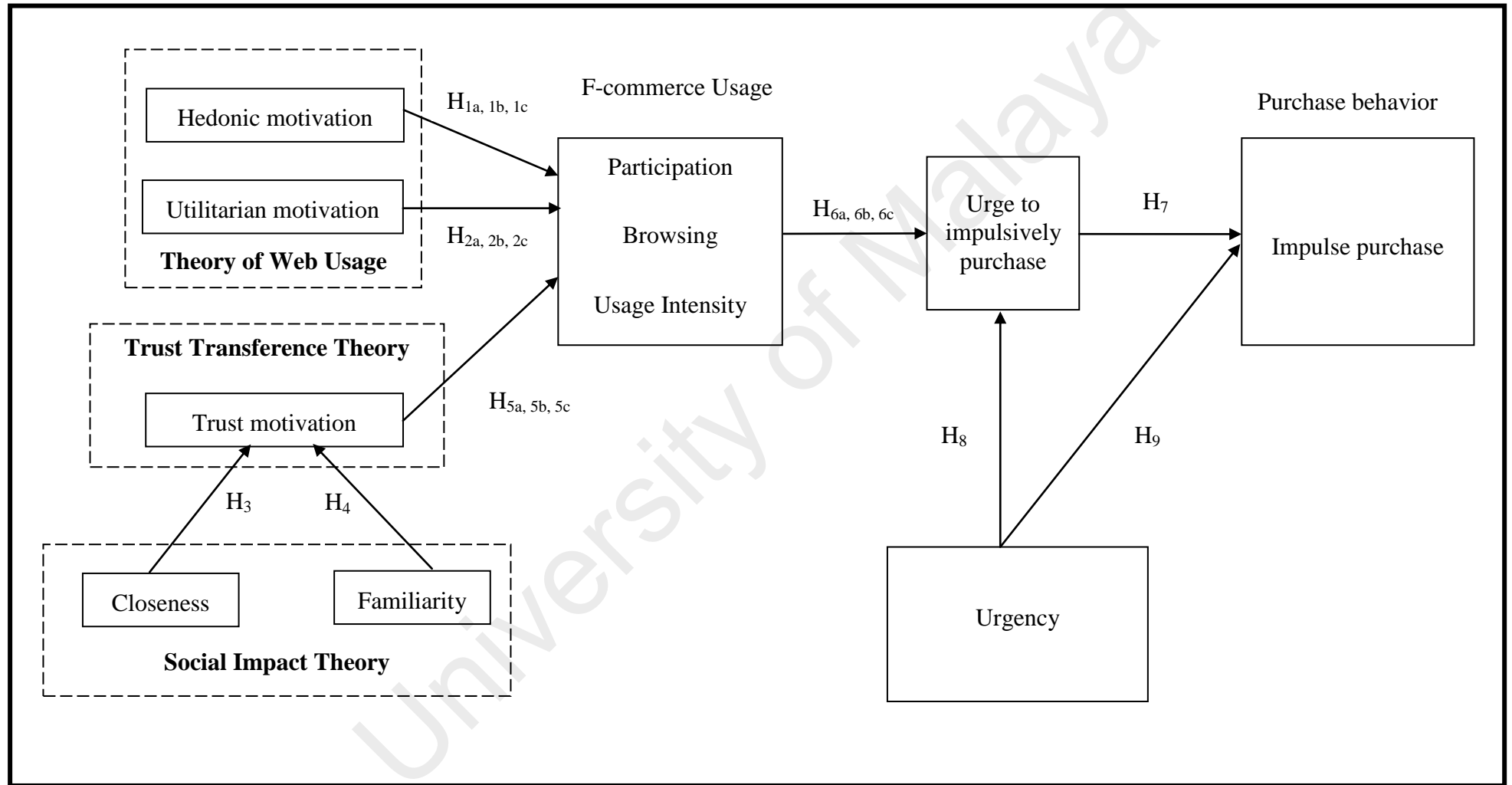
Figure 3.1: Theoretical framework

According to Pillai and Mukherjee (2011), generalization of user acceptance phenomenon without taking into consideration their utilitarian or hedonic attribute is an incomplete understanding. In fact, any information systems would be categorized as hedonic or utilitarian nature (van der Heijden, 2004) founded on the value proposition provided by the corresponding website. Hence, the constructs of Hedonic Motivation and Utilitarian Motivation are chosen based on the rationale that Facebook users normally engaged themselves for the purpose of enjoyment such as gaming, photo sharing, video sharing, chat rooms (O'Murchu et al., 2004) or accomplishing a specific task (i.e. discussion, product purchase, product review, sharing ideas and other non-leisure activities).

Hedonic and utilitarian motivation have been studied as the determinants of undergraduates' e-impulse buying of apparel products (Park et al., 2012), search intention (To et al., 2007), consultation with salesperson (Haas and Kenning, 2014), mobile users' satisfaction (Kim et al., 2013), impulse buying (Gültekin and Özer, 2012) and preference to Internet retailers (Overby and Lee, 2006) among others. Both constructs were examined as the antecedents for participation and browsing from the purchase intention of travellers' context by Pöyry et al. (2013) but in this study, they were investigated as the antecedents for participation, browsing and f-commerce usage intensity from the context of impulse purchase.

Hedonic motivation is related to consumers' participation in acquiring knowledge and skills about a product for entertainment purposes (Le Roux & Maree, 2016). Pöyry et al. (2013) found that the pleasure value of an online brand community has a positive influence on consumers' participation behaviors in the form of joining in conversations with other group members. Van der Heijden (2004) asserts that perceived enjoyment

might affect consumers' intentions to use hedonic systems like online communities and this is strongly linked to the findings by Childers et al. (2001) who found that pleasure-oriented consumers may involve in interaction with a web environment only for the sake of the interaction or engage in various online communities activities such as games or contest which can stimulate consumers positive feeling or excitement (Armstrong and Hagel, 1996). Enjoyment value of an online brand community has a positive influence on participation behaviour by engaging in conversations with other group members (Dholakia et al., 2004). Some members may perceive participating in the community as a good approach to pass their time (Pöyry et al., 2013). Besides, Vogt and Fesenmaier (1998) mentioned that many members are pleasure seekers who indeed perceived hedonic benefits derived from online communities as importance. Therefore, the following hypothesis is posited:

H$_{1a}$: Hedonic motivation has positive influence on participation

On the other hand, seeking experiences from web usage and sensory stimulation has been linked to online browsing behaviour and this is in line with the flow theory (Cotte et al., 2006). Flow theory states that shoppers occasionally experience 'flow', which is a condition of consciousness when they are intensely engrossed in a pleasant activity (Csikszentmihalyi, 1975). Within online environment, 'flow' resembles exploratory browsing (Pace, 2004) that may be variety-seeking, curiosity-based or risk-taking and customers who discover novel sites and click on unfamiliar links will find something interesting and novel irrespective of effort and time (Cotte et al., 2006). All of these activities are related to hedonic motivations which entail seeking of experiences, play and fantasy (Voss et al., 2003). When users do online shopping with hedonic motivations, they tend to browse and make impulse purchase without much thinking (Jarboe and McDaniel, 1987). Since users who browse Facebook pages are exposed to

sensory stimulation via novel ideas, multimedia content and info associated to their field of interest that are linked to the online browsing activities (Pöyry et al., 2013), the subsequent hypothesis is proposed:

H₁b: Hedonic motivation has positive influence on browsing

Hedonic motivation was found to be an imperative determinant of technology use (Brown and Venkatesh, 2005, Thong et al., 2006). This indicates that the higher the degree of hedonic motivation, the higher the degree of technology use. In terms of f-commerce, technology use is similar to usage intensity. Morever, De Vries and Carlson (2014) found that hedonic value positively influences usage intensity in social media. This again implies that the higher the level of hedonic enjoyment will lead to the higher level of intensity in f-commerce usage as Facebook itself is a kind of social media. The effect of psychological satisfaction will cause users to gain more enjoyment by using f-commerce more intensively. Therefore, hedonic motivation is theorized to have positive influence on f-commerce usage intensity and the following hypothesis is posited.

H₁c: Hedonic motivation has positive influence on f-commerce usage intensity

Utilitarian motivation is associated to consumers' participation in obtaining the knowledge and skills pertaining to a product (Le Roux & Maree, 2016). When engaging in a specific kind of behavior, consumers are normally concern on accomplishment of a task in an efficient and timely way (Cotte et al., 2006). Besides, the extent of a member's continuance commitment positively influences thread-associated reading behavior where continuance commitment is defined as the user's perception of the benefit ratio or cost of engaging in such behavior (Pöyry et al., 2013). In other words, users looking for instrumental value from the community will only

involve in behaviors of the most direct value to them. Furthermore, Dholakia et al. (2004) asserted that utilitarian customers who are driven to utilize an online community are not probable to participate in time-consuming activities and instead more concern with finding content that fits their purposes. Therefore, the next hypothesis is posited:

H₂ₐ: Utilitarian motivation has positive influence on participation

From the perspective of overall web usage, Cotte et al. (2006) revealed that utilitarian motivation has a substantial influence on search behaviour. Similarly, Pöyry et al. (2013) discovered that utilitarian motivations have strong positive association with search behavior. Moreover, Bateman et al. (2010) opined that consumers may browse in order to accumulate their knowledge of a subject of interest for imminent use even though they search for instrumental value from the community by only engaging in behaviours of highest direct value to them. Hence, browsing community pages may indicate utilitarian motivations even though the consumer is not presently going after a particular piece of info (Moe, 2003). Thus, the subsequent hypothesis is suggested:

H₂ᵦ: Utilitarian motivation has positive influence on browsing

On top of that, utilitarian motivations were found to have influence on frequency of online purchase via electronic shopping carts (Close and Kukar-Kenney, 2010). When users perceive that the level of usefulness is high (i.e. availability of wide range of products and services and ability to place/remove items in/from electronic shopping cart while continue to shop for other products), the tendency for them to use f-commerce more frequently will eventually develop. Ernst (2015) also asserts that SNS usage is determined by both utilitarian and hedonic motivations. This applies to Facebook as well being a type of SNS used to perform f-commerce. Hence, utilitarian motivation is

theorized to have positive influence on f-commerce usage intensity and the succeeding hypothesis is posited.

H₂c: Utilitarian motivation has positive influence on f-commerce usage intensity

3.3.2 Familiarity and Closeness

Familiarity has been described as the feeling of perceptive towards an entity, usually with reference to past interactions, experience and getting to know of what, who, how and when of what is occurring (Lee and Kwon, 2011). In addition, they describe the immediacy or closeness factor using the term "intimacy" to express the feeling of proximity and emotional relationship, which covers moral support, intense liking and the capacity to endure any imperfection in the process of doing so. According to Ng (2013), a user in the social network community who has more social interaction with others will have stronger feeling of familiarity and closeness with others. As this research is related to the purchase through Facebook pages, the constructs of Closeness and Familiarity are adopted in the theoretical framework to study their influence on the purchase behaviour on f-commerce which emphasizes on social interaction among buyers.

Trust may be built online (Dwyer et al., 2007) such as on social network sites and the association between trust and social interactions has been verified in e-commerce environment (Gefen, 2000). In addition, Chen et al. (2009) found that social interaction amongst members within a C2C setting may enhance the degree of trust amongst its members. It was highlighted by Lilley et al. (2012) that Facebook users are 30% more prone to share information, provide comments and be acquainted with the message from advertisers if their friends like or comment on it. This has proven that when they are familiar with their friends, they tend to trust what their friends had posted or commented

and in return, they will have no worries to participate as well. Thus, trust has become an important element (Nahapiet, 1998) and has formed the valuable basis in social relationships (Kankanhalli, 2005).

Familiarity has been studied by Gefen et al. (2003a) from the context of inexperience and experience with online stores. Besides, closeness and familiarity have been studied as the antecedents of trust motivation from the context of intention to purchase through Facebook pages (Ng, 2013). Ng (2013) asserts that having more social interactions with members within a social network community will bring about more trust within the community since familiarity and closeness may help consumers to feel more protected with their peers. The closer and more familiar users are to others, the higher the likeliness of them to trust a social network community. Social interactions in a social network community will affect an individual's trust within the community because these interactions will nurture higher commitment, involvement and sense of belonging. Therefore, reassurances develop and consumers will incline to believe that other community members will not intentionally hurt them and thus trust is formed. In other words, familiarity and closeness will enhance a user's trust towards the social network community. Morever, it was also found that psychological closeness can foster trust (Thomsen et al., 2016) while Zaman et al. (2016) assert that consumers' closeness to the business can build trust. Hence, the following hypotheses are formulated:

H₃: Closeness has positive influence on trust motivation

In addition, Sánchez-Franco and Roldán (2015) opine that familiarity not just offers a framework for upcoming expectations but also allows individuals to generate tangible ideas of what to foresee founded on prior interactions. Familiarity also reflects accrued knowledge obtained from service encounters during prior successful interactions,

lessens uncertainty and eventually fostering affective trust in social relationships. Thus, familiarity serves as a potential long-standing uncertainty-reduction approach and drives affective trust. Besides, familiarity may strengthen trust and emotionally affects the social interaction processes (Kang et al., 2016). Henceforth, the subsequent hypothesis is posited:

H$_4$: Familiarity has positive influence on trust motivation

3.3.3 Trust motivation

From the context of s-commerce, together with the feeling of self-assurance and willingness, trust is referred as the perception associated to the one we trust or do not trust, for instance trust in a store or any one source of info stemming from another user (Shin, 2013). Trust is regarded as essential for transforming site visitors into purchasers in e-commerce (Chung and Kwon, 2009; Dahlberg et al., 2008) and has been frequently reported as the key element in online shopping intentions (Goode and Harris, 2007). It even plays a more vital role in s-commerce than e-commerce (De Vries and Midden, 2008; Nutley, 2010). Jarvenpaa, Tractinsky and Vitale (2000) emphasized on the seriousness of lack of consumers' trust in exploiting the full economic potential of e-commerce. As a matter of fact, trust has been proposed as an essential element in business-to-consumer type of e-commerce (Awad and Ragowsky, 2008; Martin & Camarero, 2008). Morever, the issue of trust and distrust which causes distress among online buyers had become the main topic in the research performed by Kim and Park (2013). It is undeniable that one of the barriers in online buying is the level of trust that exists among consumers. This scenario is understood as the online buying process does not involve real access and evaluation of a product prior to purchasing it. In fact, according to Harris and Dennis (2011), a hierarchy of trust exists in which recommenders or reviewers who are 'real' friends occupy the top position while

retailers are at the bottom of the hierarchy. Hence, in this study, the construct of Trust Motivation was selected based on the justification that Facebook users tend to browse or participate more in any Facebook Pages that are recommended by someone they know founded on the trust that has been built through social interaction in the social network community.

Trust indeed plays an important role in online purchase intentions (Kim, 2012). Trust also has been studied by Gefen et al. (2003a) in online stores and by Tsai et al. (2011) in online group buying. Besides that, trust has been studied also as the antecedent of intention to purchase (Lu et al., 2010; Ng, 2013; Van der Heijden et al., 2003) but not from the context of Facebook pages usage and purchase behaviour. In s-commerce, consumers search for the existence of positive cues about a web site's overall trustworthiness and the absence of negative cues (Shin, 2013). They are normally keen to know whether or not specific online services are trustworthy before any purchase. Since consumers of s-commerce depend on user-generated product reviews, trust is indeed imperative. Studies have validated that when knowledgeable friends suggest particular products, the potential buyer may jump straight to the purchase (Buttner and Goritz, 2008; Wu and Tsang, 2008). There are times when buyers purchase what someone else has bought and if a friend knows about digital devices, a buyer may save time and purchase what their friend has already purchased.

Though advantages stemming from intrinsic and extrinsic motivation may promote participation rates, concerns about anonymity and data security may considerably reduce participation rates especially in Web-based surveys (Rogelberg et al., 2006). Usually when participants concern about the deficiency of anonymity, they will be more unwilling to reveal personal info (Joinson et al., 2010). Likewise, participants' trust in

privacy protection promotes information disclosure in e-commerce (Gefen et al., 2003) since it helps in reducing perceived risks (Culnan & Armstrong, 1999). They will also tend to participate more in business activities for instance events or games on Facebook (Peters et al., 2015). Therefore, a user who trusts a social networking site will tend to participate and based on this rationale, the subsequent hypothesis is recommended:

H$_{5a}$: Trust motivation has positive influence on participation

In addition, Lim et al. (2006) found that consumer loyalty is linked to consumer trust toward online shopping. When the consumers trust the websites, they will spend more time shopping on the websites. Ng (2013) also opined that when a consumer trusts a particular social network community, the consumer is more probable to make a purchase from the s-commerce site which means that more browsing efforts would be involved. Thus, the following hypothesis is posited:

H$_{5b}$: Trust motivation has positive influence on browsing

Nevertheless, Park and Kim (2013) found that trust has influence on intensity of SNS use. In the viewpoint of f-commerce, trust is a fundamental factor for user acceptance and building trust is imperative in achieving successful transaction. In fact, security and privacy considerations are main obstacles to internet use or e-commerce as consumers will not expose their personal data without trust (Hoffman et al., 1999). The level of trust has been discovered to be positively associated to online repurchase and website revisit (Liu et al., 2004). This showed that the higher the degree of trust, the higher the intensity of repurchase or revisit. Finally, when users have greater degree of trust towards f-commerce, they will tend to use it more frequently because of the feeling of being secure and safe. Hence, they do not anticipate issues like privacy concerns, security and risk. Vice versa, when they use f-commerce more frequently, the level of

trust motivation will become even higher and the cycle will keep repeating leading to higher intensity of f-commerce use. Thus, trust motivation is theorized to have positive influence on f-commerce usage intensity and the following hypothesis is posited:

H$_{5c}$: Trust motivation has positive influence on f-commerce usage intensity

3.3.4 Participation and Browsing

Today's businesses continue to deploy social media such as wikis, blogs, forums and social networking services in conducting their commercial activities in a paradigm shift of social commerce (Phang et al., 2013). The content generated via user participation and interaction in social media (e.g. word of mouth) may promote product sales (Chen and Xie, 2008; Forman et al., 2008). This is due to the reason that info contributed by buyers is regarded as more trustworthy (Brown et al., 2007) and can enhance product salience in the minds of the buyers and increase their interest in a product (Forman et al., 2008). The influence of browsing has also been considered as a significant component in unplanned purchasing and if buyers browse longer, they will come across more stimuli and thus enhancing the probability of urge to buy impulsively (Verhagen & van Dolen, 2011). Likewise, the effect of web browsing on online shoppers in purchasing products they might not buy otherwise actually had triggered the interest of online researchers and practitioners (Park et al., 2012). Henceforth, the constructs of Participation and Browsing are selected in this study to investigate their influences on f-commerce users's urge to impulsively purchase.

Pöyry et al. (2013) has investigated the effects of participation and browsing on referral intention, purchase intention and membership continuance intention but not its effects on urge to impulsively purchase and purchase behaviour. He has categorized the online communities into 'Quiet Membership' and 'Communicative Membership',

whereby the users are either passive browsers or active participants in the social site. This is in accordance with Burnett (2000) and Preece et al. (2004) classification of community participation as active or passive.

Passive browsers just scan through the environment which may be either 'goal directed' or 'non-goal directed'; unplanned or planned (Chang and Rice, 1993) but they have no contribution to the activities offered by the community or freely as "lurkers or free riders" (Preece et al., 2004). Active participants are highly motivated and tend to contribute to online community through message creation, information sharing, and provision of emotional support (Casaló et al., 2007) and in the content of Facebook pages such as tagging, posting (i.e. comments, product reviews, experiences, etc.), like or unlike a page or post. Regardless of active or passive participation, there are possibilities of these users having the urge to purchase products or services after seeing the reviews and comments by others. This may also lead to purchasing as a result of the urge to purchase the products or services.

The findings by Jang et al. (2008) revealed that online brand community commitment has a positive effect on brand loyalty. Baldinger and Rubinson (1996) also found that brand loyalty has a positive influence on intentions to buy the brand. Therefore, there is an indirect effect of commitment on intentions to purchase. Besides, commitment to a community is usually reflected in the behaviour of its members and active participation in community activities is perceived as a strong indicator of such commitment (Casaló et al., 2010). Hence, active participation in community activities may be an indirect indication of urge to impulsively purchase based on the rational that intention to purchase is closely related to urge to impulsively purchase. Hence, the next hypothesis is developed:

H₆ₐ: Participation has positive influence on urge to impulsively purchase

In addition, the effect of browsing on impulse buying has been investigated by Gültekin and Özer (2012). According to them, 60-70% of the purchases performed in supermarkets were categorized as impulse buying. The study by Jarboe and McDaniel (1987) revealed that browsers made more unplanned purchases than non-browsers in a regional mall environment. During in-store browsing, as a consumer browse longer, he or she will incline to come across more stimuli which will lead to tendency of experiencing impulse purchase urges. The rationale behind the linkage between browsing and urge to impulsively purchase is based on the idea of physical proximity (Beatty and Ferrell, 1998). According to Rook (1987), buyers have the hardest time resisting the urge in the instants following their encounter with the object. Hoch and Loewenstein (1991) further asserted that once desire happens, the buyer's reference point changes. Similarly, Rowley (2002) asserted that while consumers are browsing websites, they may come across a different colour, a special offer or an attractive design and eventually resulted into a real purchase. Hence, in-store browsing leads to encounters with desired products while encounter creates an urge to purchase that is hard to resist because of the physical proximity of the product. Based on these justifications, the subsequent hypothesis is postulated:

H₆ᵦ: Browsing has positive influence on urge to impulsively purchase

3.3.5 F-commerce usage intensity

The Facebook usage intensity scale was created by Ellison et al. (2007) as an instrument to measure Facebook usages. It covers the average minutes per day spent on Facebook, the total number of Facebook friends and questions of "Facebook is part of my everyday activity", "I am proud to tell people I'm on Facebook", "Facebook has

become part of my daily routine", "I feel out of touch when I haven't logged onto Facebook for a while", "I feel I am part of Facebook community" and "I would be sorry if Facebook shut down". Founded on the items mentioned, it can be theorized that the higher the Facebook usage intensity, the higher the probability a consumer may discover products and services and engage with purchasing through Facebook pages and this would provide greater opportunity for urge to purchase to develop itself. Therefore, the construct of f-commerce usage intensity is included in this research.

The construct of Facebook usage intensity has been studied in contexts of student engagement and co curricular activities (Junco, 2012), student classroom activities (Lampe et al., 2011), psychological wellbeing and bridging social capital (Steinfield et al., 2008) but not in the context of f-commerce. Unlike off-lined consumers, f-commerce consumers are able to shop online any time any where. This ubiquitous attribute of f-commerce has enabled them to perform online browsing with ease. Thus, unlike brick and mortal business model, f-commerce provides the opportunity for online consumers to frequently browse their favourite Facebook pages. As the frequency of browsing these pages increases, the possibility of the consumers being enticed by a particular items will also increases. Therefore, it is theorized that the higher the f-commerce usage intensity, the chances of developing the feeling of urge to buy will also increases. When consumers develop a positive mood towards f-commerce, the likelihood of them to browse the Facebook pages more intensively will be higher. In accordance to Beatty and Ferrell (1998), buyers' positive mood is related to urge to purchase impulsively. Hence, the following hypothesis is developed:

H6c: F-commerce usage intensity has positive influence on urge to impulsively purchase

3.3.6 Urgency

Wang and Xiao (2009, p. 4) opined that impulse purchase is "an immediate experience, often concurrent with a feeling of excitement and urgency". In this study, urgency is referred as the inclination to sense strong reactions, often in a negative affect context (Whiteside and Lynam, 2001). A number of researches have found that impulse purchase can be triggered by intense emotional contexts either negative (Miltenberger et al., 2003) or positive (Beatty and Ferrell, 1998). Nevertheless, very few researches have tried to examine the psychological predictors (e.g. cognitive, motivational mechanisms and personality traits) of impulse buying. As a result, the determinants of impulse buying with regards to psychological perspective remain unclear and understudied. It was also suggested by Eroglu et al. (2001) that other moderators and individual characteristics should be considered to extend the initial model used in their research. Therefore, in this study, the psychological construct of urgency is incorporated into the research model as a predictor of urge to impulsively purchase and impulse purchase in order to capture the factors that lead to these consumer behaviors.

Bechara and Van der Linden (2005) mentioned that a high degree of urgency can be associated with a weak capability to purposely suppress automatized responses which ultimately increase difficulty in resisting strong impulsiveness. It can be further postulated that in substance-dependent individuals, desire conditions are linked to augmented difficulty in repelling strong impulses that may lead to damaging behaviours which reduce short term negative affect but may have long term harmful effects (Billieux et al., 2008).

Moreover, Achtziger et al. (2015) assert that urgency is a significant determinant for compulsive buying tendencies while urgency has also been identified as one of the typical elements of impulse purchase (Ceballos, 2010). A high degree of urgency can make it difficult for consumers to restrain their buying impulsiveness and refrain themselves from impulsive behaviour (Brook et al., 2015). Likewise, the higher the number or urges experienced, the greater the probability of an impulse purchase will happen (Guo et al., 2017). Kim and Kim (2015) further stressed that the sense of urgency can lead to impulse buying while Huang and Kuo (2012) found that urgency in terms of limited time can entice consumers to buy. Besides, Ardizzone and Mortara (2014) assert that consumers tend to experience urge to buy as a result of urgency due to limited time in finalizing a purchase decision. Hence, founded on these justifications, the succeeding two hypotheses are developed:

H_8: Urgency has positive influence on urge to impulsively purchase

H_9: Urgency has positive influence on impulse purchase

3.3.7   Urge to impulsively purchase and Impulse purchase

Impulse buying involves unintentional, instantaneous and unreflective purchase, and buyers frequently feel the temptation to purchase the product (Jones et al., 2003). It may be accompanied by sentiment, low cognitive control, or spontaneous actions without consideration of monetary or other consequences (Sharma et al., 2010). Founded on the literature review (Amos et al., 2013); three primary constructs have been utilized to gauge impulse buying. They are 1) Self-reported measures of impulse buying (Beatty and Ferrell, 1998; Rook and Fisher, 1995) 2) Observed impulse buying behaviour, and 3) Impulse buying surrogates (e.g. how much an individual spends). In this study, impulse buying is measured based on self-reported measures and impulse

buying surrogates as these methods are able to provide sufficient measurement of impulse buying.

As mentioned by Babin and Harris (2013), Dholakia (2000), Sharma et al., (2010) and also Verhagen and van Dolen (2011), there are three key features to characterize impulse buying. Firstly, impulse buying is performed spontaneously with a positive emotion charge. Secondly, impulse purchase buyer would have lessened consideration of the cost incurred or the consequences faced and thirdly, impulse buying occurs due to hedonic temptation for the sake of instant fulfilment of someone by consumption. Their view is consistent with Gerbing et al. (1987) who agreed that impulsiveness consists of three behavioural mechanisms, namely "spontaneity", "not persistent" and "carefree". While spontaneity includes seeking of excitement; avoiding preparation; and swift decision making, not persistent includes agitation; distractibility; and avoidance of complication. Carefree behaviour refers to individuals who are happy-go-lucky in nature.

The topic of unplanned purchases or impulse buying has been considered as important by researchers and practitioners for a long duration of time (Hostler et al., 2011). However, only limited studies have investigated the role of impulse buying even though such activities have contributed a large portion of shopping behaviour (Peck and Childers, 2006). Nevertheless, Amos et al. (2013) have conducted studies to investigate the antecedents of impulse buying to gain a holistic picture of impulse buying from the consumers' perspective. For instance, when Facebook users increase their level of participation, browsing or intensity of Facebook Pages usage, the chances are more likely that they may develop urge to purchase some products and eventually commit themselves with impulse purchase. Also there are times when users do not commit

themselves with any purchase. Therefore, in order to capture these behaviours, the constructs of Urge to Impulsively Purchase and Impulse Purchase are included in the study. This is to make the findings from the study more comprehensive, thorough and rigorous.

Theoretically, urge to impulsively purchase has been assumed as an essential precursor to impulse buying behaviour (Vonkeman et al., 2017). Beatty and Ferrell (1998) further asserted that impulse purchase is the ultimate dependent variable and it encompasses real purchase of a product or fulfilment of the urge. Therefore the higher the urge to impulsively purchase, the tendencies to engage in an impulse purchase also rises. Hence, the following hypothesis is introduced:

H_7: Urge to impulsively purchase has positive influence on impulse purchase

3.3.8 Mediating effect of urge to impulsively purchase

According to Weinberg and Gottwald (1982, p. 44), "felt urge to buy impulsively is a state of desire that is experienced upon encountering an object in the environment. It clearly precedes the actual impulse action. Consistent with the literature, it is spontaneous and sudden". Urgency on the other hand, is defined as the inclination to sense strong reactions, often in a negative affect context (Whiteside and Lynam, 2001).

According to Billieux et al. (2008), it can be anticipated that potential buyers with eminent urgency tend to buy compulsively once they encounter negative affects and compulsive consumers are likely to be unable to refrain themselves from buying items as it is a mode of reducing short term negative affect irrespective of the likely event of the damaging effects such as negative feedback from colleagues, guilt or monetary problems. When buyers experience a strong urge to buy towards a product or item, the

feeling of urge to buy may reduce the influence of urgency on impulse buying because the feeling of urge to purchase may over-shadow the effect of short term negative affect. Hence, it is postulated that urge to impulsively purchase will have a mediating effect on the impact of urgency towards impulse purchase.

3.4   RESEARCH DESIGN

Business studies may be categorized into descriptive, exploratory and causal study (Churchill, 1999). Gay and Diehl (1992) further expanded the categorization to cover associative and historical researches. In selecting a research design, this research looks into account the obtainability of data, budget allocated and time available. Hence, the research method is founded on the entire structure and context of the study. Each of the research designs may be used in diverse research circumstances and conditions (Sarantakos, 2005; Zikmund, 2003).

3.4.1   Justification for selection of research design – Descriptive and causal research

Descriptive research

The main aim of descriptive research is to illustrate the composition and nature of a situation or a population. The study attempts to seek answers to questions of where, who, how what, and when. The result is a well-set and organized description hence appropriate for statistical analyses (Zikmund, 2003). Data gathered and analysed from the descriptive research may assist researchers understand the attributes of a group and may provide a holistic scenario of all perspectives of the research areas and generate novel ideas (Sekaran, 2003).

Descriptive research's aim is to describe particular areas or to illustrate a picture of the phenomena of concern from an industry, individual or organizational perspectives (Sekaran, 2003). This kind of research design is widely adopted to assess the dimensions of a population with shared interests and understand the association between the various components in the study (Emory and Cooper, 1991). The most popularly adopted research methods for descriptive research are open-ended and fill-in-the-blank survey (Davis, 2004). A descriptive research needs structured and official interviews grounded on certain prior understanding and assumptions of the current nature of the research problem (Ghauri et al., 1995).

Causal research

The aim of causal research is to identify the variables that would form the cause-and-effect associations between the variables causing specific responses and actions (Hussey and Hussey, 1997). According to Cooper and Schindler (1998), most of the causal researches rely on simulation programs and designed experimentation. In order to verify causality, a variable is held constant while another variable is changed. Nevertheless, quite a number of scholars discover that causal research is not practicable particularly in dealing with human behaviour. In other circumstances, causal research is feasible but it is fairly complex. Causal research may happen in the real world or in the laboratory as a segment of a field experiment. In a lab, the investigator builds a situation resembling to the condition in the real world. Causal research is established so as to identify the cause-and-effect associations for the chosen research variables grounded on the research issues previously defined (Zikmund, 2003). When the association is identified, the validated causality may be utilized to predict the outcome of the problem being examined.

For this study, descriptive and causal research methods were selected as this study does not entail novel ideas or concepts, hence exploratory research is not an appropriate design. Descriptive research is also more suitable to express the characteristics of the respondents in the study while taking into consideration that impulse purchase is best to be quantitatively measured. In addition, the aim of the study is to examine the cause-and-effect associations between the independent variables and the dependent variables. Hence, causal research is the best option to achieve this objective.

3.5   RESEARCH APPROACH

The next step after selecting the research paradigm is to choose a research approach. Even though newly developed technological capabilities increased the complexity in analysis, however, the main skills utilized in social science focus on three approaches namely quantitative, qualitative and combined methods (Creswell, 2003).

3.5.1   Justification for the selection of research approach – Quantitative approach

Quantitative approach is defined as the quantification of associations between variables such as work performance, age and height (Ticehurst & Veal, 2000). These associations are elucidated by using statistical analyses like linear regressions, mean and variance or frequency distributions. Moreover, quantitative methods entail intricate experiments with numerous variables and complex structural equations (Cresswell, 2003). Majority of the quantitative research inclines to be sequential due to the attribute of data gathering (Ticehurst & Veal, 2000). Quantitative research is appropriate for variables which may be measured and quantified whereby hypotheses may be developed and statistically tested to generate generalizations derived from the samples of the population (Gay & Diehl, 1992).

Surveys, experiments and observations are the usual quantitative methods (Cooper & Schindler, 1998).   Surveys may be administered to a sample with a longitudinal or cross-sectional design (Babbie, 1990).   Experiments may be in the form of actual experiments conducted with quasi-experiments or random assignment that engage non-randomized sampling designs (Keppel, 1991).   The sample size required for the hypothesis testing may be determined based on statistical power calculations (Neuman, 2003).   Generally, researchers may choose sample sizes that will give them 95% confidence level regarding the variation they are looking at (Neuman, 2003; Zikmund, 2003).

Quantitative approach is more suitable to test the hypotheses developed based on literature review (Gill & Johnson, 1991).   Gay et al. (2006) has defined quantitative research as the gathering and analyzing numerical data so as to elucidate, forecast, and/or control phenomena of interest. Moreover, quantitative research is very beneficial for deciphering the causal relationships between the independent and dependent variables (Cresswell, 2003; Neuman, 2003).   It is also more appropriate for developing theory that will concoct an account (Denzin and Lincoln, 1994; Janssen, 2001).

In this research, a quantitative research method has been utilized in a cross-sectional manner through the use of self-report questionnaires.   This research aims to measure, analyse and validate the research model using a large number of samples gathered from the survey.   Besides, this research is pertaining to finding the determinants of urge to impulsively purchase and impulse purchase in f-commerce context and understanding the strengths of causal relationships between various determinants. Statistical modelling of quantitative survey questionnaires may help in analyzing the causal relationships

among the variables in the hypotheses. Thus, quantitative method is deemed suitable in this research.

Nevertheless, in order to gain an initial understanding on Facebook users behavioural patterns towards online buying, a preliminary study was conducted to identify the most frequently visited f-commerce stores, most purchased product and the reasons for their participation in f-commerce (Please refer to Appendix D).

3.6   DATA GATHERING METHOD

There are various techniques used to gather data including questionnaires, observations and experimentations.   These techniques were examined before the decision on which is the best technique for this study is made.

Questionnaires are the most common and popular technique for primary data gathering using carefully designed questions (Kumar, 2005; Newsted et al., 1998). Information gathered from the questionnaire can be in the forms of behavioral, attitudinal, perceptual or motivational (Gay and Diehl, 1992).   Generally, surveys are tools for collecting data from a huge sample drawn from a population and do not focus on specific individual.   Questionnaires are especially appropriate for enquiring questions (Butler and Howell, 1980) as investigator is able to distribute the questionnaires and ask respondents to answer them anonymously (Montgomery and Duck, 1991; Sarantakos, 2005; Zikmund, 2003).   Among the reasons for the popular use of questionnaire in IS researchers include the ease of administration, scoring and coding; the ability to allow the values and relations of variables and constructs to be ascertained; provide responses which can be generalized in similar populations; reusable; allow behaviour to be predicted; allows theoretical propositions or hypotheses

to be tested in an objective setting; and can help in confirming and quantifying the findings of qualitative research.

Many studies in social media have also utilized questionnaires (Barker, 2009; Dunne et al., 2010; Gil de Zúñiga et al., 2012; Java et al., 2007; Kim et al., 2010; Lee and Ma, 2012; Loving and Ochoa, 2011; Raacke and Bonds-Raacke, 2008). The questions from the survey should be self-explanatory, simple, easy to understand and clearly structured since no one will be accessible to clarify the questions to them (Kumar, 2005). However, surveys normally have low response rates since respondents may not be enticed by them or because the questionnaires can be too lengthy (Aldridge and Levine, 2001; Kumar, 2005; Veal, 2005; Zikmund, 2003).

Kumar (2005) and Zikmund (2003) assert that once questionnaires are gathered back, they have to be coded, analysed using statistical tool and interpreted. If a survey is well-structured and founded on a suitable literature review and statistical assumptions then the finding can be generalized to the bigger population (Butler and Howell, 1980). Questionnaires data can be gathered in various ways such as email, direct mailing, drop-off and pick-up, telephone interviews and face-to-face interviews (Bordens and Abbott, 2005; Ticehurst and Veal, 2000).

3.6.1 Justifications for selection of data gathering technique - Questionnaires

The researcher has decided to use the questionnaire technique due to several reasons. Firstly, questionnaires enable the standardization of the results so that the investigator may compare the answers. Secondly, questionnaires are the most appropriate technique for this research as it measures behavioural and attitudinal quantities. Besides, questionnaires involve low cost and are efficient thus it is appropriate for the budget and

time restraints of this research. Moreover, survey findings using well-structured questionnaires are comparatively accurate and reliable which can greatly increase the value of research. Finally, from the primary data and sizeable samples obtained, they can be utilized to make generalizations based on the findings from the hypothesis testing.

Therefore, in this research, the researcher had gathered data from a large number of f-commerce users by using questionnaires as the data gathering process may be done in a short duration of time.

3.7   TYPES OF SURVEY ADMINISTRATION

Questionnaires can be administered in various ways such as direct mailing, group-administered survey, telephone interview, electronic interviews or face to face interview (Burns and Bush, 2003; Malhotra, 2004; Sekaran, 2003). The selection of a suitable administration method depends on the balance of factors like available research environment, budget, research objective, information accuracy, time, sensitivity of research topic, sampling, characteristics of the respondents and the structure of the questionnaire (Ranchhod and Zhou, 2001; Sekaran, 2003; Skjak and Harkness, 2003).

Household drop-off or self-administered questionnaires have benefits over both group-administered and mail questionnaires. In self-administered survey, the investigators go to organizations or households and ask them to fill the survey and return it back later by mail. Alternatively, research collectors can go back to collect the surveys. The respondents may complete the questionnaires anywhere and anytime and then contact the questionnaire collectors or investigator if they have any questions or problems. Neuman (1997, p. 38) has listed two main advantages of using self-

administered questionnaires in which the research can be carried out over a wide area and distance is not a restriction.

Besides, self-administered questionnaires offer greater anonymity and can avoid interviewer bias. Neuman (1997) has further emphasized on its advantages whereby self-administered questionnaires allows access to greater sample size and ability to capture data which can be tested empirically. On the other hand, Zikmund (2003) emphasized that self-administered surveys allow for geographical flexibility, as data may be gathered from the respondents in various locations at the same time; and the process can be comparatively fast with little cost incurred. The quality of the data gathered depends on the quality and content of the question instead of the techniques of the interviewer which can avoid biasness.

Generally, response rates for surveys are lesser than the face-to-face interview nonetheless may still be acceptable (Bordens and Abbott, 2005). Self-administered questionnaires are also subject to restrictions in terms of lack of control over who responds to the questionnaire and whether or not that individual consults with colleagues while completing it and misunderstandings may also happen (Bourque and Fielder, 1995; De Vaus, 1996; Kerlinger, 1986; Oppenheim, 2000). Therefore, several measures were taken to overcome or minimize these weaknesses. Among the measures can be taken including provide explanation about the survey to the appropriate respondents before they complete the survey forms. As for the issue of low response rate, it can be addressed by explaining to the respondents on the importance of the survey. Moreover, the survey instrument can be pre-tested to identify problems and to avoid confusion in terms of wording and layout.

3.7.1 Justification for selection of types of survey administration - self-administered survey

For this research, self-administered surveys were chosen because these surveys require less time and cost. By utilizing pen and paper, the respondents have time to read and fill in the survey questionnaire at their convenience. In this research, respondents are given as much time as they need to complete the questionnaires before they were returned back to the researcher.

3.8   RESEARCH POPULATION AND SAMPLING TECHNIQUE

Malaysia was chosen as the location of this study due to several reasons. First of all, Malaysia is among the frontrunners in digital adoption and innovation in Southeast Asia region in terms of smartphone time spending or mobile penetration rate and Malaysian users are leading in this region whereby its digital transformation has affected both the people and business positively (Nextshark.com, 2016). Secondly, more than half of the population (i.e. 18 million users) use Facebook every month and Malaysia is ranked third in Asia with 3 hours and 24 minutes spent daily on social media (Go-globe.com, 2016). Besides that, it is also ranked third in Asia with 94% online population using Facebook (Go-globe.com, 2016). Thirdly, Malaysian people are ranked tenth in the world in terms of posing the most friends with 1.6 times more Facebook friends than the world average (Gadgetsnow.com, 2016). Furthermore, Malaysian are also twice more probable to like a page in comparison to the world average (Thestar.com, 2016). Therefore, with all these uniqueness, Malaysia is indeed a good location to conduct a study pertaining to Facebook commerce.

The population of this research is Facebook commerce users who are Malaysian working adults at the age of 15 to 64 (Department of Statistics, 2016). Sampling refers to the use of portions of the population to draw conclusions about the entire population. It entails ascertaining the survey targets and generally larger samples are more precise than small samples. However with appropriate sampling techniques, a small sample can still offer a reliable estimation of the whole population (Zikmund, 2000). On the other hand, sampling selection refers to the procedure used in choosing a sample from a target population (Aldridge and Levine, 2001). Generally, there are two types of sample selection namely non-probability sampling and probability sampling (Aaker et al., 1998; Krueger, 1988).

Due to the absence of sampling frame of f-commerce users, non probability sampling has been chosen and in accordance to Warren et al. (2014), purposive or criterion sampling was engaged in this study. Babbie et al. (2007) opined that purposive sampling is suitable when it is either impossible or impractical to compile a list of elements constituting the population. Until now, there is no readily available list of Facebook users in the Malaysia. Apart from the whole number of Facebook users in the country (Socialbakers, 2013), there is hardly any other statistical reports that identify Facebook users in the country. The targeted respondents are active Facebook users who own Facebook account and have made at least one purchase through f-commerce in the past one year and are working adults in geographical areas with high social media and Internet penetration (MCMC, 2012).

Questionnaires were administered to respondents in numerous hypermarkets in the Klang Valley. It is situated in the middle of Selangor and comprises of Malaysia's capital city a.k.a Kuala Lumpur as well. The Klang Valley or Greater Kuala Lumpur is

a large urban agglomeration with projected population of 7.2 million in 2016 (World Population Review, 2016). Malaysians across the country converged to the capital city due to better job prospect as can be seen from the estimated 1.6 million vehicles that ply the North-South Expressway during the Aidilfitri (New Straits Times, 2016) and Chinese New Year holidays (The Malay Mail, 2016). Hence, the selection of Greater Kuala Lumpur is indeed a good representation of the general Malaysia context as it comprises of people converging from all over the nation with diversified ethnic groups, religions, cultures and backgrounds.

The scope of the study is the Malaysian f-commerce based on the findings generalized from the samples in Klang Valley due to its total broadband Internet penetration rate per 100 household of 156.6 in Q2 for the year of 2015 (MCMC, 2015). S-commerce requires Internet connection to access its social media platform to perform online transactions of products and services (Hashim, Nor and Janor, 2016). Hence, the high broadband Internet penetration rate in Klang Valley would most likely cover the number of s-commerce users, particularly f-commerce users in Malaysia owing to the fact that Facebook recorded the highest usage among Malaysians of 41% compared to WhatsApp of 39% ("Digital In 2016", 2016).

The respondents for the data gathering procedure were recruited using mall intercept technique at Berjaya Times Square, Lot 10, Pavilion Kuala Lumpur and Sungei Wang Plaza that are in the list of top 20 shopping malls in Kuala Lumpur (ExpatGo, 2016). The respondents were also screened using screening question to ensure that only respondents who own a Facebook account are allowed to continue with the survey as f-commerce buyers would be required to login to their Facebook account. The data gathering was done over duration of 3 months at these 4 shopping malls during

weekends that tend to have more customers. During data collection, the respondents were assisted in completing the questionnaires whenever the needs arise. It is deemed suitable to distribute survey questionnaires to customers at shopping malls as conducted by Hew, Lee, Ooi, and Lin (2016). Since these customers possess the spending capacity to buy things at shopping malls (Singh, Singh, & Tripathi, 2012), it indicates that they may also have similar spending capacity to buy things online including through social media.

As recommended by Hair (2010), a sample size to parameter estimate ratio of 15:1 to 20:1 is adequate in order to obtain meaningful estimations. Thus, a sample size of 1000 respondents was used in this study and with a total of 17 parameter estimates; the ratio is approximately 59:1 which is way above the recommended threshold. In addition to that, based on the well-known rule of thumb for rigorous PLS-SESM analysis as recommended by Hair et al. (2011, p. 144), "the minimum sample size should be equal to or larger of the following (1) ten times the largest number of formative indicators used to measure one construct or (2) ten times the largest number of structural paths directed at a particular latent construct in the structural model". In the present study, since the structural model consists of only reflective indicators, therefore the second criterion was used. Based on the biggest number of structural paths directed to the construct of urge to impulsively purchase (i.e. 4), the minimum sample size should be at least 10 x 4 = 40. Finally, based on a minimum R^2 value of 0.25 with 5% probability of error and a statistical power of 80%, the minimum sample size for a maximum number of arrows pointing at a construct of 4 would be 41 (Hair et al., 2016, p. 26). Hence, a sample size of 1000 has well exceeded the recommended minimum size required for PLS-SEM analysis. This sample size is consistent with previous IS studies in behaviour and perception which have targeted at distributing a number of survey approaching

1000 for better representation of respondents (Ahuja & Jason Bennett, 2005; Dinev & Hart, 2006; Gee-Woo et al., 2005; Gil de Zúñiga et al., 2012; Wang & Haggerty, 2011).

3.9   QUESTIONNAIRE DESIGN

Majority of quantitative techniques with statistics may be deployed via the process of data gathering using questionnaires (Easterby-Smith et al., 1991). Gill and Johnson (1991) opined that questionnaires must include sufficient questions to address the research topic in adequate detail and normally there should be at least two questions per variable. Every question in the questionnaire should be associated with the hypotheses and research questions (Burns and Bush, 2000; Ticehurst and Veal, 2000). Hence, questionnaire design is an imperative component in research process as it may affect the data (Burns and Bush, 2003). Respondents will read the written questions and then jot down their responses to the questions (Kumar, 2005; Zikmund, 2003). Normally, respondents need to give their answers to the questions by themselves and investigators are unable to explicate the meaning of the questions to the respondents. Hence, the words in the questionnaire must be clear, easy to understand and simple (Kumar, 2005).

As shown in Appendix I, the questionnaire utilised in this research consists of Part I (Demographic profile) and Part II (Factors influencing f-commerce usage). There are 19 questions in Part I to seek personal details about the respondents such e-mail address, age, gender, marital status, education level, monthly income, number of children and occupation. Other questions including their amount of time spent online surfing Internet, availability of Facebook account and the number of years they have been using it, the types of devices used to access Facebook as well as the number of f-commerce transactions performed within the last 12 months, when was the most recent f-commerce transaction performed and the number of years of f-commerce experience

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possessed. The respondents were also being asked about the reasons of their f-commerce participations, the obstacles faced in using f-commerce, the average yearly purchase through f-commerce and finally their intention to perform f-commerce again in the future.

In Part II, there are altogether 10 independent variables and 1 dependent variable for a total of 54 items to measure the factors which lead to impulse purchase in f-commerce. The independent variables are hedonic motivation (4 items), utilitarian motivation (3 items), closeness (3 items), familiarity (4 items), browsing (3 items), trust motivation (5 items), participation (4 items), f-commerce usage intensity (7 items), urgency (12 items), and urge to impulsively purchase (4 items) while the dependent variable of impulse purchase consists of 5 items. All these items were adapted from the related past studies questionnaires that were conducted using English language. Since this research is also conducted in English language, the need to do language translation does not arise. The details of these measurement items are further explained in section 3.9.

3.10   CONSTRUCT MEASUREMENT

Likert scale is utilized to gauge respondents' opinions by capturing their levels of agreement or disagreement for a question (Veal, 2005; Kumar, 2005). Occasionally, the respondents may want to choose a suitable response from a list of definite answers or multiple choices in a closed-ended question (Zikmund, 2003). Variations of Likert scales include 3, 5, 7 or 10 points depending on how well investigators want to gauge the propensity of respondents' opinions (Kumar, 2005). Though larger Likert scales may make it likely to distinguish opinions more accurately, however they may also confuse the respondents (Bass et al., 1974).

Even so, 7-point scales are found to have the ability to ease imprecision while the 5-point scales may limit choice too much (Burns and Bush, 2000). As it is also more widely used in acceptance and adoption studies, a 7-point Likert scale is used in this research to measure all the items in the questionnaire to capture more details. The 7 points are defined as Scale 1 – Strongly disagree; Scale 2 – Disagree; Scale 3 – Somewhat disagree; Scale 4 – Neutral; Scale 5 – Somewhat agree; Scale 6 – Agree; Scale 7 – Strongly agree.

To ensure content validity of the instrument, all items in the research instrument are adapted based on the work by other researchers (Babin et al., 1994; Beatty and Ferrel, 1998; Casaló et al., 2010; Ellison et al., 2007; Hartman et al., 2006; Ng, 2013; Verhagen and van Dolen, 2011; Whiteside and Lynam, 2001). Nevertheless, a series of measures has been performed during the pretest and pilot test to ensure the validity and reliability of the survey instrument. In the pretest, face validity, content validity and construct validity were performed while the construct reliability was determined in the pilot test. The following sub-sections explain in detail the definition and items adapted for each variable used in this research.

3.10.1 Hedonic motivation

Various definitions have been used in defining hedonic motivation. Hirschman and Holbrook (1982) defined hedonic motivation as the consumption behaviours in seeking happiness, fantasy, enjoyment and sensuality. To and Sung (2015) defined hedonic motivation as selecting gifts for others to fulfil familial or peer role, getting new information at store front, looking for pleasure of bargaining in negotiations with the sellers or the sensory stimuli from the retail setting and enjoyment from the sense of superiority when getting services from the sellers.

Arnold and Reynolds (2003) however, defined hedonic motivation as shopping as a special self-treat, shopping for the adventure and sheer excitement of the shopping trip or as opportunity to socialize. Besides that, Parsons (2002) defined hedonic motivation as the seeking of emotions of enjoyment and fantasy, happiness and experience gained through the shopping trip.

Overby and Lee (2006) referred hedonic motivation as a general evaluation of experiential sacrifices and benefits like escapism and entertainment. Hedonic motivation is also defined as shopping for emotions like cheer, passion and joy, jealousy and fear (Gültekin and Özer, 2012). In this study, hedonic motivation is defined as searching for enjoyment, entertainment and fun from the f-commerce experience itself (Pöyry et al., 2013) while the items adapted are shown in Table 3.1.

Table 3.1: Items and source(s) for hedonic motivation

Construct and indicators	Source(s)
Hedonic Motivation (HM) HM1: Using f-commerce is truly a joy.[1] HM2: Compared to the other things I could have done, participating in f-commerce is truly enjoyable.[1] HM3:I enjoy using the f-commerce for its own sake, not just for the information I find. [1] HM4:I enjoy spending my time in the f-commerce.[2]	1. Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research, 20*(4), 644-656. 2. Hartman, J. B., Shim, S., Barber, B., & O'Brien, M. (2006). Adolescents' utilitarian and hedonic web-consumption behaviour: hierarchical influence of personal values and innovativeness. *Psychology & Marketing, 23*(10), 813-839.

3.10.2 Utilitarian motivation

The definition of utilitarian motivation is diversified. Hoffman and Novak (1996) referred utilitarian motivation as a general assessment (i.e. judgment) of functional benefits and sacrifices that are related to task-specific usage of online shopping. On the other hand, Overby and Lee (2006) defined utilitarian motivation as resourcefulness,

cost-effectiveness and job specific attributes of products and services. Utilitarian values are resulting from the yearning for efficient, rational and task-oriented efforts pertinent to purchasing products (Babin et al., 1994). Buyers who are driven by utilitarian values may seek the ease of accessing information (Childers et al., 2001; Kwon and Jain, 2009, To et al., 2007) or convenience of saving time (Childers et al., 2001; Kwon and Jain, 2009). Besides, utilitarian values can stimulate purchases either in the conventional formats (Babin et al., 1994) or online channels (Childers et al., 2001; To et al., 2007).

Based on the above mention definitions, in this study, utilitarian motivation is defined as seeking for achievement of particular goal through the f-commerce, like looking for useful info before making a buying decision or purchase planning with no time wasted (Pöyry et al., 2013). Table 3.2 listed the items adapted for utilitarian motivation in this research.

Table 3.2: Items and source(s) for utilitarian motivation

Construct and indicators	Source(s)
Utilitarian Motivation (UM) UM1: Success in the f-commerce is finding what I'm looking for. UM2: F-commerce helps me with purchase planning. UM3: I like to get in and out the f-commerce with no time wasted.	Hartman, J. B., Shim, S., Barber, B., & O'Brien, M. (2006). Adolescents' utilitarian and hedonic web-consumption behavior: hierarchical influence of personal values and innovativeness. *Psychology & Marketing, 23*(10), 813-839.

3.10.3 Familiarity

Several definitions have been proposed by scholars in defining familiarity. Ecker et al. (2007) referred familiarity as an overall feeling of having encountered an individual or particular object previously without conscious access to contextual details like the place or time of the encounter. Familiarity has also been defined as both an emotional

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and cognitive concepts at the same time, however Lee and Kwon (2011) adopted definition by Ecker et al. (2007) that considered familiarity as an affective concept and recommended familiarity as a novel affective factor which influences user's continuance intention. Lee and Kwon (2011, p. 348) defined familiarity as "the feeling of the understanding of an entity, most of the times based on prior interactions, experiences and learning of the what, who, how and when of what is happening".

Ng (2013) further defined familiarity as the feeling of understanding of individuals' social network friends. Zhao (2002) on the other hand, defined familiarity as a pointer to gauge the strength of ties that influence establishment of long-term relationships. Whereas, Alba and Hutchinson (1987, p. 411) defined familiarity as "the number of product-related experiences that have been accumulated by the consumer". They further stressed that augmented product familiarity will improve consumers' task performance and cognitive structures and their ability to analyze info, to elaborate upon given info and to memorize product info. Based on these definitions, in this study, familiarity is defined as the sense of familiar and understanding between f-commerce friends, frequently founded on past level of experiences, interactions, and learning of the who, what, when, how, whom, and why of what is occuring (Lee and Kwon, 2011). The items adapted for familiarity motivation are as shown in Table 3.3.

Table 3.3: Items and source(s) familiarity motivation

Construct and indicators	Source(s)
Familiarity (FM) FM1: I become more familiar with my friends on f-commerce through comment exchanges. FM2: I become more familiar with my friends on f-commerce through Pages' links sharing. FM3: I become more familiar with my friends on f-commerce through Pages invitation. FM4: I have a very high level of interaction with each friend on f-commerce.	Ng, C.S.P. (2013). Intention to purchase on social commerce websites across cultures: A cross-regional study. *Information & Management, 50*(8), 609-620.

3.10.4 Closeness

Closeness and intimacy can be used interchangeably where intimacy is referred as the sense of emotional bonding and closeness, which involve moral support from social network friends and intense liking and the capability to bear social network friends' mistakes (Ng, 2013). Intimacy is also referred as sense of emotional bonding and closeness, encompassing moral support, intense liking and ability to withstand flaws in the significant others (Tolsted & Stokes, 1983).

Many social psychological researchers defined intimacy as a quality of relationships and interactions between individuals (Acitelli and Duck, 1987; Laurenceau et al., 1998; Timmerman, 1991). Moreover, Reis and Shaver (1988) defined intimacy as an interpersonal process which entails feelings to other individual who responds sympathetically and warmly and communication of personal information. Alternatively, Prager and Roberts (2004) defined closeness as intimate interactions that are reflected by self-exposing behaviour, shared understandings and positive engagement with others which include the disclosure of personal, private information either verbal or non-verbal.

Lee and Kwon (2011) defined intimacy as a particular kind of feeling of closeness, loving and warmth interaction between partners. Intimacy has been considered as a crucial aspect of maintaining relationships and of interpersonal relationships (Lee and Kwon, 2011). In this study, closeness is referred as the sense of intimacy, closeness and emotional attachment; encompassing moral support, intense liking, product recommendations or reviews from f-commerce friends; and the capability to bear f-commerce friends' mistakes (Lee and Kwon, 2011). The following Table 3.4 shows the items adapted for the variable closeness.

Table 3.4: Items and source(s) for closeness

Construct and indicators	Source(s)
Closeness (CL) CL1: I feel a sense of closeness with my friends through f-commerce. CL2: I feel a sense of intimacy with my friends through f-commerce. CL3: I feel my friend's product recommendations or product reviews on f-commerce are a very important part of my consumption consideration.	Ng, C.S.P. (2013). Intention to purchase on social commerce websites across cultures: A cross-regional study. *Information & Management, 50*(8), 609-620.

3.10.5 Trust motivation

Mayer et al. (1995) provide a general definition for trust as a party's willingness to be susceptible to the actions of another party founded on the anticipation that the other party will do a specific action significant to the trustor regardless of the capability to control or monitor that other party. Trust is also referred as the belief that the trustee will act in a favourable manner so as the trustee will not do any harm to the trustor and that the negative consequences will not occur (Morgan and Hunt, 1994). Besides that, trust is also defined as the belief that trusted parties will behave in accordance to the trusting party's anticipation confidence by demonstrating benevolence, integrity and ability (Luhmann, 1979; Mayer et al., 1995) which is in accordance to Wang et al. (2016) who also defined trust as a three-dimensional construct encompassing ability, benevolence and integrity.

Trust in website is referred as buyers' beliefs in a website that will perform anticipated activities according to the buyers' confidence (Gefen, 2000a; Pavlou & Gefen, 2004). From the context of e-marketing, trust is defined as the assurance and depth of feeling based on inconclusive evidence (Rahimnia and Hassanzadeh, 2013) whereas in the perspective of C2C e-commerce, trust is referred as "the willingness of a party to be vulnerable to the actions of another party according to the expectation that

other will perform a specific action imperative to the trustor, irrespective of the ability to monitor or control that party" (Mayer et al., 1995, p. 712).

Furthermore, trust may also be defined as individual's belief that others in return will not act opportunistically by taking advantage of the circumstances (Beldad et al., 2010; Koller, 1988; Qureshi et al., 2009). In addition to that, trust has been defined as an expression for enduring beliefs from the antagonist's action (Mayer, Davis and Schoorman, 1995); an individual's faith in another individual (Doney and Cannon, 1997) and the ability and readiness of business rival to create and sustain a dedicated business relationship as well as the trustworthiness of the business rival in maintaining the promises or prior arrangement (Schurr and Ozanne, 1985).

On the other hand, depends on the level of care provided by a company, emotional trust describes a consumer's beliefs about the company which involves his or her emotional feelings (Rempel et al., 1985). For instance, sense of security or perceived strength of relationship can lead to emotional trust. Alternatively, cognitive trust is gained through observation of a company's behaviors towards its clients while emotional trust is built through emotional relationship between firms and clients. Therefore, cognitive trust formed the basis for emotional trust. Combination of both dimensions of trust is being defined as behavioural trust by Lewis and Weigert (1985), which covers actions that arise from the condition of affective and cognitive trust. As such, Kim and Park (2013, p. 320) defined trust as "the level of a consumer's confidence in an s-commerce firm's reliability based on his or her emotions formed by the level of sincere concern and care demonstrated by the firm". Hence, in the present study, trust motivation is referred as the feeling of protection from harm or danger, care and look out for one's interests, fine interaction, reliability and confidence from the

messages, feedback, or recommendations from other friends on the f-commerce (Ng, 2013). The following Table 3.5 indicated the items and source for the variable trust.

Table 3.5: Items and source(s) for trust

Construct and indicators	Source(s)
Trust Motivation (TM) TM1: I feel fine interacting with my f-commerce friends because it fulfils my needs of interaction efficiently. TM2: I always feel confident that I can rely on my f-commerce friends' responses and feedback when I interact with them. TM3: I assume my f-commerce friends would always look out for my interests. TM4: I assume my f-commerce friends would make sure that I was not harmed or in danger. TM5: I feel like my f-commerce friends care what happens to me.	Ng, C.S.P. (2013). Intention to purchase on social commerce websites across cultures: A cross-regional study. *Information & Management, 50*(8), 609-620.

3.10.6 Participation

Participation is defined as the basis of creating shared knowledge within company-hosted online communities (Wiertz and de Ruyter, 2007). Casaló et al. (2010) defined participation in on-line communities as consumption of content (e.g. reading comments that are uploaded by other members of the on-line community) and production of content (e.g. writing a post). Park (2002) found that buyers who actively involved themselves in interactive participation will have higher trust on the online provider.

From the context of social media, participation is defined as an effort to attain co-creation of values via required but voluntary interactive participation of the consumers in delivery process and service production in social media and may be segmented into customer-customer, customer-media and customer-brand based on the subject of interaction (Chae & Ko, 2016). Thus, in the present study participation is referred as the degree to actively participate, contribute and generate content to the f-commerce,

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like uploading purchase information, posting questions related to the host company's services or the f-commerce topic in general, comments on other users' posts and posting product experiences and reviews (Pöyry et al., 2013). The items and source for participation variable are as shown in Table 3.6 below.

Table 3.6: Items and source(s) for participation

Construct and indicators	Source(s)
Participation (PTC) PTC1: I participate actively in the f-commerce activities (for example by liking, sharing, posting to the page or commenting other's posts). PTC2: I do contribute to the f-commerce activities and development. PTC3: I usually provide useful purchase information to other f-commerce buyers. PTC4: I participate in the f-commerce with great excitement and frequency.	Casaló, L. V., Flavián, C., & Guinalíu, M. (2010). Antecedents and consequences of consumer participation in online communities: the case of the travel sector. International *Journal of Electronic Commerce, 15*(2), 137-167.

3.10.7 Browsing

Verhagen and van Dolen (2009) had defined browsing as glancing through a retailer's products for leisure and information gathering purposes but without the instantaneous intention to purchase. Getting hold of information via online browsing enable consumers fulfil their information needs which are crucial for their purchase decision making as the more they browse, the higher the possibility of them to be able to find relevant information (Burnett, 2000). Besides, it is also defined as consumers' inspection of windows displays (Jarboe and Mc Daniel, 1987) and products (Bloch and Richins, 1983; Bloch et al., 1989) without previous intention to purchase but merely for enjoyment and info gathering.

Alternatively, Bloch et al. (1989, p. 14) defined browsing as "the in-store examination of a retailer's merchandise for informational or recreational purposes without an immediate intent to buy". They opined that though browsers do not have any intention to buy, they may make unintended purchases, buy at a later time or involve in word-of-mouth activities that may prompt others to buy. Hence, in this study browsing is defined as looking around, scanning and monitoring of items planned to buy, either directly on the f-commerce or, more frequently, via the user's posting of comments, reviews, and experiences (Pöyry et al., 2013) while the items adapted for the browsing variable are listed in Table 3.7.

Table 3.7: Items and source(s) for browsing

Construct and indicators	Source(s)
Browsing (BR) BR1: The percentage of my time I spent just looking around on f-commerce was fairly high. BR2: I would say that I was primary ''just looking around'' on f-commerce. BR3: I devoted most of my attention to the items I planned to buy on f-commerce.	Beatty, S.E., & Ferrell, E.M. (1998). Impulse buying: modeling its precursors. *Journal of Retailing, 74*(2), 169-191.

3.10.8 F-commerce usage intensity

A better and more comprehensive measure of intensity of Facebook use was created by Ellison et al., (2007) who developed a scale to guage user's engagement in Facebook activities founded on quantity of time spent on the network on a particular day, number of 'friends' and the extent of agreement with a number of statements measuring users' emotional engagement to the site. It differs from the traditional way of gauging media usage in communication studies that measures the duration of exposure to a medium or frequency but this method fails to account for the richer user experience offered by interactive online sites such as Facebook (Valenzuela et al., 2009). The measurement for usage intensity (Ellison et al., 2007) has been empirically validated in various IS

studies including Dhir and Tsai (2017), Jordaan and Van Heerden (2017), Naqshbandi et al. (2017), Wirtz et al. (2017), Su and Chan (2017).

With reference to Ellison et al. (2007), in this study, f-commerce usage intensity is defined as the average time per day, and an additional of 6 items about users' proudness, feeling out of touch, sense of belonging and disappointment in their connection and attachment with the f-commerce in their daily routine or activity (Kuo and Tang, 2014). The Likert seven-point scale of 1 to 7 (1 = strongly disagree, 2 = very disagree, 3 = disagree, 4 = neutral stand, 5 = agree, 6 = very agree and 7 = strongly agree) is used to gauge users' attitude towards f-commerce. The following Table 3.8 shows the items and their source for the variable f-commerce usage intensity used in this research.

Table 3.8: Items and source(s) for f-commerce usage intensity

Construct and indicators	Source(s)
F-Commerce Usage Intensity (FCI) FCI1: In the past week, on average, approximately how many hours per week have you spent on f-commerce? FCI2: F-commerce is part of my everyday activity. FCI3: I am proud to tell people I'm on f-commerce. FCI4: F-commerce has become part of my daily routine. FCI5: I feel out of touch when I haven't logged onto f-commerce for a while. FCI6: I feel I am part of the f-commerce community. FCI7: I would be sorry if f-commerce is shut down.	Ellison, N., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook ''Friends:'' Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.

3.10.9 Urgency

Urgency is referred as the propensity to commit rash and regrettable actions as a consequence of intense negative affect related to impulsiveness facet of the NEO-PI-R scales and is referred to as the propensity to experience strong impulses, often under conditions of negative affect (Whiteside and Lynam, 2001). In layman's terms, it is an individual's impulsiveness or vulnerability to impulsive buying. High scorers on urgency have the tendency to involve in impulsive behaviours so as to lessen negative emotions regardless of the long term destructive consequences of the actions. Therefore, in this study, urgency is referred as a propensity to commit regrettable or rash actions in f-commerce due to intense negative affect such as trouble in controling irresistable impulses or cravings, having bad feelings, upsets, regretness and feeling rejected in f-commerce (Whiteside and Lynam, 2001).

In addition, scholars have proposed that the construct of urgency is a strong pointer of a person's proneness to involve in various maladaptive behaviours to relieve or regulate negative emotional experience (Cyders and Smith, 2008; Fischer et al., 2004; Selby et al., 2008). Urgency is the facet of impulsivity that best forecast a number of problematic behaviours when controlling other facets of impulsivity and depression or anxiety symptoms (Billieux et al., 2008). The items and source for the variable urgency are as shown in Table 3.9 below.

Table 3.9: Items and source(s) for urgency

Construct and indicators	Source(s)
Urgency (UR) UR1: I have trouble controlling my impulses when participating in f-commerce. UR2: I have trouble resisting my cravings to buy in f-commerce. UR3: I often get involved in things I later wish I could get out of in f-commerce. UR4: When I feel bad, I will often participate in f-commerce in which I later regret in order to make myself feel better now. UR5: Sometimes when I feel bad, I can't seem to stop participating in f-commerce even though it is making me feel worse. UR6: When I am upset I often participate in f-commerce without thinking. UR7: When I feel rejected, I will often participate in f-commerce that I later regret. UR8: It is hard for me to resist f-commerce on my feelings. UR9: I often make matters worse because I participate in f-commerce without thinking when I am upset. UR10: In the heat of an argument, I will often participate in f-commerce that I later regret. UR11: I am always able to keep my feelings for f-commerce under control. (Reverse worded) UR12: Sometimes I do things on impulse in f-commerce that I later regret.	Whiteside, S.P., & Lynam, D.R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and individual differences, 30*(4), 669-689.

3.10.10 Urge to impulsively purchase

Urge to impulsively purchase is referred as the stage preceding to and leading towards the stage of actual impulse purchase (Badgaiyan and Verma, 2015). Beatty and Ferrell (1998, p. 172) defined it as "a state of desire that is experienced upon encountering an object in the environment. It clearly precedes the actual impulse action and it is spontaneous and sudden". Piron (1991) also referred urge to impulsively purchase as a condition that is hedonically complex, sometimes sudden, persistent and irresistible.

Rook (1987) asserts that impulsive purchase happened once a buyer experienced a sudden and often powerful and persistent urge to purchase something instantaneously. Urge to impulsively purchase or urge to purchase is a condition of craving that is experienced upon meeting an object in the shopping setting like particular product, brand or model (Dholakia, 2000; Mohan et al., 2013; Rook, 1987). Thus, in this study, urge to impulsively purchase is referred as the experience of sudden and strong urges to buy, momentarily out of control and pay less consideration to behavioural consequences, which lead to unplanned purchase in f-commerce without a considerate consideration why and for what motive one needs the product (Verhagen and van Dolen, 2011). Table 3.10 listed the items and source for urge to impulsively purchase as adapted in this study.

Table 3.10: Items and source(s) for urge to impulsively purchase

Construct and indicators	Source(s)
Urge to Impulsively Purchase (UP) UP1: I experienced a number of sudden urges to buy things. UP2: I saw a number of things I wanted to buy even though they were not on my shopping list. UP3: I experienced no strong urges to make unplanned purchases. UP4: I felt a sudden urge to buy something.	Beatty, S.E., & Ferrell, E.M. (1998). Impulse buying: modeling its precursors. *Journal of Retailing, 74*(2), 169-191.

3.10.11 Impulse purchase

Various definitions have been given to impulse purchase or impulse buying. Stern (1962, p. 59) referred impulse purchase as "any purchase which a shopper makes but has not planned in advance". Piron (1991) defined impulse purchase as purchase that has the properties of an unplanned decision, the outcome from the response of being stimulated and a decision that is made right when the stimulation occurs. On the other hand, Beatty and Ferrell (1998) referred impulse buying as the tendency to experience

abrupt and spontaneous urge to purchase on-the-spot which lead towards actions taken on these urges without much assessment or forethought of their outcomes.

The stress on behavioural elements of impulse purchase has led Rook (1987, p. 191) to define impulse purchase as "buying that occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately. The impulse to buy is hedonically complex and may stimulate emotional conflict. Also, impulse buying is prone to occur with diminished regard for its consequences". Alternatively, impulse purchase is defined as having a sudden and unplanned purchase decision that is motivated by certain environmental stimuli or cues immediately and is supplemented by strong sense of excitement and enjoyment (Wu et al., 2016). Hence, in this study, impulse purchase is referred as an immediate and sudden online purchase in f-commerce with no pre-shopping intentions; it is spontaneous, unplanned and decided there and then (Verhagen & van Dolen, 2011). The items and source for impulse purchase utilised in this research are shown in the following Table 3.11.

Table 3.11: Items and source(s) for impulse purchase

Construct and indicators	Source(s)
Impulse Purchase (IP) IP1: My purchase was spontaneous. IP2: My purchase was unplanned. IP3: I did not plan to buy before the f-commerce purchase. IP4: Before the f-commerce session, I did not have the intention to purchase. IP5: I could not resist purchasing at the f-commerce site.	Verhagen, T., & van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management, 48*(8), 320-327.

3.11   PRE-TEST

Face validity was performed as subjective decision on the operationalization of a construct may arise (Drost, 2011). Thus, a 6 members expert panel which comprised of 3 academicians and 3 industrial practitioners (Please refer to Appendix E) was formed to seek their opinions about the initial questionnaires developed based on the adapted items.   The academicians are Prof. Dr. Ooi Keng Boon (Deputy Vice Chancellor & Dean, UCSI University), Assoc. Prof. Dr. Chew Kok Wai (Multimedia University) and Mr. Garry Tan Wei Han (Senior Lecturer, Universiti Tunku Abdul Rahman) while the industrial practitioners are Mr. Sze Tian-Poh (Vice President Hair, Unilever), Mr. Lee PS (Executive Director, Valentino Rudy Sdn. Bhd.) and Mr. Tan Boon In (General Manager, RCE Marketing Sdn. Bhd.).   All the comments from the 6 experts were as shown in Appendix F. These comments were duly incorporated in the questionnaire used in the pilot test.

Next, the same 6 members of expert panel mentioned above were invited to perform content validation (Please refer to Appendix G). Content validity of the instrument was performed to determine the extent to which the sample of items chosen is able to represent a sufficient operational definition of the construct of interest (Polit-O'Hara & Beck, 2006).   According to Lynn (1986), a minimum of 3 but not more than 10 experts is deemed appropriate. The first type of content validity performed was content validity index for items (I-CVI) to measure the content validity of individual items in which I-CVI = 1.00 if there are $3 - 5$ experts while I-CVI $>= 0.83$ if there are 6 experts in total. The other type of content validity performed was content validity index for scales (S-CVI) to measure the content validity of the overall scale which includes Universal Agreement (UA) and Ave (Average).   Since S-CVI/UA can become excessively stringent when there are many experts therefore, S-CVI/Ave is preferred whereby S-

CVI/Ave >= 0.90 is considered acceptable (Lynn, 1986). The results for the content

validity are shown in Table 3.12 and had been summarized using Table 3.13.

Table 3.12: I-CVI and S-CVI/Ave

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
HM1	X	X	X	X	X	X	6	1.00
HM2	X	X	X	X	X	X	6	1.00
HM3	X	X	X	X	X	X	6	1.00
HM4	X	X	X	X	X	X	6	1.00
Proportion Relevant:	1.00	1.00	1.00	1.00	1.00	1.00	Mean I-CVI:	1.00
Mean expert proportion:	1.00						S-CVI/UA:	1.00
							S-CVI/AVE:	1.00
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
UM1	X	X	X	X	X	X	6	1.00
UM2	X	X	X		X	X	5	0.83
UM3	X	X	X	X	X	X	6	1.00
Proportion Relevant:	1.00	1.00	1.00	0.67	1.00	1.00	Mean I-CVI:	0.94
Mean expert proportion:	0.95						S-CVI/UA:	0.67
							S-CVI/AVE:	0.95
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
CL1	X	X	X	X	X	X	6	1.00
CL2	X	X	X	X	X	X	6	1.00
CL3	X	X	X		X	X	5	0.83
Proportion Relevant:	1.00	1.00	1.00	0.67	1.00	1.00	Mean I-CVI:	0.94
Mean expert proportion:	0.95						S-CVI/UA:	0.67
							S-CVI/AVE:	0.95
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
FM1	X	X	X	X	X	X	6	1.00
FM2	X	X	X	X	X	X	6	1.00
FM3		1	X	X	X	X	5	0.83
FM4	X	X	X	X	X	X	6	1.00
Proportion Relevant:	0.75	1.00	1.00	1.00	1.00	1.00	Mean I-CVI:	0.96
Mean expert proportion:	0.96						S-CVI/UA:	0.75
							S-CVI/AVE:	0.96
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
BR1	X	X	X	X	X	X	6	1.00
BR2	X	X	X	X	X	X	6	1.00
BR3	X	X	X		X	X	5	0.83
Proportion Relevant:	1.00	1.00	1.00	0.67	1.00	1.00	Mean I-CVI:	0.94
Mean expert proportion:	0.95						S-CVI/UA:	0.67
							S-CVI/AVE:	0.95
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
TM1	X	X	X		X	X	5	0.83
TM2	X	X	X	X	X	X	6	1.00
TM3	X	X	X	X	X	X	6	1.00
TM4	X	X	X	X	X	X	6	1.00
TM5	X	X	X	X	X	X	6	1.00
Proportion Relevant:	1.00	1.00	1.00	0.80	1.00	1.00	Mean I-CVI:	0.97
Mean expert proportion:	0.97						S-CVI/UA:	0.80
							S-CVI/AVE:	0.97
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
PTC1	X	X	X	X	X	X	6	1.00
PTC2	X	X	X		X	X	5	0.83
PTC3	X	X	X	X	X	X	6	1.00
PTC4	X	X	X	X	X	X	6	1.00
Proportion Relevant:	1.00	1.00	1.00	0.75	1.00	1.00	Mean I-CVI:	0.96
Mean expert proportion:	0.96						S-CVI/UA:	0.75
							S-CVI/AVE:	0.96
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
FCI1	X	X	X	X	X	X	6	1.00
FCI2	X	X	X	X	X	X	6	1.00
FCI3	X	X	X		X	X	5	0.83
FCI4	X	X	X	X	X	X	6	1.00
FCI5	X	X	X	X	X	X	6	1.00
FCI6	X	X	X	X	X	X	6	1.00
FCI7	X		X	X	X	X	5	0.83
Proportion Relevant:	1.00	0.86	1.00	0.86	1.00	1.00	Mean I-CVI:	0.95
Mean expert proportion:	0.95						S-CVI/UA:	0.71
							S-CVI/AVE:	0.95
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
UP1	X	X	X	X	X	X	6	1.00
UP2	X	X	X	X	X	X	6	1.00
UP3	X	X	X	X	X	X	6	1.00
UP4	X	X	X	X	X	X	6	1.00
Proportion Relevant:	1.00	1.00	1.00	1.00	1.00	1.00	Mean I-CVI:	1.00
Mean expert proportion:	1.00						S-CVI/UA:	1.00
							S-CVI/AVE:	1.00
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
UR1	X	X	X	X	X	X	6	1.00
UR2		X	X	X	X	X	5	0.83
UR3	X	X	X	X	X	X	6	1.00
UR4	X	X	X	X	X	X	6	1.00
UR5	X	X	X	X	X	X	6	1.00
UR6	X	X	X	X	X	X	6	1.00
UR7	X	X	X	X	X	X	6	1.00
UR8	X	X	X	X	X	X	6	1.00
UR9	X	X	X	X	X	X	6	1.00
UR10	X	X	X	X	X	X	6	1.00
UR11	X	X	X	X	X	X	6	1.00
UR12	X	X	X	X	X	X	6	1.00
Proportion Relevant:	0.92	1.00	1.00	1.00	1.00	1.00	Mean I-CVI:	1.00
Mean expert proportion:	0.99						S-CVI/UA:	0.92
							S-CVI/AVE:	0.99
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.12 continued

Item	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Number in Agreement	Item CVI
IP1	X	X	X	X	X	X	6	1.00
IP2	X	X	X	X	X	X	6	1.00
IP3	X	X	X	X	X	X	6	1.00
IP4	X	X	X	X	X	X	6	1.00
IP5	X	X	X	X	X		5	0.83
Proportion Relevant:	1.00	1.00	1.00	1.00	1.00	0.80	Mean I-CVI:	0.97
Mean expert proportion:	0.97						S-CVI/UA:	0.80
							S-CVI/AVE:	0.97
Note: X = Item is relevant; I-CVI = Item Content Validity Index; S-CVI/UA = Scale Content Validity Index/Universal Agreement								
S-CVI/AVE =Scale Content Validity Index/Average Proportion; Minimum I-CVI is 0.83 and S-CVI/AVE is 0.90 for 6 experts (Lynn, 1986)								

Table 3.13: Summary of content validity

Construct	No. of items	I-CVI (>= 0.83)	S-CVI/Ave (>=0.90)
Hedonic motivation	4	Y	Y
Utilitarian motivation	3	Y	Y
Closeness	3	Y	Y
Familiarity	4	Y	Y
Browsing	3	Y	Y
Trust motivation	5	Y	Y
Participation	4	Y	Y
F-commerce usage intensity	7	Y	Y
Urgency	12	Y	Y
Urge to impulsively purchase	4	Y	Y
Impulse purchase	5	Y	Y

The draft scales in the instrument went through another pre-test to determine its construct validity using a technique similar to those used by Moore and Benbasat (1991). Construct validity refers to how good the investigator has transformed or translated an idea, behaviour or concept – that is a construct – into a operating and functioning reality or the operationalization (Trochim, 2006). Based on two rounds of classification scheme similar to the Q-sort method, two pairs of working professionals for each round will sort the scales into their respective constructs based on their definitions (Please refer to Appendix H). The level of agreement among each pair of the raters or judges in each round is assessed using Cohen's Kappa scores (Cohen, 1960) with a recommended threshold of 65% inter-rater reliability. As shown in Table 3.14, the first round of Cohen's Kappa score of 66.05% was recorded and the score has improved to 69.05% in the second round. It can be concluded that the scores for both rounds are above the recommended threshold and the constructs chosen for the research instrument are valid.

Table 3.14: Cohen's Kappa score

Round No.	Measure of Agreement Kappa		
	Pair 1	Pair 2	Average
1	0.669	0.652	0.6605
2	0.629	0.752	0.6905

Next, the hit ratio which refers to the percentage of correct placements of scales into their actual targeted constructs was then calculated. Based on Table 3.15 and Table 3.16, it can be seen that the overall hit ratio for both round one and round two is 78% and 79% respectively. This instrument was modified, if necessary, after a pre-test and a pilot test was carried out on a group of f-commerce users to assess the clarity and phrasing of the indicators and the adequacy of the domain coverage.

Table 3.15: Hit ratio round one

		Actual											N/A	Total	Hit Ratio (%)
		HM	UM	CL	FM	BR	TM	PTC	FCI	UR	UP	IP			
Theoretical	HM	16												16	100%
	UM	1	8	1		1		1						12	67%
	CL			8		2	2							12	67%
	FM				15				1					16	94%
	BR					11						1		12	92%
	TM			3	3		14							20	70%
	PTC	2						14						16	88%
	FCI			2				2	24					28	86%
	UR	3					1		4	29	8	3		48	60%
	UP								1	1	12	2		16	75%
	IP									2		18		20	90%

Item placements: 216   **Hits:** 169   **Overall Hit Ratio:** 78%

Table 3.16: Hit ratio round two

		Actual											N/A	Total	Hit Ratio (%)
		HM	UM	CL	FM	BR	TM	PTC	FCI	UR	UP	IP			
Theoretical	HM	14	1						1					16	88%
	UM		10		1	1								12	83%
	CL			9		2	1							12	75%
	FM				15			1						16	94%
	BR	1	1			9					1			12	75%
	TM			1	9		10							20	50%
	PTC			1				11	4					16	69%
	FCI			3	1				24					28	86%
	UR	1			2				1	37	3	3	1	48	77%
	UP					1					14	1		16	88%
	IP									1	2	17		20	85%

Item placements: 216   **Hits:** 170   **Overall Hit Ratio:** 79%

3.12   PILOT TEST

Pilot test is a formal validation of the survey questionnaire using small number of sample (Malhotra, 2004; Zikmund, 2003). A pilot test may help researchers to make alterations to minimalize any unanticipated issues (Zikmund, 2003) and is normally performed to test the viability of this research before implementation of a full-scale survey. Pilot test was engaged in this research to validate correct sampling and research techniques while ensuring suitable research methodology and questionnaire design were used. Besides, through pilot test, professional advice on the hypotheses and research questions can be obtained as well. This is supported by Neuman (2003) who asserted that pilot test is utilized as a way to assess the efficiency of questionnaire and to ensure that the connotation of every question is clear to the pilot respondents.

As part of the last stage of instrument development, construct reliability was performed to determine the degree to which measurements are repeatable; when different individuals make the measurements, on different junctures, under different

conditions. Reliability is stability of measurement over a variety of conditions or consistency of measurement (Bollen, 1989), in which principally the same outcomes should be attained (Nunnally, 1978). Rossi et al. (1983) assert that 20 to 50 respondents in a pilot test are sufficient in detecting questionnaire errors.

Hence, in the pilot test conducted, 50 questionnaires were distributed to f-commerce users from the Klang Valley, Malaysia. However, only 76% or 38 questionnaires returned by the respondents were usable. The scale of reliabilities of the data collected were then tested using Cronbach's alpha test in which only variables with alpha value more than 0.7 were accepted (Field, 2005; Nunnally and Bernstein, 1994). As shown in Table 3.17, the alpha values are ranging from 0.716 to 0.920. Therefore, all variables are reliable and can be utilised in the final survey.

Table 3.17: Cronbach's alpha for pilot test

Variable	No. of items	Cronbach's Alpha (>=0.70)
Hedonic motivation	4	0.805
Utilitarian motivation	3	0.795
Closeness	3	0.748
Familiarity	4	0.863
Browsing	3	0.741
Trust motivation	5	0.716
Participation	4	0.761
F-commerce usage intensity	7	0.904
Urgency	12	0.920
Urge to impulsively purchase	4	0.896
Impulse purchase	5	0.799

There were also no comments from the pilot test respondents about the questionnaire design or clarity of the language. The finalized questionnaire after the completion of pilot test is as attached in Appendix I.

3.13   UNIT OF ANALYSIS

According to Department of Statistics Malaysia (2016), the age range of workers in Malaysia is from 15 to 64 years old. Hence, the unit of analysis in this research refers to the f-commerce users who are Malaysian working adults at the age of 15 to 64 as they are perceived to have purchasing power based on their income.

3.14   DATA ANALYSIS AND PRESENTATION

Majority of the quantitative surveys in business studies gather a huge amount of data that is then processed with data analysis programs. Data analysis is the process of attaching data to constructs and drawing linkages between constructs like a visual display (Lillis, 2006; Miles and Huberman, 1994). In this study, after the data collection stage was completed, all the questionnaires returned were analysed accordingly by going through a series of steps. The first step for data analysis is to edit, code, classify and key-in the data into statistical software (i.e. SPSS). For data editing, it entails examination for inconsistent and incomplete data in which resulted in the data being excluded from data analysis. Data coding involves identification of every data point with numerical score or character as shown in Appendix J. This is followed by data categorizing to classify variables into sets of constructs founded on the research design such as nominal or categorical, interval and ratio. The data are subsequently keyed-in into the data analysis program (Sekaran, 2003). Then, data cleansing is performed by removing the outliers while assessment of Harman's Single Factor and

also Method Factor Analysis are performed to assess the existence of common method bias (CMB) issue.

The next step for data analysis is getting a general picture of the data by examining the descriptive statistics and inferential statistics. The descriptive tests performed are mean and standard deviation while the inferential tests included normality, linearity, multicollinearity, homoscedasticity, variance inflation factor, tolerance and Pearson's correlation analysis. Next, the data are verified for quality based on tests of reliability and validity namely constructs reliability, discriminant validity and convergent validity. Then, the measurement model is evaluated using cross loadings and outer loadings. For the structural model, it is evaluated using bootstrapping with 5000 samples with no sign change as well as blindfolding to access the predictive relevance and effect size. For testing of mediating effect, the Baron-Kenny's test is used. The last step in data analysis is interpretation and presentation of the statistical results using graphs and tables (Sekaran, 2003).

3.15 STATISTICAL TEST

Various statistical tests are engaged to make comparisons between variables and relationships between variables. Since the main objective of this research is to test hypotheses based on the independent and dependent variables, hence multiple regressions using Partial Least Squares (PLS) was conducted. PLS is a predictive statistical tool for modeling intricate multivariate associations among latent and observed outcomes (Vinzi et al., 2010). The tool enables the estimation of a causal theoretical network of associations connecting latent complex concepts by means of a number of observable indicators. Recently, the popularity of PLS has increased and the main attraction is that PLS may be utilized when theories are less established and for

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elucidating certain pre-specified constructs when causal effects are involved and for complex models with various variables that are estimated without making assumptions about prior data distribution. PLS is a statistical technique which allows formative measurement of constructs and this technique is best for researchers who want to get the best results with predictive modelling. It is also able to deal with complex models with less constraints and offer better statistical power. However, it is not suitable when rigorous confirmatory structuring is needed or for testing theory.

SmartPLS is a software for analysing path models. In SmartPLS, structural model is examined to predict the capacity of a model and the associations between constructs (Hair et al., 2014). It is also able to test for mediation effects which could be full, partial or no mediation effect at all. In this research, the assumptions for PLS analysis were tested using correlations analysis while the summary of the respondent's demographic profiles was done based on descriptive statistics analysis conducted using SPSS. Consistent to Anderson and Gerbing (1988), a two-stage approach was engaged to analyse the data set for this research. In the first stage, the measurement model was evaluated for discriminant validity, convergent validity and construct reliability while in the later stage; the structural model was examined for path significances.

The SmartPLS 3.0 (Ringle et al., 2015) software was utilized in this exploratory study in examining the Cronbach's alpha, EFA factor loadings, correlations, composite reliability, convergent validity based on AVE, discriminant validity founded on Fornell-Larcker's (1981) criterion and measurement model fit indices. The SmartPLS 3.0 was chosen as the statistical tool as it can be more robust towards non-normal data distribution. Furthermore, this research is aimed at exploring the effects of various theories that have not been integrated before in the Facebook commerce context, which

is a comparatively novel type of e-commerce and there is a scarcity of well-established theories underlying the research model. Besides that, another objective is to optimize the percentage of variance explained in predicting the urge to impulsively purchase and impulse purchase in f-commerce and not estimation of model fitness, hence a variance-based SEM is more suitable. Finally, the complexity of the model and non normality of the data distribution have further supported the use of the PLS SEM.

3.16   CHAPTER SUMMARY

For this study, positivist paradigm based on description and causal research is engaged. All the variables in this research have been clearly justified for their inclusion in the theoretical framework. Based on literature reviews, a detailed hypotheses development was performed to support the development of theoretical framework of this research. Quantitative approach is used to verify the hypotheses developed founded on literature review. Pretest and pilot test are performed before the actual data collection to safeguard the validity and reliability of the research instrument. By using self-administered questionnaires, responses from 1000 f-commerce users from the Klang Valley are obtained through purposive sampling and then analysed using SmartPLS 3.0 via a series of statistical tests. The next chapter will focus on the results from the detailed data analysis performed on a set of 800 usable data.

CHAPTER 4: RESULT

4.1   INTRODUCTION

In this chapter, all the relevant assumption tests conducted and the results of the data analysis performed using statistical tool SmartPLS 3.0 software are presented in detail.

4.2   DATA PROCESSING

Once the data collection was completed, the raw data were processed to prepare the data for the next stage of statistical data analysis.

4.2.1   Data editing

The raw data gathered from the survey was inspected for consistency, completeness, accuracy and respondent eligibility as proposed by Churchill (1999), Sekaran (2003) and Zikmund (2003). A total of 1000 questionnaires were distributed and out of this amount 968 were returned. Hence, the response rate is 96.8%. The high response rate is attributed to the face-to-face questionnaire administration.

4.2.2   Data coding

Data coding involved 2 steps as suggested by Churchill (1999). Firstly, the categories or classes should be determined based on the research problem. Secondly, code numbers should be assigned to the constructs and their items (Churchill, 1999). Hence, responses were pre-coded based on the codes that were assigned before data collection. The scale items and their codes are as indicated in Appendix J. Following these two steps, the data was then transformed into digital files with SPSS.

4.3   DATA CLEANSING AND SCREENING

From the collection of questionnaires returned by respondents, data screening process was performed to ensure that all data is reliable and valid for statistical analysis. Data cleaning and screening is the process to check whether the data had been keyed-in precisely and also to identify missing data and inconsistent responses (Malhotra, 2004).

In this research, two approaches were used to screen and clean the data. Firstly, descriptive statistics and frequency distributions were screen comprehensively. This process detected a few minor data entry errors which were checked instantly with the original questionnaires. Then, every tenth data set was checked manually against the original questionnaires. No entry errors were found based on these checking.

4.3.1   Missing data

Hair et al. (2010) assert that missing data may occur due to errors from the respondents' mistakes (e.g. failure to answer a question) or external to the respondents (e.g. data entry errors). Following the approach similar to Chong (2013), Chou et al. (2013) and Hu et al. (2013), each questionnaire returned was checked prior to data entry and any missing data in random present in the questionnaire that resulted in incomplete questionnaire is being eliminated from the subsequent data analysis (Tabachnick & Fidell, 2013). Besides that, using the same approach by Wang et al. (2009), questionnaires with double entries were also discarded to ensure only a complete data set was used in the data analysis. Of the total 1000 questionnaires, 20 were discarded due to missing data, 133 respondents who had mistakenly mixed up between Facebook and f-commerce indicated that they never use f-commerce before, while 39 respondents did not return the questionnaire distributed to them yielding to a sample size of only 808.

4.3.2 Outliers

According to Hair et al. (2010), outliers are observations with an exclusive combination of attributes distinct from other observations. These observations are cases that possess values different from most of cases in the data set. It is essential to detect outliers as they can excessively affect the outcomes. Elimination of outliers may lessen the probability of Type I or Type II errors and increase the accuracy in estimates (Osborne & Overbay, 2004). However, there are problematic and beneficial outliers. The problematic outliers are not representative of the population as they are counter to the objectives of the analysis whereas beneficial outliers are indicative attributes in population (Hair et al., 1998). To detect outliers, Mahalanobis distance, d^2 is examined using SPSS 21. The Chi-square cumulative distribution function's p-values are then computed. The data set is then sorted in ascending order according to the p-values. Based on the p-values that are less than 0.001 (Tabachnick and Fidell, 2001), 8 outliers were detected and removed from the data set. Therefore, the final usable sample is 800 questionnaires. This sample size has exceeded the rule of thumb of minimum 10 times the maximum number of paths aiming at any construct (Barclay, 1995 as cited in Hair et al., 2012).

4.4 COMMON METHOD BIAS (CMB)

Since the data for dependent and independent variables were gathered using a single instrument there may be issue of CMB. Consistent with Podsakoff et al. (2003), both procedural and statistical procedures are applied in this research data analysis to address the CMB issue. For the procedural wise, all respondents have been assured of their anonymous identities prior to the administration of the survey and they have been informed also that there is no wrong or right answer to each question and only needed to

respond candidly to all the questions. On the statistical aspect, Harman's Single Factor and Common Method Factor are engaged to evaluate the CMB.

4.4.1 Harman's Single Factor

First of all, the existence of CMB with Harman's Single Factor analysis (Table 4.1) was analyzed and it was found that the single factor can explain only 38.18% which is less than 50% of the variance. Thus, it can be concluded that there is no problem of CMB.

Table 4.1: Harman's Single Factor analysis
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.236	38.181	38.181	20.236	38.181	38.181
2	4.619	8.716	46.896			
3	3.541	6.681	53.578			
4	2.237	4.220	57.798			
5	2.054	3.876	61.674			
6	1.776	3.351	65.024			
7	1.567	2.956	67.981			
8	1.489	2.810	70.791			
9	1.251	2.360	73.151			
10	1.121	2.115	75.266			
11	.951	1.795	77.061			
12	.837	1.580	78.641			
13	.779	1.471	80.111			
14	.722	1.363	81.474			
15	.641	1.210	82.685			
16	.602	1.135	83.820			
17	.544	1.026	84.846			
18	.487	.918	85.764			
20	.430	.811	87.450			
21	.376	.710	88.160			
22	.368	.694	88.854			
23	.358	.675	89.529			
24	.317	.598	90.127			
25	.304	.573	90.700			
26	.296	.558	91.258			
27	.286	.540	91.798			
28	.278	.525	92.323			

Table 4.1 continued

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
29	.260	.490	92.813			
30	.252	.475	93.288			
31	.234	.442	93.730			
32	.233	.440	94.170			
33	.224	.423	94.593			
34	.209	.395	94.988			
35	.200	.378	95.366			
36	.189	.356	95.722			
37	.185	.350	96.072			
38	.183	.346	96.417			
39	.166	.313	96.730			
40	.161	.303	97.033			
41	.152	.287	97.320			
42	.152	.286	97.607			
43	.142	.267	97.874			
44	.138	.260	98.134			
45	.128	.241	98.375			
46	.127	.239	98.614			
47	.124	.233	98.847			
48	.120	.227	99.074			
49	.117	.221	99.295			
50	.112	.212	99.507			
51	.102	.192	99.699			
52	.088	.165	99.865			
53	.072	.135	100.000			

Extraction Method: Principal Component Analysis.

4.4.2 Common Method Factor

Next, by referring to researches by Liang et al. (2007), Podsakoff et al. (2003) and Williams et al. (2003), a common method factor with all the indicators of the principal constructs as its indicators is created. To do this in SmartPLS, all indicators have been altered to become single-indicator constructs therefore making all key constructs and method factor become second order constructs (Please refer to Figure 4.1). After that, the substantive variance is compared to the method variance based on the squared value of the substantive factor loadings and squared value of the method factor loadings.

Table 4.2 shows that every substantive variance is significantly greater than the method variance and the average substantive variance is 0.726 compared to the method variance of just 0.009. Therefore, the ratio of substantive variance to the method variance is 84:1. Besides that, majority of the method factor loadings are negative and insignificant. Hence, it is confirmed that there is indeed no issue of CMB in this study.

Figure 4.1: Common Method Factor analysis

Table 4.2: Substantive variance versus method variance

Construct	Indicator	Substantive factor loading (R1)	Substantive variance (R1 square)	Method factor loading (R2)	Method variance (R2 square)
Browsing (BR)	BR1	0.852***	0.727	0.043	0.002
	BR2	0.943***	0.889	-0.002	0.000
	BR3	0.939***	0.881	-0.039	0.002
Closeness (CL)	CL1	0.899***	0.809	0.007	0.000
	CL2	0.971***	0.942	-0.044*	0.002
	CL3	0.852***	0.726	0.039	0.002
F-commerce Usage Intensity (FCI)	FCI1	0.451***	0.203	0.196**	0.039
	FCI2	0.765***	0.585	0.011	0.000
	FCI3	0.885***	0.782	-0.052	0.003
	FCI4	0.893***	0.797	-0.028	0.001
	FCI5	0.899***	0.809	-0.042	0.002
	FCI6	0.857***	0.734	-0.037	0.001
	FCI7	0.766***	0.587	0.005	0.000
Familiarity (FM)	FM1	0.788***	0.621	0.089*	0.008
	FM2	0.950***	0.902	-0.050*	0.003
	FM3	0.924***	0.853	-0.131***	0.017
	FM4	0.838***	0.702	-0.074***	0.005
Hedonic Motivation (HM)	HM1	0.962***	0.925	0.045*	0.002
	HM2	0.980***	0.961	-0.027	0.001
	HM3	0.906***	0.822	0.161***	0.026
	HM4	0.779***	0.607	-0.008	0.000
Impulse Purchase (IP)	IP1	0.717***	0.514	0.126**	0.016
	IP2	0.913***	0.833	-0.047	0.002
	IP3	0.955***	0.911	-0.057*	0.003
	IP4	0.906***	0.821	-0.013	0.000
	IP5	0.838***	0.702	0.001	0.000
Participation (PTC)	PTC1	0.772***	0.597	0.103***	0.011
	PTC2	0.925***	0.855	-0.011	0.000
	PTC3	0.947***	0.896	-0.041*	0.002
	PTC4	0.901***	0.813	-0.048*	0.002
Trust Motivation (TM)	TM1	0.762***	0.580	0.073*	0.005
	TM2	0.922***	0.850	-0.046*	0.002
	TM3	0.969***	0.939	-0.079**	0.006
	TM4	0.885***	0.783	0.004	0.000
	TM5	0.797***	0.635	0.054*	0.003
Utilitarian Motivation (UM)	UM1	0.896***	0.803	-0.004	0.000
	UM2	0.965***	0.930	-0.051*	0.003
	UM3	0.855***	0.732	0.056*	0.003
Urge to Impulsively Purchase (UP)	UP1	0.824***	0.679	-0.030	0.001
	UP2	0.902***	0.813	-0.030	0.001
	UP4	0.796***	0.633	0.057	0.003
Urgency (UR)	UR3	-0.893***	0.798	-0.146*	0.021
	UR1	0.880***	0.774	0.070	0.005
	UR10	0.709***	0.502	0.453***	0.205
	UR11_R	-0.477***	0.227	0.072	0.005
	UR12	0.565***	0.319	-0.125*	0.016
	UR2	0.894***	0.799	-0.122*	0.015
	UR3	0.922***	0.850	-0.001	0.000
	UR4	0.834***	0.696	0.006	0.000
	UR5	0.803***	0.644	0.031	0.001
	UR6	0.806***	0.649	0.049	0.002
	UR7	0.818***	0.668	0.044	0.002
	UR8	0.775***	0.600	0.039	0.002
	UR9	0.701***	0.491	0.126*	0.016
	Average		0.726		0.009
	Ratio	84:1			

Note: ***p<0.001, *p<0.05

4.5 TESTING OF MULTIVARIATE ASSUMPTIONS

Before further multivariate analysis can be conducted, there are several fundamental assumptions that need to be fulfilled. These include normality, linearity, multicollinearity and homoscedasticity tests.

4.5.1 Normality test

Test on normality distribution is vital for structural equation modelling (SEM) as its first assumption is a multivariate normal distribution (Hair et al., 1998). Normality is referred to as the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution (Hair et al., 2006). If the ultimate aim of the research is to make inference, then testing for normality is an imperative step in multivariate analysis (Tabachnick & Fidell, 2007). Multivariate normality stresses not just the individual items' distribution but also the distribution of variable combinations (Hooley et al., 1999). The normality of the dataset was tested using Kolmogorov-Smirnov test (Table 4.3) and the data analysis revealed that all p-values are less than 0.05. Hence, non-normality of the dataset is supported.

Table 4.3: Kolmogorov-Smirnov test

One-Sample Kolmogorov-Smirnov Test

	N	Normal Parameters[a,b] Mean	Std. Deviation	Most Extreme Differences Absolute	Positive	Negative	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
HM1	800	5.15	1.221	.156	.156	-.150	4.411	.000
HM2	800	5.02	1.120	.168	.168	-.168	4.753	.000
HM3	800	4.91	1.060	.178	.171	-.178	5.023	.000
HM4	800	4.84	1.032	.192	.181	-.192	5.441	.000
UM1	800	4.78	1.006	.192	.188	-.192	5.439	.000
UM2	800	4.75	1.007	.188	.188	-.182	5.325	.000
UM3	800	4.65	.990	.199	.199	-.183	5.623	.000
CL1	800	4.58	.995	.201	.201	-.183	5.679	.000
CL2	800	4.54	1.023	.205	.205	-.169	5.806	.000
CL3	800	4.52	1.041	.202	.202	-.167	5.705	.000
FM1	800	4.46	1.072	.201	.201	-.158	5.674	.000
FM2	800	4.42	1.053	.210	.210	-.164	5.931	.000
FM3	800	4.42	1.078	.200	.200	-.162	5.666	.000
FM4	800	4.36	1.067	.204	.204	-.173	5.773	.000
BR1	800	4.37	1.093	.179	.179	-.172	5.057	.000
BR2	800	4.32	1.106	.194	.194	-.177	5.482	.000
BR3	800	4.36	1.138	.195	.195	-.178	5.527	.000

Table 4.3 continued

One-Sample Kolmogorov-Smirnov Test

		Normal Parameters[a,b]		Most Extreme Differences				
	N	Mean	Std. Deviation	Absolute	Positive	Negative	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
TM1	800	4.25	1.137	.192	.192	-.178	5.442	.000
TM2	800	4.22	1.100	.194	.194	-.189	5.482	.000
TM3	800	4.22	1.116	.201	.201	-.197	5.677	.000
TM4	800	4.18	1.104	.196	.191	-.196	5.555	.000
TM5	800	4.15	1.080	.214	.214	-.199	6.043	.000
PTC1	800	4.15	1.099	.190	.190	-.186	5.379	.000
PTC2	800	4.06	1.075	.208	.208	-.189	5.871	.000
PTC3	800	4.02	1.106	.192	.192	-.182	5.434	.000
PTC4	800	3.96	1.150	.172	.172	-.157	4.852	.000
FCI1	800	3.20	1.216	.232	.232	-.136	6.574	.000
FCI2	800	3.95	1.037	.205	.205	-.165	5.798	.000
FCI3	800	4.15	.977	.250	.250	-.227	7.085	.000
FCI4	800	4.32	1.007	.244	.244	-.207	6.902	.000
FCI5	800	4.35	1.037	.240	.240	-.188	6.799	.000
FCI6	800	4.39	1.037	.237	.237	-.190	6.706	.000
FCI7	800	4.40	1.082	.233	.233	-.179	6.599	.000
UR1	800	4.65	1.180	.172	.154	-.172	4.853	.000
UR2	800	4.60	1.124	.171	.171	-.171	4.851	.000
UR3	800	4.54	1.069	.195	.195	-.165	5.503	.000
UR4	800	4.47	1.059	.214	.214	-.193	6.064	.000
UR5	800	4.44	1.043	.209	.209	-.177	5.919	.000
UR6	800	4.36	1.049	.204	.204	-.176	5.763	.000
UR7	800	4.37	1.007	.227	.227	-.188	6.423	.000
UR8	800	4.34	1.044	.229	.229	-.187	6.473	.000
UR9	800	4.34	1.082	.212	.212	-.178	5.983	.000
UR10	800	4.31	1.075	.221	.221	-.183	6.239	.000
UR11_R	800	3.8613	1.11402	.190	.178	-.190	5.362	.000
UR12	800	4.24	.997	.237	.237	-.208	6.702	.000
UP1	800	4.27	1.021	.219	.219	-.207	6.207	.000
UP2	800	4.35	1.038	.199	.199	-.177	5.622	.000
UP4	800	4.36	.989	.220	.220	-.197	6.229	.000
IP1	800	4.41	.991	.225	.225	-.196	6.360	.000
IP2	800	4.40	1.015	.206	.206	-.194	5.824	.000
IP3	800	4.42	1.022	.209	.209	-.181	5.912	.000
IP4	800	4.43	1.040	.197	.197	-.173	5.573	.000
IP5	800	4.46	1.037	.198	.198	-.181	5.590	.000

a. Test distribution is Normal; b. Calculated from data.

4.5.2 Linearity test

Next, the linearity test between the IVs and DVs using deviation from linearity and ordinary least square (OLS) was performed. A p-value of 0.05 and above for the deviation from linearity indicates the existence of linear relationship between the IV and DV. If the p-value of deviation from linearity is less than 0.05, further verifications were conducted using Ordinary Least Squares (OLS). The linearity is confirmed if the p-value is less than 0.05. Table 4.4 shows the outcomes of the linearity test between each IV and DV and its respective OLS result, if applicable. For the full results of linearity test, please refer to Appendix K. It was found that there were linear

relationships between all the DVs and IVs. Hence, linearity assumption is validated

statistically.

Table 4.4: Linearity test and Ordinary Least Squares test

Variables	Type of Test	Sig.	p-value	Remark
Participation * Hedonic Motivation	OLS (linear regression)	0.000	< 0.05	Linear
Participation * Utilitarian Motivation	ANOVA test for linearity	0.364	> 0.05	Linear
Participation * Trust Motivation	OLS (linear regression)	0.000	< 0.05	Linear
Participation * Urge to Impulsively Purchase	OLS (linear regression)	0.000	< 0.05	Linear
Browsing * Hedonic Motivation	OLS (linear regression)	0.000	< 0.05	Linear
Browsing * Utilitarian Motivation	ANOVA test for linearity	0.149	> 0.05	Linear
Browsing * Trust Motivation	OLS (linear regression)	0.000	< 0.05	Linear
F-commerce Usage Intensity * Hedonic Motivation	OLS (linear regression)	0.000	< 0.05	Linear
F-commerce Usage Intensity * Utilitarian Motivation	ANOVA test for linearity	0.288	> 0.05	Linear
F-commerce Usage Intensity * Trust Motivation	OLS (linear regression)	0.000	< 0.05	Linear
F-commerce Usage Intensity * Urge to Impulsively Purchase	OLS (linear regression)	0.000	< 0.05	Linear
Trust Motivation * Closeness	OLS (linear regression)	0.000	< 0.05	Linear
Trust Motivation * Familiarity	OLS (linear regression)	0.000	< 0.05	Linear
Urge to Impulsively Purchase * Browsing	OLS (linear regression)	0.000	< 0.05	Linear
Urge to Impulsively Purchase * Urgency	ANOVA test for linearity	0.146	> 0.05	Linear
Urge to Impulsively Purchase * Impulse Purchase	OLS (linear regression)	0.000	< 0.05	Linear
Urgency * Impulse Purchase	ANOVA test for linearity	0.265	> 0.05	Linear

4.5.3 Multicollinearity test

Multicollinearity is the condition where two or more of the IVs are highly correlated (Cooper & Schindler, 2003). Multicollinearity problems may cause the capability to define any variable's effect to diminish, owing to their interrelationships (Hair et al., 2006). In conducting multivariate hypothesis testing, it is important that there is no problem of multicollinearity as it will render the result invalid. Two methods were used to assess multicollinearity problem by using Variance Inflation Factor (VIF) and Pearson's correlation analysis.

4.5.3.1 Variance Inflation Factor and Tolerance

The multicollinearity problem was ruled out based on the VIF<10 and Tolerance > 0.1 and Pearson's correlation coefficient of less than 0.90 (Tan et al., 2014). All VIFs and Tolerance values are less than the recommended threshold as summarized in Table 4.5 while the full results are as shown in Appendix L.

Table 4.5: Variance Inflation Factor (VIF) and Tolerance

	Variables	Tolerance	VIF
Dependent variable: Impulse Purchase	Hedonic Motivation	0.546	1.832
	Utilitarian Motivation	0.492	2.033
	Trust Motivation	0.852	1.173
	Closeness	0.534	1.872
	Familiarity	0.534	1.872
	Participation	0.578	1.729
	Browsing	0.693	1.442
	F-Commerce Usage Intensity	0.537	1.861
	Urge to Impulsively Purchase	0.620	1.613
	Urgency	0.620	1.613

4.5.3.2 Pearson's correlation analysis

The multicollinearity problem was further validated based on Pearson's correlation coefficient of less than 0.90 (Tan et al., 2014) and the result are shown in the following Table 4.6. The details of the Pearson's correlation test are indicated in Appendix M.

Table 4.6: Pearson's correlation

Correlations												
	HM	UM	CL	FM	BR	TM	PTC	FCI	UR	PT	UP	IP
HM	1											
UM	.673**	1										
CL	.495**	.678**	1									
FM	.366**	.475**	.682**	1								
BR	.271**	.406**	.403**	.621**	1							
TM	.229**	.382**	.497**	.553**	.659**	1						
PTC	.151**	.343**	.416**	.455**	.488**	.669**	1					
FCI	.231**	.387**	.465**	.527**	.465**	.560**	.593**	1				
UR	.463**	.505**	.535**	.512**	.418**	.499**	.460**	.546**	1			
PT	.322**	.404**	.427**	.404**	.402**	.473**	.451**	.487**	.649**	1		
UP	.291**	.393**	.391**	.353**	.355**	.458**	.429**	.488**	.617**	.700**	1	
IP	.373**	.397**	.440**	.410**	.324**	.434**	.400**	.478**	.618**	.587**	.669**	1
**. Correlation is significant at the 0.01 level (2-tailed).												

4.5.4 Homoscedasticity test

Lastly, the homoscedasticity of the dataset was tested with scatter plots of DVs and their regression standardized residuals and it was found that all dots were evenly distributed along a straight line (Figure 4.2) thus validating homoscedasticity. Generally, it can be concluded that all multivariate assumptions have been fulfilled.
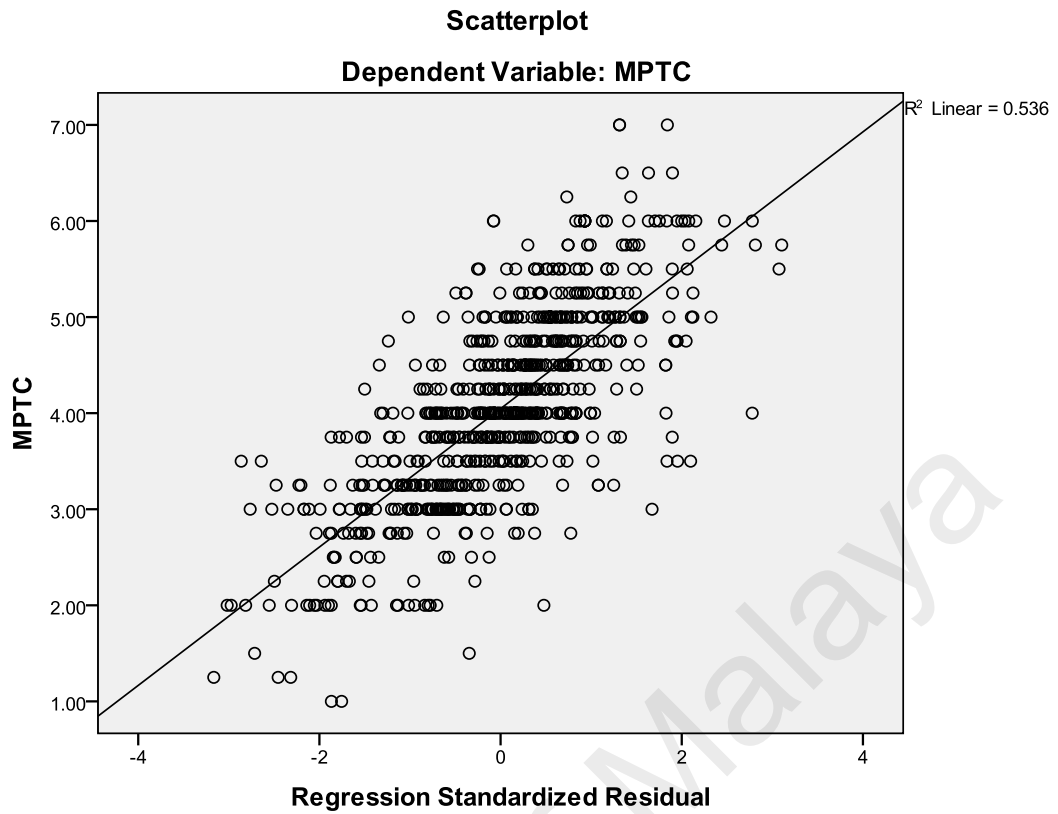
Figure 4.2: Scatter plots
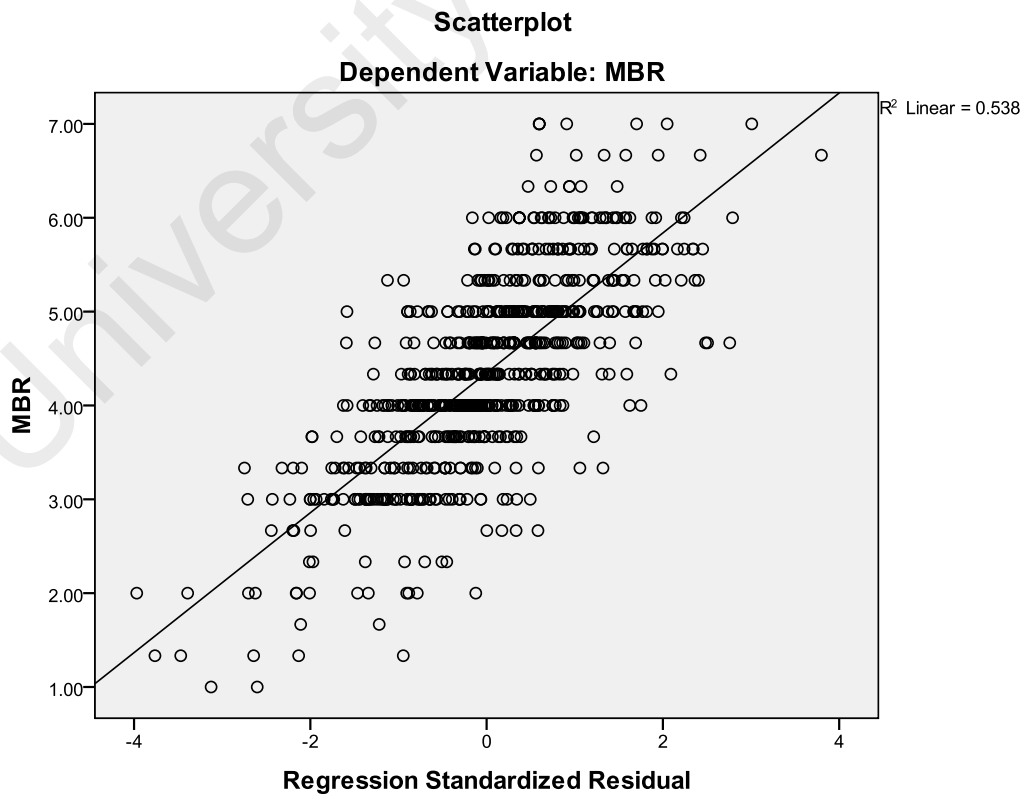
Figure 4.2 continued
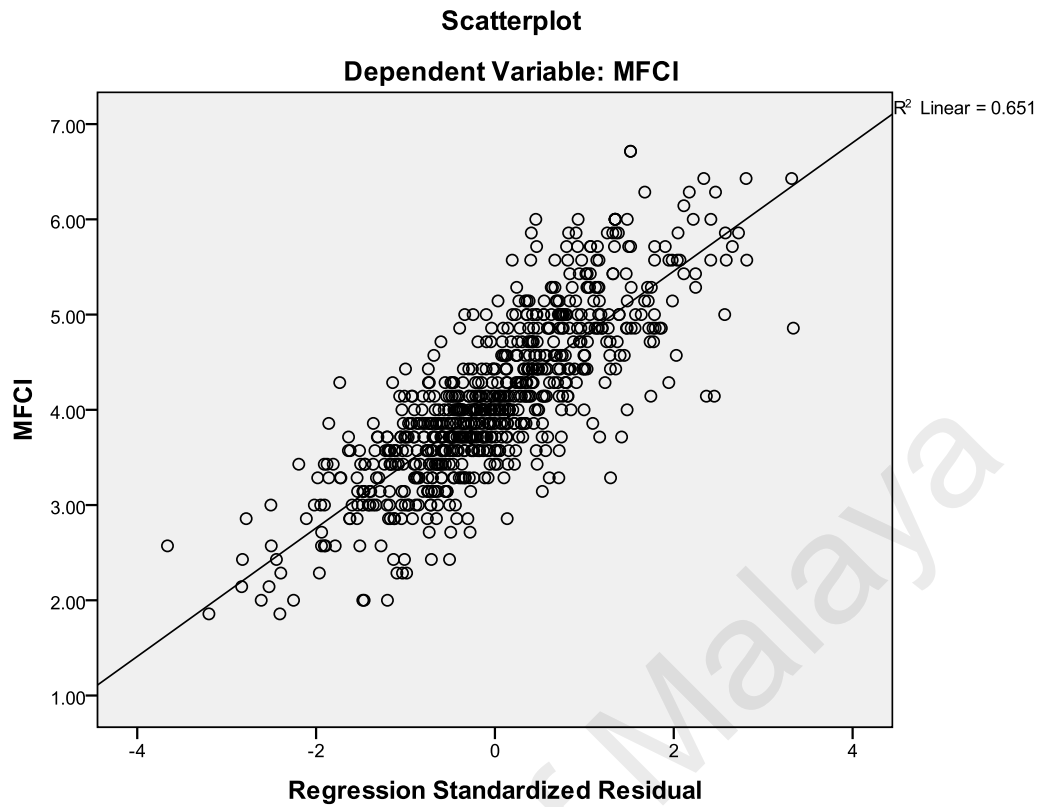
Scatterplot

Dependent Variable: MFCI

R^2 Linear = 0.651

Figure 4.2 continued

Scatterplot

Dependent Variable: MTM

R^2 Linear = 0.668

Figure 4.2 continued

Scatterplot

Dependent Variable: MUP

Figure 4.2 continued

Scatterplot

Dependent Variable: MIP

Figure 4.2 continued

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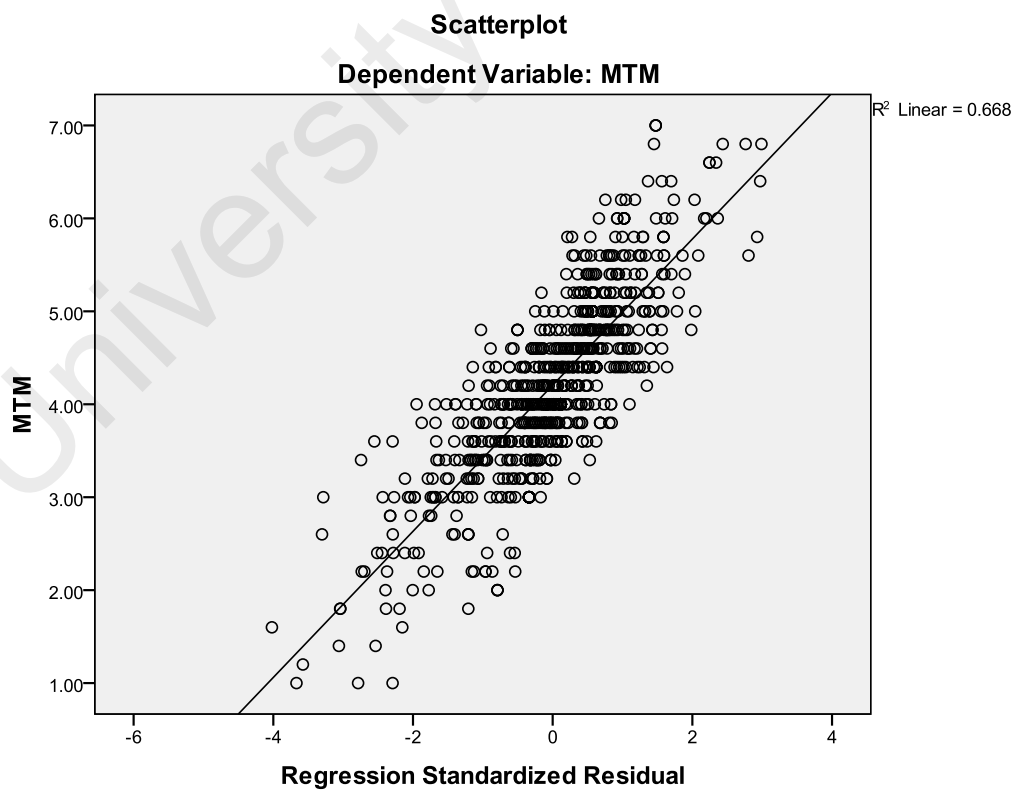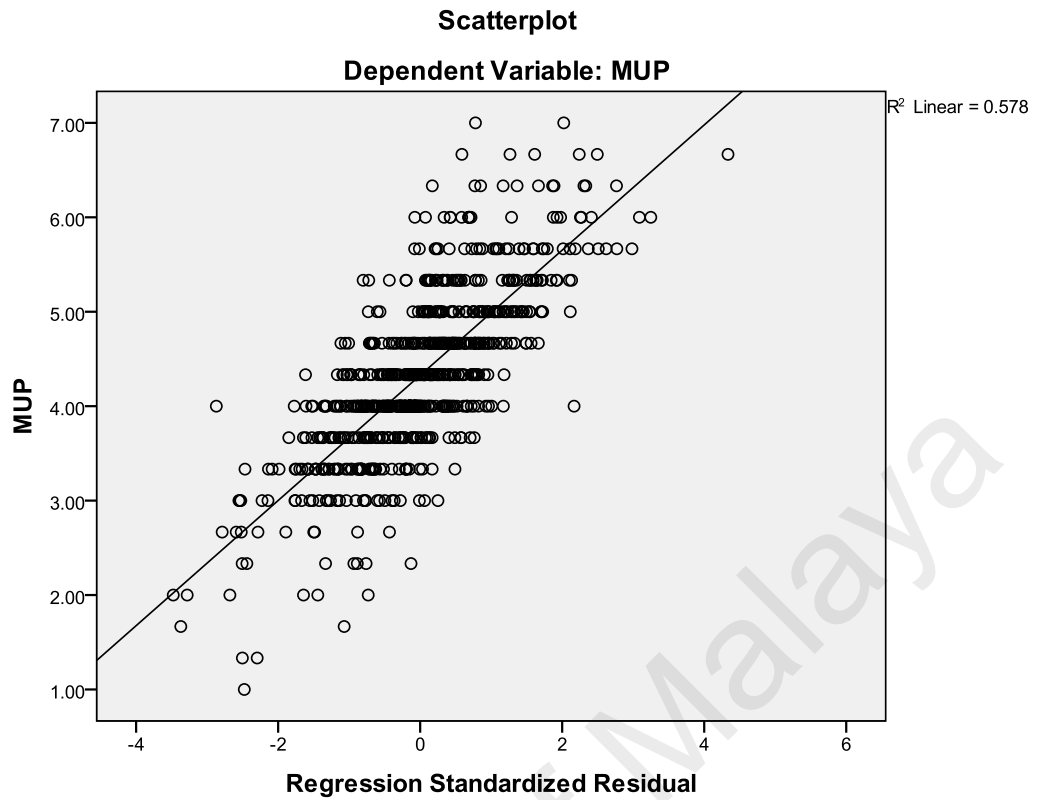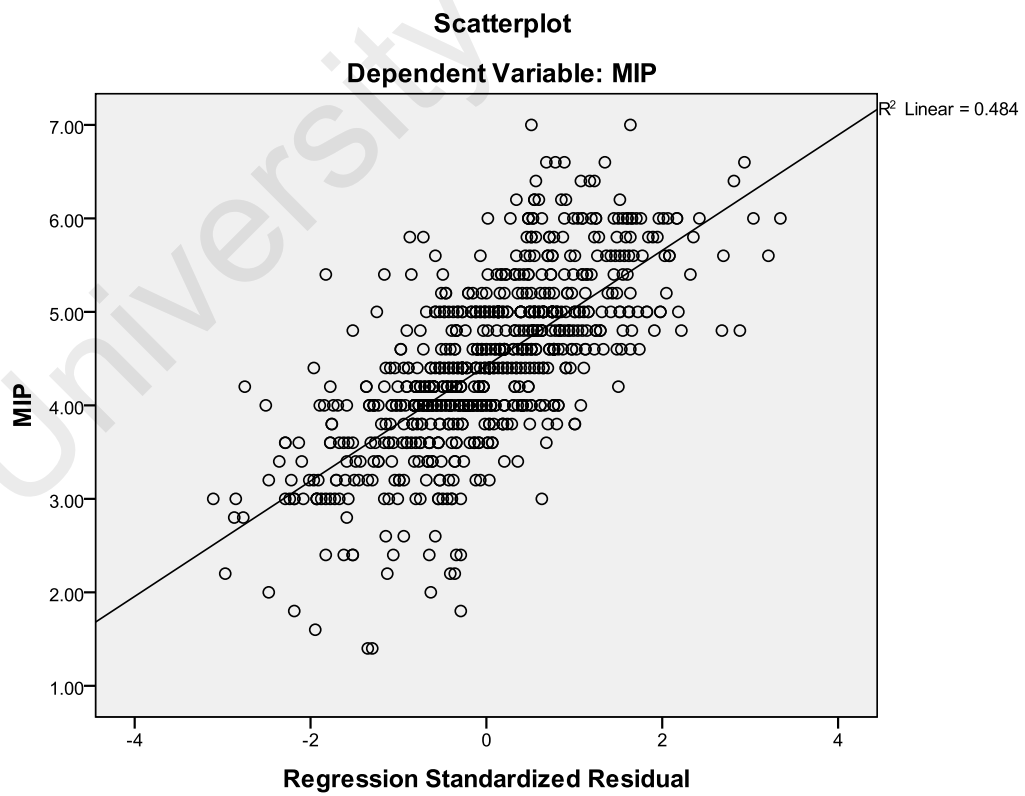
4.6 RESULTS OF DATA ANALYSIS

The outcomes obtained from the analysis of the data set which consists of 800 usable data are presented systematically in the following sub-sections.

4.6.1 Demographic of the respondents

The demographic profile of the 800 respondents is illustrated in Table 4.7. The sample consists of 44.8% males and 55.3% females. 31.3% of the respondents aged between 15 to 24, 48.4% aged 25 to 34, 15.6% between 35 to 44, 3.5% between 45 to 54, 1% aged between 55 to 64 and 0.3% are at least 65 years old. Among these respondents, 75.9% are single, 23.6% married. In terms of monthly income, 20.8% of them earn at most RM1000, 10% earn between RM1001 to RM2000, 41% bring home RM2001 to RM3000, 11.3% take home RM3001 to RM4000, 11.1% managed to get RM4001 to RM5000, 5.5% of them earn RM5001 to RM10000 and only 0.4% take back a monthly salary of more than RM10000. Education wise, 29.9% of the sample respondents own SPM (equivalent to O-Level), 7.3% possess STPM (equivalent to A-Level), 31.9% have Diploma, 25.9% are graduates, 4% Masters' holders and only 1.1% are have doctoral degree. Besides that, 20.3% of the respondents are students, 19.3% are non-executives, 45.4% are executives, 3.1% are managers, 3.5% as senior managers, 5.8% are self-employed and 2.8% other occupations.

In terms of Internet usage, the distribution of weekly hours spent on surfing the Internet are as follows; 55.4% surfed less than 7 hours, 24% spent 7 to 14 hours, 17.4% surfed between 15 to 21 hours and 3.3% spent more than 21 hours weekly in surfing the Internet. From the perspective of Facebook usage experience, 1.1% of the respondents have less than one year of experience, 12.6% have 1 to 2 years of experience, 25.3% have 3 to 4 years of experience, 51.4% have 5 to 6 years of experience, 8.3% have 7 to

8 years of experience and only 1.4% have more than 8 years of experience in using Facebook. From the context of f-commerce transaction, 61.8% of the respondents in the sample perform 1 to 5 times of f-commerce transaction in the last 12 months, 31.1% have 6 to 10 times of transactions, 6.1% conduct 11 to 15 times of transactions and only 1.0% transact more than 8 times in the last 12 months. Out of these transactions, 31.8% were conducted less than 2 months ago, 39.4% were done 3 to 4 months ago, 4.8% were performed 5 to 6 months ago, 17.6% carried out 7 to 8 months ago, 5.3% done 9 to 10 months ago and only 1.3% happened 11 to 12 months ago. In terms of years of f-commerce experience, 18.3% have less than a year of experience, 53.6% have 1 to 2 years of experience, 26% have 3 to 4 years of experience, 1.6% have 5 to 6 years of experience and only 0.5% have more than 6 years of experience in using f-commerce. From the perspective of average purchase using f-commerce, 20.9% spent less than RM50, 45.1% spent between RM50 to RM100, 20.1% spent RM101 to RM150, 8.8% spent RM151 to RM200, 3% spent RM201 to RM250 and only 2.1% spent more than RM250.

In terms of intention to repurchase via f-commerce, 98.6% are willing to conduct future transaction and only 1.4% refused to do so. Among the reasons for using f-commerce are purchase of product or services (32.5%), review of products or services (22.7%), evaluate products or services (14.7%), search information for particular products or services (11.6%), browse for new products or services (9.7%) and only 8.7% is for entertainment, leisure or past times. The obstacles that hinder the use of f-commerce included lack of trust on the privacy of the information provided for the f-commerce (24.5%), lack of confidence on the security of the f-commerce (21.1%), lack of time to browse through the many f-commerce pages (17.3%), lack of knowledge and skill in conducting f-commerce (14.8%), lack of guidance in how to use f-commerce

(14.5%), lack of budget to purchase items from f-commerce (7.7%) and other obstacles (0.1%).

Table 4.7: Demographic profile of respondents

		Frequency	Percent
Gender	Male	358	44.8
	Female	442	55.3
Age (years)	15 – 24	250	31.3
	25 – 34	387	48.4
	35 – 44	125	15.6
	45 – 54	28	3.5
	55 – 64	8	1.0
	>= 65	2	.3
Marital status	Single	607	75.9
	Married	189	23.6
	Others	4	.5
Monthly income (RM)	0 – 1000	166	20.8
	1001 – 2000	80	10.0
	2001 – 3000	328	41.0
	3001 – 4000	90	11.3
	4001 - 5000	89	11.1
	5001 – 10000	44	5.5
	> 10000	3	.4
Education	SPM	239	29.9
	STPM	58	7.3
	Diploma	255	31.9
	Bachelor degree	207	25.9
	Master degree	32	4.0
	Doctoral degree	9	1.1
Occupation	Student	162	20.3
	Non executive	154	19.3
	Executive	363	45.4
	Manager	25	3.1
	Senior manager	28	3.5
	Self employed	46	5.8
	Others	22	2.8
Weekly hours spent surfing Internet	< 7	443	55.4
	7 – 14	192	24.0
	15 – 21	139	17.4
	> 21	26	3.3
Years of using Facebook	< 1	9	1.1
	1 – 2	101	12.6
	3 – 4	202	25.3
	5 – 6	411	51.4
	7 – 8	66	8.3
	> 8	11	1.4

Table 4.7 continued

		Frequency	Percent
Number of f-commerce transactions in the last 12 months	1 - 5 times	494	61.8
	6 - 10 times	249	31.1
	11 - 15 times	49	6.1
	> 15 times	8	1.0
Last transaction occurred about	0 - 2 months ago	254	31.8
	3 - 4 months ago	315	39.4
	5 - 6 months ago	38	4.8
	7 - 8 months ago	141	17.6
	9 - 10 months ago	42	5.3
	11 - 12 months ago	10	1.3
Years of f-commerce experience	< 1	146	18.3
	1 – 2	429	53.6
	3 – 4	208	26.0
	5 – 6	13	1.6
	> 6	4	.5
Average purchase using f-commerce	<50	167	20.9
	50-100	361	45.1
	101-150	161	20.1
	151-200	70	8.8
	201-250	24	3.0
	>250	17	2.1
Will you perform f-commerce transaction again in the future?	Yes	789	98.6
	No	11	1.4
Reason to use FC	Browse for new products or services	195	9.7
	Search information for particular products or services	233	11.6
	Evaluate products or services	296	14.7
	Review products or services	456	22.7
	Purchase product or services	652	32.5
	Entertainment / Leisure / Past Times	175	8.7
Obstacles in using FC	Lack of guidance in how to use f-commerce	289	14.5
	Lack of knowledge and skill in conducting f-commerce	296	14.8
	Lack of time to browse through the many F-commerce pages	345	17.3
	Lack of trust on the privacy of the information provided to the f-commerce	490	24.5
	Lack of confidence on the security of the f-commerce	422	21.1
	Lack of budget to purchase items from f-commerce	153	7.7
	Other obstacles in using f-commerce	2	0.1

4.6.2 Mean and standard deviation analysis

Based on Table 4.8, the overall mean for hedonic motivation is 4.98 and quite a number of respondents agree that using f-commerce is truly a joy (mean = 5.15) and in comparison to other things, participating in f-commerce is truly enjoyable (mean = 5.02). They also agree that they enjoy using f-commerce for its own sake and not only for the information they find (mean = 4.91). They also somewhat agree that they enjoy passing the time in the f-commerce (mean = 4.84).

Table 4.8: Mean and standard deviation for hedonic motivation

Item code: Description	Mean (N=800)	Std. Deviation
HM1: Using f-commerce is truly a joy.	5.15	1.22
HM2: Compared to the other things I could have done, participating in f-commerce is truly enjoyable.	5.02	1.12
HM3: I enjoy using the f-commerce for its own sake, not just for the information I find.	4.91	1.06
HM4: I enjoy passing the time in the f-commerce.	4.84	1.03
MHM: Overall Hedonic Motivation	**4.98**	**1.01**

Table 4.9 indicated that the overall mean for utilitarian motivation is 4.73 and the respondents are somewhat agree that success in f-commerce is finding what they are looking for (mean = 4.78) and f-commerce helps them with purchase planning (mean = 4.75). They also moderately agree that they like to get in and out the f-commerce with no time wasted (mean = 4.65).

Table 4.9: Mean and standard deviation for utilitarian motivation

Item code: Description	Mean (N=800)	Std. Deviation
UM1: Success in the f-commerce is finding what I'm looking for.	4.78	1.01
UM2: F-commerce helps me with purchase planning.	4.75	1.01
UM3: I like to get in and out the f-commerce with no time wasted.	4.65	0.99
MUM: Overall Utilitarian Motivation	**4.73**	**0.93**

From Table 4.10, in terms of closeness, the overall mean value is 4.54. The respondents moderately agree that they feel a sense of closeness (mean = 4.58) and intimacy (mean = 4.54) with their friends through f-commerce. They also somewhat agree that they feel their friends' product reviews or product recommendations on f-commerce are a very important part of their consumption lives (mean = 4.52).

Table 4.10: Mean and standard deviation for closeness

Item code: Description	Mean (N=800)	Std. Deviation
CL1: I feel a sense of closeness with my friends through f-commerce.	4.58	0.99
CL2: I feel a sense of intimacy with my friends through f-commerce.	4.54	1.02
CL3: I feel my friend's product recommendations or product reviews on f-commerce are a very important part of my consumption life.	4.52	1.04
MCL: Overall Closeness	**4.54**	**0.93**

In the perspective of familiarity, the overall mean value is 4.41 as indicated in Table 4.11. The respondents somewhat agree that they are familiar with their friends on f-commerce through comment exchanges (mean = 4.46). They also claim to moderately agree that they are familiar with their friends on f-commerce through Pages links sharing (mean = 4.42). The same level of agreement was obtained on the statement that they are familiar with their friends on f-commerce through Pages invitation (mean = 4.42). The respondents also moderately agree that they have a very high degree of interaction with each friend on f-commerce (mean = 4.36).

Table 4.11: Mean and standard deviation for familiarity

Item code: Description	Mean (N=800)	Std. Deviation
FM1: I am familiar with my friends on f-commerce through comment exchanges.	4.46	1.07
FM2: I am familiar with my friends on f-commerce through Pages' links sharing.	4.42	1.05
FM3: I am familiar with my friends on f-commerce through Pages invitation.	4.42	1.08
FM4: I have a very high level of interaction with each friend on f-commerce.	4.36	1.07
MFM: Overall Familiarity	**4.41**	**0.93**

As shown in Table 4.12, from the context of browsing, the overall mean value is 4.35. The respondents have weak agreement on the statement that the percentage of their time spent just for looking on f-commerce was fairly high (mean = 4.37). They also weakly agree that they would say that they were mainly "just looking around" on f-commerce (mean = 4.32) and they devoted most of their attention to items they intended to purchase on f-commerce (mean =4.36).

Table 4.12: Mean and standard deviation for browsing

Item code: Description	Mean (N=800)	Std. Deviation
BR1: The percent of my time I spent just looking around on f-commerce was fairly high.	4.37	1.09
BR2: I would say that I was primary ''just looking around'' on f-commerce.	4.32	1.11
BR3: I devoted most of my attention to the items I planned to buy on f-commerce.	4.36	1.14
MBR: Overall Browsing	**4.35**	**1.01**

The overall mean value for trust motivation is 4.21 as depicted in Table 4.13. The respondents have light agreement that they feel fine interacting with their f-commerce friends because it fulfils their needs of interaction efficiently (mean = 4.25). They also somewhat agree that they continuously feel confident that they may rely on their f-commerce friends' feedback and responses when they interact with them (mean = 4.22).

In addition, they again somewhat agree that they assume their f-commerce friends will always safeguard their interests (mean = 4.22). Besides that, they also have small agreement in their assumption that their f-commerce friends would ensure that they were not in danger or harmed (mean = 4.18). Finally, they weakly agree that they feel like their f-commerce friends care about what happen to them (mean = 4.15).

Table 4.13: Mean and standard deviation for trust motivation

Item code: Description	Mean (N=800)	Std. Deviation
TM1: I feel fine interacting with my f-commerce friends because it fulfills my needs of interaction efficiently.	4.25	1.14
TM2: I always feel confident that I can rely on my f-commerce friends' responses and feedback when I interact with them.	4.22	1.10
TM3: I assume my f-commerce friends would always look out for my interests.	4.22	1.12
TM4: I assume my f-commerce friends would make sure that I was not harmed or in danger.	4.18	1.10
TM5: I feel like my f-commerce friends care what happens to me.	4.15	1.08
MTM: Overall Trust Motivation	**4.21**	**0.96**

With regards to Table 4.14, in terms of participation, the overall mean value is 4.05 indicating a near to neutral stance among the respondents. The respondents have weak agreement that they participate actively in the f-commerce activities, for instance by liking, sharing, commenting other's posts or posting to the page (mean = 4.15). They take almost neutral stance in they use to contribute to the f-commerce (mean = 4.06) and that they normally give useful purchase info to other f-commerce buyers (mean = 4.02). Similarly, their stance is almost neutral in admitting that they participate in f-commerce with great excitement and frequency (mean = 3.96).

Table 4.14: Mean and standard deviation for participation

Item code: Description	Mean (N=800)	Std. Deviation
PTC1: I participate actively in the f-commerce activities (for example by liking, sharing, posting to the page or commenting other's posts).	4.15	1.10
PTC2: I use to contribute to the f-commerce.	4.06	1.08
PTC3: I usually provide useful purchase information to other f-commerce buyers.	4.02	1.11
PTC4: I participate in the f-commerce with great excitement and frequency.	3.96	1.15
MPTC: Overall Participation	**4.05**	**0.98**

From the view point of f-commerce usage intensity, the overall mean value is 4.11 as indicated in Table 4.15. Majority of the respondent spend 3 to 4 hours weekly for f-commerce (mean = 3.20). They weakly disagree that f-commerce is part of their everyday activity (mean = 3.95) but they moderately agree that they are proud to tell people they are on f-commerce (mean = 4.15). The level of agreement on f-commerce being part of their daily routine is higher (mean = 4.32) and even higher for feeling out of touch when they haven't logged onto f-commerce for a while (mean = 4.35). They also have a moderate agreement that they feel they are part of the f-commerce community (mean = 4.39). Their level of agreement on their worry if f-commerce is shut down is somewhat weak (mean = 4.40).

Table 4.15: Mean and standard deviation for f-commerce usage intensity

Item code: Description	Mean (N=800)	Std. Deviation
FCI1: In the past week, on average, approximately how many hours per day have you spent on f-commerce? Scale: 1 = less than 1 hour, 2 = 2 – 3 hours, 3 = 3 – 4 hours, 4 = 4 – 5 hours, 5 = 5 – 6 hours, 6 = 6 = 3 – 4 hours, 7 = more than 4 hours	3.20	1.22
FCI2: F-commerce is part of my everyday activity.	3.95	1.04
FCI3: I am proud to tell people I'm on f-commerce.	4.15	0.98
FCI4: F-commerce has become part of my daily routine.	4.32	1.01
FCI5: I feel out of touch when I haven't logged onto f-commerce for a while.	4.35	1.04
FCI6: I feel I am part of the f-commerce community.	4.39	1.04
FCI7: I would be sorry if f-commerce shut down.	4.40	1.08
MFCI: Overall F-commerce Usage Intensity	**4.11**	**0.83**

In terms of urgency which has an overall mean value of 4.38 as shown in Table 4.16, the respondents have medium agreement that they have trouble controlling their impulses when participating in f-commerce (mean = 4.65). They also somewhat agree that they have trouble resisting their cravings to buy in f-commerce (mean = 4.60). They also moderately agree that they frequently get engaged in things they later wish they could get out of in f-commerce (mean = 4.54). The respondents also partially agree that when they feel bad, they will often participate in f-commerce in which they later regret so as to make themselves feel better at that time (mean = 4.47). They also merely agree that occasionally when they feel bad, they can't seem to stop participating in f-commerce even though it is making them feeling worse (mean = 4.44). They somewhat agree that when they are upset, they often participate in f-commerce without thinking (mean = 4.36) and that when they feel rejected, they will often participate in f-commerce which they later regret (mean = 4.37). They also slightly agree that it is difficult for them to resist f-commerce on their feelings (mean = 4.34) and they often make matters worse because they participate in f-commerce without thinking when they are upset (mean = 4.34). Their agreement is somewhat weak in admitting that in the heat of an argument, they will often participate in f-commerce which they later regret (mean = 4.31). However, they slightly disagree that they are always able to keep their feelings for f-commerce under control (mean = 3.86). Lastly, they slightly agree that sometimes they do things on impulse in f-commerce which they later regret (mean = 4.14).

Table 4.16: Mean and standard deviation for urgency

Item code: Description	Mean (N=800)	Std. Deviation
UR1: I have trouble controlling my impulses when participating in f-commerce.	4.65	1.18
UR2: I have trouble resisting my cravings to buy in f-commerce.	4.60	1.12
UR3: I often get involved in things I later wish I could get out of in f-commerce.	4.54	1.07
UR4: When I feel bad, I will often participate in f-commerce in which I later regret in order to make myself feel better now.	4.47	1.06
UR5: Sometimes when I feel bad, I can't seem to stop participating in f-commerce even though it is making me feel worse.	4.44	1.04
UR6: When I am upset I often participate in f-commerce without thinking.	4.36	1.05
UR7: When I feel rejected, I will often participate in f-commerce that I later regret.	4.37	1.01
UR8: It is hard for me to resist f-commerce on my feelings.	4.34	1.04
UR9: I often make matters worse because I participate in f-commerce without thinking when I am upset.	4.34	1.08
UR10: In the heat of an argument, I will often participate in f-commerce that I later regret.	4.31	1.08
UR11: I am always able to keep my feelings for f-commerce under control. (Reverse worded)	3.86	1.11
UR12: Sometimes I do things on impulse in f-commerce that I later regret.	4.14	1.11
MUR: Overall Urgency	**4.38**	**0.77**

Based on Table 4.17, from the perspective of urge to impulsively purchase, the overall mean value is 4.33. The respondents somewhat agree that they experienced some sudden urges to purchase things (mean = 4.27) and they saw several things they desired to buy even though they were not on their shopping list (mean = 4.35). They also moderately agree that they experienced no strong urges to make unintended purchases (mean = 4.31) and they felt a sudden urge to purchase something (mean = 4.36).

Table 4.17: Mean and standard deviation for urge to impulsively purchase

Item code: Description	Mean (N=800)	Std. Deviation
UP1: I experienced a number of sudden urges to buy things.	4.27	1.02
UP2: I saw a number of things I wanted to buy even though they were not on my shopping list.	4.35	1.04
UP3: I experienced no strong urges to make unplanned purchases. (Reversed worded)	4.31	0.99
UP4: I felt a sudden urge to by something.	4.36	0.99
MUP: Overall Urge to Impulsively Purchase	**4.33**	**0.87**

Last but not the least, the overall mean value for impulse purchase is 4.42. Please refer to Table 4.18. The respondents somewhat agree that they purchase was spontaneous (mean = 4.41) and unplanned (mean = 4.40). They also slightly agree that they did not intend to do this purchase before the f-commerce session (mean = 4.42) and before the f-commerce session, they did not have intention to do purchase (mean = 4.43). They also partially agree that they can not resist to do buying at the f-commerce site (mean = 4.46).

Table 4.18: Mean and standard deviation for impulse purchase

Item code: Description	Mean (N=800)	Std. Deviation
IP1: My purchase was spontaneous.	4.41	0.99
IP2: My purchase was unplanned.	4.40	1.02
IP3: I did not intend to do this purchase before the f-commerce session.	4.42	1.02
IP4: Before the f-commerce session, I did not have the intention to do purchase.	4.43	1.04
IP5: I could not resist to do purchase at the f-commerce site.	4.46	1.04
MIP: Overall Impulse Purchase	**4.42**	**0.89**

4.6.3 Data treatment of initial measurement model

The initial model consists of 11 constructs with 54 indicators. Before full data analysis were performed, the measurement model was treated and refined by revising the initial measurement model founded on the criteria suggested by Hair et al. (2016)

which states that outer loadings should be at least 0.70. Besides, the AVE should be at least 0.50 and the composite reliability should be larger than 0.70 (Hair et al., 2016) while the SRMR goodness-of-fit index should be less than 0.08 (Henseler et al., 2016). Therefore, indicators which have outer loadings less than 0.70 were discarded using iterative process starting from the smallest outer loading until all criteria are fulfilled. However, Hair et al. (2016, p. 114) also suggested that "indicators with very low outer loadings (below 0.40) should, however, always be eliminated from the construct" (Bagozzi et al., 1991; Hair et al., 2011). Based on these criteria, a total of five iterations were performed as follows:

First iteration:

For the first iteration, the result of the outer loadings is shown in Table 4.19. Indicator UP3_R has the smallest factor loading (-0.896) followed by UR11_R (-0.086), UR12 (0.631) and FCI1 (0.633). Therefore, indicator UP3_R was removed from the initial measurement model. Figure 4.3 depicts the initial measurement model used in the first iteration.

Table 4.19: Outer loadings of initial measurement model

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	0.878										
BR2	0.942										
BR3	0.915										
CL1		0.902									
CL2		0.936									
CL3		0.886									
FCI1			0.633								
FCI2			0.792								
FCI3			0.849								
FCI4			0.868								
FCI5			0.854								
FCI6			0.811								
FCI7			0.752								
FM1				0.849							
FM2				0.906							
FM3				0.906							
FM4				0.842							
HM1					0.840						
HM2					0.910						
HM3					0.943						
HM4					0.911						

Table 4.19 continued

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
IP1						0.826					
IP2						0.882					
IP3						0.909					
IP4						0.889					
IP5						0.829					
PTC1							0.857				
PTC2							0.917				
PTC3							0.912				
PTC4							0.860				
TM1								0.822			
TM2								0.887			
TM3								0.906			
TM4								0.885			
TM5								0.839			
UM1									0.888		
UM2									0.927		
UM3									0.901		
UP1										0.795	
UP2										0.874	
UP3_R										-0.896	
UP4										0.848	
UR1											0.744
UR10											0.775
UR11_R											-0.086
UR12											0.631
UR2											0.775
UR3											0.809
UR4											0.835
UR5											0.830
UR6											0.852
UR7											0.860
UR8											0.814
UR9											0.814

In terms of overview quality of the initial measurement model, Table 4.20 indicates that all AVE are larger than 0.50, composite reliability and Cronbach's alpha are more than 0.70 (except for UP). Therefore, the initial measurement model possesses adequate quality except for the value of Cronbach's alpha for UP (-0.183). However, due to the poor factor loading of UP3_R, these values were used as another benchmark of improvement in ensuring the quality of revised measurement models in the subsequent iterations.

Table 4.20: Overview of initial measurement model quality

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BR	0.899	0.937	0.832
CL	0.893	0.934	0.825
FCI	0.903	0.924	0.636
FM	0.899	0.930	0.768
HM	0.928	0.946	0.813
IP	0.918	0.938	0.753
PTC	0.909	0.936	0.787
TM	0.918	0.939	0.754
UM	0.890	0.932	0.820
UP	-0.183	0.708	0.729
UR	0.918	0.937	0.583
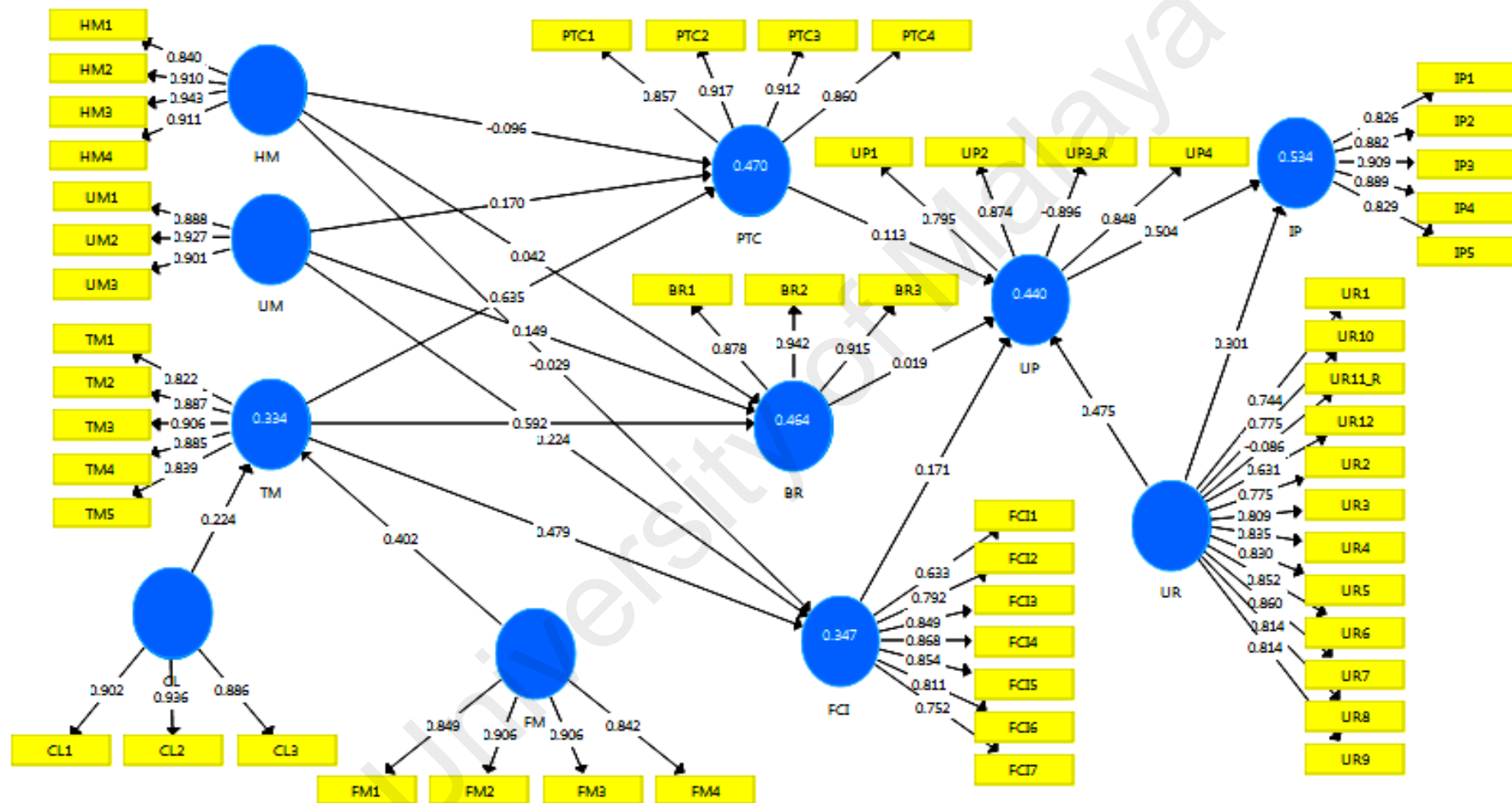
Figure 4.3: Outer loadings of initial measurement model

Second iteration:

After indicator UP3_R was removed from the initial measurement model, the model was re-run and Table 4.21 shows the new outer loadings of each of the indicators. There are still three indicators with factor loadings less than 0.70 namely UR11_R (-0.087), UR12 (0.631) and FCI1 (0.633). Hence, indicator UR11_R was removed from the measurement model. Figure 4.4 shows the outer loadings of the second measurement model.

Table 4.21: Outer loadings of indicators for measurement model in second iteration

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	0.878										
BR2	0.942										
BR3	0.915										
CL1		0.902									
CL2		0.936									
CL3		0.886									
FCI1			0.633								
FCI2			0.792								
FCI3			0.849								
FCI4			0.868								
FCI5			0.854								
FCI6			0.811								
FCI7			0.752								
FM1				0.849							
FM2				0.906							
FM3				0.906							
FM4				0.842							
HM1					0.840						
HM2					0.910						
HM3					0.943						
HM4					0.911						
IP1						0.825					
IP2						0.883					
IP3						0.909					
IP4						0.889					
IP5						0.829					
PTC1							0.857				
PTC2							0.917				
PTC3							0.912				
PTC4							0.860				
TM1								0.822			
TM2								0.887			
TM3								0.906			
TM4								0.885			
TM5								0.839			
UM1									0.888		
UM2									0.927		
UM3									0.901		

Table 4.21 continued

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
UP1										0.836	
UP2										0.890	
UP4										0.838	
UR1											0.745
UR10											0.775
UR11_R											-0.087
UR12											0.631
UR2											0.776
UR3											0.809
UR4											0.835
UR5											0.830
UR6											0.852
UR7											0.859
UR8											0.814
UR9											0.813

In the perspective of overview quality of the second measurement model, Table 4.22 shows that the AVE for UP has improved from 0.729 to 0.731 while composite reliability has also improved from 0.708 to 0.891. The Cronbach's alpha has increased from -0.183 to 0.817.

Table 4.22: Overview quality of second measurement model

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BR	0.899	0.937	0.832
CL	0.893	0.934	0.825
FCI	0.903	0.924	0.636
FM	0.899	0.930	0.768
HM	0.928	0.946	0.813
IP	0.918	0.938	0.753
PTC	0.909	0.936	0.787
TM	0.918	0.939	0.754
UM	0.890	0.932	0.820
UP	0.817	0.891	0.731
UR	0.918	0.937	0.583
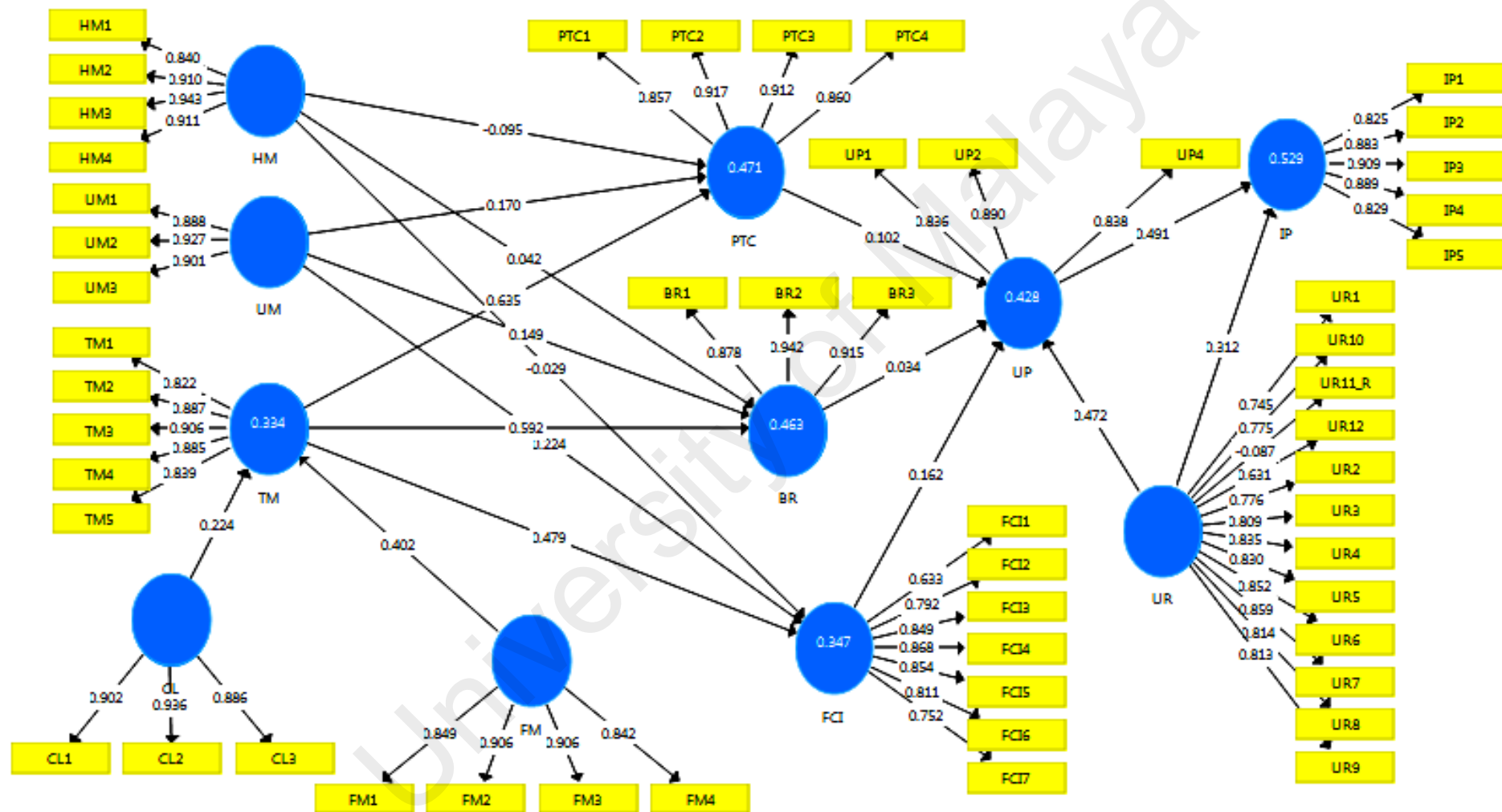
Figure 4.4: Outer loadings of the second measurement model

Third iteration:

Once indicator UR11_R has been removed from the second measurement model, the model is re-run. Table 4.23 demonstrates that there are still two factor loadings that are less than 0.70 namely UR12 (0.633) and FCI1 (0.633). Thus, indicator UR12 was removed in the fourth iteration. Figure 4.5 shows the outer loadings of all the indicators in the third measurement models.

Table 4.23: Outer loadings of third measurement model

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	0.878										
BR2	0.942										
BR3	0.915										
CL1		0.902									
CL2		0.936									
CL3		0.886									
FCI1			0.633								
FCI2			0.792								
FCI3			0.849								
FCI4			0.868								
FCI5			0.854								
FCI6			0.811								
FCI7			0.752								
FM1				0.849							
FM2				0.906							
FM3				0.906							
FM4				0.842							
HM1					0.840						
HM2					0.910						
HM3					0.943						
HM4					0.911						
IP1						0.825					
IP2						0.883					
IP3						0.909					
IP4						0.889					
IP5						0.829					
PTC1							0.857				
PTC2							0.917				
PTC3							0.912				
PTC4							0.860				
TM1								0.822			
TM2								0.887			
TM3								0.906			
TM4								0.885			
TM5								0.839			
UM1									0.888		
UM2									0.927		
UM3									0.901		
UP1										0.836	
UP2										0.890	
UP4										0.838	

Table 4.23 continued

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
UR1											0.744
UR10											0.776
UR12											0.633
UR2											0.776
UR3											0.809
UR4											0.834
UR5											0.830
UR6											0.851
UR7											0.859
UR8											0.814
UR9											0.814

In terms of overview quality of the third measurement model, Table 4.24 indicates that the AVE for UR has improved from 0.583 to 0.635 while composite reliability increased from 0.937 to 0.950. Finally, Cronbach's alpha has also improved from 0.918 to 0.942.

Table 4.24: Overview quality of the third measurement model

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BR	0.899	0.937	0.832
CL	0.893	0.934	0.825
FCI	0.903	0.924	0.636
FM	0.899	0.930	0.768
HM	0.928	0.946	0.813
IP	0.918	0.938	0.753
PTC	0.909	0.936	0.787
TM	0.918	0.939	0.754
UM	0.890	0.932	0.820
UP	0.817	0.891	0.731
UR	0.942	0.950	0.635

Fourth iteration:

After indicator UR12 has been removed, the revised measurement model was re-run and Table 4.25 shows that only indicator FCI1 is having a factor loading less than 0.70. Therefore, in the final iteration, this indicator was removed from the measurement model. Figure 4.6 shows the outer loadings of all indicators of the fourth measurement model.
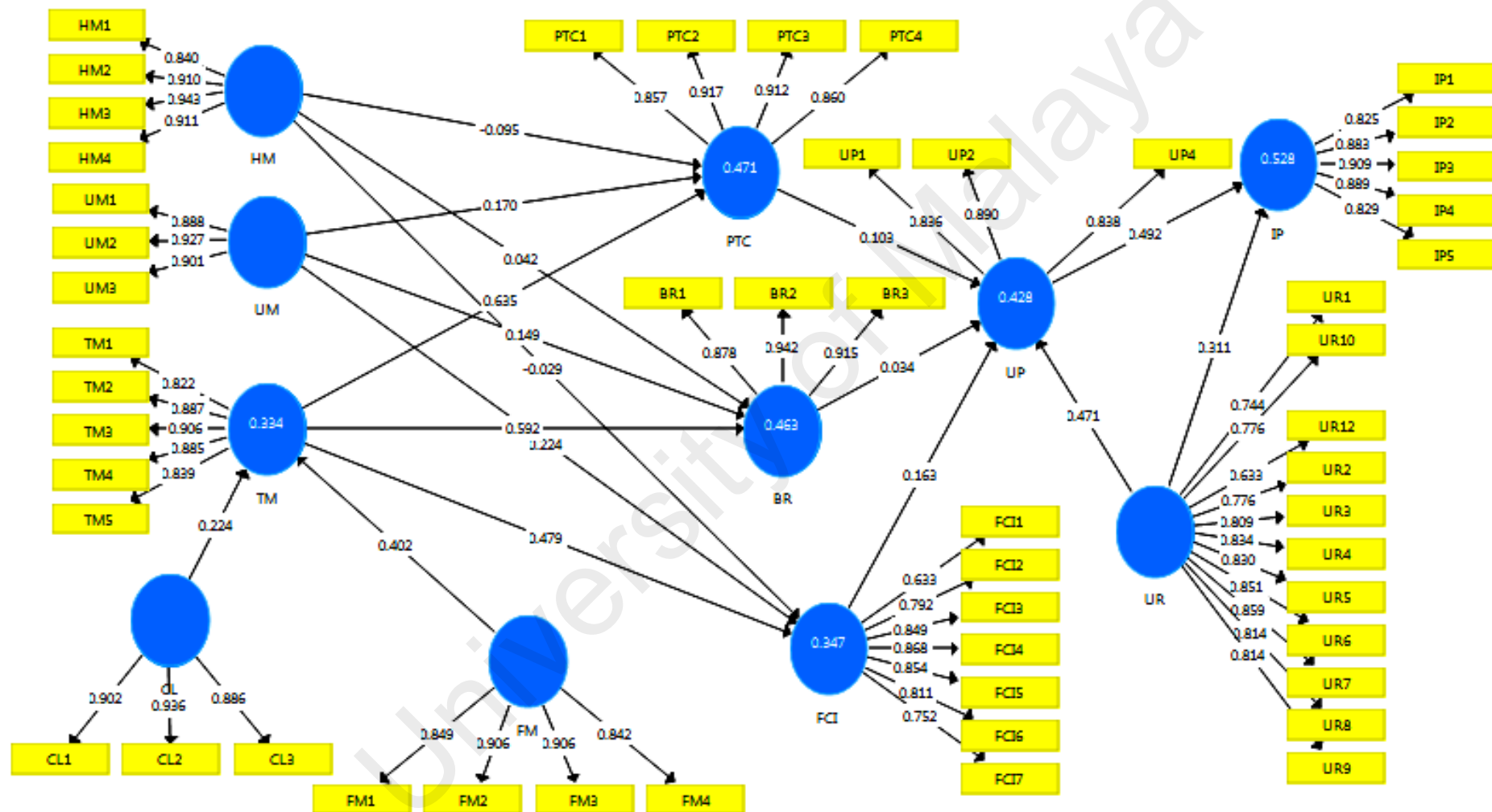
Figure 4.5: Outer loadings of indicators in third measurement models

Table 4.25: Outer loadings of measurement model in the fourth iteration

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	0.878										
BR2	0.942										
BR3	0.915										
CL1		0.902									
CL2		0.936									
CL3		0.886									
FCI1			0.633								
FCI2			0.792								
FCI3			0.849								
FCI4			0.868								
FCI5			0.854								
FCI6			0.811								
FCI7			0.752								
FM1				0.849							
FM2				0.906							
FM3				0.906							
FM4				0.842							
HM1					0.840						
HM2					0.910						
HM3					0.943						
HM4					0.911						
IP1						0.825					
IP2						0.882					
IP3						0.909					
IP4						0.889					
IP5						0.829					
PTC1							0.857				
PTC2							0.917				
PTC3							0.912				
PTC4							0.860				
TM1								0.822			
TM2								0.887			
TM3								0.906			
TM4								0.885			
TM5								0.839			
UM1									0.888		
UM2									0.927		
UM3									0.901		
UP1										0.836	
UP2										0.890	
UP4										0.838	
UR1											0.754
UR10											0.759
UR2											0.786
UR3											0.816
UR4											0.844
UR5											0.834
UR6											0.854
UR7											0.863
UR8											0.816
UR9											0.812

Figure 4.6: Outer loadings of indicators of measurement model in fourth iteration

In terms of overview quality of the measurement model, Table 4.26 shows that the Cronbach's alpha for UR has improved from 0.942 to 0.944 while composite reliability has increased from 0.950 to 0.952. The AVE has also improved from 0.635 to 0.664.

Table 4.26: Overview quality of the measurement model in the fourth iteration

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BR	0.899	0.937	0.832
CL	0.893	0.934	0.825
FCI	0.903	0.924	0.636
FM	0.899	0.930	0.768
HM	0.928	0.946	0.813
IP	0.918	0.938	0.753
PTC	0.909	0.936	0.787
TM	0.918	0.939	0.754
UM	0.890	0.932	0.820
UP	0.817	0.891	0.731
UR	0.944	0.952	0.664

Fifth iteration:

Once indicator FCI1 has be removed from the measurement model, the revised measurement model was re-run and Table 4.27 indicates that the outer loadings of all indicators have fulfilled the minimum requirement of 0.70. Hence, no more indicators were removed from this measurement model. Therefore, this measurement model was used for the final statistical analysis. Figure 4.7 shows the outer loadings of all indicators in the final measurement model.

Table 4.27: Outer loadings of indicators for measurement model in the fifth iteration

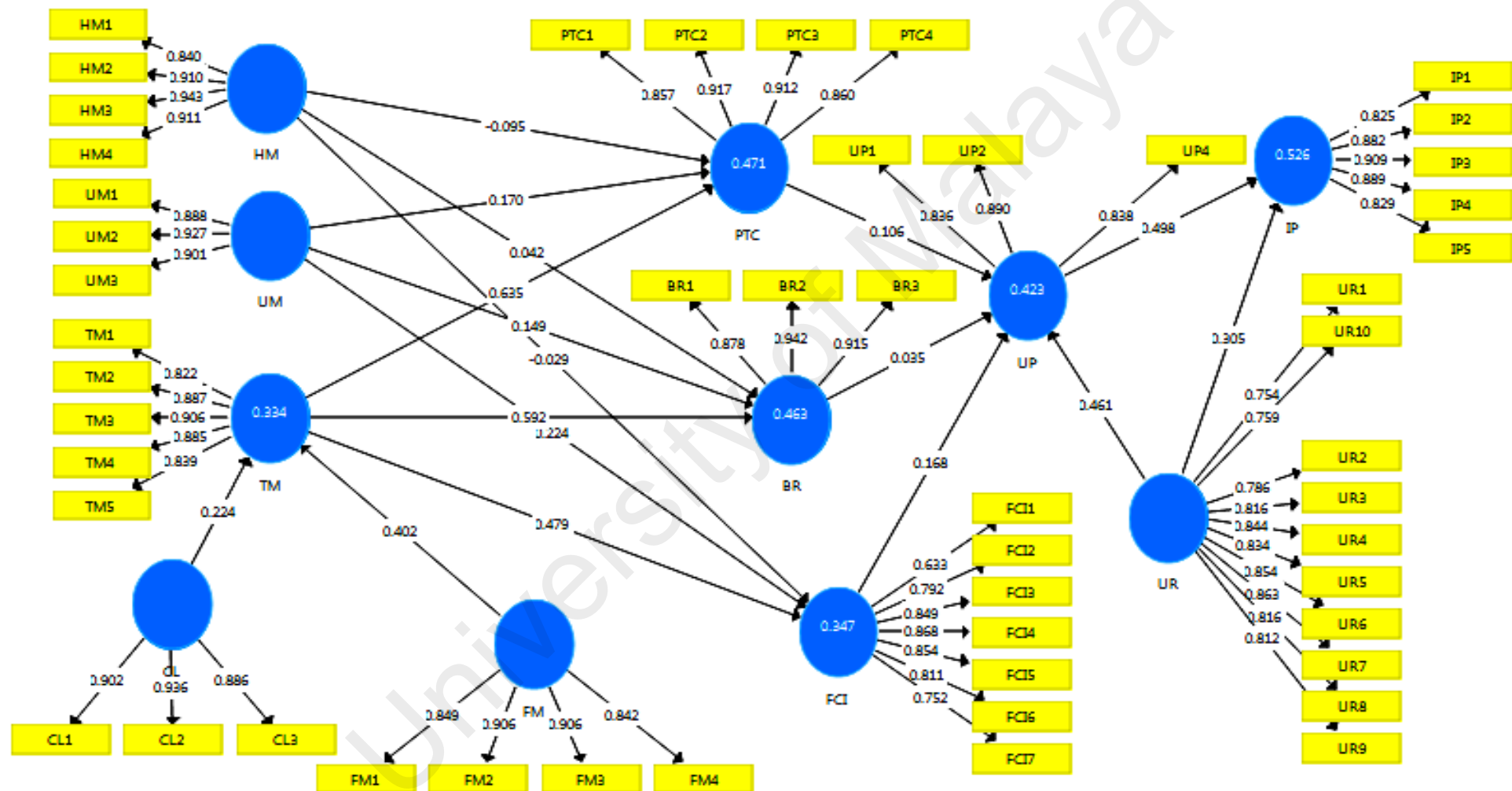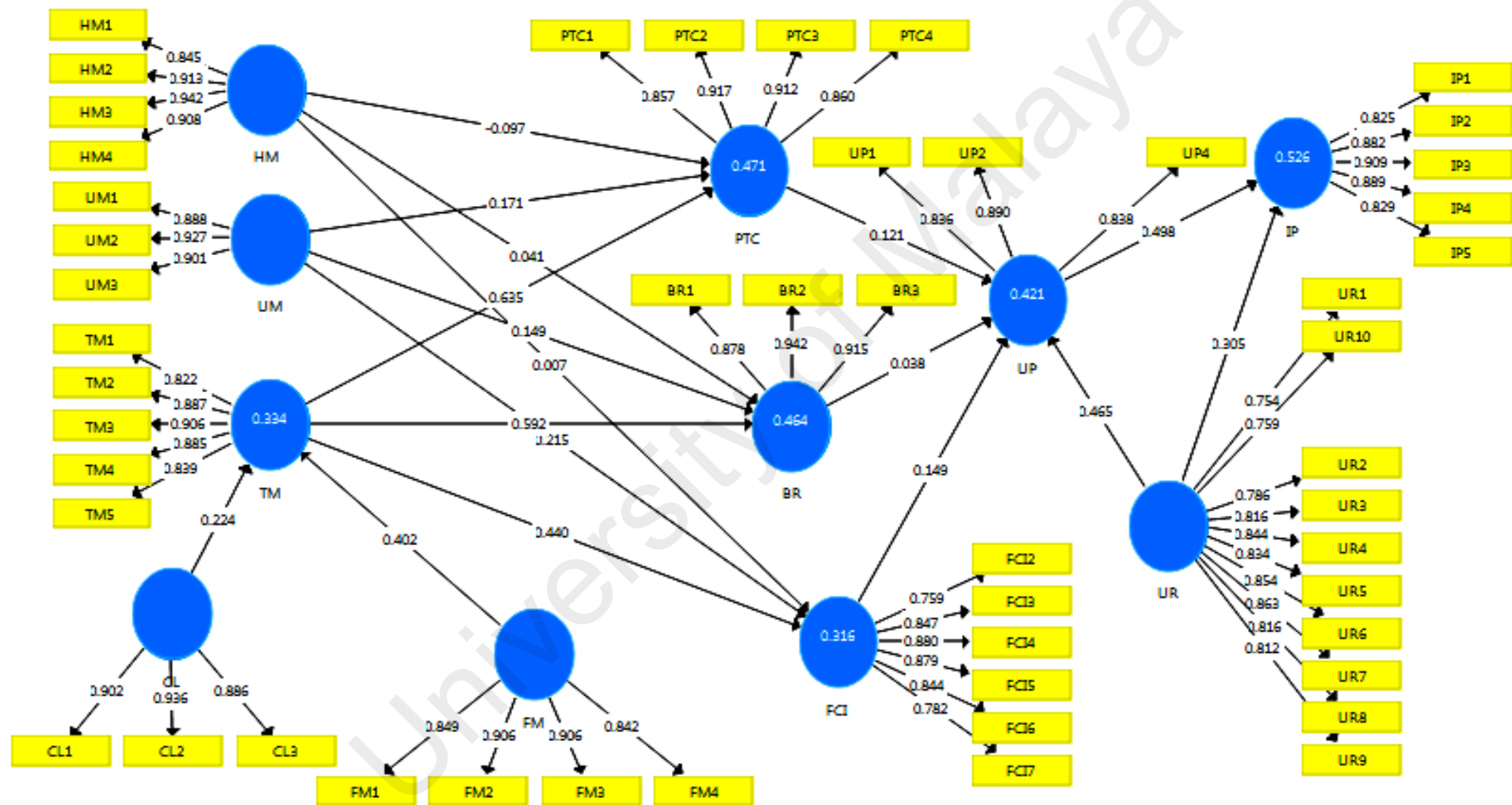|	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	0.878										
BR2	0.942										
BR3	0.915										
CL1		0.902									
CL2		0.936									
CL3		0.886									
FCI2			0.759								
FCI3			0.847								
FCI4			0.880								
FCI5			0.879								
FCI6			0.844								
FCI7			0.782								
FM1				0.849							
FM2				0.906							
FM3				0.906							
FM4				0.842							
HM1					0.845						
HM2					0.913						
HM3					0.942						
HM4					0.908						
IP1						0.825					
IP2						0.882					
IP3						0.909					
IP4						0.889					
IP5						0.829					
PTC1							0.857				
PTC2							0.917				
PTC3							0.912				
PTC4							0.860				
TM1								0.822			
TM2								0.887			
TM3								0.906			
TM4								0.885			
TM5								0.839			
UM1									0.888		
UM2									0.927		
UM3									0.901		
UP1										0.836	
UP2										0.890	
UP4										0.838	
UR1											0.754
UR10											0.759
UR2											0.786
UR3											0.816
UR4											0.844
UR5											0.834
UR6											0.854
UR7											0.863
UR8											0.816
UR9											0.812

Figure 4.7: Outer loadings of indicators of the final measurement model

In terms of overview quality of the final measurement model, Table 4.28 shows that the Cronbach's alpha for FCI has improved from 0.903 to 0.911 while composite reliability has increased from 0.924 to 0.931. Finally, the AVE has also improved from 0.636 to 0.694.

Table 4.28: Overview quality of the final measurement model

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BR	0.899	0.937	0.832
CL	0.893	0.934	0.825
FCI	0.911	0.931	0.694
FM	0.899	0.930	0.768
HM	0.928	0.946	0.815
IP	0.918	0.938	0.753
PTC	0.909	0.936	0.787
TM	0.918	0.939	0.754
UM	0.890	0.932	0.820
UP	0.817	0.891	0.731
UR	0.944	0.952	0.664

4.6.4   Assessment of final measurement model

The final measurement model was assessed based on the discriminant validity and convergent validity of the construct. The convergent validity was validated based on the AVE > 0.50 (Table 4.29) and significant loadings (>0.70) of the indicators to its respective constructs (Table 4.30). The convergent validity was confirmed since the minimum value of AVE is 0.664 and the largest value is 0.832. On the other hand, Cronbach's alpha values are ranging from 0.817 to 0.944 while the composite reliability (CR) values are ranging from 0.891 to 0.952 hence verifying the internal consistency reliability. The SRMR for the saturated model is 0.059 which is less than the cut-off value of 0.08 (Henseler et al., 2016). Therefore, it is concluded that the dataset fit very well to the measurement model.

Table 4.29: Convergent validity and construct reliability

	AVE	Composite Reliability (CR)	R Square	Cronbachs Alpha
BR	0.832	0.937	0.464	0.899
CL	0.825	0.934		0.893
FCI	0.694	0.931	0.316	0.911
FM	0.768	0.930		0.899
HM	0.815	0.946		0.928
IP	0.753	0.938	0.526	0.918
PTC	0.787	0.936	0.471	0.909
TM	0.754	0.939	0.334	0.918
UM	0.820	0.932		0.890
UP	0.731	0.891	0.421	0.817
UR	0.664	0.952		0.944

Note: BR=Browsing, CL=Closeness, FCI=F-commerce Usage Intensity, FM=Familiarity, HM=Hedonic Motivation, IP=Impulse Purchase, PTC=Participation, TM=Trust Motivation, UM=Utilitarian Motivation, UP=Urge to Impulsively Purchase, UR=Urgency.

Table 4.30: Outer loadings with t-values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
BR1 ← BR	0.878	0.878	0.011	79.107	0.000
BR2 ← BR	0.942	0.942	0.005	184.256	0.000
BR3 ← BR	0.915	0.915	0.007	129.239	0.000
CL1 ← CL	0.902	0.902	0.009	103.986	0.000
CL2 ← CL	0.936	0.935	0.006	150.992	0.000
CL3 ← CL	0.886	0.886	0.010	91.025	0.000
FCI2 ← FCI	0.759	0.759	0.017	43.701	0.000
FCI3 ← FCI	0.847	0.847	0.014	60.644	0.000
FCI4 ← FCI	0.880	0.880	0.012	75.038	0.000
FCI5 ← FCI	0.879	0.879	0.011	82.074	0.000
FCI6 ← FCI	0.844	0.844	0.013	66.134	0.000
FCI7 ← FCI	0.782	0.782	0.019	41.487	0.000
FM1 ← FM	0.849	0.849	0.013	63.287	0.000
FM2 ← FM	0.906	0.906	0.008	107.063	0.000
FM3 ← FM	0.906	0.905	0.010	91.570	0.000
FM4 ← FM	0.842	0.842	0.013	66.715	0.000
HM1 ← HM	0.845	0.844	0.019	44.741	0.000
HM2 ← HM	0.913	0.912	0.011	84.432	0.000
HM3 ← HM	0.942	0.942	0.005	176.520	0.000
HM4 ← HM	0.908	0.908	0.009	105.945	0.000
IP1 ← IP	0.825	0.825	0.014	58.709	0.000
IP2 ← IP	0.882	0.882	0.012	76.352	0.000
IP3 ← IP	0.909	0.909	0.008	119.458	0.000
IP4 ← IP	0.889	0.889	0.010	90.872	0.000
IP5 ← IP	0.829	0.829	0.014	58.024	0.000

Table 4.30 continued

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
PTC1 ← PTC	0.857	0.856	0.011	77.369	0.000
PTC2 ← PTC	0.917	0.917	0.009	98.598	0.000
PTC3 ← PTC	0.912	0.912	0.009	96.235	0.000
PTC4 ← PTC	0.860	0.860	0.012	72.415	0.000
TM1 ← TM	0.822	0.822	0.013	61.976	0.000
TM2 ← TM	0.887	0.887	0.010	92.537	0.000
TM3 ← TM	0.906	0.906	0.009	95.900	0.000
TM4 ← TM	0.885	0.885	0.010	85.635	0.000
TM5 ← TM	0.839	0.839	0.012	70.487	0.000
UM1 ← UM	0.888	0.887	0.011	79.954	0.000
UM2 ← UM	0.927	0.927	0.009	100.785	0.000
UM3 ← UM	0.901	0.901	0.008	109.879	0.000
UP1 ← UP	0.836	0.836	0.014	60.593	0.000
UP2 ← UP	0.890	0.890	0.009	95.767	0.000
UP4 ← UP	0.838	0.838	0.012	71.178	0.000
UR1 ← UR	0.754	0.754	0.018	41.491	0.000
UR10 ← UR	0.759	0.760	0.017	43.838	0.000
UR2 ← UR	0.786	0.786	0.017	45.548	0.000
UR3 ← UR	0.816	0.816	0.015	55.840	0.000
UR4 ← UR	0.844	0.843	0.013	64.699	0.000
UR5 ← UR	0.834	0.834	0.012	68.557	0.000
UR6 ← UR	0.854	0.854	0.011	76.566	0.000
UR7 ← UR	0.863	0.863	0.010	90.477	0.000
UR8 ← UR	0.816	0.815	0.013	61.410	0.000
UR9 ←UR	0.812	0.812	0.013	61.280	0.000

By using Fornell-Larcker's criterion (1981) to examine discriminant validity, it was found that all square roots of AVE are larger than their corresponding correlation coefficients. This is further verified based on the AVE values that are more than the average shared variance (ASV) and maximum shared variance (MSV) and Fornell-Larcker's ratio below one (Table 4.31). Discriminant validity is also corroborated based on the cross-loadings of the indicators to the relevant constructs (Table 4.32). In the context of indicator reliability, all square loadings have exceed the threshold of 0.70 while for internal consistency reliability, all composite reliability (CR) and Cronbach's

alpha values are bigger than 0.70 (Table 4.28). Construct reliability is further validated

based on the values of CR which exceeded their respective AVE.

Table 4.31: Discriminant validity

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR	AVE	CR	MSV	ASV
BR	0.912											0.832	0.937	0.435	0.207
CL	0.403	0.908										0.825	0.934	0.467	0.260
FCI	0.442	0.455	0.833									0.694	0.931	0.293	0.216
FM	0.622	0.680	0.507	0.876								0.768	0.930	0.462	0.254
HM	0.297	0.516	0.271	0.383	0.903							0.815	0.946	0.504	0.164
IP	0.325	0.440	0.464	0.408	0.387	0.868						0.753	0.938	0.468	0.218
PTC	0.490	0.419	0.541	0.457	0.186	0.401	0.887					0.787	0.936	0.457	0.208
TM	0.660	0.497	0.525	0.554	0.253	0.436	0.676	0.868				0.754	0.939	0.457	0.258
UM	0.407	0.683	0.390	0.476	0.710	0.399	0.347	0.386	0.906			0.820	0.932	0.504	0.235
UP	0.354	0.393	0.472	0.355	0.317	0.684	0.431	0.459	0.395	0.855		0.731	0.891	0.468	0.213
UR	0.411	0.517	0.517	0.498	0.465	0.609	0.453	0.490	0.498	0.613	0.815	0.664	0.952	0.375	0.261
FL	0.523	0.566	0.422	0.602	0.618	0.622	0.581	0.606	0.614	0.640	0.565				

Note: Diagonal shows square root of AVE; MSV=Maximum Shared Variance, ASV=Average Shared Variance; CR=Composite Reliability, AVE=Average Variance Extracted; FL=Fornell-Larcker's ratio; BR=Browsing, CL=Closeness, FCI=F-commerce Usage Intensity, FM=Familiarity, HM=Hedonic Motivation, IP=Impulse Purchase, PTC=Participation, TM=Trust Motivation, UM=Utilitarian Motivation, UP=Urge to Impulsively Purchase, UR=Urgency.

Table 4.32: Cross-loadings

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
BR1	**0.878**	0.373	0.411	0.644	0.284	0.311	0.446	0.544	0.369	0.333	0.381
BR2	**0.942**	0.387	0.402	0.574	0.297	0.308	0.458	0.623	0.371	0.326	0.389
BR3	**0.915**	0.345	0.397	0.492	0.233	0.270	0.437	0.635	0.374	0.311	0.356
CL1	0.372	**0.902**	0.394	0.564	0.527	0.411	0.373	0.445	0.729	0.377	0.486
CL2	0.356	**0.936**	0.406	0.604	0.475	0.411	0.378	0.447	0.618	0.366	0.475
CL3	0.371	**0.886**	0.436	0.681	0.406	0.376	0.388	0.462	0.518	0.329	0.449
FCI2	0.415	0.318	**0.759**	0.397	0.092	0.354	0.558	0.478	0.286	0.420	0.386
FCI3	0.379	0.360	**0.847**	0.432	0.175	0.368	0.504	0.471	0.298	0.402	0.418
FCI4	0.392	0.378	**0.880**	0.418	0.249	0.418	0.466	0.458	0.364	0.410	0.459
FCI5	0.361	0.399	**0.879**	0.450	0.281	0.411	0.423	0.428	0.340	0.391	0.455
FCI6	0.330	0.418	**0.844**	0.434	0.285	0.381	0.376	0.402	0.340	0.383	0.434
FCI7	0.321	0.407	**0.782**	0.402	0.290	0.387	0.355	0.372	0.319	0.344	0.434
FM1	0.448	0.722	0.450	**0.849**	0.391	0.410	0.415	0.472	0.475	0.322	0.447
FM2	0.479	0.621	0.456	**0.906**	0.336	0.378	0.383	0.464	0.420	0.319	0.438
FM3	0.573	0.557	0.465	**0.906**	0.333	0.342	0.404	0.498	0.418	0.308	0.453
FM4	0.668	0.491	0.406	**0.842**	0.283	0.304	0.398	0.504	0.358	0.295	0.406
HM1	0.147	0.376	0.175	0.263	**0.845**	0.293	0.044	0.133	0.477	0.193	0.344
HM2	0.233	0.430	0.205	0.318	**0.913**	0.320	0.108	0.174	0.549	0.232	0.389
HM3	0.294	0.485	0.251	0.364	**0.942**	0.358	0.177	0.248	0.662	0.299	0.448
HM4	0.329	0.523	0.300	0.391	**0.908**	0.393	0.255	0.294	0.767	0.356	0.458

Table 4.32: Cross-loadings continued

	BR	CL	FCI	FM	HM	IP	PTC	TM	UM	UP	UR
IP1	0.294	0.377	0.408	0.353	0.341	**0.825**	0.356	0.405	0.377	0.681	0.539
IP2	0.266	0.356	0.388	0.331	0.319	**0.882**	0.321	0.370	0.357	0.610	0.507
IP3	0.259	0.393	0.397	0.355	0.366	**0.909**	0.355	0.368	0.338	0.574	0.531
IP4	0.304	0.387	0.424	0.360	0.322	**0.889**	0.368	0.382	0.322	0.570	0.549
IP5	0.283	0.395	0.393	0.372	0.329	**0.829**	0.338	0.360	0.331	0.514	0.511
PTC1	0.472	0.402	0.473	0.423	0.226	0.346	**0.857**	0.691	0.325	0.384	0.413
PTC2	0.423	0.388	0.484	0.412	0.169	0.362	**0.917**	0.602	0.310	0.388	0.418
PTC3	0.416	0.356	0.479	0.397	0.148	0.381	**0.912**	0.557	0.298	0.389	0.411
PTC4	0.419	0.331	0.484	0.384	0.104	0.334	**0.860**	0.530	0.294	0.365	0.359
TM1	0.721	0.418	0.421	0.519	0.255	0.356	0.516	**0.822**	0.359	0.397	0.414
TM2	0.600	0.425	0.463	0.499	0.193	0.375	0.542	**0.887**	0.337	0.368	0.413
TM3	0.532	0.439	0.444	0.468	0.195	0.388	0.576	**0.906**	0.333	0.388	0.421
TM4	0.508	0.450	0.474	0.451	0.229	0.401	0.606	**0.885**	0.326	0.422	0.457
TM5	0.494	0.427	0.473	0.464	0.225	0.372	0.692	**0.839**	0.316	0.416	0.421
UM1	0.349	0.546	0.339	0.390	0.734	0.377	0.282	0.302	**0.888**	0.374	0.459
UM2	0.356	0.597	0.354	0.424	0.640	0.335	0.299	0.339	**0.927**	0.329	0.444
UM3	0.396	0.703	0.363	0.473	0.566	0.372	0.356	0.399	**0.901**	0.369	0.450
UP1	0.300	0.304	0.365	0.294	0.255	0.510	0.344	0.369	0.308	**0.836**	0.493
UP2	0.320	0.347	0.401	0.295	0.269	0.544	0.403	0.422	0.359	**0.890**	0.541
UP4	0.289	0.353	0.437	0.319	0.286	0.683	0.357	0.386	0.342	**0.838**	0.533
UR1	0.281	0.415	0.299	0.375	0.454	0.401	0.239	0.302	0.386	0.413	**0.754**
UR10	0.348	0.378	0.389	0.392	0.300	0.496	0.399	0.435	0.360	0.552	**0.759**
UR2	0.280	0.443	0.328	0.386	0.457	0.439	0.261	0.327	0.420	0.442	**0.786**
UR3	0.267	0.442	0.383	0.379	0.455	0.464	0.279	0.342	0.418	0.454	**0.816**
UR4	0.323	0.446	0.461	0.415	0.452	0.506	0.341	0.405	0.443	0.493	**0.844**
UR5	0.331	0.425	0.482	0.401	0.361	0.545	0.391	0.403	0.383	0.510	**0.834**
UR6	0.336	0.447	0.481	0.430	0.379	0.557	0.409	0.411	0.426	0.510	**0.854**
UR7	0.377	0.424	0.475	0.436	0.334	0.524	0.451	0.443	0.427	0.516	**0.863**
UR8	0.372	0.387	0.428	0.405	0.308	0.502	0.429	0.415	0.384	0.531	**0.816**
UR9	0.408	0.418	0.445	0.426	0.332	0.501	0.437	0.475	0.414	0.540	**0.812**

4.6.5 Structural model

The structural model was tested via bootstrapping with 5000 samples in SmartPLS. The model can explain 52.6% of variance in impulse purchase, 47.1% in participation, 46.4% in browsing, 42.1% in urge to impulsively purchase, 31.6% in f-commerce usage intensity and lastly 33.4% in trust. All R^2 are above 10% indicating the model has adequate explaining power. Figure 4.8 shows the path coefficients (beta) of the causal relationships and the level of significance.

Note:

──→ significant path,   – –→ non significant path;   *$p<0.05$,   **$p<0.01$,   ***$p<0.001$;
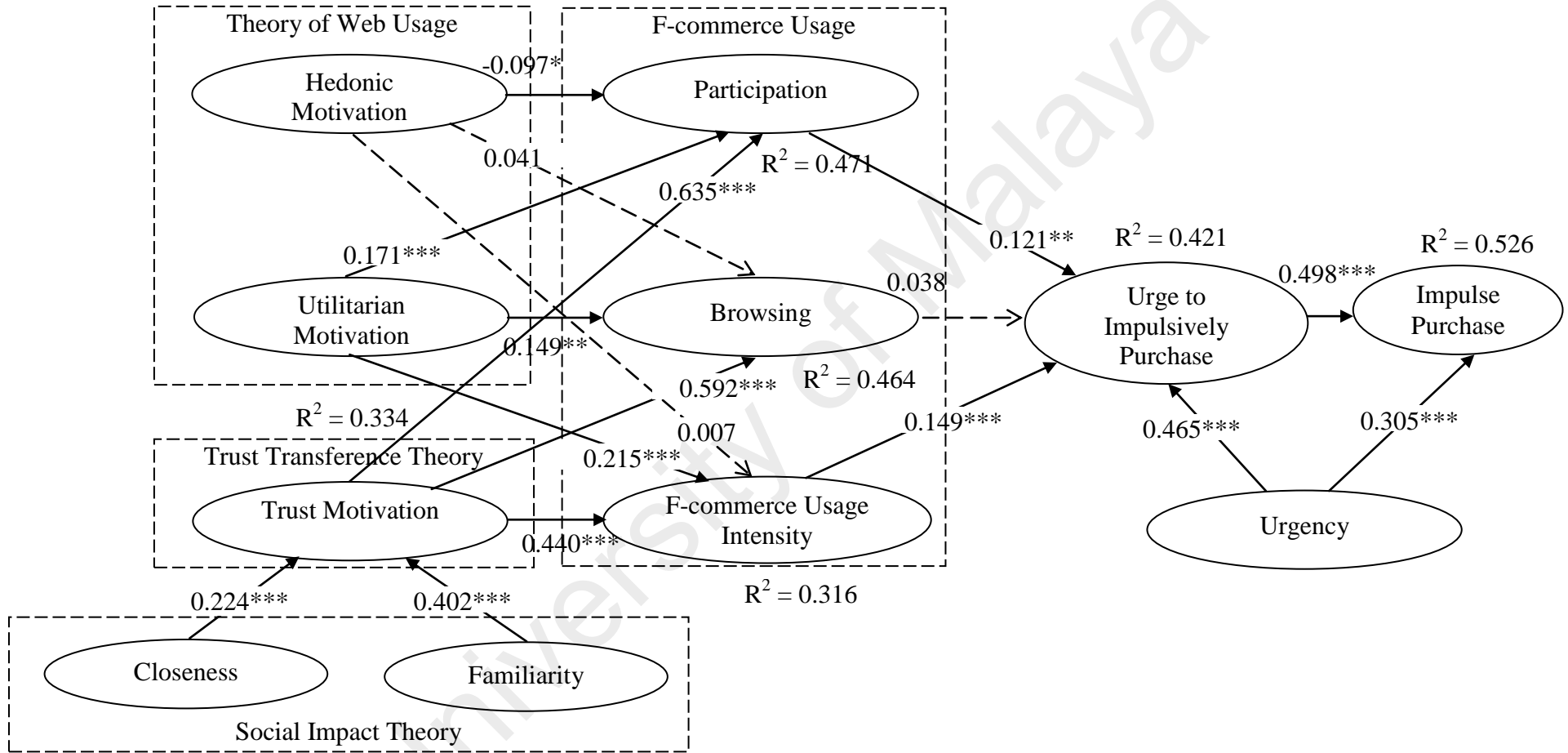
Figure 4.8: PLS path analysis result

4.6.6 Testing of hypotheses

To test the proposed hypotheses, *t*-value of 1.960 ($p<0.05$), 2.56 ($p<0.01$) and 3.29 ($p<0.001$) were used. The results of the path analysis are presented in Table 4.33. All together there are 17 hypotheses with 14 of them significant and 3 insignificant. Therefore, 82.4% of the hypotheses are significant. The percentange of variance explained ranges from 31.6% to 52.6%. Based on the path analysis, it was found that hedonic motivation (β=-0.097, *t*=2.470) has negative significant influence on participation while utilitarian motivation (β=0.171, *t*=3.985) and trust motivation (β=0.635, *t*=24.704) have positive significant influence on participation. On the other hand, utilitarian motivation (β=0.149, *t*=3.370) and trust motivation (β=0.592, *t*=21.016) has positive significant impact on browsing. Therefore, hypothesis H1a, H2a, H2b, H5a and H5b are supported. However, there were no significant influence of hedonic motivation (β=0.041, *t*=0.972) on browsing. Hence, hypothesis H1b is not supported.

It was also found that f-commerce usage intensity is positively affected by utilitarian motivation (β=0.215, *t*=4.623) and trust motivation (β=0.440, *t*=12.720) hence, supporting hypothesis H2c and H5c. However, there was no significant impact of hedonic motivation (β=0.007, *t*=0.146) on f-commerce usage intensity and therefore H1c is not supported. In addition, closeness (β=0.224, *t*=4.574) and familiarity (β=0.402, *t*=8.438) were found to be significant antecedents for trust motivation further supporting hypothesis H3 and H4.

The findings also validated participation (β=0.121, *t*=3.478), f-commerce usage intensity (β=0.149, *t*=4.140) and urgency (β=0.465, *t*=12.910) as the predictors of urge to impulsively purchase. Hence, H6a, H6c and H8 were supported. However, there is no significant effect of browsing (β=0.038, *t*=0.981) on urge to impulsively purchase

making H6b unsupported. Finally, we found that impulse purchase is positively influenced by urge to impulsively purchase (β=0.498, t=15.404) and urgency (β=0.305, t=8.875). Therefore, hypotheses H7 and H9 have been empirically supported. In the next section, test on the mediation effect of the urge to impulsively purchase towards the urgency-impulse purchase relationship as well as the indirect effects of the predictors were presented.

Table 4.33: Hypothesis testing results

Hypothesis	Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)
H1a	HM → PTC	-0.097	-0.097	0.039	2.470*
H1b	HM → BR	0.041	0.041	0.042	0.972
H1c	HM → FCI	0.007	0.006	0.048	0.146
H2a	UM → PTC	0.171	0.172	0.043	3.985***
H2b	UM → BR	0.149	0.150	0.044	3.370***
H2c	UM → FCI	0.215	0.216	0.046	4.623***
H3	CL → TM	0.224	0.224	0.049	4.574***
H4	FM → TM	0.402	0.403	0.049	8.438***
H5a	TM → PTC	0.635	0.635	0.026	24.704***
H5b	TM → BR	0.592	0.592	0.028	21.016***
H5c	TM → FCI	0.440	0.441	0.035	12.720***
H6a	PTC → UP	0.121	0.121	0.035	3.478**
H6b	BR → UP	0.038	0.037	0.038	0.981
H6c	FCI → UP	0.149	0.150	0.036	4.140***
H7	UP → IP	0.498	0.497	0.032	15.404***
H8	UR → UP	0.465	0.466	0.036	12.910***
H9	UR → IP	0.305	0.305	0.034	8.875***

Note: *p<0.05, **p<0.01, ***p<0.001; BR=Browsing, CL=Closeness, FCI=F-commerce Usage Intensity, FM=Familiarity, HM=Hedonic Motivation, IP=Impulse Purchase, PTC=Participation, TM=Trust Motivation, UM=Utilitarian Motivation, UP=Urge to Impulsively Purchase, UR=Urgency.

4.6.7 Examining the mediating and total effects

Baron-Kenny's (1986) technique was engaged in assessing the strength of the mediation effect of urge to impulsively purchase (Table 4.34). The results showed that urge to impulsively purchase has partial mediating effect on the relationship between urgency and impulse purchase.

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Table 4.34: Baron-Kenny's test for mediation effect

| IV | M | DV | IV→DV | IV→M | SE | IV + M → DV | | | Mediation |
						IV→DV	M→DV	SE	
UR	UP	IP	0.616*	0.619*	0.027	0.307*	0.499*	0.032	Partial

Note: *$p < 0.001$; SE=Standard Error, UP=Urge to Impulsively Purchase, UR=Urgency, IP=Impulse Purchase

Table 4.35: Indirect effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
BR →IP	0.019	0.019	0.019	0.981	0.327
BR → UP					
CL → BR	0.133	0.133	0.027	4.990	0.000
CL → FCI	0.099	0.099	0.023	4.334	0.000
CL → IP	0.018	0.019	0.005	3.415	0.001
CL → PTC	0.142	0.143	0.031	4.595	0.000
CL → TM					
CL → UP	0.037	0.037	0.010	3.603	0.000
FCI → IP	0.074	0.075	0.020	3.767	0.000
FCI → UP					
FM → BR	0.238	0.238	0.034	6.956	0.000
FM → FCI	0.177	0.177	0.026	6.842	0.000
FM → IP	0.033	0.033	0.007	4.491	0.000
FM → PTC	0.255	0.255	0.032	7.878	0.000
FM → TM					
FM → UP	0.066	0.066	0.014	4.849	0.000
HM → BR					
HM → FCI					
HM → IP	-0.005	-0.005	0.006	0.814	0.416
HM → PTC					
HM → UP	-0.009	-0.009	0.011	0.817	0.414
PTC → IP	0.060	0.060	0.017	3.467	0.001
PTC → UP					
TM → BR					
TM → FCI					
TM → IP	0.082	0.082	0.015	5.497	0.000
TM → PTC					
TM → UP	0.165	0.165	0.027	6.131	0.000
UM → BR					
UM → FCI					
UM → IP	0.029	0.029	0.007	3.967	0.000
UM → PTC					
UM → UP	0.058	0.059	0.014	4.192	0.000
UP → IP					
UR → IP	0.231	0.232	0.023	10.263	0.000
UR → UP					

Besides, as suggested by Hair et al. (2016), the new mediation analysis procedure has been used to determine the type of mediation. First, based on the bootstrapping of the structural model, urgency ($\beta = 0.231$, $t = 10.263$, $p = 0.000$) was found to have significant indirect effect (Please refer to Table 4.35) on impulse purchase. Second, urgency ($\beta = 0.305$, $t = 8.875$, $p = 0.000$) was also found to have significant direct effect (Please refer to Table 4.33) on impulse purchase. Third, the product of the direct and indirect effect (0.231 x 0.305) is calculated and the result is a positive value of 0.070. Hence, based on the tree diagram for mediation analysis by Hair et al. (2016, p.233), it can be concluded that urge to impulsively purchase has a complementary partial mediation effect on the relationship between urgency and impulse purchase. The total effects and the respective T-values of the endogenous variables are illustrated in Table 4.36. The indirect effect of urgency on impulse purchase is total effect of **0.536** – direct effect of **0.305 = 0.231.**

Table 4.36: Total effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)
BR → IP	0.019	0.019	0.019	0.973
BR → UP	0.038	0.037	0.038	0.981
CL → BR	0.133	0.132	0.027	4.882***
CL → FCI	0.099	0.099	0.023	4.240***
CL → IP	0.018	0.019	0.006	3.340**
CL → PTC	0.142	0.142	0.032	4.475***
CL → TM	0.224	0.224	0.049	4.574***
CL → UP	0.037	0.037	0.010	3.529***
FCI → IP	0.074	0.075	0.019	3.905***
FCI → UP	0.149	0.150	0.036	4.140***
FM → BR	0.238	0.239	0.035	6.794***
FM → FCI	0.177	0.178	0.027	6.628***
FM → IP	0.033	0.033	0.007	4.529***
FM → PTC	0.255	0.256	0.033	7.712***
FM → TM	0.402	0.403	0.048	8.438***
FM → UP	0.066	0.067	0.014	4.838***
HM → BR	0.041	0.041	0.042	0.972
HM → FCI	0.007	0.006	0.048	0.146
HM → IP	-0.005	-0.005	0.005	0.822

Table 4.36 continued

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)
HM → PTC	-0.097	-0.097	0.039	2.470*
HM → UP	-0.009	-0.009	0.011	0.823
PTC → IP	0.060	0.060	0.018	3.437**
PTC → UP	0.121	0.121	0.035	3.478**
TM → BR	0.592	0.592	0.028	21.016***
TM → FCI	0.440	0.441	0.035	12.720***
TM → IP	0.082	0.082	0.015	5.542***
TM → PTC	0.635	0.635	0.026	24.704***
TM → UP	0.165	0.165	0.027	6.160***
UM → BR	0.149	0.150	0.044	3.370**
UM → FCI	0.215	0.216	0.046	4.623***
UM → IP	0.029	0.029	0.007	4.024***
UM → PTC	0.171	0.172	0.043	3.985***
UM → UP	0.058	0.059	0.014	4.240***
UP → IP	0.498	0.497	0.032	15.404***
UR → IP	0.536	0.537	0.029	18.214***
UR → UP	0.465	0.466	0.036	12.910***

Note: *$p<0.05$, **$p<0.01$, ***$p<0.001$; BR=Browsing, CL=Closeness, FCI=F-commerce Usage Intensity, FM=Familiarity, HM=Hedonic Motivation, IP=Impulse Purchase, PTC=Participation, TM=Trust Motivation, UM=Utilitarian Motivation, UP=Urge to Impulsively Purchase, UR=Urgency.

4.6.8 Effect size

To measure the effect size of the exogenous variables, the researcher has also calculated the f^2 as indicated in Table 4.37. The effect sizes show the relative importance of each of the IVs to their respective DVs. These relative importances are corresponding to the strengths of the relationships measured by the beta coefficients (β) in the hypothesis testing (Table 4.33).

Table 4.37: Effect sizes

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STERR|)	P values
BR → UP	0.002	0.003	0.004	0.384	0.701
CL → TM	0.041	0.043	0.018	2.196	0.028*
FCI → UP	0.023	0.025	0.012	1.961	0.050*
FM → TM	0.130	0.134	0.034	3.792	0.000***
HM → BR	0.002	0.003	0.004	0.384	0.701
HM → FCI	0.000	0.002	0.002	0.015	0.988
HM → PTC	0.009	0.010	0.007	1.175	0.240
PTC → UP	0.015	0.017	0.009	1.685	0.092
TM → BR	0.555	0.563	0.079	7.033	0.000***
TM → FCI	0.241	0.245	0.047	5.180	0.000***
TM → PTC	0.648	0.653	0.081	7.963	0.000***
UM → BR	0.019	0.021	0.012	1.625	0.104
UM → FCI	0.030	0.032	0.014	2.211	0.027*
UM → PTC	0.025	0.027	0.013	1.910	0.056
UP → IP	0.327	0.330	0.053	6.153	0.000***
UR → IP	0.122	0.125	0.030	4.099	0.000***
UR → UP	0.250	0.254	0.046	5.381	0.000***

Note: *$p<0.05$, **$p<0.01$, ***$p<0.001$; BR=Browsing, CL=Closeness, FCI=F-commerce Usage Intensity, FM=Familiarity, HM=Hedonic Motivation, IP=Impulse Purchase, PTC=Participation, TM=Trust Motivation, UM=Utilitarian Motivation, UP=Urge to Impulsively Purchase, UR=Urgency.

4.6.9 Predictive relevance

Predictive relevance was assessed based on Stone-Geisser's Q^2. Stone-Geisser's Q^2 is the relative importance and relevance of the IV with respect to the DV. A Q^2 value of 0.02, 0.15 and 0.35 is regarded as small, medium and large predictive relevance (Cohen, 1960). Table 4.38 shows that all endogenous constructs possess medium to large predictive relevance.

Table 4.38: Stone-Geisser's predictive relevance (Q^2)

	SSO	SSE	$Q^2 = 1 – SSE/SSO$
BR	2,400.000	1,526.007	0.364
FCI	4,800.000	3,823.423	0.203
IP	4,000.000	2,532.073	0.367
PTC	3,200.000	2,101.542	0.343
TM	4,000.000	3,063.701	0.234
UP	2,400.000	1,705.079	0.290

Note: BR = Browsing, FCI = F-commerce Usage Intensity, IP = Impulse Purchase, PTC = Participation, TM = Trust Motivation, UP = Urge to Impulsively Purchase

4.7   CHAPTER SUMMARY

In this chapter, the findings from analysis of the 800 responses have been presented systematically. There was no issue of CMB and all the assumption tests have been performed accordingly prior to the multivariate analysis. Descriptive analysis was performed and the measurement model was assessed based on the convergent validity and discriminant validity of the construct. Subsequently, the structural model was tested using bootstrapping with 5000 samples in SmartPLS. It was found that 3 out of the 17 hypotheses tested were not significant while partial mediating effect indeed exists in this research. The next chapter will explain in detail all the findings obtained from the data analysis.

5.1   INTRODUCTION

In this chapter, all the important findings from the data analysis performed are being discussed and also by relating them to the previous studies.

5.2   REINSTATE OF RESEARCH QUESTIONS AND OBJECTIVES

To gain better understanding on the discussion of the findings in this research, it is imperative to relook at the research questions and objectives as stated in Table 5.1 below to determine whether the research questions were appropriately answered and the research objectives were achieved as planned.

In answering these questions and achieving the predetermined objectives, a research framework with 17 hypotheses was established based on extensive literature review. The statistical analysis indicated 14 hypotheses were supported. The three unsupported hypotheses were Hedonic Motivation-Browsing, Hedonic Motivation-F-commerce Usage Intensity and Browing-Urge to Impulsively Purchase. Furthermore, the research also found that there was partial mediating effect of Urge to Impulsively Purchase on the Urgency-Impulse Purchase association. These interesting findings may contribute to the literature on f-commerce and impulse purchase. The next section will provide a full discussion of the key findings of this research.

Table 5.1: Key findings of the research

Research question	Research objectives	Hypothesis	Supported	Conclusion
RQ1: What are the antecedents that lead to impulse purchase in f-commerce?	RO1: To identify the effects of hedonic, utilitarian and trust motivation on participation, browsing and usage intensity in f-commerce.	H_{1a}: Hedonic motivation has positive influence on participation	Yes	The antecedents that lead to trust motivation are closeness and familiarity.
		H_{1b}: Hedonic motivation has positive influence on browsing	No	
		H_{1c}: Hedonic motivation has positive influence on f-commerce usage intensity	No	The antecedents that lead to participation are hedonic, utilitarian and trust motivations.
		H_{2a}: Utilitarian motivation has positive positive influence on participation	Yes	
		H_{2b}: Utilitarian motivation has positive influence on browsing	Yes	The antecedents that lead to browsing are utilitarian and trust motivations.
		H_{2c}: Utilitarian motivation has positive influence on f-commerce usage intensity	Yes	
		H_{5a}: Trust motivation has positive influence on participation	Yes	The antecedents that lead to f-commerce usage intensity are utilitarian and trust motivations.
		H_{5b}: Trust motivation has positive influence on browsing	Yes	
		H_{5c}: Trust motivation has positive influence on f-commerce usage intensity	Yes	The antecedents that lead to urge to impulsively purchase are participation, f-commerce usage intensity and urgency.

Table 5.1 continued

Research question	Research objectives	Hypothesis	Supported?	Conclusion
	RO2: To determine the effect of closeness and familiarity on trust motivation in f-commerce.	H_3: Closeness has positive influence on trust motivation	Yes	The antecedents that lead to impulse purchase are urge to impulsively purchase and urgency.
		H_4: Familiarity has positive influence on trust motivation	Yes	
	RO3: To examine the influence of participation, browsing and usage intensity on urge to impulsively purchase in f-commerce.	H_{6a}: Participation has positive influence on urge to impulsively purchase	Yes	
		H_{6b}: Browsing has positive influence on urge to impulsively purchase	No	
		H_{6c}: F-commerce usage intensity has positive influence on urge to impulsively purchase	Yes	
RQ2: How does urge to purchase affect impulse purchase in f-commerce?	RO4: To investigate the mediating effect of urge to impulsively purchase on urgency and impulse purchase in f-commerce.	H_8: Urgency has positive influence on urge to impulsively purchase	Yes	Urge to impulsively purchase has a complementary partial mediation effect on the relationship between urgency and impulse purchase.
		H_9: Urgency has positive influence on impulse purchase	Yes	
	RO5: To determine the influence of urge to impulsively purchase on impulse purchase in f-commerce.	H_7: Urge to impulsively purchase has positive influence on impulse purchase	Yes	Urge to impulsively purchase directly influences consumers' impulse purchase behaviors.

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5.3   DISCUSSION OF FINDINGS

This section focuses on discussing the findings from the current study and also relating the findings with prior studies as to see how the findings can vary depend on the context of study.

5.3.1   Hedonic motivation and f-commerce users' participation

The findings have provided evidence and support for the theory that hedonic motivation is a significant predictor of user's participation in f-commerce. Interestingly, the outcome indicates that there is a negative effect of hedonic motivation on participation. Based on the beta coefficient, it shows that for every unit of changes in hedonic motivation, there will be a decrease of 0.097 units of changes in participation. It further shows that when f-commerce users possess higher degree of hedonic motivation, they tend to have lower degree of participation in f-commerce activities. This is contradictory to the work of Van der Heijden (2004) who opined that perceived enjoyment may influence consumers' intention to use a system. The negative effect of hedonic motivation on participation in f-commerce is also inconsistent to the findings of Childers et al. (2001), Armstrong and Hagel (1997) who discovered that pleasure-oriented buyers normally engaged themselves in interaction with a web setting for the sake of interaction or to stimulate their positive feeling or excitement. The contradictory result may be attributed to the reality that with higher level of hedonic motivation especially in the form of Facebook games (e.g. Candy Crush Saga, Subway Surfers, Clash of Clans, Farm Heroes Saga and etc.), users are distracted from participating in real f-commerce activities.

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In addition to that, the finding of this research is also inconsistent with the work of Dholakia et al. (2004). This could be due to the present context of f-commerce which is quite different from Dholakia et al. (2004) who examined the effect of enjoyment value from the context of online brand community in US. Besides difference in the context of study, there are also cultural differences between these two studies which are conducted in US and Malaysia respectively. The evidence in cultural differences between these two countries can be clearly seen from the below Figure 5.1 in terms of masculinity, individualism, uncertainty avoidance, power distance, indulgence and long term orientation (Hofstede, 2015).

Malaysia
in comparison with United States
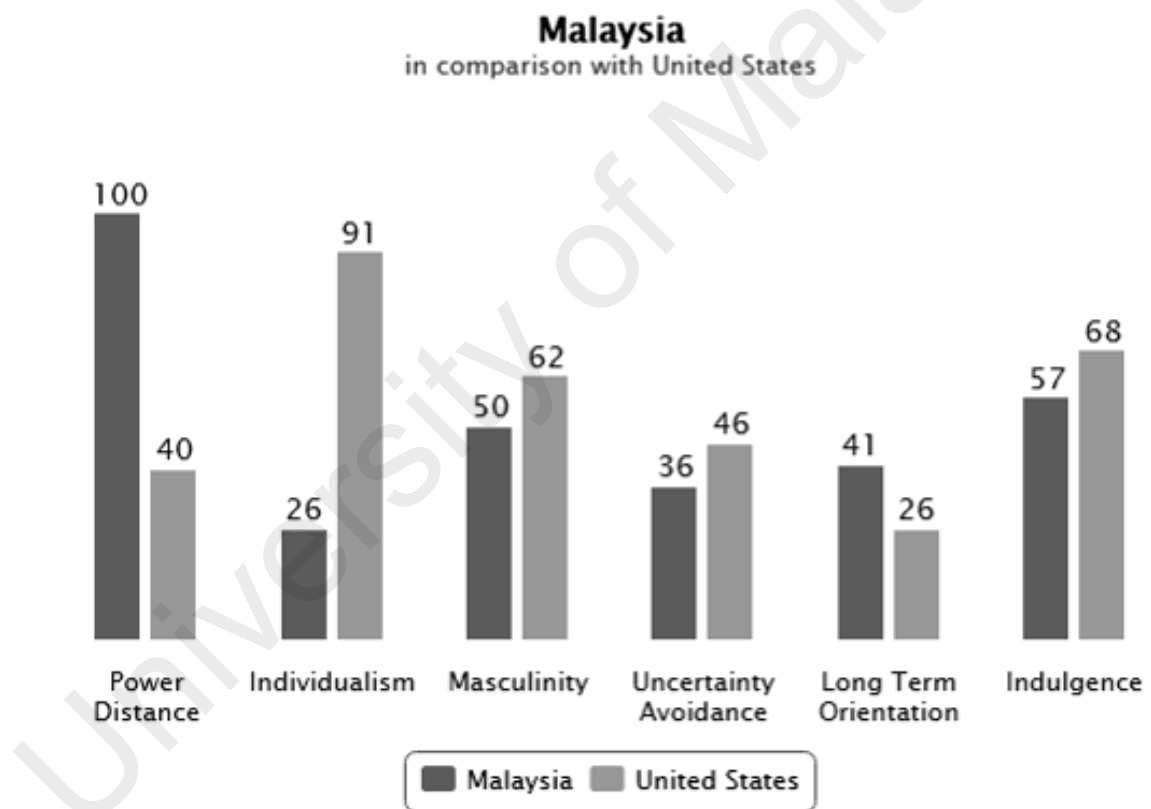
Figure 5.1: Cultural differences – Malaysia vs. United States
(source: http://geert-hofstede.com/malaysia.html)

As depicted in Figure 5.1, the greatest difference is in terms of power distance in which Malaysia scores 100 in comparison to US which scores only 40. Power distance is referred as the degree to which the less powerful members of organisations and

institutions within a nation accept and expect that power is distributed unevenly (Hofstede, 2015). In contrary, US scores 91 compared to Malaysia which only scores 26 in terms of individualism. Individualism is referred as the extent of interdependence a society upholds among its members (Hofstede, 2015). From the perspective of masculinity, Malaysia scores 50 compared to US which scores 62. Malaysia is also lack behind US in terms of uncertainity avoidance as it scores 36 in comparison to 46 by the US. Another significant difference is from the perspective of long term orientation where Malaysia only scores 26 compared to US which scores 41. Long term orientation is referred as how each society has to uphold some relations with its own past while addressing the challenges of the future and present (Hofstede, 2015). Finally, US also outperforms Malaysia in the context of indulgence as it manages to score 68 while Malaysia's score is 57. Indulgence is referred as the degree to which indivuals try to control their impulses and desires, according to the way they were raised (Hofstede, 2015).

Due to the existence of the cultural differences, the effect of hedonic motivation on users' participation in f-commerce is different. This showed that the association between hedonic motivation and users' participation in f-commerce is not a universal association. Furthermore, the finding is also not consistent to Pöyry et al. (2013) who asserted that some members of the community may assume participation as a decent way to pass their time. Thus, it is concluded that with a higher degree of hedonic motivation, f-commerce users would be less likely to involve themselves in the f-commerce activities and its related transactions.

5.3.2 Hedonic motivation and f-commerce browsing

Surprisingly, hedonic motivation was found to have no significant effect on f-commerce browsing. It shows that there is no empirical evidence to support the hypothesis that the higher the extent of hedonic motivation, the higher the extent of browsing among f-commerce users. Hence, it is concluded that f-commerce browsing is independent from the level of hedonic motivation. F-commerce users seem to be unaffected by their hedonic motivations. No matter how enjoyable they feel, it does not influence their browsing frequencies.

The result may be due to the fact that f-commerce users are able to easily obtain various forms of hedonic applications through the cyber world with just a mouse click. Another reason is that f-commerce pages are not built mainly for hedonic purposes but more for purchasing of product and services. Therefore, the propensity to browse the pages is not driven by the level of hedonic motivation it provides.

This finding is contrary to Cotte et al. (2006) and Voss et al. (2003) who found that seeking sensory stimulation, experiences and fantasy from browsing Facebook community pages via new ideas, multimedia content and info relevant to their field of interest is associated with the online browsing behaviour which is in-line with the flow theory. It has provided support and evidence to theorize that f-commerce users are independent from perception and feeling of self enjoyment when browsing the f-commerce pages.

This contradiction also may be attributed to the fact that users are more self-conscious and do not take hedonic motivation as a factor in deciding the level of f-commerce browsing. For them, utilitarian motivation is more imperative than hedonic

motivation as the former can bring about more functional outcomes than the latter. Hence, hedonic motivation is not considered in determining the level of f-commerce browsing. Instead, the study revealed that utilitarian motivation has overshadowed the effect of hedonic motivation in affecting users' browsing propensity.

Another reason is perhaps the cultural differences which have given substantial influence on users' f-commerce browsing. Again, based on the cultural dimensions (Hofstede, 2016) as shown in Figure 6.1, these cultural differences have brought about differences in perceptions about hedonic motivation and browsing among the f-commerce users. With differences in cultures and languages, there may be variations in interpreting and deciphering the meanings of the words and terminologies used in the survey instrument, rendering differences in the responses by the f-commerce users for identical survey instrument. Therefore, it is not surprising that the outcomes from the prior studies are not the same as in this study and may not be applicable in the context of Malaysia f-commerce.

Last but not the least; the contradictory result may also be attributed to the different sample of respondents. Unlike Voss et al. (2003) who used undergraduates from a North American university and Cotte et al. (2006) who used undergraduates, MBA students and office staff, this study used a wider age bracket of general f-commerce users from several shopping malls. Due to the differences in the samples of respondents, the contradictory finding is not surprising.

5.3.3 Hedonic motivation and f-commerce usage intensity

Interestingly, hedonic motivation is not a significant predictor for f-commerce usage intensity as previously hypothesized. It shows that there is no empirical evidence to support the hypothesis that the higher the extent of hedonic motivation will lead to high extent of f-commerce usage intensity. Hence, f-commerce users' intensity in using f-commerce is not related to their levels of hedonic motivation. Therefore, the two entities are actually independent from each other.

This surprising finding again may be caused by the abundance of various hedonic applications the users can easily access through the cyber world and there are less interesting hedonic applications provided by the f-commerce platform. This result showed that f-commerce users' usage intensity is not influence by their perceptions of hedonic motivation and there is no association between the two. This outcome is inconsistent with Thong et al. (2006), Brown and Venkatesh (2005) who found that higher level of hedonic motivation may lead to high level of technology use. The inconsistency may be caused by the different context of study. Thong et al. (2006) studied the effects of post-adoption belief from the context of mobile internet services of Hong Kong residents while Brown and Venkatesh (2005) studied individual adoption of technology using Model of Adoption of Technology in the Household or MATH from the context of PC adoption of US households. These contexts of studies differ largely from the current context of f-commerce adoption as both of the previous studies are not business-related. It is not surprise to obtain contradictory findings in comparison to the previous studies.

Another possible explanation is the existence of cultural differences between the current study and the two existing studies. As shown in Figure 5.1, there exist significant cultural differences in the cultural dimensions of Malaysia and US. Likewise, Figure 5.2 indicates that there are obvious cultural differences between Malaysia and Hong Kong in terms of the five cultural dimensions. For example, in terms of power distance, Malaysia scored 100 points compared to Hong Kong's score of 68 points. On the other hand, Hong Kong outperformed Malaysia in terms of long term orientation as the score for Hong Kong is 61 points compared to Malaysia's 41 points. Hong Kong also has slightly higher score (57 points) than Malaysia (50 points) in terms of masculinity. Nevertheless, Malaysia has an edge over Hong Kong in terms of indulgence with 57 points compared to just 17 points for Hong Kong. However, both countries share a same level of individualism as Malaysia obtained just 1 point above Hong Kong's 25 point. Therefore, due to these substantial cultural differences, there may be variations in the understandings and perceptions from the f-commerce users in these two countries for the same survey instruments.

Malaysia
in comparison with Hong Kong
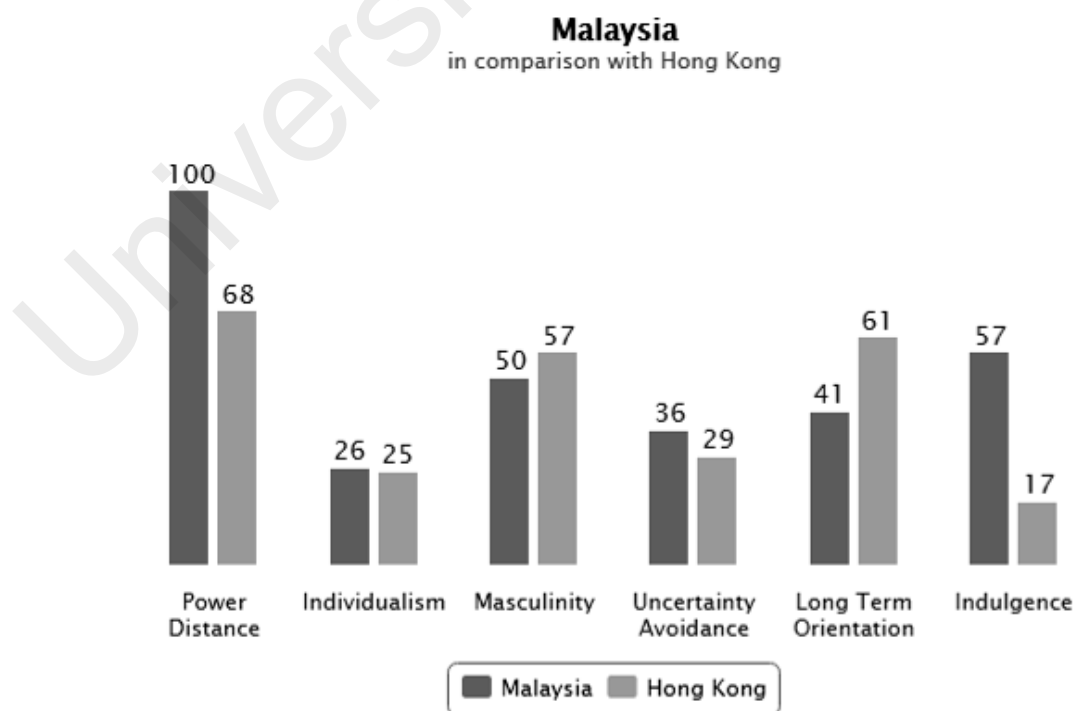
Figure 5.2: Cultural differences – Malaysia vs. Hong Kong
(source: http://geert-hofstede.com/malaysia.html)

5.3.4 Utilitarian motivation and f-commerce users' participation

As expected and theorized, utilitarian motivation significantly influences f-commerce users' participation. The result shows that for every unit of changes in utilitarian motivation, it will contribute 0.171 units of changes in f-commerce participation. This finding has provided new empirical evidence to support the hypothesis that high level of utilitarian motivation will lead to high degree of participation in f-commerce. Since there are no studies done on the effect of utilitarian motivation and f-commerce users' participation, no comparison and contrast will be discussed. However, since this is a new association developed in this study, we argue that the degree of utilitarian motivation will directly influences users' participation in f-commerce and can be supported with empirical evidence.

The finding showed that when f-commerce users perceive f-commerce activities as task-related or utilitarian-related, the tendency for the users to participate in f-commerce will be greatly stimulated. For example, when f-commerce users discovered that a particular f-commerce page is very useful in helping them to look for items that are on their purchasing list, the tendencies for them to involve and participate will become more intensified. As a result, they will engross themselves in participating in f-commerce activities more than users who possess low level of utilitarian motivation.

This newly developed theory has further advanced the literature of f-commerce specifically and the body of knowledge on online commerce generally. Previously there is hardly any empirical evidence to support the hypothesis that utilitarian motivation can lead to participation especially in f-commerce context. With this finding, scholars and researchers will be able to gain better understanding and insight about the influence of utilitarian motivation on users' f-commerce participation. Finally, the novelty of this

finding has also provided the necessary foundation for future studies in other related contexts of study.

5.3.5 Utilitarian motivation and f-commerce users' browsing

Another newly developed theory is the effect of utilitarian motivation on f-commerce browsing. The result indicates that for every unit of changes in utilitarian motivation, it can bring about 0.149 units of changes in f-commerce browsing. This finding has provided empirical evidence to support the hypothesis that the higher the extent of utilitarian motivation, the higher the intensity of browsing among f-commerce users. This outcome is similar to Cotte et al. (2006) who discovered that utilitarian motivation has significant effect on search behaviour. It is also similar to the finding by Bateman et al. (2010) who assert that consumers may browse a website in order to gain knowledge of a subject of interest for imminent use although they may also find instrumental value from the community by merely involve in behaviours of utmost direct benefit to them.

Nonetheless, to the best knowledge of the investigator, there has been no empirical evidence which supports the direct influence of utilitarian motivation on browsing from the context of f-commerce. Nevertheless, the novelty finding has further advanced the work by Cotte et al. (2006) who discovered that utilitarian motivation significantly influences searching behaviour. Similarly, the finding also supported the work by Moe (2003) who found that browsing of community page may manifest utilitarian motivation even though the user is not finding for a particular piece of info.

The finding has provided evidence to theorize that when f-commerce users perceive an activity as utilitarian-related, they will be more inclined to browse the f-commerce pages. For example, when a f-commerce user found a Facebook page that is very useful to them, they will browse more in comparison to users who do not think that the page is useful to them. With this new finding, scholars and researchers will have better insight on the influence of utilitarian motivation on browsing of f-commerce pages and thus provided evidence and support for the hypothesized theory. It has also contributed in advancing the f-commerce literature especially from the Malaysian cultural context.

5.3.6 Utilitarian motivation and f-commerce usage intensity

As hypothesized, the study revealed that there is significant association between utilitarian motivation and f-commerce usage intensity. The statistical result indicates that for every unit of changes in utilitarian motivation, it can generate 0.215 units of changes in f-commerce usage intensity. This finding has provided empirical evidence to support the hypothesis that the higher the extent of utilitarian motivation, the higher the intensity of f-commerce usage among the users. It further indicates that when f-commerce users perceive an activity as utilitarian-related, their usage intensity will increase. This finding is consistent with Close and Kukar-Kenney (2010). However, the context of study is different as for Close and Kukar-Kenney; their context of study is online purchase via electronic shopping carts and not f-commerce context.

The study also offers supporting evidence that the association between utilitarian motivation and f-commerce usage intensity is independent of cultural settings. Even though there are significant and obvious cultural differences (Figure 5.1), we still found similar result on the relationship between utilitarian motivation and f-commerce usage intensity. This new finding can be adopted as a basis for forthcoming studies and can

be extended to other contexts of study. Hence, it will be able to further enrich the literature of f-commerce and advance our understanding on utilitarian motivation and f-commerce usage intensity thus contributing to the body of knowledge.

5.3.7   Trust motivation and f-commerce users' participation

The finding showed a significant association between trust motivation and f-commerce users' participation. Based on the statistical result, it shows that for every unit of changes in trust motivation, there will be an increase of 0.635 units in f-commerce participation. This outcome has provided an empirical evidence to support the hypothesis that the higher the extent of trust motivation among f-commerce users, the higher the level of participation. It is also similar to the work of Peters et al. (2015) who found that users' trust in privacy protection can increase the tendency to participate in business activities.

However, no comparison and contrast will be discussed as this is a new finding. The novel finding has further provided evidence and support to the hypothesis that when f-commerce users possess high degree of trust motivation; they will be more probable to engage in f-commerce transactions. For example, when f-commerce users' trust in f-commerce activities is high, the likelihood for them to participate in those activities will be much higher compared to those who have low level of trust in them.

The outcome is also analogous to the work of Joinson et al. (2010) who found that when participants are concern about the deficiency in anonymity, they will be more unwilling to expose their personal info. This is because when participants do not have sufficient trust in anonymity, they will participate less for the fear of exposing the personal information. Furthermore, the finding also supported the theory by Gefen et al.

(2003) who opined that trust in privacy protection will increase information revelation in e-commerce. Hence, trust motivation plays an important role in determining participation of f-commerce users.

Last but not the least; the novel finding may be utilized as a theoretical basis for upcoming studies in other contexts of study. Since this is a newly developed relationship, the finding will surely enhance the extant of f-commerce literature especially from the cultural context of Malaysia.

5.3.8   Trust motivation and f-commerce browsing

Another newly developed association is the relationship between trust motivation and f-commerce browsing. The result implies that for every unit of changes in trust motivation, there will be an increase of 0.592 units in f-commerce browsing. The new finding has provided the necessary empirical evidence to support the hypothesis that the higher the trust motivation, the higher the propensity to browse f-commerce pages and their activities. This finding is similar to Ng (2013) who asserts that when consumers trust a social network community, their likelihood to making a purchase would be higher. For example, when a f-commerce user trusts a particular f-commerce event, he or she will not hesitate to browse more to further find out about the event compared to a user who has less trust towards the same event.

However, no comparison and contrast can be done as this is a novel finding and there has been no prior study related to it. Nevertheless, this finding showed support and provided evidence from the Malaysian context to confirm that trust motivation can significantly influence f-commerce users' browsing propensity. It further showed that when f-commerce users have high degree of trust motivation on a particular f-commerce

page, they will be more likely to browse more the page in comparison to those with lower degree of trust motivation.

With this new finding, scholar and practitioners may apply suitable measures in raising the level of f-commerce browsing among the users. More importantly, the new finding can be utilized as a theoretical basis for impending studies in other contexts. It will also contribute considerably to the present f-commerce literature and provide the groundwork for upcoming studies particularly in other cultural setting.

5.3.9 Trust motivation and f-commerce usage intensity

This is a newly established finding and it has provided the empirical evidence to support the hypothesis that when the degree of trust motivation among f-commerce user is high, the intensity of usage will also be high. For example, when f-commerce users have high trust motivation towards a particular Facebook page, they tend to visit the page more compared to other users who have less degree of trust towards the same page. The statistical result also indicates that for every unit of changes in trust motivation, it can bring about an increase of 0.440 units in f-commerce usage intensity.

Previously, there has been no study done on the effect of trust motivation on f-commerce usage intensity. Hence, there is no need for comparison and contrast to be made. However, the new finding has provided novel insight and understanding on the role of trust motivation on users' f-commerce usage intensity and further supported the theory that when f-commerce users possess high level of trust motivation, they will be more inclined to raise their usage intensity. Likewise, if they are lack of trust motivation, it would be very difficult for them to frequently visit any f-commerce page.

Hence, the new finding has further enriched the existing literature specifically from the context of Malaysian f-commerce.

5.3.10 Closeness and trust motivation

The study revealed that there is significant effect of closeness on trust motivation. The result reveals that for a unit of change in closeness, there will be an increment of 0.224 units in trust motivation. Therefore, this finding has given the empirical evidence to support the hypothesis that when the level of closeness is high, the level of f-commerce users' trust motivation will also be high. For example, when f-commerce users have a close relationship with a particular Facebook page seller, it will promote high degree of trust towards the page compared to users who are not very close to the same page.

This discovery has offered fresh evidence to support the work of Ng (2013) who found that social interaction may bring about closeness. Users who have more social interaction with others will gain stronger feeling of closeness and thus generating greater trust within the community as social interactions may foster more sense of belonging, commitment and involvement among users.

Similarly, it also supported the work by Chen et al. (2009) who found that social interaction among C2C members may lead to high level of trust among its members. However, due to the cultural differences, the result has offered novel insight and understanding from the Malaysian cultural context and hence propelling the existing literature to a new level as it showed that the association between closeness and trust motivation is robust against cultural differences.

5.3.11 Familiarity and trust motivation

Just as closeness, familiarity is also significantly linked to trust motivation in f-commerce. The path analysis indicated that for a unit change in familiarity, there will be an equivalent change of 0.402 units in trust motivation. This finding has given the empirical evidence to support that when the level of familiarity among f-commerce users is high, the level of trust motivation will also be high. This result is consistent with the work by Ng (2013) who found that social interaction may trigger familiarity among users and eventually lead to formation of trust among the users. With such kind of reassurances and belief that other users will not intentionally harm them, the tendency for them to gain high level of trust motivation will be further increased.

Nevertheless, the current f-commerce context is different from the context of study by Ng (2013) who used an experimental Facebook fan page in Taiwan instead of real f-commerce pages. Furthermore, there are also cultural differences between the Taiwan and Malaysia. For example, Malaysia scored 100 points compared to 58 points by Taiwan in power distance. However, in terms of long term orientation, Taiwan scored 93 points against Malaysia's 41 points. Malaysia also lag behind Taiwan in uncertainty avoidance as it only scored 36 points against Taiwan's 69 points. Besides that there are also differences in indulgence (Malaysia 57, Taiwan 49), masculinity (Malaysia 50, Taiwan 45) and individualism (Malaysia 26, Taiwan 17). Even though there are significant cultural differences between Ng (2013) and the current study, the finding remains the same indicating that the effect of familiarity towards trust motivation is not influenced by the cultural differences between both countries.

However, the finding from the current f-commerce specific context of study is dissimilar to the context of study in the existing studies and thus may further advance the literature of f-commerce especially from a cross cultural context. It can also be adopted as a theoretical underpinning for imminent studies from other contexts of study.

5.3.12 F-commerce participation and urge to impulsively purchase

The study showed that there is empirical evidence to support the hypothesis that the higher the degree of f-commerce participation, the higher the urge to impulsively purchase. For example, when the level of participation in a particular f-commerce page is high, the extent of urge to purchase a particular item will also be high. The result also shows that for every unit of change in f-commerce participation, there will be an increase of 0.121 units of changes in urge to impulsively purchase.

Since this is a newly found association, no comparison and contrast can be performed. However, the finding has further advanced the existing indirect effect of commitment on purchase intention based on the works of Casaló et al. (2010), Baldinger and Rubinson (1996). Therefore, active participation of f-commerce users will eventually lead to their urge to purchase of a product or service through the f-commerce pages.

With this finding, scholars and practitioners will be able to gain more understanding regarding the behaviour of urge to impulsively purchase among f-commerce users. The new finding may serve as a basis for forthcoming studies to further explore the effect of participation on urge to impulsively purchase in other contexts of study like online group buying, C2C, online auction and etc.

5.3.13 F-commerce browsing and urge to impulsively purchase

Surprisingly, f-commerce browsing has insignificant effect on urge to impulsively purchase. This showed that f-commerce users' urge to impulsively purchase is independent from their browsing behaviour. The finding contradicts with the work of Jarboe and McDaniel (1987) who discovered that browsers make more unintended purchases than non-browsers in the context of a regional mall. It also violated the idea of physical proximity (Beatty and Ferrell, 1998) which states that consumers will have hard time to resist the urge to purchase following their encounter with the product in proximity (Rook, 1987).

The contrary finding may be due to the differences in context or setting of the previous study. For example, Jarboe and McDaniel used the setting of a regional mall which is a brick-and-mortar business model while online business model of f-commerce was used in this context of study. Due to the differences between a brick-and-mortar and online business models, it is not surprising to get opposing results. Hence, we conclude that the previous findings are inapplicable in the present context of study as it is not relevant to the existing online business model of f-commerce conducted via social media platform.

Besides the online social media mediated f-commerce context of study, the cultural differences between the previous studies and the current study is another major reason. As shown in Figure 5.1, we found obvious cultural differences across the five cultural dimensions between Malaysia and USA. Hence, it would not be surprising if contrary results were obtained between the current and the previous studies.

5.3.14 F-commerce usage intensity and urge to impulsively purchase

A significant relationship was identified from the finding of this research between f-commerce usage intensity and consumers' urge to impulsively purchase. The result reveals that for every unit of changes in f-commerce usage intensity, there will be an increment of 0.149 unit changes in urge to impulsively purchase. The finding has provided the empirical evidence to support the hypothesis that when the degree of f-commerce usage intensity is high, the urge to impulsively purchase among f-commerce users will also be high. For example, when an f-commerce user frequently visits a particular Facebook page, he or she may come across a different color, a special offer or an attractive design and therefore ended up with an urge to purchase the item which lead to real purchase (Rowley, 2002).

Nevertheless, since this is a newly identified association, comparison and contrast are not applicable. However, the result showed that there are evidence and support for theorising that when f-commerce users' usage intensity increases, there will be a corresponding increase in the urge to purchase a service or product via the f-commerce platform. Regular f-commerce users are more likely to develop the urge to purchase in comparison to the occasional users. This has provided crucial information about the antecedent of urge to impulsively purchase in f-commerce to scholars and practitioners. It has further advanced the f-commerce and impulse purchase literature. The finding will provide a strong foundation for future studies on f-commerce and impulse purchase especially from the context of Malaysia.

5.3.15 Urgency and urge to impulsively purchase

So far, there has been no study that links urgency with urge to impulsively purchase. However, the statistical analysis reveals that for every unit of change in urgency, it contributes an increase of 0.465 unit changes in urge to impulsively purchase. Thus, this study has managed to reveal the unexplored effect of urgency on f-commerce users' urge to impulsively purchase. As such, comparison and contrast will not be conducted. The finding has further provided essential empirical evidence and support in theorizing that buyers with elevated degree of urgency will be more probable to purchase impulsively as they are unable to refrain from their urge to purchase.

The finding also showed that individuals with strong trait of urgency will be more probable of conducting unplanned purchase due to their irresistible urge to purchase a product or service through the f-commerce platform. This newly-found association may further propel the extant of f-commerce and impulse purchase literature particularly from the Malaysian context of study. With this new understanding, it has provided a good foundation for scholars and practitioners to utilize the finding in achieving better decision making processes and strategic planning.

5.3.16 Urgency and f-commerce impulse purchase

The result indicated that for every unit of changes in urgency, it can generate a change of 0.305 units in impulse purchase. Due to the close relationship between urge to impulsively purchase and impulse purchase, it is thus not surprising that this study has further endorsed the effect of urgency on f-commerce impulse purchase. It has provided new empirical evidence to support the hypothesis that the higher the score in urgency, the higher the extent of impulse purchase among f-commerce users. Again, this is another newly developed association that does not allow for comparison and

contrast to be made. Nevertheless, the finding has given us vital understanding and insight on the effect of the urgency trait of f-commerce users on their impulse purchase behaviour.

Prior to this study, there have been no studies done in examining the linkage between urgency and impulse purchase although there were several studies done in investigating the influence of urge to impulsively purchase and impulse purchase. Hence, it is believed that the new association will be able to enrich the existing impulse purchase literature while providing a new foundation for future studies by scholars and researchers especially from the non-Malaysian context of study.

5.3.17 Urge to impulsively purchase and f-commerce impulse purchase

As expected, urge to impulsively purchase is a significant predictor of impulse purchase. The result further shows that for a unit of change in urge to impulsively purchase, there will be an equivalent of 0.498 unit changes in impulse purchase. This finding has provided empirical evidence to support the hypothesis that f-commerce users with high degree of urge to impulsively purchase tend to have high tendency to perform impulse purchase compared to those with lower level of urge to impulsively purchase. The finding has further supported the works of Beatty and Ferrell (1998); Weinberg and Gottwald (1982). However the contexts of studies are different between the existing studies and the current study. Beatty and Ferrell (1998) studied from the context of US consumers while Weinberg and Gottwald (1982) examined from the context of the German consumers.

As shown in Figure 5.1, there are substantial cultural differences in terms of the Hofstede' cultural dimensions. Similarly, there are also significant cultural differences between the Malaysia and the German cultural settings. Figure 5.3 further illustrates the cultural differences between Malaysia and Germany. For example, Malaysia scored 100 points in power distance compared to Germany which scored only 35 points. Hence, there is empirical evidence to support that the association between urge to impulsively purchase and impulse purchase are cultural-independent and may be treated as a universal association. In addition, Malaysia also scored higher in terms of indulgence as it managed to obtain 57 points against Germany's 40 points. However, Germany outperformed Malaysia in terms of individualism (67 to 26 points), masculinity (66 to 50 points), uncertainty avoidance (65 to 36 points) and long term orientation (83 to 41 points). Even though there are significant cultural differences between Germany and Malaysia, the significant effect of urge to impulsively purchase on impulse purchase remains the same. Hence, it is concluded that the effect is robust against these cultural differences.
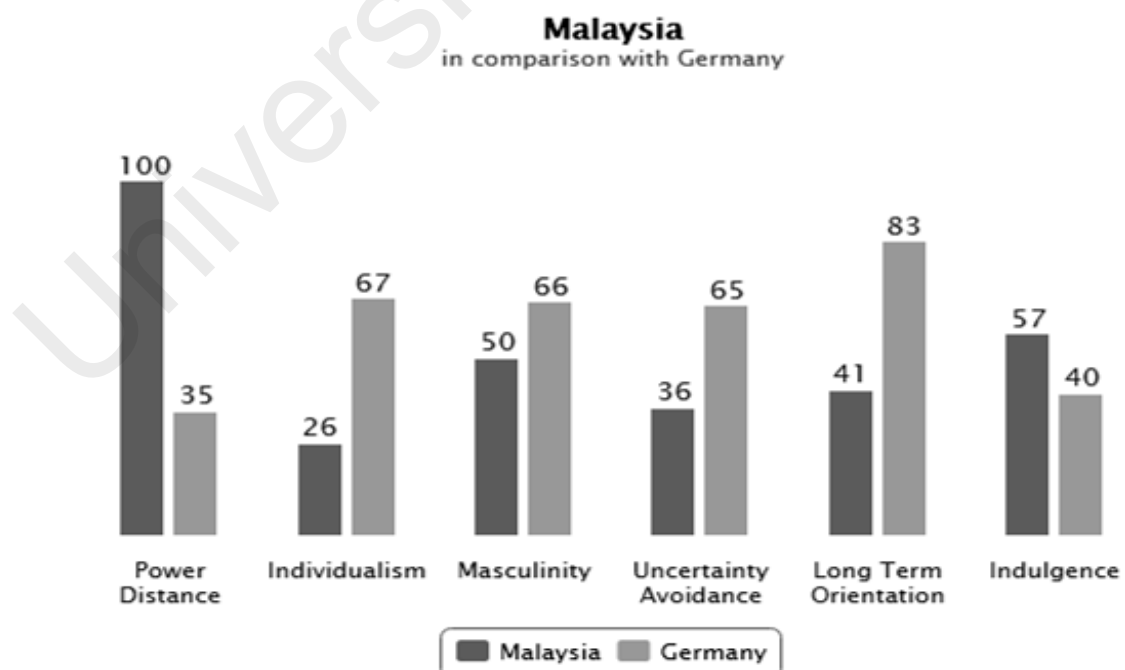
Figure 5.3: Cultural differences – Malaysia vs. Germany
(Source: http://geert-hofstede.com/malaysia.html)

5.3.18 Mediating effect of urge to impulsively purchase on the relationship between urgency and impulse purchase

As proposed in the hypothesis, urge to impulsively purchase has complementary partial mediating effect on the association between urgency and impulse purchase. In the base model, without the inclusion of urge to impulsively purchase, urgency has a significant direct effect of 0.616 units on impulse purchase. However, with the introduction of urge to impulsively purchase, the direct effect of urgency dropped to 0.307 and remains significant.

This is a new finding which can provide new understanding and insight to scholars and practitioners. It has also further extended the extant f-commerce literature as previously there has been hardly any f-commerce study which examined the mediating effect of urge to impulsively purchase. The finding has also provided empirical evidence to support that when consumers experience a strong urge to impulsively purchase, the sense of urgency towards impulse purchase will be reduced.

5.4   CHAPTER SUMMARY

In this chapter, the 2 research questions and 6 research objectives have been revisited and all the 17 hypotheses have been related to them accordingly. All the key findings from this research have been compared and contrasted with previous studies and duly discussed for consistencies or discrepancies of research findings. The next chapter will provide a summary of the whole research conducted.

CHAPTER 6: CONCLUSION

6.1   OVERVIEW OF RESEARCH

A research on users' motivation towards purchase through f-commerce is indeed warranted to contribute practically and theoretically to the commercial social media environments. This study was conducted with the main objective of gaining more understanding about factors that lead to impulse purchase among f-commerce users in Malaysia. It has validated a holistic research model in the f-commerce context. Founded on the support from comprehensive literature review, the Social Impact Theory, Theory of Web Usage and Trust Transference Theory were incorporated into the theoretical framework in predicting the impulse purchase behaviour among f-commerce consumers which involved 17 hypotheses with altogether 11 variables (hedonic motivation, utilitarian motivation, closeness, familiarity, browsing, trust motivation, participation, f-commerce usage intensity, urge to impulsively purchase, impulse purchase and psychological trait of urgency).

Even though all items in the survey instrument were adapted from related past studies, yet the validity of the survey instrument has been verified again through a systematic and rigorous development process that includes a pretest and pilot test. An expert panel which consists of 3 academicians and 3 practitioners were engaged in the pretest to determine the face validity and content validity of the survey instrument. Another group of 8 working professionals were involved in the determination of construct validity while the reliability of the instrument was determined in the pilot test conducted on 50 f-commerce users at Klang Valley since this area recorded the highest Internet penetration rate.

By utilizing purposive sampling, a total of 1000 sets of questionnaire were administered to f-commerce users at a few hypermarkets in Klang Valley. However, only 808 questionnaires returned were usable and subsequently analyzed using SPSS and SmartPLS. The final data set of 800 data after removal of 8 outliers is deemed sufficient and a series of tests has been performed accordingly on the data set. The results revealed that 3 hypotheses out of the 17 hypotheses were not supported namely Hedonic Motivation-Browsing, Hedonic Motivation-F-commerce Usage Intensity and Browsing-Urge to Impulsively Purchase.

The research model can predict 33.4% of variance in trust motivation, 46.4% variance in browsing, 47.1% variance in participation, 42.1% variance in urge to impulsively purchase and 52.6% of variance in impulse purchase. The results indicate that trust motivation is significantly influenced by closeness and familiarity whereas f-commerce usage intensity is significantly influenced by utilitarian and trust motivation. However, the finding showed that hedonic motivation does not have significant effect on f-commerce usage intensity. In terms of f-commerce browsing, the findings showed that utilitarian and trust motivations are the main predictors but not hedonic motivation. Besides, the findings also indicated that hedonic, utilitarian and trust motivations have significant direct effects on f-commerce participation.

On the other hand, it was also found that urge to impulsively purchase among f-commerce users is significantly influenced by the f-commerce usage intensity, participation and the level of urgency. The study shows that impulse purchase among f-commerce users are significantly influenced by urge to impulsively purchase and the level of urgency. Last but not least, the findings showed that there is significant partial

mediating effect of urge to impulsively purchase on the association between urgency and impulse purchase.

The study shows that it is vital for f-commerce players to put in more efforts, focus and attention to further promote the levels of hedonic, utilitarian and trust motivations in order to increase the levels of f-commerce participation. However, to improve the levels of browsing and usage intensity, more measures should be taken to promote utilitarian and trust motivations among the f-commerce users.

In addition to that, it is very important for f-commerce stakeholders to concentrate on enhancing the extent of participation and usage intensity in f-commerce in order to stimulate the urge to impulsively purchase among the users. Finally, attention and focus should be given in ensuring that the levels of urge to impulsively purchase and urgency are augmented in order to drive impulse purchase among f-commerce users.

In this research, several novel findings have been discovered and the impulse purchase behaviour has been statistically theorized as well. For example, a new integrated model that incorporated Social Impact Theory, Trust Transference Theory and Theory of Web Usage was empirically validated. On top of that, urgency that was derived from psychological literature has been included in the research framework to explicate the influence of personality trait on f-commerce impulse purchase. Among the newly developed relationships include the effect of hedonic and utilitarian motivation on browsing, participation, browsing and f-commerce usage intensity on urge to impulsively purchase. Scholars and practitioners will be able to use the findings from this study to gain further insights and understanding about f-commerce. Just as any studies, the findings of this study are confined to the Malaysian geographical

context and some other limitations. Hence, the researcher has proposed several future research directions for scholars to further explore and investigate. The following sections provide more details on these aspects.

6.2   THEORETICAL IMPLICATIONS

Due to the limited studies that have been performed on social commerce purchase, specifically f-commerce, this integrated model may provide vital information and greater predictive power in understanding customer purchase behavior in Facebook. It is hoped that this research will give a comprehensive and holistic in-depth understanding and insight pertaining to the factors that motivate consumers to use Facebook commerce and its impacts on urge to impulsively purchase and impulse purchase behavior.

First of all, the study has validated an integrated model encompassing the Social Impact Theory, Trust Transference Theory and the Theory of Web Usage in predicting the f-commerce usage behaviors (i.e. participation, browsing and usage intensity) which lead to urge to impulsively purchase and ultimately impulsive purchase with the introduction of the urgency variable. The personality trait variable of urgency from the psychology discipline can contribute theoretically to the development of a more specific model with better explanations on social commerce particularly on f-commerce with regards to its usage and influence on impulse purchase.   Perhaps this is the first time the antecedents of impulse purchase was studied in a holistic manner starting from the three types of motivations to three kinds of f-commerce use behaviors followed by the feeling of urge to impulsively purchase which lead to impulse purchase. The finding from the relationship between urgency and impulse purchase under the influence urge to impulsively purchase is another contribution of this study.

Secondly, even though some of the hypotheses have been tested before, however, the context of study differs; hence several new relationships have also been empirically validated. These include the Hedonic Motivation-Browsing, Utilitarian Motivation-Browsing, Closeness-Trust Motivation, Familiarity-Trust Motivation, Hedonic Motivation-F-commerce Usage Intensity, Trust Motivation-Participation, Trust Motivation-Browsing, Participation-Urge to Impulsively Purchase, Browsing-Urge to Impulsively Purchase, and F-commerce Usage Intensity-Urge to Impulsively Purchase relationships. These relationships may further advance our understanding on how the process of urge to impulsively purchase and impulse purchase are developed from the f-commerce context. The linkages between motivational antecedents and f-commerce usage behaviour will enable us to explain why f-commerce users engage themselves in certain kind of usage behaviour. For example, what drives them to actively participate in f-commerce or what stimulates them to vigorously browse the f-commerce pages or what make them intensify their frequency of using the platform. More importantly, it can be theorized the urge to impulsively purchase in f-commerce is based on the three types of f-commerce usage behaviour of participation, browsing and usage intensity. Furthermore, the study also contributes theoretically to the extant of consumer behaviour literature in understanding the antecedents that drive the urge to impulsively purchase and impulsive purchase.

Thirdly, the study has theoretically advanced the previous works by other researchers by validating the existing relationships in the newly emerged f-commerce context. These include the Hedonic Motivation-F-commerce Usage Intensity, Trust Motivation-F-commerce Usage Intensity, Urge to Impulsively Purchase-Impulse Purchase, Urgency-Urge to Impulsively Purchase, and Urgency-Impulse Purchase relationships. Some of these relationships are indirectly linked while others have been validated in

other contexts. With the relationships theorized in the new context of f-commerce, we will now be able to offer the theory behind the f-commerce usage intensity, urge to impulsively purchase and impulse purchase behaviors among f-commerce users with a more precise prediction and understanding.

Fourth, the introduction of urgency variable has further advanced our understanding on the influence of psychological trait towards impulse purchase behavior among f-commerce users. This is a significant theoretical contribution as currently there have been hardly any studies on the influence of urgency in impulse buying. With the theorized of the influence of urgency on urge to impulsively purchase and impulse purchase, we can now explain how these feeling and behaviour are built and developed among the f-commerce users.

In addition, the theoretical model was validated in the newly emerged f-commerce context and therefore the generalizations of the findings from this context of study will theoretically contribute to the current literature on impulse purchase. This is due to the fact that most of the existing studies on impulse purchase have been conducted from the context of traditional stores or online stores but very limited studies have been conducted from the f-commerce context. Very little has been known on how impulse purchase evolves from the f-commerce context and even only few studies had examined the antecedents of impulse purchase in a comprehensive and holistic scale.

Finally, the mediating role of urge to impulsively purchase may provide vital insights on how the effect of urgency on impulse purchase can be reduced. This shows that urgency may still provide significant influence on impulse purchase even under the influence of urge to impulsively purchase as there is no full mediation effect found. In

conclusion, the study has contributed significantly to the extant theory on impulse purchase in f-commerce with a predictive power of 52.6% of variance explained in impulse purchase, 47.1% in participation, 46.4% in browsing, 42.1% in urge to impulsively purchase, 31.6% in f-commerce usage intensity and 33.4% in trust.

6.3   MANAGERIAL IMPLICATIONS

In view of the stiff rivalry among online business competitors, it is vital to attain deeper insight of the usage motivations and behaviors towards impulse purchase in f-commerce for enabling Facebook to enhance its services and to formulate more practical business models. For instance, online marketers and advertisers will find the findings from this research very useful as they will be able to know how to attract more users to discover and continuously promote or buy their products and services through Facebook. The success of f-commerce will surely benefit all e-commerce players since greater traffic and higher number of users will normally contribute to the increase in revenue.

First and foremost, in order to raise companies' sales through increasing the Facebook usage intensity, f-commerce sellers may host contests in which their active followers with the most shares and social media engagements can be duly rewarded with complementary products or additional discounts for products or services purchased from them. It is also essential for the f-commerce sellers to regularly post quality and worth sharing contents and also useful information with regards to their businesses in their Facebook pages. By integrating the three C's in their posts, namely value added *content*, good *context* to encourage conversation and establish *contact* for community building, it may encourage their followers to regularly check for more updates and hopefully become a daily habit to visit the Facebook pages and may end up making

impulse purchase when they come across something useful to them.   In particular, to enhance utilitarian motivation among consumers, the f-commerce stores' owners must be smart in ensuring the content types can echo with their followers or targeted audience. It can be very encouraging for their followers having to see their pictures, posts, or other user generated contents being highlighted at the f-commerce stores. Hence, they will develop a "task" in their mindset and be motivated to post more quality contents.

Secondly, f-commerce players and other relevant stakeholders may promote the intensity of f-commerce usage among the prospective buyers by providing more trust motivation through enrichment of closeness and familiarity to lock-in these buyers. For example, a social shopping website may be created to engage buyers where they may interact and built up familiarity and closeness among themselves. A fan club can also be established where the f-commerce members or fans can interact and share information among each other. Gatherings can be conducted not only online but also through events in which members can meet each other in person to foster better relationship. Another alternative is to offer membership cards to potential buyers or existing customers so that the feeling of belongingness and togetherness can be further fortified while building a stronger sense of loyalty and closeness. It is with these sense of familiarity and closeness, trust can emerge and start to flourish. On top of that, being transparent and honest in disseminating information by f-commerce sellers may further increase the trust level of buyers. F-commerce sellers who are responsive, being prompt and willing to take full responsibilities in handling customers' complaints for sure can stand a better chance to win the trust of buyers and in return they will not hesitate to recommend the f-commerce sites to their acquaintances.

Third, based on the psychological point of view, f-commerce sellers can build consumers' trust by developing partnerships with people or brands that their target audience or fans trust as a way to build brand credibility. This tactic is effective because consumers tend to response better to those they trust and will not hesitate to make purchase from these f-commerce stores. In addition, f-commerce sellers can organize Facebook social events such as tea breaks; children coloring competitions; or fun-runs and share these events with their fans. Through these events, f-commerce sellers would have better opportunities to be closer to their fans which are essential in building customer trust and loyalty that eventually can turn into actual sales. F-commerce sellers may also provide money back guarantee for unsatisfactory services or replacement for faulty items to boost the trust level in their customers. Testimonies from existing customers can also be displayed on their Facebook pages to convince the potential new customers or target audience. Nevertheless, to build consumers' trust and loyalty, it would be the best if these f-commerce sellers themselves can become influencers in their market rather than just followers of the trend. Most importantly, it is essential not only for f-commerce sellers to have the ability to share and sell, but it is better if they are able to inspire and influence their customers as a way to gain their trust and eventually earn their loyalty.

Fourthly, they may increase the frequency in browsing among users by increasing the level of trust and utilitarian motivation. For example, to built trust among users, more security features may be included into the f-commerce stores. These may include capcha code, encryption of password and credit card number, protected registration details of users, guarantee and warranty of product and services, protection of privacy concerned, uncensored testimonial from customers, official newspaper reports, etc. All these measures may further reinforce the feeling of trust among users towards

conducting transactions over the f-commerce platform. Besides that, more useful functions and features should also be incorporated into the f-commerce stores to increase the frequency of browsing. For instance, besides determining the right timing of posting of events, ads or sponsored stories, f-commerce stores may also provide other features such as ranking of product, guarantee or warranty period, customized order, special delivery, special event reminder, coupon pop-up, membership redemption, customer complaint corner, bidding or auction corner, currency converter calculator, and many other customer-oriented applications. In addition, video ads, pop-up discount banners and posts that can communicate contents to the audience in a chatty style or informal tone can be effective so that audience feels connected to the f-commerce sellers. Moreover, creative or humorous videos may gain more shares and attention and thus can increase the browsing rate. Besides, it is important to ensure the f-commerce stores are being included with complete utilitarian- or task-related features such as "search", "buy" or "add-to-cart", "pay", "recommend", "book", "availability", "watch", "comment", "feedback", "wishlist", "money converter", "redeem points", "tag", etc. By having a diversify and multipurpose f-commerce platform, it will be enabling the purchasing processes all under one roof while at the same time contribute to more frequent browsing among the users.

Fifth, the level of participation in f-commerce stores can be elevated by reducing the distraction caused by increase in hedonic motivation. For example, to reduce the distraction cause by popular Facebook online games, the f-commerce participating stores may organise some online scratch and win competition, short music or video clip creation, selfie/wefie contest, best cover photo contest, etc in order to entice the users to participate. Attractive rewards in the form of cash, voucher and gift can encourage more participation from potential and existing users. Electronic word of mouth of such

contests through Facebook may lead to wide participation of users. This can indirectly promote the brand name of a Facebook store and eventually increase its sales. Similar measures can also be taken in promoting the level of utilitarian and trust motivation as mentioned earlier since both of these motivations are able to increase the level of participation among users. Besides, to increase Facebook participation from users, they are encouraged to check-in at business places and in return, they can be rewarded with some kind of incentives such as free drinks or vouchers redeemable on the spot. Check-in feature can act as a promotion tool, particularly to local audience as it provides free visibility in the news feed for other Facebook users to know more about a particular business. The perception that a business is popular; offers good quality or variety of products; or good customer service can be generated when more Facebook users check-in to certain business places and indirectly can bring more income to the f-commerce sellers. Besides that, f-commerce sellers can drive more audience and increase participations at their Facebook stores by being attentive and create topics that their followers or fans are hotly talking about.

In addition, all f-commerce stakeholders should also put more effort and attention in inculcating the urge to impulsively purchase among users by enhancing the level of participation and usage intensity. However, since browsing does not have any significant influence on urge to impulsively purchase, therefore all of the above mentioned steps and recommendations to increase participation and usage intensity should be considered except those on browsing. Since usage intensity has higher effect on urge to impulsively purchase than f-commerce participation, more focus should be taken in promoting high degree of usage intensity among the potential and existing buyers. However, this does not mean that consumers' participation in f-commerce should be ignored or put aside. Therefore, reasonable attention should also be given in

encouraging more participation from f-commerce users and this can be done through the previously suggested measures. If f-commerce sellers are able to increase the levels of f-commerce usage intensity and participation, it would greatly promote urge to impulsively purchase among the users.

Furthermore, in terms of impulse purchase, more measures should be taken by marketers or advertisers in inducing the urge to impulsively purchase among the users. These may be achieved by escalating the level of participation and usage intensity among f-commerce users. Nevertheless, since the psychological trait of urgency also influences impulse purchase, steps should be taken to ensure that the f-commerce stores are rich with elements that can easily trigger the sense of urgency among the users. For example, alerts on flash sales or great discounts of up to 50% instead of the normal 10% for popular items can appear frequently on those Facebook pages so that users may be attracted and feel the impulsiveness to purchase a product or services that may not come across their mind. Another alternative approach is to practice personalized shopping by posting attractive promotion advertisements and special offers and deals based on the interest of the registered users. This would be much better and effective by leveraging the interest of users compared to the traditional marketing and promotional approach of using "one size for all" advertisement. Personalized promotional advertisement will have better chance to induce impulse purchase among potential and existing buyers compared to the common form of advertisement for the whole spectrum of users. For instance, f-commerce stores may display customer sensitive pop-up by tracking on the customer's buying preferences so that individual attention can be given to each customer. Alternatively, customer can be directed to different pages based on their purchasing styles. Besides, advertising through mobile communication devices by sending notifications or reminders on online flash sales or links to video clips can also

trigger impulsiveness of individuals. When individuals are attracted to the video advertisements or items offered in flash sales, they may feel the urgency to purchase the item and eventually lead to impulse purchase through their Internet enabled mobile communications devices which come in handy.

Last but not least, business organizations as well as government and non-government organizations (NGOs) will be able to tap in the spill-over effects of the potential traffic increase of f-commerce usage when Facebook have successfully improvised and enhanced their services by taking into their considerations the factors motivating impulse purchase on f-commerce. In addition, findings from this study may be used by various stakeholders such as e-commerce players, e-marketers, e-retailers, e-learning providers, Web 2.0 users and practitioners as well as private agencies in their research, development, marketing and planning strategies to ensure that their product or services will likely be purchased spontaneously by their clients. This will lead to customer satisfaction and eventually higher customer retention and customer loyalty.

6.4 LIMITATIONS AND FUTURE RESEARCH DIRECTION

Just as any other research, this study is limited in the sense that it used a cross sectional approach and the temporal effect was not examined. Since the perception and impulsiveness of users may be affected once they gained experience over time, it is recommended that future study may engage a longitudinal study in understanding how the time factor may influence consumers' impulse purchase behavior.

Besides that, the study was conducted in just a sole country and therefore the outcomes may not be generalized to represent consumers from other geographical areas. Hence, upcoming studies may be carried out in other parts of the world. A cross-

country study can also be conducted to investigate whether cultural differences have any role to play in predicting the impulse purchase behaviour among consumers from different cultural settings.

Furthermore, since the current study is based on f-commerce users' perception, future studies may use an experimental setting so as to measure the real impact of each of the factors on impulse purchase in f-commerce. In addition, since the current study focused on examining the drivers of participation, browsing, f-commerce usage intensity, urge to impulsively purchase and impulse purchase, it would be fascinating for forthcoming studies to investigate the inhibitors for these f-commerce behaviours that tend to be complicated due to the popular Facebook usage by a wide range of users.

Furthermore, future studies may also investigate the determinants of f-commerce continuance intention as well as f-commerce consumers' loyalty as these are very important for practitioners and scholars to ensure that the survival of f-commerce remains strong and progressive. It would also be motivating to examine factors that lead to dis-adoption of f-commerce as such a study would provide vital understanding to all f-commerce stakeholders in retaining good customer relationships.

In addition to that, it would also be motivating for imminent studies to examine the direct antecedents of urge to impulsively purchase. Finally, to achieve a holistic understanding of purchase behaviour through f-commerce platform, other factors can be included into the research model in order to increase its predictive power. For example, psychological traits such as the Big Five Model can be considered for incorporation into the research model in future study.

6.5   CHAPTER SUMMARY

In this chapter, a summary of research was included to provide an essence of the research conducted. The theoretical and practical contributions of the findings from this study have been discussed comprehensively on how they can be beneficial to the researchers generally and practitioners in particular. The limitations of this research have been highlighted and recommendations were given on future research direction as to provide more insights in maximizing the potentials of social networks for commerce purposes a.k.a social commerce.

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LIST OF PUBLICATIONS AND PAPER PRESENTED

Papers accepted:

1) What triggers impulse purchase in Facebook commerce?, submitted to *International Journal of Mobile Communications* (ISI ranked journal: 2015 Clarivate Analytics impact factor = 0.765, 5 year impact factor = 0.965)

2) Understanding impulse purchase in Facebook commerce: Does Big Five matter?, submitted to *Internet Research* (ISI ranked journal: 2016 JCR impact factor = 2.931, 5 year impact factor = 4.580)

3) Understanding Facebook commerce (F-commerce) actual purchase from an artificial neural network perspective, submitted to *Journal of Electronic Commerce and Research* (ISI ranked journal: 2016 JCR impact factor = 1.386, 5 year impact factor = 2.777)

Paper submitted:

1) The effects of Facebook browsing and usage intensity on impulse purchase in f-commerce, submitted to *Computers in Human Behavior* ((ISI ranked journal: 2016 JCR impact factor = 3.435, 5 year impact factor = 4.252)