Chapter V

Findings of the Study, Discussion, and Conclusion

5.1 INTRODUCTION

This chapter is divided into following topics 5.2. A brief overview of the study, 5.3. The core constructs of proposed model and their impact on behavioural intention towards mobile shopping app adoption, 5.4 Discussion, 5.5 Theoretical contribution 5.6 Practical Implications, 5.7 Limitation and recommendations for future research.

5.2. A BRIEF OVERVIEW OF THE STUDY

The overall purpose of this study is to examine determinants of mobile shopping app adoption by comparing existing baseline models of UTAUT2 of Venkatesh et al (2012), extended UTAUT2 model of Slade et al (2014) to that of proposed extended UTAUT2 model in a mobile shopping app adoption context. The other objectives of this research include, i) to extend the UTAUT2 model of Slade et al (2014) by integrating newer relevant constructs such as ESI, FLO and Product Involvement (Electronic gadgets and Apparel products) in a mobile shopping app adoption context, ii) to analyse the moderating effect of Gender, Age, Experience and Profession on this proposed model.

A theoretical model was developed to describe the relationship between seventeen latent constructs such as (PE, EE, ISI, ESI, FC, HM, PV, HAB, TRST, PR, MSE, PINNO, FLO, INVELE, INVAPP, BI and USB). This study was conducted with the help of survey responses from the consumers of mobile shopping apps.

One of the key aspects of the current study is to validate the variance explained by the existing UTAUT2 models of Venkatesh et al (2012) and Slade et al (2014) in mobile app shopping adoption context in an empirical way. The increased penetration of smartphone and recent promotions of mobile apps from m-commerce companies in India by offering products at discount prices on purchase made through mobile apps was the major motivation for this research. After a thorough review of mobile shopping and m-commerce related literature, a theoretical model was developed by considering UTAUT2
of Venkatesh et al (2012) as a baseline model and the data was empirically tested using structural equation modelling (SEM) technique through Smart PLS 2 software. The proposed model was found to have the highest explanatory power of about ($R^2 = 80.4\%$) when compared with existing UTAUT2 models of Venkatesh et al (2012) ($R^2 = 67.1\%$) and Slade et al (2014) ($R^2 = 74.4\%$).

Table 4.25 and 4.26 shows the summary of data analysis results with BI and USB as dependent variables respectively. From the table 4.25, it can be observed that the proposed extended UTAUT2 model has increased explanatory power ($R^2$) and predictive relevance ($Q^2$) on BI when compared with the UTAUT2 models of Venkatesh et al (2012) and Slade et al (2014). In Slade et al (2014) model, the inclusion of factors such as PINNO, MSE, TRST, and PR was found to have a significant impact on BI. Similarly, in the proposed model the inclusion of INVELE, INVELE, FLO and ESI were found to have a significant impact on BI. The PV was found to have strongest effect size ($f^2$) on BI for the UTAUT2 model of Venkatesh et al (2012). The HAB was found to have a medium impact on USB for all the models [i.e. UTAUT2 models of Venkatesh et al (2012), Slade et al (2014) and proposed model]. In the proposed model the effect size ($f^2$) of PV and INVELE was found to have a medium impact on BI which shows that INVELE construct has some effect on UTAUT2 model. FLO and ESI were also found to have some small effect size ($f^2$) on BI which shows that the extra incorporated constructs in the proposed model (i.e. INVELE, ESI, and FLO) has some small effect on BI. It can also be observed that apart from the moderating effect of GEND, AGE, and EXP, the PROF also has a moderating effect on MSA. The PV was found to be the most important factor for mobile shopping app adoption among the age group (41-50) users when compared with the other two age groups [(i.e. age groups 21-30 and 31-40)] users. At the same time, the users of age group (41-50) were found to have very low TRST on BI when compared to the other two age groups [(i.e. age groups 21-30 and 31-40)] which show that aged people still has some hesitation on sharing their information with the apps. The INVELE is high among the age group (21-30) when compared to the other two age groups [(i.e. age groups 21-30 and 31-40)] which indicate that age plays important role in MSA. INVELE was found to be the major factor among Bank Employees in adopting MSA. When compared to professions, PV appears to not have a significant role among Bank Employees to adopt mobile shopping apps. The
results of this study will be greatly helpful for both m-commerce providers and m-app users.

5.3 THE CORE CONSTRUCTS OF PROPOSED MODEL AND THEIR IMPACT ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

The analysis results showed that among all constructs (PE, EE, ISI, FC, HM, HAB, PV, TRST, PR, MSE, PINNO, FLO, INVELE and INVAPP) of the proposed model measured, the PV was found to be the strongest factor that affects behavioural intention towards mobile shopping app adoption.

5.3.1 IMPACT OF PRICE VALUE (PV) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

The PV was found to have the strongest impact on MSAA, which is consistent with most of the previous m-technology adoption studies (Singhal and Vaibhav, 2015; Liu et al., 2015; Kim et al., 2015; Chong, 2013; Kim et al., 2007; Keel, 2012; Lin and Wang, 2006; Kim and Han, 2014; Yang, 2013; Yee, 2015) thus the results of the current study provided evidence that PV is the strongest and important significant factor that affect mobile shopping app adoption. The results also show that the predictive power of PV (β=0.307) was the strongest when compared with other core constructs of UTAUT2 (i.e. PE, EE, SI, FC, HM and HAB) in terms of path coefficients (β) value on MSAA (see Table. 4.5), which supports the previous studies of (Im and Ha, 2015; Kim and Han, 2014; Kim et al., 2015; Liu et al, 2015; Yang, 2013).

5.3.2 IMPACT OF PERFORMANCE EXPECTANCY (PE) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Performance expectancy (PE) was found to have a positive influence on MSAA with the predictive power of (β= 0.153) in terms of path coefficients (β) value on BI. Thus, it is consistent with the results of previous m-commerce studies (Agrebi and Jallais, 2015; Groß, 2015a; Yang and Forney, 2013; Yang et al., 2015; Yang, 2012; Yul, 2014). Thus the
results of the current study provided evidence that PV is an important construct that drives to adopt mobile shopping app.

5.3.3 IMPACT OF EFFORT EXPECTANCY (EE) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

The effort expectancy (EE) was found to have the no significant impact on m-shopping app adoption (MSAA) with the predictive power of ($\beta= 0.006$) when compared with other constructs of UTAUT2 (i.e. PE, HM, PV and HAB) in terms of path coefficients ($\beta$) value on MSAA, which is supported by most of the previous m-commerce studies (Yee, 2015; Ha and Im, 2014; Son et al, 2012; Yang, 2013; Yang, 2010; Lu, 2014; Chong, 2013; Wu and Wang, 2005; Yang, 2013), thus the results of the current study provided evidence that EE does not have any significant role in MSAA but it cannot be denied as an important construct that would drive to adopt technology like mobile shopping app (Ki-Heung, 2015; Singhal and Vaibhav, 2015; Groß, 2015a; Yul, 2014).

5.3.4 IMPACT OF INTERNAL SOCIAL INFLUENCE (ISI) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Internal social influence (ISI) was found to have a positive influence on MSAA. It was found to have a least significant impact on BI when compared with other core constructs of UTAUT2 (i.e. PE, EE, FC, HM, PV, and HAB), with the predictive power of ($\beta=0.095$) in terms of path coefficients ($\beta$) value on MSAA. It is supported by most of the previous MTA studies (Yul, 2014; Ha and Im, 2014; Yang and Forney, 2013; Yang, 2012; Yang, 2010; Zhong, 2013) and thus the results of the current study provided evidence that ISI construct also has some slight impact on mobile shopping app adoption. Though the impact of the ISI might be low on BI in this research study, but it was found to be one of the most important predictor for m-commerce adoption in the studies of (Im and Ha, 2013; Jayasingh and Eze, 2010; Fong and Wong, 2015; Rouibah et al., 2011; Yadav et al., 2016). So there is a need for more research on the effect of ISI on m-shopping app adoption among Indian consumers in future.
5.3.5 IMPACT OF FACILITATING CONDITIONS (FC) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Facilitating conditions (FC) was found to have a positive influence on MSAA. It is the fourth most important factor when compared with other core constructs of UTAUT2, with the predictive power of ($\beta=0.110$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with most of the previous MTA studies (Alwahaishi and Snásel, 2013; Hew et al., 2015; Yang and Forney, 2013; Yang, 2010). Thus the results of the current study provided evidence that FC is a significant construct that drives mobile shopping app adoption (MSAA).

5.3.6 IMPACT OF HEDONIC MOTIVATION (HM) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Hedonic Motivation (HM) was found to have a positive influence on MSAA (see Table. 4.7) with the predictive power of ($\beta=0.126$) in terms of path coefficients ($\beta$). Thus, it is consistent with most of the previous m-commerce related studies (Agrebi and Jallais, 2015; Kit, 2014; Ha and Im, 2014; Yang and Forney, 2013; Yang, 2012; Zhong, 2013; Keels, 2012). Thus the results of the current study provided evidence that HM is an important construct that drives mobile shopping app adoption.

5.3.7 IMPACT OF HABIT ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Habit (HAB) was found to be positive significant, but had very low impact on MSAA (see Table. 4.7). The predictive power of HAB was ($\beta=0.067$) in terms of path coefficients ($\beta$) value, which is very low when compared with other core constructs of UTAUT2. Thus, it is consistent with previous studies (Faria et al., 2014; Hew et al., 2015; Kit, 2014; Kim, 2014; Lin and Wang, 2006; Venkatesh et al., 2012; Yee, 2015). Thus the results of the current study provided evidence that HAB also has some slight impact on mobile shopping app adoption.
5.3.8 IMPACT OF EXTERNAL SOCIAL INFLUENCE ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

External social influence (ESI) was found to have a positive influence on MSAA. The predictive power of ESI was ($\beta = 0.136$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with previous studies (Ahmed and Sathish, 2015; Kim and Han, 2014; Kim 2010; López-Nicolás et al., 2008). Thus the results of the current study provided evidence that ESI is an important construct that drives MSAA.

5.3.9 IMPACT OF TRUST ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Trust (TRST) was found to have the third strongest positive influence on MSAA. The predictive power of TRST was ($\beta = 0.135$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with previous studies (Chong, 2013; Groß, 2015a; Harris et al., 2016; Hung et al., 2012; Sharif et al., 2014; Yang et al., 2015;). Thus the results of this study provided an evidence that TRST is an important construct that drives to adopt mobile shopping app.

5.3.10 IMPACT OF PERCEIVED RISK TRUST ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

The perceived risk (PR) was found to have a positive influence on MSAA. The predictive power of PR was ($\beta = -0.109$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with previous m-commerce studies (Thakur and Srivastava 2013; Yang et al., 2015; Zhou, 2013). Thus the results of the current study provided the evidence that PR is an important construct that drives to adopt the mobile shopping app. PR was also found to have a partial mediating effect on BI in the proposed model.
5.3.11 IMPACT OF MOBILE APPLICATION SELF-EFFICACY (MSE) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Mobile application self-efficacy (MSE) was found to have a positive influence on MSAA. The predictive power of MSE was ($\beta = 0.109$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with previous m-commerce studies (Faqih and Jaradat, 2015; Khalifa and Ning Shen, 2008; Lee et al., 2014; Lu and Su, 2009). Thus the results of the current study provided evidence that MSE is an important construct that drives to adopt m-commerce app like mobile shopping app.

5.3.12 IMPACT OF PERSONAL INNOVATIVENESS (PINNO) ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

Personal Innovativeness (PINNO) was found to have a positive influence on MSAA. The predictive power of PINNO was ($\beta = 0.146$) in terms of path coefficients ($\beta$) value on BI. Thus, it is consistent with previous studies (Chong, 2013; Ha and Im, 2014; Liu et al., 2015; Lu, 2014; Yang et al., 2015). Thus the results of this study provided evidence that the PINNO is an important construct that drives to adopt the mobile shopping app.

5.3.13 IMPACT OF FLOW EXPERIENCE ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION

The effect of Flow was significant, but it was found to have very low impact on MSAA with the predictive power of ($\beta = 0.104$) in terms of path coefficients ($\beta$) value. Thus, it is consistent with previous studies (Cho and Youn-Kyung, 2012; Kim and Han, 2014; Korzaan, 2003; Shin and Kim, 2008; Zhou, 2013a; Zhou, 2013b). Thus the results of the current study provided an evidence that the FLO also has some slight impact on mobile shopping app adoption.
5.3.14 IMPACT OF PRODUCT INVOLVEMENT ON BEHAVIOURAL INTENTION TOWARDS MOBILE SHOPPING APP ADOPTION (INVELE, INVAPP)

Product Involvement with electronic product categories (INVELE) was found to have a positive influence on MSA. The INVELE was found to have a second strong positive impact on MSAA with the predictive power of ($\beta = 0.179$) in terms of path coefficients ($\beta$) value. Thus, it is consistent with previous studies (Bian and Moutinho, 2011; Hong, 2015; Im and Ha, 2011; Kim, 2012; Lloyd, 2014). Product Involvement with apparel product categories (INVAPP) was found to have a low significant impact on MSAA. The predictive power of INVAPP was ($\beta = 0.022$) in terms of path coefficients ($\beta$) value on BI. Thus the results of the current study provided the evidence that involvement towards product plays an important role in mobile shopping app adoption. This study results proved that the adoption of shopping through mobile app also depends on consumer’s involvement level towards the product. Thus, from the results of this study, it can be concluded that product involvement is an important construct that drives m-shopping app adoption.

5.3.15 MODERATING EFFECT OF GENDER, AGE, EXPERIENCE AND PROFESSION

These study results show that the moderating effect of group variable “Gender” with male as group 1 and female as group 2 for the paths between EE, TRST, PINNO and FLO towards MSAA were found to be significant at $\rho = 0.05$ (95%) level.

The test revealed that the moderating effect of grouping variable “Age” with an age range of 21-30 as group 1 and the age range of 31-40 as group 2 for the paths between PE, EE, ESI, PV, HAB, TRST, PR, MSE, PINNO and INVELE towards MSAA were found to be significant at $\rho = 0.05$ (95%) level. The moderating effect of grouping variable “Age” with an age range of 21-30 years as group 1 and age 41-50 years as group 3 for the paths between PE, PV, TRST, MSE, PINNO, INVELE and INVAPP towards MSAA were found to be significant at $\rho = 0.05$ (95%) level. The moderating effect of grouping variable “Age” with an age range of 31-40 as group 2 and age 41-50 as group 3 for the paths between PE, EE, ESI, HM, PV, HAB, PR, PINNO, FLO, INVELE and INVAPP towards BI were found
to be significant at $\rho=0.05$ (95%) level. The test revealed that the moderating effect of grouping variable “Profession” with IT professionals as group 1 and academic professors as group 2 for the paths between PE, EE, HM, HAB, TRST and MSE towards BI were found to be significant at $\rho=0.05$ (95%) level. The moderating effect of grouping variable “Profession” with IT working professionals as group 1 and Bank employees as group 3 for the paths between EE, ISI, PV and TRST towards BI were found to be significant at $\rho=0.05$ (95%) level. The moderating effect of grouping variable “Profession” with academic professors as group 2 and Bank employees as group 3 for the paths between EE, ISI, HM, PV, PR, MSE, PINNO, FLO and INVELE towards BI were found to be significant at $\rho=0.05$ (95%) level.

5.4 DISCUSSION

This study presented an initial effort to extend on understanding the use of mobile application technology for shopping purposes. This study conceptualized a framework by incorporating several constructs from multiple behavioural theories such as the Unified theory of acceptance and use of technology 2 (UTUAT2) (Venkatesh et al., 2012), Unified theory of acceptance and use of technology 2 (Slade et al., 2014), Flow theory (Csikszentmihalyi, 1975) and Involvement theory (Zaickhowsky, 1985) within the context of mobile shopping app acceptance. In addition, this study compared the results of current research with existing (UTAUT2 and extended UTAUT2) models to verify their explanatory power in m-shopping app adoption context and investigated the relationship between various constructs (such as PE, EE, ISI, ESI, FC, PV, HM, HAB, TRST, PR, PINNO, FLO, INVELE, and INVAPP) towards mobile shopping app adoption.

5.4.1. CONCLUSIONS OF THE STUDY

The following conclusions were drawn from the findings of this study

- The study results once again proved that UTAUT2 has a good explanatory power (Slade et al., 2014; Venkatesh et al., 2012). UTAUT2 of Venkatesh et al (2012) explains 67.1%, extended UTAUT2 of Slade et al (2014) explains 74.4% of the variance and the proposed extended UTAUT2 model
of this current research explains 80.4% of the variance in a m-app shopping context.

- The proposed model has 80.4% of explanatory power which is considered to be substantial as per recommendations of Hair et al (2011, 2013) and Henseler et al (2009) for $R^2$ values. Thus the proposed model is said to have the substantial explanatory power on behavioural intention.

- Apart from basic constructs of UTAUT2 Venkatesh et al (2012) model several other constructs (such as ESI, INVELE, FLO, PINNO, TRST and PR) also play important role in MSAA.

- PV was found to have a strong significant impact on MSAA. M-shopping app users perceive PV to be most important for its adoption, which is consistent with previous m-commerce studies such as (Chong, 2013; Kim and Han, 2014; Liu et al., 2015; Yang, 2013; Yee, 2015). The reason behind this would be the discounts offered by the m-commerce providers such as (App shopping day, App mela etc.). So m-commerce providers must take serious note on it to promote their products through apps. At least for this sample PV was found to be the critical factor that affects MSAA. These findings validate the proposed model’s congruence with the existing established UTAUT2 model by Venkatesh et al (2012) in that PV are found to be the significant contributor towards model’s explanatory power.

- Product involvement with electronic gadgets product categories (INVELE) was found to be the second most important factor that affects MSAA. Which supports the argument of Kim and Han (2014), Yul (2014) and Zhou (2013) who stated that involvement has a significant role in mobile app technology adoption. At least for this sample INVELE was found to be the critical factor that affects MSAA. This finding shows that improvement in proposed model’s factor structure and explanatory power, which goes above and beyond the existing model structure provided by Venkatesh et al (2012) and Slade et al (2014).
PE was found to be a third strong factor that affects MSAA. App users perceive PE to be important for its adoption, which is consistent with previous m-commerce studies such as (Alwahaishi and Snášel, 2013; Yang, 2010; Yul, 2014).

PINNO was found to be the fourth most important factor that affects MSAA. Which is the evidence that the samples in this study are innovative, they like to adopt new innovations as early as possible. This factor was conceptually proposed under the UTAUT2 model by Slade et al (2014) but was never empirically tested in m-shopping app adoption context. The results of these findings prove that PINNO has a significant contribution towards existing model structure and explanatory power.

ESI was found to have a positive influence on MSAA. It is the fifth most important construct that affects MSAA. At least for this sample, the influence from various external sources (such as newspaper, magazines, online blogs, social media etc.) drives consumers to adopt mobile shopping app. This finding shows that improvement in proposed model’s factor structure and explanatory power, which goes above and beyond the existing model structure provided by Venkatesh et al (2012) and Slade et al (2014).

TRST was found to have a positive influence on MSAA. It is the sixth most important factor that affects MSAA. So this study proves that trust on app plays an important role in the adoption of MSAA, which supports the argument of Chong (2013), Gitau and Nzuki (2014), Sharif et al (2014), Nassuora (2013), Yang et al (2015), and Zhou (2013).

HM was found to have a seventh most important factor that affects MSAA. Thus fulfills the argument of Yul (2014) who recommended for more research on the effect of HM on mobile app adoption context.

FC was found to have a positive influence on MSAA. At least for this sample, FC is considered as a significant factor that affects MSAA.

ISI was found to have little impact on MSAA. For this study sample, the influence of the information shared between friends, family, and colleagues has minimum impact on MSAA.
HAB construct was found to be significant, but had very low impact on MSAA. This might be due to the early stage of mobile shopping app adoption among Indian consumers. The mobile apps are new to Indian society so future research should conduct a longitudinal study to understand the effect of HAB on mobile shopping app adoption. HAB was found to be a crucial element and had a strong impact on mobile shopping adoption in previous studies of (Groß, 2015a; Ha and Im, 2014; Hew et al., 2015; Kit, 2014; Yang, 2012; Yang, 2010; Yang, 2013; Yee, 2015). There is a need for a more longitudinal study to understand more clearly about the effect of Habit, Privacy and Security issues on using mobile apps (Yang, 2012) because it may vary from time to time.

MSE was found to have a positive influence on MSAA. This result contradicts with the previous study on mobile app adoption (Yul, 2014). There is mixed evidence on the role of MSE in mobile technology adoption so future research should investigate more on the effect of MSE on mobile technology adoption context.

PR was found to have a significant negative impact on MSAA. This result proves that at least for this sample sharing personal information and other transaction details with the mobile app is not a concern.

FLO was found to have a positive influence on MSAA. This result proves that at least for this sample flow experience of mobile shopping app has some effect on its adoption. FLO was found to have significant impact on e-shopping (Cho and Youn-Kyung, 2012; Korzaan, 2003; Shin and Kim, 2008; Zhang et al., 2014) and m-commerce (Kim and Han, 2014, Su et al., 2016, Zhou, 2013) adoption studies, so there is a need for more research on the effect of FLO on the mobile shopping app adoption among Indian smartphone users in future.

INVAPP was found to have a significant negative impact on MSAA. This result contradicts the previous study of Lloyd (2014) who stated that involvement with apparel products affects impulse buying. So there is a
need of more investigation on the effect of involvement with apparel products on MSAA in future.

- There is a significant moderating effect of gender on the paths between EE and ISI towards MSAA. These results prove that at least for this samples gender moderates MSAA.
- There is a significant moderating impact between “Age” groups with age range of 20-26 as group 1 and age range of 27-32 as group 2 for the paths between PE, EE, FC, HM, PV, HAB, TRST, PR and MSE towards MSAA, with age range of 20-26 as group 1 and age 33 and above as group 3 for the paths between PE, FC, PV, HAB, TRST, PR, PINNO, INVELE and INVAPP towards MSAA and also with age range of 27-32 as group 2 and age 33 and above as group 3 for the paths between PE, EE, ISI, FC, HM, PV, HAB, PR, PINNO, INVELE and INVAPP towards MSAA. This result proves that at least for this samples the AGE moderates MSAA.
- There is significant moderating impact of grouping variable “Profession” with IT professionals as group 1 and academic professors as group 2 for the paths between PE, HM, TRST, and MSE towards MSAA, with IT working professionals as group 1 and Bank employees as group 3 for the paths between EE, ISI, PV, PR, INVELE and INVAPP towards MSAA and also with academic professors as group 2 and Bank employees as group 3 for the paths between ISI, HM, PV, MSE, INVELE and INVAPP towards MSAA. This result proves that at least for this samples the Profession moderates MSAA.

5.5 THEORETICAL CONTRIBUTION

This research has explored factors affecting mobile shopping app adoption through the smartphone. Venkatesh et al (2012) who developed Unified theory of acceptance and Use of Technology 2 (UTAUT2) model suggested that UTAUT2 model should be tested with different countries, with different technologies and also should be extended with other relevant factors in a consumer context. This research fills this gap by exploring other relevant constructs of UTAUT2 in m-shopping app adoption context. Scholars have
extended UTAUT2 in a mobile technology context, such as Slade et al (2013) who expanded the UTAUT2 model in mobile health care app’s context wherein they suggested to confirm the validity of their proposed mechanisms with different technologies. Slade et al (2014) also extended the UTAUT2 model in m-payment adoption context and suggested for future research to empirically validate their model in different technological context. Alalwan et al (2014) who used UTAUT2 model in Internet banking adoption context and suggested future research study on other mobile technology adoption using UTAUT2 with other relevant constructs. This research study has contributed UTAUT2 models of Venkatesh et al (2012) and Slade et al (2014) by empirically validating it in m-shopping context, and also confirmed that proposed UTAUT2 has substantial explanatory power in explaining technology adoption at the consumer level.

Both Venkatesh et al (2012) and Slade et al (2014) UTAUT2 models showed substantial improvements in the variance explained in behavioural intention. This study has supported Slade et al (2014) UTAUT2 model through an empirical validation and have also come up with three more extra constructs such as external social influence (ESI), Product involvement (INVELE and INVAPP) and Flow (FLO) experience by extending the UTAUT2 model of Slade et al (2014). As stated by Venkatesh et al (2012) there is an improvement in variance explained in behavioural intention (BI) with the application of UTAUT2 in the consumer context. With these results, this study provides a significant contribution towards strengthening the arguments for extending the existing model by Venkatesh et al (2012) and Slade et al (2014).

5.6 PRACTICAL IMPLICATIONS

From the results of this study few important implications are drawn such as from m-commerce, business providers must focus on offering valuable pricing strategies to attract more customers to shop through m-apps. This study results showed that PV is an important factor that drives Indian smartphone users to shop through mobile shopping apps. The Indian m-commerce companies promoted shopping apps through various schemes such as ‘app-shopping day’ by offering sales of products at a lesser price in app-shopping compared to website shopping in the past. The m-commerce providers must focus keenly on offering products at a lower price and also should focus on attracting customers by
sending information on mobile coupons/deals through their app. Involvement with electronic products also leads to MSAA which indicates that at least for samples of this study the product involvement (INVELE) has a significant effect, so m-commerce providers must try to promote products based on consumer’s involvement level towards the product by offering a better price on the products that are most searched by the user through mobile apps to keep them involved and increase business transactions.

The PE was found to have a third strongest impact on MSAA. So m-commerce companies must also focus on utilitarian features of mobile shopping apps. Utilitarian features such as sending proper customised promotional information about the products and with the proper assortment of products list will drive consumers to adopt mobile app channel for shopping.

The results of this study also show that PINNO was found to be one of the important factors that affect MSAA. This indicates that the sample chosen for the current study shown to be giving higher preference for innovation when it comes to adopting any new technology. They like to adopt these new technologies at an early stage, if possible. Hence, m-commerce providers must try to enhance features of a shopping app with more new innovative technology system.

ESI was also found to have some impact on MSAA which indicates that external promotion of shopping apps from various external sources such as newspapers, magazines, blogs, forums, social networks, etc. affects MSAA. These findings match with the recent trend among consumers who use digital platform for most of their spending. This highlights the surge in adoption of digital transaction among consumers. The proposed model proves that by adding ESI as an additional construct, better explanations can be derived from UTAUT2 model in the m-shopping adoption context. M-business providers must strategize their promotions with the use of innovative and effective media channel to acquire more customers and strengthen their business. Since PR was found to have a negative impact on BI and TRST was found to have a positive impact on MSAA which shows that mobile shoppers do not hesitate to share personal and transactional information with mobile apps thus, this gives an opportunity to m-commerce providers to enable location-based marketing (LBM). TRST towards apps also enables many m-commerce providers to strengthen their consumer’s analytics for improved business. The m-commerce providers
can promote their offers through proper customization by efficiently tracking app user’s behaviour. Surprisingly, FLO was also found to have a positive influence on m-shopping app adoption. At least for the samples of this study, there was some effect of FLO on m-shopping app adoption.

HAB was found to be having statistically significant relationship with BI but, it is of low magnitude. This low value could be attributed to the nascent stage of m-app shopping among smartphone users in India. This is further explained by the statistically significant relationship between HAB and USB which was also moderate in its magnitude. Hence, a close attention must be paid towards the aspect of HAB among mobile app adopters by m-business providers. ISI was also found to have a low significant impact on MSAA which shows that there is a need for providing better mobile app shopping experience to app users that can lead to internal social influence which will ultimately impact m-business. Hence, m-business providers must focus on providing better customer experience. INVAPP was found to have a negative significant impact on BI which indicates that involvement differs with the product so it is for MSAA.

From the multigroup analysis of gender, it can be observed that the effect of TRST and FLO on MSAA was found to be slightly higher among the male group when compared to the female group. The effect of PINNO and EE on BI towards m-app shopping adoption was found to be slightly higher among the female group when compared to the male group which indicates that the female shoppers are more innovative and like to adopt app if it is user-friendly. Females despite being so innovative in the adoption of new technology but TRST factor was found to lower when compared to males. So m-commerce companies must focus on this aspect of gender difference and provide the necessary features accordingly.

The PV was found to be the most important factor for mobile app shopping among the age group (41-50) users when compared with the other two age groups [(i.e. age groups 21-30 and 31-40)] users, so m-commerce providers must keep track on age of users and offer them better price for the age group 41-50 range. At the same time, the users of age group (41-50) were found to have very low TRST on BI when compared to the other two age groups [(i.e. age groups 21-30 and 31-40)] which show that aged people still has some hesitation on sharing their information with the apps. The INVELE is high among age
group (21-30) when compared to the other two age groups [(i.e. age groups 21-30 and 31-40)] which indicate that the m-commerce providers must promote products based on the age factor. INVELE was found to be the major factor among Bank Employees in adopting MSA when compared to other professions. So m-commerce companies must make a note that the m-shopping app adoption differs across professions and PV is not always important it differs across professions based on their needs.

5.7 LIMITATION AND RECOMMENDATIONS FOR FUTURE RESEARCH

The existing model has been tested on a specific set of demographic audience whereas the current study has used an entirely different set of participants. This differs in terms of Context, Culture, Language, Geographical space and Profession. Because of this reason the generalization of studies results is not advisable. There is a need of utmost care to be taken during the application of the proposed model in a different context and with different culture samples. Since this study has used non-probability sampling in the form of the purposive method, a degree of sampling bias is expected. In this study, the Habit (HAB) and Internal social influence (ISI) construct were found as a significant factor but with very low impact on BI. In this study, ESI as a construct was measured in a broader term. This limits the scope of explanations that can be arrived at its results. In order to get a meaningful measure out of this construct, an expansion, and specific focus must be given on a contextual basis. This can be achieved by separating the sources of ESI into varying categories such as print (i.e. newsprint, hoardings, brochures, wall posters, standees, etc.), digital (i.e. social network sites, digital kiosks, Television, etc.). As part of the empirical validation of the model experience of using m-shopping app was tested for its moderator role. The findings of this measure show that there is inadequate information in this regard, at the moment in the Indian context. Hence, a definitive inference could not be drawn from the results of this study. With more penetration of mobile shopping app usage could pave way for detailed understanding on the aspect of experience as a moderator. Future research should investigate more on the effect of HAB and ISI construct in MSAA context. In this current study, the samples were drawn from three different professions (IT employees, Academic professors, and Bank employees) future research should include more samples
from different professions for better generalization. There is a need for a more longitudinal study to understand more clearly about the effect of Habit, Flow, Privacy and Security issues on using mobile apps (Yang, 2012) because it may vary from time to time. Previous studies on mobile app adoption arena have suggested investigating the effect of other constructs such as system reliability (Siau et al., 2004; Yul, 2014) and the effect of variables such as satisfaction, loyalty (Chong, 2013; Thakur and Srivastava, 2013) on m-shopping adoption context. The effect of social ties (i.e. number friends in a social network) which was found to be one of the major factors to adopt mobile apps (Hsiao et al., 2016) must be investigated in future research.

Keels (2012) suggest for future research with different fashion product categories (such as Shoes, accessories, jewellery, and housewares) in MSA context. The perceived risk (PR) was found to have a negative impact on m-app shopping adoption and TRST was found to have a positive significance impact on m-shopping app adoption, which indicates that mobile app shopper are not worried on sharing personal information and transactional details with the shopping app. Thus, this gives an opportunity to m-commerce providers to enable location-based marketing (LBM). LBM is an upcoming concept. There is a need for more research on LBM through retail apps (Kang et al., 2015; Kim et al., 2013; Lee et al., 2015). The location-based shopping adoption increases when perceived risk is low (Zhou, 2013). The design aesthetics of mobile apps also affects its adoption intention (Hazarika et al., 2015). So there is a need for more investigation on the effect of design aesthetics of apps on m-shopping app adoption in future. The adoption of retail apps is new to Indian consumers so future research can focus on Location-based shopping retail apps adoption among Indian consumers.