

# CONSUMERS' RESPONSE TO M-COMMERCE ADOPTION INTENTION IN THE STATE OF GUJARAT

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## ABSTRACT:

The main aim of this paper is to find the consumers' M-Commerce adoption intention for product or services purchase in the western state of India - Gujarat. To conduct this study, a primary research technique using an online survey form method was used as a research instrument & 53 samples were collected from various towns and cities of Gujarat state. The methods used for analysis of the responses are mean, standard deviation and ANOVA. This research paper discusses the various factors that play a key role in enabling consumers to adopt online purchase through mobile phones compared to traditional e-commerce portals. The findings of this study state that the people of Gujarat show an inclination to adopt M-Commerce based on need, availability of attractive schemes and enhanced security features on the electronic payment platforms.

The practical implication of this paper is that the companies in India can leverage the platform of M-Commerce to market their products or services, as this gives them the scope of wide spread, fast reach and penetration to their intended target audience.

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Consumers, in turn, will have the privilege of choosing the product or service based on their requirements, areas of interest, offers available and current location through M-Commerce applications. This research will enhance value-addition to M-Marketing firms as they can send marketing related messages or videos to consumers based on their search profiles. Consumers, on the other hand, can also request information based on their current location and perform M-Commerce operations based on needs, offers available and convenience.

**Keywords:** M-Marketing, M-Commerce, Accessibility, E-Commerce, Location-specific messaging.

## **1. INTRODUCTION:**

People in India are now moving towards cashless economy through various digital platforms like Mobile wallet, M-Marketing and M-Commerce tools in the current scenario of high digitalization, and the recent demonetization of high denomination currency enforced by the union government. India being a developing market for smartphones, the focus of M-Marketing and M-Commerce is likely to gain further momentum in the coming years. With the Government of India redrafting the telecom policy, broadband through wireless media like smartphones and tablets will have a whirlwind effect on the use of M-Marketing and M-Commerce in India. According to MMA (2011), firms looking forward to compete with each other on mobile platform should prioritize the development of smartphone apps that look to provide customers with basic utility, fun and entertainment at home or on the move connectivity.

Brands must make aware about the real risk and opportunities of M-Commerce through smartphones, before expecting returns in the form of interactivity and revenue from customers (MMA-2011). Any brand should first understand the social inclination of its users and then manage its way to instill itself in the minds of the customers (MMA-2011). Apart from this, the biggest hurdle in analyzing whether the mobile strategies and campaigns were successful lies in its measurement techniques.

The customer value created by firm's mobile marketing applications results in adoption intention, usage and loyalty which in turn affect association and loyalty to the firm. To understand customer repurchase behaviors, both, cognitive and affective variables are taken into consideration. Trust and attitude form important determinants of customer adoption intention towards M-Commerce applications.

Consumers spend more time on Facebook, Twitter and Instagram these days. As a result, smartphone has become more social and has provided marketing firms with a platform to

interact with users simply and effectively. Since, the entire targeted customer base is on same platform, it is easier for M-Marketing firms to advertisement and interacts with customers at virtually no-cost (MMA-2011). Thus, mobile marketing can devise extraordinary experiences for customers that they can share with family and friends (MMA-2011). Ultimately, smartphones must be seen as long-term investments that enhances value to customer (MMA-2011).

## **2. LITERATURE REVIEW:**

According to a survey by Harris Interactive & Tea-leaf Survey, 2011, 47% of consumers expect their smartphone transaction to be at least the same or even better than in-store experience. Among these 47% customers, 80% of them expect it to be at par or even higher than in-store experience, and 85% expect it to be comparative or even superior to their online experience using a laptop or desktop computer. According to another survey conducted by Local and e-tailing group 2012, 47% of customers use their smartphone's local information search such as a store nearby to visit, 46% of users check product prices on shop's mobile apps, and 42% verify stockpiles before shopping from a store.

According to Mobile Audience Insights Report from JiWire, 2012, 80% of smartphone users look for local advertising relevant to them and 75% after going through location-specific messages, may take action. According to eDigitalResearch, eCustomerServiceIndex (2012), 30% of online shopping had happened through tablets, while only 25% of shopping had happened through smart-phone.

As per reports of study conducted by inMobiHoliday Mobile Shopping (2012), 29% of customers approach smartphones to study brand new products or services, 27% access the smartphone while making a decision to buy and 15% of shoppers utilize it to make a purchase during holiday season. According to a study by InMobi Holiday Mobile Shopping (2012), apart from product research by consumers through mobile devices over 21 million consumers, i.e. 36%, make direct purchase plans from their mobile devices.

According to Balasubramanian, 2002 & Chenandnath, 2004, the customer value created by mobile services should be independent of time and place, and should be customized based on their personal profile, time and location. According to kumar and Zahn (2003), interactivity by customer and operational efficiency turned out to be real business drivers for firms resulting in increased effectiveness and efficiency for retailers. According to Barnes, 2002; Buellingen and Woerter, 2004; Mamaar, 2003; Shankar and Balasubramanian 2009, several activities by multiple actors contribute to mobile marketing value chain thereby improving communication and sales.

Mobile marketing should also include location-specificity which is a unique feature that is not found in internet marketing. Thus, firms should focus on identifying M-Marketing opportunities that adequately leverages the customer's physical location (Kolmel and Alexakis, 2002). Similarly, a customer should not be cluttered with offers and messages. They must be targeted selectively in a tailor made fashion with offers rather than being harrowed through messages that are indiscriminately broadcasted to the entire customer base.

According to Cabanillis, Fernandez & Munoz-Leiva (2012), the customer's age plays an important role in the proposed behavioral model. Apart from the trust factor, perceived risk also plays the role of an impediment in the adoption of mobile payment-related activities. Experience also exhibits a major factor in the use of m-commerce related activities such as m-payment, m-banking and m-transaction. After a certain number of attempts, the user generally feels comfortable in handling mobile-related transactions due to fast, convenient, safe and simple way of handling the transaction menu within a given device.

The vendors and companies are also at advantage because of the experience of m-commerce activity as compared to e-commerce related activity because of its anytime, anyplace accessibility. Another important factor the user experiences is the standards used by telecom-service providers, such as GSM, UMTS and SIM Cards that provides safer interaction for economic transaction through their data encryption technique. Thus, with experience the intention to use m-commerce related activities either through dedicated websites or through virtual social network will increase because of improved reliability and reduced wait time and errors.

According to Gupta et al 2013; future M-Marketing apps can be personalized to gain highest performance as future marketing strategies targets the power of apps within the mobile domain. Similarly, retailers should apply a mobile marketing focus to create a sustainable and profitable relationship with smartphone savvy customers. According to various research documents, innovativeness has frequently been considered as an important construct in explaining adoption of new technologies like QR codes and NFC by customer (Aldas-Manzano et al. 2009; Bauer et al. 2005; Kim et al; 2008).

### **3. OBJECTIVE:**

The main objective of this study is to understand the consumer expectations and consumer adoption intention of m-commerce apps in the state of Gujarat. Therefore, the objective of this research would be:

1. To analyze the consumer's response to m-commerce in Gujarat.
2. To identify the factors responsible for customer adoption of M-Commerce in Gujarat.
3. To determine the moderating effect of age, experience and external influence in the adoption intention of consumers towards M-Commerce app in the state of Gujarat.

#### **4. HYPOTHESES AND RESEARCH MODEL:**

As per study conducted by, Roselius (1971); Featherman and Fuller (2003), it was stated that consumers with lower level of experience in using M-Commerce tools will perceive a high level of risk in using such tools will therefore require an external boosting from their family, friends and peers. Therefore, as the external influences increases, consumers' level of trust also increases. Hence, the following hypothesis is proposed:

H1. External influence has a moderating effect on perceived ease-of-use of m-commerce apps in adopting these tools.

Because of the awareness of the risk associated with M-Commerce apps, customers with a higher experience will exhibit higher level of trust towards such apps (Flavián & Guinalú, 2007; Ruizet al., 2007; Sultan, 2002). Customers with zero experience with similar M-Commerce apps will require a greater trust to reduce the effort required for adoption of such system. Based on the above, the following hypothesis is proposed:

H2. Trust has a moderating effect on perceived ease-of-use of m-commerce apps in adopting such tools.

Additionally, experience will negatively affect the association between perceived usefulness and attitude. Thus, perceived usefulness will have a lesser effect on experienced consumers, as they have prior knowledge of such apps. Thus, higher the experience levels in a consumer will make the assessment more confusing, compared to the assessment process for inexperienced consumers. Inexperienced M-Commerce consumers will be in a better position to assess the usefulness, and their attitude towards the payment system will be supportive (Ha, Yoon, & Choi, 2007). Under these circumstances, the following hypothesis is proposed:

H3. Experience has a negative moderating effect on the relationship between attitude and adoption intention of new m-commerce tools.

The level of customer experience also moderates the relationship between usefulness and adoption intention. Customers with no previous experience with such payments tools will

have strong positive inclination towards the usage of such tools due to curiosity in exploring the usefulness of such new systems (Ha et al., 2007). Thus, customers with zero experience will develop a stronger bonding between system's usefulness and positive attitude towards the usage intention of such new payment system. Based on these aspects, it can be inferred that experience has a moderating effect on the above mentioned relationship, where consumers with no experience are better inclined towards such relationship between usefulness and adoption intention than those users who already have some experience on such m-commerce apps (Ha et al., 2007). Based on above arguments, the following hypothesis is proposed:

H4. Experience has a negative moderating effect on the relationship between perceived usefulness and adoption intention of new m-commerce tools.

Young consumers are more inclined to adopt contemporary technological apps due to their inherent perception of greater ease of use. According to a survey conducted separately by ONTSI (2011) on the use of e-commerce, and by AMETIC (2011) on mobile internet, based on social networks on raw data, it was statistically verified that young consumers have a higher inclination to accept the latest technological apps. Thus, it can be stated based on the above evidence that elderly customers will require greater external influence and will require greater guidance from a social group (Van de Watering, 2007) than younger users (Chung, Park, Wang, Fulk, & McLaughlin, 2010). Based on the above reasons, the following hypothesis is proposed:

H5. Age has a moderating effect on the relationship between perceived ease of use and adoption intention of latest m-commerce tools.

Based on their knowledge and greater accessibility of latest technological apps (INE, 2012; ONTSI, 2011), younger users are expected to show greater trust and ease of use than older users due to the latter's reluctance towards latest payment tools. Hence, it can be stated that young users will display great affinity towards new technology based on trust factor, thereby resulting in perceived ease (Lorenzo, Alarcón, & Gómez, 2011). Under these circumstances, the following hypothesis is proposed:

H6. Age has a moderating effect on the relationship between perceived risk and adoption intention of latest m-commerce tools.

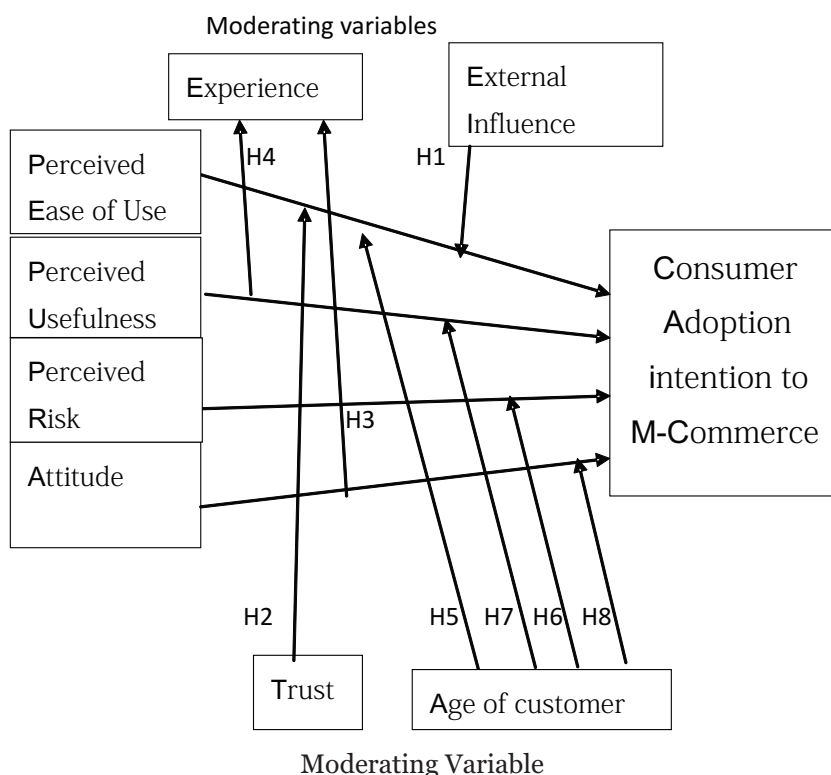
Under the influence of extrinsic rewards, young users will have fewer difficulties in processing complex stimuli compared to older users. This determines the extent to which younger users intend to adopt a new transaction system (Venkatesh et al., 2003). On the

other hand, elderly customers will require others' influence or opinion to adopt such new payment tools (Venkatesh et al., 2003). Thus, again, the external influence seems to moderate the approach towards adoption of new payment tools in case of older customers, than in case of younger customers. On the basis of the above reasons, the hypothesis mentioned below is proposed:

H7. Age has a moderating effect on the relationship between perceived usefulness and adoption intention of a new m-commerce system.

Lastly, young users' attitudes are more inclined towards new technology as they trust, and put in less effort to understand the nuances of new technology, thereby enhancing their attitude towards these services (Lorenzo et al., 2011). Conversely, older users trust less and put in more effort to understand the details of these services including the content, quality and security aspects. Hence, on the basis of above argument, the proposed hypothesis is:

H8. Age has a moderating effect on the relationship between attitude and adoption intention of new m-commerce system.



**Figure (a):- Conceptual model**

## 5. RESEARCH METHODOLOGY:

The research methodology used in this study relies on online survey technique where questionnaires with measurement scale items adapted from extant literature were circulated amongst students, young-working professionals and middle level working professional. They were asked to submit their response. The data collected thus was then compiled together and analyzed in SPSS 17.

### Data Collection & Sampling:

Since the study is based on mobile users of all age group and across various professions, data collection was carried out through the convenience quota sampling technique, which is a non-probability sampling technique known for ease of data collection, lower costs, and lower turnaround time.

Data collection was done across various districts of the cosmopolitan state of Gujarat. The questionnaire was prepared using Google Forms for technical ease of distribution and collection. Overall, 126 online survey forms were sent via email, to various respondents across Gujarat; 53 were received back.

All the item scales for the constructs were adapted from existing literature, and were based on the 5-point Likert scale. Before circulating the questionnaire for data collection, two external experts were consulted for questionnaire reviewing. The questionnaire was also tested on junior research fellows and other visiting scholars for language clarity and validity. The list of measurement scale items and their sources of adaptation are mentioned below in Table 5.1

**Table 5.1 Measurement scale items and their sources**

<b>Statements</b>	<b>Construct</b>	<b>Source of adaptation</b>
1. Purchase of products/service through M -Commerce apps is quite user-friendly & easy.	Perceived Ease-of-use	Chong et al (2012).
2. I experienced a better level of comfort while transacting through M-Commerce apps than other online/offline mode through GPRS, 3G or 4G.		
3. I am able to use M-Commerce app connect to location based services, purchase product/services easily.		



4. M-commerce app allows me to improve my work productivity.	Perceived usefulness	Chong et al (2012).
5. Entertainment offered by m-commerce app is better and more convenient than pc based Internet		
6. M-Commerce is much more convenient than e-commerce.		
7. I will use m-commerce in the near future also.	Adoption intention	Chong et al (2012).
8. I will purchase m-commerce enabled smartphones in the near future as well.		
9. I am currently using m-commerce app frequently.		
10. Transactions through M -Commerce apps are as safe & secure.	Trust	Chong et al (2012).
11. Transactions via m-commerce apps are secured.		
12. I am confident with the security measurements offered by m-commerce apps.		
13. Privacy on m-commerce app is well protected		
14. I am not worried about providing credit card information for m-commerce transactions through apps.		
15. M-commerce app is as secure as any e-commerce websites.		
16. Friends and family members have great influence on my decision to use m-commerce apps.	External Influence	Chong et al (2012).
17. Mass media (e.g. TV, Radio, newspapers) always influence my decision to use m-commerce apps.		
18. It is the current trend to use m-commerce apps.		
19. I like the idea of using my smartphone to purchase products or services.	Attitude	Gao et al. (2013)
20. My smartphone could be a good way for me to access information about things to do and places to go at anytime, anywhere.		
21. I would enjoy receiving coupons or other offers and incentives on my smartphone.		

22. I am reluctant to provide personal information such as my name and e-mail address in lieu of receiving something of value to me.	Perceived Risk	Gao et al. (2013)
23. It is annoying to receive random or unsolicited texts from companies or organizations.		
24. I am reluctant to provide my personal information such as my name or email address in lieu of access to news and information of interest to me.		

### DATA ANALYSIS:

Based on sampling theory, the sample size should have an item-to-response ratio ranging from 1:4 to 1:10 for each set of scale items to be analyzed (Hinkin et al, 1995). In this research, there are 29 measurement items therefore a sample size of 116 to 290 respondents was considered appropriate for data analysis. As per above theory, an average sample size of 160 is well justified.

Analysis of variance (ANOVA) between m-commerce activities and several variables such as age group and experience, among others has been analyzed to see whether the objectives of the study are fulfilled or not. The data is presented in the tables below.

**Table 5.2: External Influence v/s Experience Level**

External Influence v/s Experience Level	Experience Level				F-Value	Sig.
	No Experience	Low-level	Medium-level	High-level		
External Influence	-	2.8	2.0	2.011	9.23	0.002

The results visible in Table 5.2 state that as the level of experience increases, the level of influence decreases from low to medium experience with significant analysis of variance  $F(2,50)=9.23$  ( $p<0.05$ ). The results signify that as the experience level of the customer increases, the amount of external influence becomes less imminent. Therefore, the results show that external influence has a significant effect on low-level experience than on high-level experience. Hence, hypothesis H1 stands supported.

**Table 5.3: Trust v/s Experience Level**

<b>Trust v/s Experience Level</b>	<b>Experience Level</b>				<b>F-value</b>	<b>Sig.</b>
	<b>No Experience</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>		
Trust in Adoption(Mean Value)	-	3.44	3.6	4.08	10.69	0.001

From Table 5.3, we understand that at a low level of experience, the trust is low, whereas when the level of experience increases, the trust in adopting the new technology also increases;  $F(3,49)=10.69$  is also significant ( $p<0.005$ ). Hence, hypothesis H2 stands supported.

**Table 5.4: Usefulness v/s Experience Level**

<b>Usefulness v/s Experience Level</b>	<b>Experience Level</b>				<b>F-value</b>	<b>Sig.</b>
	<b>No Experience</b>	<b>Low-level</b>	<b>Medium-level</b>	<b>High-level</b>		
Usefulness (Mean Value)	-	4.33	4.21	4.16	11.24	0.001

From Table 5.4, we understand that less experienced users are better placed to assess the usefulness of m-commerce apps and m-marketing tools compared to more experienced users, based on the result of analysis of variance with  $F(2,50)=11.24$  at  $p=0.001$ . Hence, hypothesis H3 stands supported.

**Table 5.5: Attitude v/s Experience Level**

<b>Attitude v/s Experience Level</b>	<b>Experience Level</b>				<b>F-value</b>	<b>Sig.</b>
	<b>No Experience (%)</b>	<b>Low-level (%)</b>	<b>Medium-level (%)</b>	<b>High-level (%)</b>		
Attitude (Mean Value)	-	3.88 (39%)	3.6 (38%)	4.16 (23%)	10.58	0.002

From Table 5.5, we understand that low to moderately experienced users feel more positive about adopting new technology such as M-Commerce, compared to highly experienced users as the analysis of variance value  $F(3,49)=10.58$  is significant at  $p<0.05$ . Similarly, the mean value of attitude also states that individuals with lesser experience show a higher level of positive attitude compared to users with medium levels of experience. But, from medium level to high level of experience, the attitude slightly decreases towards adoption of M-Commerce. Hence, hypothesis H4 stands supported.

**Table 5.6: Adoption Intention v/s Experience Level**

Adoption Intention v/s Experience Level	Experience Level				F-value	Sig.
	No Experience	Low-level	Medium-level	High-level		
Adoption Intention (Mean Value)	-	3.11	2.56	2.25	8.415	0.001

From the analysis, we infer that 43.4% of the respondents, irrespective of their experience level, show positive adoption intentions towards M-Commerce apps, whereas 35.8% of the respondent seems neutral, and the remaining are not in favor of adopting this new technology. Similarly, it can be stated that on average, an individual with lesser experience shows higher adoption intention compared to an individual with moderate (Mean value=2.56/5.0) experience and high level of experience (Mean value=2.25/5.0) with  $F(3,49)=8.415$  at  $p<0.05$ . Hence, hypothesis H5 stands supported.

**Table 5.7: Adoption Intention v/s Age group**

Adoption Intention v/s Age group	Age Group				F-value	Sig.
	16-30 years	31-45 years	46-60 years	Above 60 years		
Attitude (Mean Value)	3.80	2.88	3.0	4.0	8.965	0.002

From the analysis of Table 5.7, we infer that proportionately, the younger age group seems to accept this new technology more than the older age group. This is backed by the result of analysis of variance,  $F(3,49)=8.965$  at  $p<0.05$ . Therefore, hypothesis H6 stands supported.

**Table 5.8: Perceived Risk v/s Age Group**

Perceived Risk v/s Age Group	Age Group				F-value	Sig.
	16-30 years	31-45 years	46-60 years	Above 60 years		
Perceived Risk (Mean Value)	3.75	3.55	4.0	4.0	7.956	0.002

Contrary to the general perception that there is no significant role of age in the perceived risk avoidance in adopting new technology system like M-Commerce for buying products (Dabholkar, Bobbit and Lee, 2003), the findings of the analysis in this study is different. Based on the analysis of results, from Table 5.8, we can infer that on average the perceived risk avoidance is higher for higher age groups, at ANOVA value,  $F(2,50)=7.56$  at  $p<0.002$ . Hence, hypothesis H7 stands supported.

**Table 5.9: Perceived Usefulness v/s Age Group**

Perceived Usefulness v/s Age Group	Age Group				F-value	Sig.
	16 – 30 years	31 – 45 years	46 – 60 years	Above 60 years		
Perceived Usefulness (Mean Value)	3.97	4.02	4.0	3.0	9.357	0.002

The analysis result stated that 26 out of 36 respondents fall in the age group of 26–34 years; they agree to the perceived usefulness of M-Commerce apps influenced through various social media and group. Similarly, 10 out of 15 respondents in the age group of 35–44 years (middle-aged working professionals) agree to the perceived usefulness of M-Commerce apps directly influenced by social media or groups. It can be concluded that compared to older users, the younger users are highly persuaded by the perceived usefulness of M-Commerce apps as the analysis of variance value,  $F(3,49)=9.357$  is highly significant at  $p<0.05$ .

Similarly, from Table 5.9, we infer that students, young working professionals and middle-aged working professionals have higher perceived usefulness about M-Marketing tools and M-Commerce apps compared to older generations. Hence, hypothesis H8 is supported.

**Table 5.10: Attitude v/s Age group**

Attitude v/s Age group	Age Group				F-value	Sig.
	16-30 years	31-45 years	46-60 years	Above 60 years		
Attitude (Mean Value)	4.44	3.65	4.0	4.0	8.954	0.001

Similarly, the analysis of variance result in Table 5.10 shows analysis of variance  $F(3,49)=8.954$ ; this is again highly significant, implying that younger age groups display a positive attitude towards adopting this new technology. Finally, it can be stated that all the reviewed respondents displayed a positive attitude towards adoption of this new technology. It can be concluded based on the above findings that younger users are more positive towards adopting the new technology of m-marketing tools or m-commerce apps; however, there is need for further elaborate study on the adoption intentions and attitudes of people of higher age groups (45 years and above), towards this new technology.

Based on Table 5.10, it can be inferred that students show a higher positive attitude towards adoption of new technology compared to members of older age groups, such as young working professionals, middle-aged working professionals, and senior-level working professionals. Hence, hypothesis H9 stands supported.

## **6. DISCUSSION:**

Based on the data analysis detailed above, it can be primarily concluded that students, young working professionals, middle-aged working professionals, and older working professionals are positive in their approach towards the features, security aspects, and benefits of adopting the latest m-commerce apps compared to other online shopping modes such as e-commerce websites, and offline modes such as retail store purchase, wholesale store purchase, and physical banking at banks. From the data analysis, it can be stated that the people of Gujarat are ready to adopt m-commerce apps in the coming years due to the primary advantages such apps offer, such as the always-on feature, one-touch accessibility, the mobility feature, convenience, and added discounts.

For future studies, this study can further be elaborated to understand value-addition to m-marketing firms, as they can send marketing-related messages or videos based on customer search patterns. Customers, on the other hand, can request information based on their current location, and perform m-commerce operations based on needs, offers, and convenience. The practical application of this study can help smartphone manufacturers in developing apps as per customer expectations. It would also help various m-commerce firms to decide whether to go for push or pull based m-marketing in the coming years to capture more market share for online purchases through mobile phones.

### **Limitations of this study:**

Like most studies, this one, too, is not free from limitations. This study is restricted geographically to the western state of India – Gujarat. It can be extended to other parts of India in future. Here, the sample population comprises of a large number of young people. A

quota sample with a larger number of people of older age groups may provide greater insights about behaviors, approaches, and intentions of those from younger age groups. The category of homemakers, which is an integral part of Indian society, is yet to be studied for further insights into the adoption intentions towards M-Commerce apps.

This study does not discuss repeat purchase behavior, brand loyalty because of adoption intention, and customer relationship commitment due to increased satisfaction. Due to geographical constraints in data collection, convenience sampling was used here; this means the findings cannot be generalized to the entire nation. Other segments of the population, such as senior-level working professionals, senior citizens, and housewives, could be analyzed separately in more depth.

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