CHAPTER- FIVE

FINDINGS AND IMPLICATIONS OF THE RESEARCH STUDY

DETAILED CONTENTS AT A GLANCE

PARA NUMBER		PARTICULAR	PAGE NUMBER
		EXECUTIVE SUMMARY OF CHAPTER FIVE	
5.0		INTRODUCTION	231
5.1		FINDINGS OF RANKING THE PREFERENCE OF FEATURES WHILE SELECTING SMARTPHONE	231
	5.1.1	Hypotheses-01 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Vadodara City About Their Preference for Selected Features of Mobile Phone.	232
	5.1.2	Hypotheses-02 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Ahmedabad City About Their Preference for Selected Features of Mobile Phone.	232
	5.1.3	Hypotheses-03 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Ahmedabad City About Their Preference for Selected Features of Mobile Phone.	233
	5.1.4	Hypotheses-04 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Rajkot City About Their Preference for Selected Features of Mobile Phone.	233
	5.1.5	Hypotheses-05 There Is No Significant Difference in The Overall Mean Ranks Preference of The Selected M-Shoppers of Selected Cities of Gujarat State (Vadodara, Ahmedabad, Surat And Rajkot) About Their Preference for Selected Features of Mobile Phone.	234
	5.1.6	Implications of The Findings Based on Friedman Ranking Test on Features of Preference While Selecting Smartphone	234
5.2		FINDINGS OF RANKING OF THE USER-FRIENDLINESS' OF OPERATING SYSTEM OF SMARTPHONE	236
	5.2.1	Hypotheses-06 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Vadodara City About Their User-Friendliness' with The Selected Operating System.	236
	5.2.2	Hypotheses-07 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Ahmedabad City About Their User-Friendliness' with The Selected Operating System.	236
	5.2.3	Hypotheses-08 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Surat City About Their User-Friendliness' with The Selected Operating System.	237
	5.2.4	Hypotheses-09 There Is No Significant Difference in The Mean Ranks Preference of The Selected M-Shoppers of Rajkot City About Their User-Friendliness' with The Selected Operating System.	237
	5.2.5	Implications of The Findings Based on Friedman Ranking Test on Preference Of Operating System Among Smartphone Users	238

PARA NUMBER		PARTICULAR	PAGE NUMBER
5.3		Findings of Chi-Square Test Applied to Test the Hypotheses	238
	5.3.1	Hypotheses-10 The Overall Opinion of Selected Smartphone Users on Perceived Ease of Use of Smartphone Attributes Has No Association with Their Selected Demographic Variables Such as Age; Gender; Income; Educational Qualifications and Marital Status.	238
	5.3.2	Implications of The Research Study Based on The Results of The Chi-Square Test on Perceived Ease of Use Vis-À-Vis Age, Gender, Income, Educational Qualifications and Marital Status	239
	5.3.3	Hypotheses-11 The Overall Opinion of Selected Smartphone Users on Price of Smartphone Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status.	239
	5.3.4	Implications of The Research Study Based on The Results of The Chi-Square Test on The Price of Smartphone Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status.	240
	5.3.5	Hypotheses-12 The Overall Opinion of Selected Smartphone Users on Perceived Usefulness of Smartphone Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status	241
	5.3.6	Implications of The Research Study Based on The Results of The Chi-Square Test on Perceived Usefulness of Smartphone Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status	242
	5.3.7	Hypotheses-13 The Overall Opinion of Selected Smartphone Users on Trust in Smartphone Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status.	243
	5.3.8	Implications of The Research Study Based on The Results of The Chi-Square Test on Trust in Smartphone Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status	243
	5.3.9	Hypotheses-14 The Overall Opinion of Selected Smartphone Users on Perceived Ease Of Use Of Smartphone Application Has No Association With Their Selected Demographic Variables Such As Age; Gender; Income; Educational Qualifications And Marital Status.	244
	5.3.10	Implications of The Research Study Based on The Results of The Chi-Square Test on Perceived Ease of Use of Smartphone Application Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status	246
	5.3.11	The Overall Opinion of Selected Smartphone Users on Price of Shopping in Smartphone Application Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status.	249

PARA NUMBER		PARTICULAR	PAGE NUMBER
	5.3.12	Implications of The Research Study Based on The Results of The Chi-Square Test on Price of Shopping from Smartphone Application Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status	250
	5.3.13	Hypotheses-16the Overall Opinion of Selected Smartphone Users on Perceived Usefulness of Smartphone Application Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status.	250
	5.3.14	Implications of The Research Study Based on The Results of The Chi-Square Test on Perceived Usefulness of Smartphone Application Vis-À-Vis Age, Income, Gender, Educational Qualifications and Marital Status	257
	5.3.15	Hypotheses-17 The Overall Opinion of Selected Smartphone Users on Trust in Smartphone Application Has No Association with Their Selected Demographic Variables Such as Age; Income; Educational Qualifications and Marital Status.	261
	5.3.16	Implications of The Research Study Based on The Overall Opinion of Selected Smartphone Users on Trust in Smartphone Application Vis-À-Vis Age; Income; Educational Qualifications and Marital Status.	264
	5.3.17	Hypotheses-18 The Overall Opinion of Selected Smartphone Users on Quality of Smartphone Application Has No Association with Their Recommendations to Others For M-Shopping	266
	5.3.18	Implications of The Research Study Based on The Overall Opinion of Selected Smartphone Users on The Quality of Smartphone Application and Recommendations To Others Vis-À-Vis Perceived Usefulness, Perceived Ease Of Use, Price And Trust.	268
	5.3.19	Hypotheses-19 The Overall Opinion of Selected Smartphone Users of Quality Of Smartphone Application By Selected Smartphone Users Has No Association With Their Continuance To Purchase.	269
	5.3.20	Implications of The Research Study Based on Selected Smartphone Users' Overall Opinion on Quality of Smartphone Application Vis-À-Vis; Their Continuance to Purchase	271
	5.3.21	Hypotheses-20 The Overall Opinion of Selected Smartphone Users on Smartphone Attributes by Selected Smartphone Users Has No Association with Their Continuance to Purchase.	272
	5.3.22	Implications of The Research Study Based on The Overall Opinion of Selected Smartphone Users on The Quality of Smartphone Application and Continuance to Purchase Vis-À-Vis Perceived Usefulness, Perceived Ease of Use, Price and Trust.	272
	5.3.23	Hypotheses-21 The Overall Opinion of Selected Smartphone Users on Smartphone Attributes by Selected Smartphone Users Has No Association with Recommendation to Others	274
	5.3.24	Implication of the research study based on Overall Opinion of Selected Smartphone Users on Smartphone Attributes by Selected Smartphone Users Has No Association with Recommendation to Others	275

PARA NUMBER		PARTICULAR	PAGE NUMBER
5.4		Factor Analysis of Mobile Application of Quality (MAQ) And Perceived Usefulness (Pu)	275
	5.4.1	Importance of Components for Mobile Applications Quality (MAQ) And Perceived Usefulness (PU)	279
5.5		Factor Analysis of Mobile Application Quality (MAQ) And Perceived Ease of Use (PE)	282
5.6		Factor Analysis of Mobile Application Quality (MAQ) And Trust (Tr)	286
5.7		Factor Analysis of Mobile Application Quality and Price KMO and Bartlett's Test	290
5.8		Factor Analysis of Mobile Attributes (Ma) And (Pu, Pe, Tr, Pr) KMO Bartlett's Test	292
5.9		Factor Analysis of Perceived Usefulness (Pu)And Mobile Attributes [Ma]	295
5.10		Factor Analysis of Perceived Ease of Use (PE) [MAQ And Ma] KMO And Bartlett's Test Perceived Ease of Use (PE) And Mobile Attributes [MA]	302
5.11		Factor Analysis of Trust (TR) And Mobile Attributes [MA] Through KMO And Bartlett's Test	306
5.12		Factor Analysis of Price (PR) And Mobile Attributes [MA] KMO and Bartlett's Test	310
5.13		Customers' Satisfaction Index (CSI) Of the Selected Mobile Shoppers' Satisfaction from Mobile Applications Quality And Smartphones Attributes In Selected Cities	312
5.14		Implications on Overall Market Performance Analysis and Customers' Satisfaction Score	316
5.15		Findings of Kendall's TAU Correlation	317
5.16		Structural Equation Model	319
5.17		KEY FINDINGS OF THE RESEARCH STUDY	323

CHAPTER – FIVE

FINDINGS AND IMPLICATIONS OF THE RESEARCH STUDY

EXECUTIVE SUMMARY OF THE CHAPTER NUMBER FIVE:

An attempt has been made by the research scholar in the chapter number five to offer implications of the research study based on the findings of the research study with the help of various statistical tools and statistical techniques applied in data analysis and testing of hypotheses of this research study. The researcher had applied chi-square to examine relationships between the opinion of the m-shoppers on various issues and their demographic variables. Experiences and Expectations of selected m-shoppers regarding the smartphone application quality amd smartphone attributes were also observed in relation to demographic variables. The relationships between perceived usefulness, perceived ease of use , trust and price of smartphone application quality and smartphone attributes with overall satisfaction , continuous intention to purchase on smartphone applications and recommendation to others about m-shopping were also seen with the help of SEM.

Corelation test was also applied to see the intensity of relationship between perceived usefulness, perceived ease of use , trust and price of smartphone application quality and smartphone attributes with overall satisfaction , continuous intention to purchase on smartphone applications and recommendation to others about m-shopping.

Friedman Test was carried out to identifying the ranking of features while buying a smartphone and in knowing preference of operating system by the selected m-shoppers of four selected cities viz., Vadodara, Surat, Rajkot and Ahmedabad of the Gujarat State.

The factor analysis was applied to study measure and examine the perceived usefulness , perceived ease of use , trust and price of smartphone application quality and smartphone attributes of selected m-shoppers to reduce the dimension of the construct. The researcher has offered overall findings and implications of the research study in this chapter.

CHAPTER – FIVE

FINDINGS AND IMPLICATIONS OF THE RESEARCH STUDY

5.0: INTRODUCTION:

The research study was undertaken to examine the expectation & experience of Smartphone users 'with reference to attributes of smartphone and shopping applications that lead to mobile shopping using smartphones and play a crucial role in influencing their m-shopping intentions, and further continuation of m-shopping and recommendation to other mobile shoppers in near future. The major objective of the research study was to study and examine the influence of Perceived Quality of Smartphone Applications, such as Appearance, Content Quality, Technical Adequacy, mediated by its Perceived Usefulness, Perceived ease of Use, Trust, Convenience to Use & Price Sensitivity, on M-Shoppers' Shopping intention; And to assess the influence of Perceived Quality of features of Smartphones, mediated by its Perceived Usefulness, Perceived ease of Use, Trust, Convenience to Use & Price Sensitivity, on M-Shoppers' Shopping Intentions.

In this chapter number five, research has presented the key findings of the research study. The primary data was collected from the selected smartphone users in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat, who were involved in m-shopping. The filled questionnaires have been used to derive meaningful data and were tabulated, interpreted, and analyzed by applying statistical tools.

The Friedman analysis, Chi-Square Test, Factor Analysis and SEM had been applied to test the various formulated hypotheses for this research study. Friedman test had been applied to analyze the preference of them-shoppers (question number 7) based on the experience of smartphone users.

For the purpose of applying the Chi-square test, the question no 21 had been bucketed into perceived usefulness, Perceived ease of Use, mobile application quality, perceived ease of use, trust, mobile attributes and price. The questionnaire had been simplified into unimportant, neutral, and important (Question number 21) for expectations. Regarding the experience, it had been simplified into poor, fair and good (question number 21).

5.1: FINDINGS OF RANKING THE PREFERENCE OF FEATURES WHILE SELECTING SMARTPHONE:

The researcher had analysed the data to know the preferences of selected features of the smartphone available in the market. There are several factors which influence the choice of the smartphone which are not the part of this research study, but for this particular study, what was the preference given by m-shoppers, while selecting a smartphone, had been recorded and ranked by the researcher. The ranking is shown as given below from Table Number:5.1 to Table Number 5.4.

5.1:1: HYPOTHESES-01: There is no significant difference in the mean ranks preference of the selected m-shoppers of Vadodara City about their preference for selected features of mobile phone.

Table Number 5.1: Findings of Friedman Test for Preference of Selected Features of Smartphones, of M-shoppers' of Vadodara City								
Descriptive Statistics (N= 299)							Friedman Test Score Value	
Selected Features of Smartphone	N	**Percentiles**			Mean Rank	Median Value		**Rank**
		25th	50th (Median)	75th				
Brand	299	2.00	3.00	4.00	2.84	3.0	X^2 = 40.379	**01**
Looks and feel	299	2.00	3.00	4.00	2.61	3.0		**02**
Functionality	299	1.00	2.00	3.00	2.26	2.0	**df** = 3	**04**
Security & Privacy	299	1.00	2.00	3.00	2.29	2.0	**P-Value** =0.000	**03**

Table Number 5.1 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of buyers of Smartphones of Vadodara City for selected Features of the smartphone. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 40.379, $p< 0.00$.

In the city of Vadodara, the analysis on the rank of features preferred while selecting the Smartphone, showed that the Brand value played a very important role among the users of Smartphone in Vadodara. Looks and feel came to the second rank while Security & Privacy was at the 3rd and Functionality were found the least preferred by them-shoppers of Vadodara.

5.1:2: HYPOTHESES-02: There is no significant difference in the mean ranks preference of the selected m-shoppers of Ahmedabad City about their preference for selected features of mobile phone.

Table Number 5.2: Findings of Friedman Test for Preference of Selected Features of Smartphones, of M-shoppers' of Ahmedabad City								
Descriptive Statistics (N= 500)							Friedman Test Score Value	
Selected Features of Smartphone	N	**Percentiles**			Mean Rank	Median Value		**Rank**
		25th	50th (Median)	75th				
Brand	500	2.00	3.00	4.00	2.78	3.0	X^2 = 236.952	**02**
Looks and feel	500	2.00	3.00	4.00	3.07	3.0		**01**
Functionality	500	1.00	2.00	3.00	1.96	2.0	**df** = 3	**04**
Security & Privacy	500	1.00	2.00	3.00	2.19	2.0	**P-Value** =0.000	**03**

The analysis showed that the feature of Looks & feel came to the first rank among the users of Smartphone in the city of Ahmedabad while Brand value came to the second rank and Security & Privacy was at the 3rd preference among the Ahmadabad smartphone users. Functionality was found the least preferred.

Table Number 5.2 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of buyers of Smartphones from **M-shoppers' of Ahmedabad City** for selected **Features of mobile phone**. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 236.952, p< 0.00.

5.1:3: HYPOTHESES-03: There is no significant difference in the mean ranks preference of the selected m-shoppers of Surat City about their preference for selected features of mobile phone.

Table Number 5.3: Findings of Friedman Test for Preference of Selected Features of Smartphones, of M-shoppers' of Surat City

Descriptive Statistics (N= 426)							Friedman Test Score Value	
Selected Features of Smartphone	N	**Percentiles**			Mean Rank	Median Value		**Rank**
		25th	50th (Median)	75th				
Brand	426	2.00	3.00	4.00	2.92	3.0	***X²*** = 142.94 **df** = 3 **P-Value** =0.000	**01**
Looks and feel	426	2.00	3.00	4.00	2.82	3.0		**02**
Functionality	426	1.00	2.00	3.00	2.10	2.0		**04**
Security & Privacy	426	1.00	2.00	3.00	2.16	2.0		**03**

In the city of Surat, the feature of Brand value played a very important role among the users of Smartphone. Looks and feel came to the second rank while Security & Privacy secured the 3rd preference among the smartphone users of Surat city. Functionality was found as least preferred in Surat.

Table Number 5.3 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of buyers of Smartphones from M-shoppers' of Surat City for selected Features of mobile phone. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x2 value (DF 3) = 142.94, p< 0.00.

5.1:4: HYPOTHESES-04: There is no significant difference in the mean ranks preference of the selected m-shoppers of Rajkot City about their preference for selected features of mobile phone.

Table Number 5.4: Findings of Friedman Test for Preference of Selected Features of Smartphones, of M-shoppers' of Rajkot City

Descriptive Statistics (N= 426)							Friedman Test Score Value	
Selected Features of Smartphone	N	**Percentiles**			Mean Rank	Median Value		**Rank**
		25^{th}	50th (Median)	75th				
Brand	426	2.00	3.00	3.00	2.65	3.0	***X²*** = 142.94 **df** = 3 **P-Value** =0.000	**02**
Looks and feel	426	2.00	3.00	4.00	2.57	3.0		**03**
Functionality	426	1.00	2.00	3.00	2.01	2.0		**04**
Security & Privacy	426	1.00	3.00	4.00	2.77	2.0		**01**

The study revealed in the city of Rajkot, the Security & Privacy played a very important role among the users of Smartphone. Brand value came to the second rank among the users of Rajkot city while Looks

and feel took the 3rd preference and Functionality was found at the least preference by the Rajkot m-shoppers.

Table Number 5.4 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of buyers of Smartphones from M-shoppers' of Rajkot City for selected Features of mobile phone. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 142.94, p< 0.00.

5.1.5: HYPOTHESES-05: There is no significant difference in the overall mean ranks preference of the selected m-shoppers of selected cities of Gujarat State (Vadodara, Ahmedabad, Surat and Rajkot) about their preference for selected features of mobile phone.

Table Number 5.5: Results of Friedman Test for Preference of Selected Features of Smartphones, of M-shoppers' of selected cities of Gujarat State (Vadodara, Ahmedabad, Surat and Rajkot)

Descriptive Statistics (N= 1489)							Friedman Test Score Value	
Selected Features of Smartphone	N	**Percentiles**			Mean Rank	Median Value		**Rank**
		25th	50th (Median)	75th				
Brand	1489	2.00	3.00	4.00	2.81	3.0	$\boldsymbol{X^2}$ =	**02**
Look and feel	1489	2.00	3.00	4.00	2.82	3.0	375.176	**01**
Functionality	1489	1.00	2.00	3.00	2.07	2.0	**df** = 3	**04**
Security & Privacy	1489	1.00	2.00	3.00	2.31	2.0	**P-Value** =0.000	**03**

The study among the smartphone users across the cities of Vadodara, Ahmedabad, Surat and Rajkot about their preference while selecting the smartphone showed the results displayed in the table above. Looks and feel topped the first preference, followed by Brand in the 2nd rank among them-shoppers. Security and Privacy bagged 3rd preference among smartphone users. The preference of functionality secured the least rank by the m-shoppers across the four selected cities.

The Table Number 5.5 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of selected m-shoppers of selected cities of Gujarat State (Vadodara, Ahmedabad, Surat and Rajkot) for selected Features of mobile phone. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 375.176, p< 0.00.Null Hypotheses was rejected.

5.1.6: Implications of the Findings Based on Friedman Ranking Test on Features of Preference while selecting Smartphone:

There are multiple driving forces, which play important roles in selecting smartphones. M-shoppers have numerous options while buying a smartphone. Result of the analysis indicated that customers believe in the brand name, which is established by the performance of the smartphone, so Manufacturers should focus on features, which are liked by the users, resulting into the brand image of the smartphone. Since m-shoppers enter the bank details and sensitive personal information, security becomes concerned of the online buyers. The easy handling, weight, dimensions and looks of the smartphones have also

become appealing in the selection process of smartphones. The smartphones vary in functionalities as per them-shoppers' need.

The Friedman test had been applied to rank the preference of them-shoppers in the cities of Vadodara, Ahmedabad, Surat and Rajkot. The findings of the test applied revealed that the **brand name** of the smartphone came as first preference while buying smartphones in the cities of Vadodara and Surat. This consumer preference shows that m-shoppers are developing awareness of the brand name of the smartphone. This is due to the reliability of the brand in case any hardware problem or defect in the smartphone that might arise in the future. Purchasing a reputed brand of a smartphone also carries a status symbol among smartphone users. Some of them-shoppers buy the high-end brand smartphones irrespective of the smartphones' functionalities and Looks. M-shoppers also rely on the guarantee provided the renowned manufacturers and the after-sales customer support. The well-known smartphone brands tend to have a good network of customer service centres all across India and abroad if needed.

Looks and feel of the smartphone became the first choice of preference to the users in Ahmedabad and it was the second preferred choice to the smartphone users in Vadodara and Surat. It bagged the third place among the smartphone users in Rajkot. It clearly shows that m-shoppers gave much importance to the Looks and feel of a smartphone. M-shoppers are getting conscious about the Looks of the smartphone, which provides an opportunity for the manufacturer for improving the looks and style of the phone to attract them-shoppers. Smartphone manufacturers should keep on introducing slight changes because users get bore from one style for long.

Security and privacy are a growing concern to smartphone users especially to those who are doing mobile shopping using shopping applications developed for smartphones. Selected m-shoppers in Rajkot preferred security and privacy as a second rank feature, whereas the smartphone users in Vadodara, Surat and Ahmedabad preferred Security and privacy in the third rank among the other options of brand name, Looks, feel and functionality. It indicates that security and privacy are mostly overshadowed by the brand value since the brand value is built based on the trust, that m-shoppers have on it. Security and privacy are the moderate preferred choice of smartphone users across all four major selected cities in Gujarat. With the change in technology and need of the safety & security in m-shopping would be of great importance in future, so smartphone manufacturers have to continuously update the smartphones so that it can very well satisfy the needs of its users. Due to increasing incidences of different type of frauds and concern for the privacy of data, m-shoppers now want the smartphone manufacturers to adopt new features as well as smartphone application developers to design secure payment systems, in m-shopping applications.

Functionality is the fourth most preferred features of the smartphone among the users in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot.

M-shoppers tend to prefer a good brand that would have good functionalities in their smartphones. Since the functionality is getting changed as per the latest release of updated mobile software and its versions,

m-shoppers prefer the reliable smartphone, having good Looks with easy handling and good security features.

5.2: FINDINGS OF RANKING OF THE USER-FRIENDLINESS' OF OPERATING SYSTEM OF SMARTPHONE

The researchers had analysed the data and results in the case of user-friendliness' of selected Smartphone users concerning the selected operating system is shown as given below from **Table Number 5.6 to Table Number 5.9.**

5.2:1: HYPOTHESES-06: There is no significant difference in the mean ranks preference of the selected m-shoppers of Vadodara City about their user-friendliness' with the selected operating system.

Table Number 5.6: Findings of Friedman Test for Preference of selected Operating Systems among selected m-shoppers of Vadodara City

Descriptive Statistics (N= 299)							Friedman Test Score Value	
Operating System	N	**Percentiles**						
		25th	50th (Median)	75th	Mean Rank	Median Value		**Rank**
Android	299	4.00	4.00	4.00	3.74	4.0	X^2 = 703.504 **df** = 3 **P-Value** =0.000	**01**
iOS	299	3.00	3.00	3.00	2.88	3.0		**02**
Windows	299	2.00	2.00	2.00	2.37	2.0		**03**

In the city of Vadodara, Android operating system secured the first rank among the users as the preferred operating system, followed by iOS in the second rank. The operating system of Windows came in third place. Other operating system came as the least preferred system among smartphone users.

Table Number 5.6 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of the selected m-shoppers of Vadodara City about their user-friendliness' with the selected operating system. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 703.504, p< 0.00, so the Null hypotheses were rejected.

5.2:2: HYPOTHESES-07: There is no significant difference in the mean ranks preference of the selected m-shoppers of Ahmedabad City about their user-friendliness' with the selected operating system.

Table Number 5.7: Findings of Friedman Test for Preference of selected Operating Systems among selected m-shoppers of Ahmedabad City

Descriptive Statistics (N= 500)							Friedman Test Score Value	
Operating System	N	**Percentiles**						
		25th	50th (Median)	75th	Mean Rank	Median Value		**Rank**
Android	500	4.00	4.00	4.00	3.79	4.0	X^2 = 1317.208 **df** = 3 **P-Value** =0.000	**01**
iOS	500	3.00	3.00	3.00	3.06	3.0		**02**
Windows	500	2.00	2.00	2.00	2.15	2.0		**03**

The Android operating system came to the first rank among the users of Ahmedabad city, followed by iOS in the second rank. The operating system of Windows came in third place. Other operating system came as the least preferred system among smartphone users.

Table Number 5.7 shows the result of a Friedman Test, which was carried out to compare the mean rank preference of the selected m-shoppers of Ahmedabad City about their user-friendliness' with the selected operating system. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 1317.208, p< 0.00, so the Null hypotheses was rejected.

5.2:3: HYPOTHESES-08: There is no significant difference in the mean ranks preference of the selected m-shoppers of Surat City about their user-friendliness' with the selected operating system.

Table Number 5.8: Findings of Friedman Test for Preference of selected Operating Systems among selected m-shoppers of Surat City

Descriptive Statistics (N= 426)							Friedman Test Score Value	
Operating System	N	**Percentiles**						
		25th	50th (Median)	75th	Mean Rank	Median Value		**Rank**
Android	426	4.00	4.00	4.00	3.79	4.0	***X²*** = 1118.208 **df** = 3 **P-Value** =0.000	**01**
iOS	426	3.00	3.00	3.00	3.06	3.0		**02**
Windows	426	2.00	2.00	2.00	2.15	2.0		**03**

In the case of Surat Android emerged as a first choice of operating systems among the Smartphone users', followed by iOS and Windows. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 1118.208, p< 0.00, so the Null hypotheses was rejected.

5.2:4: HYPOTHESES-09: There is no significant difference in the mean ranks preference of the selected m-shoppers of Rajkot City about their user-friendliness' with the selected operating system.

Table Number 5.9: Findings of Friedman Test for Preference of selected Operating Systems among selected m-shoppers of Rajkot City

Descriptive Statistics (N= 264)							Friedman Test Score Value	
Operating System	N	**Percentiles**						
		25th	50th (Median)	75th	Mean Rank	Median Value		**Rank**
Android	264	4.00	4.00	4.00	3.92	4.0	***X²*** = 717.317 **df** = 3 **P-Value** =0.000	**01**
iOS	264	3.00	3.00	3.00	2.88	3.0		**02**
Windows	264	2.00	2.00	2.00	2.20	2.0		**03**
Others	264	1.00	1.00	1.00	1.00	1.0		**04**

In the case of Rajkot also Android emerged as a first choice of operating systems among the Smartphone users', followed by iOS and Windows. It was found that there is an overall statistically significant difference between the mean ranks of the related groups with an x^2 value (DF 3) = 717.317, $p < 0.00$, so the Null hypotheses was rejected.

5.2.5: Implications of the findings Based on Friedman Ranking Test on Preference of Operating System among smartphone users:

Results of Ranking test on Preference of Operating System showed a very similar trend in all selected cities of Gujarat, where smartphone users were largely using android phones followed by iOS & windows. This was a clear indication of user sensitiveness towards price & ease of use, which is more in case of android phones. The android operating system is no doubt, having more user-friendly features than iOS. This implies that manufacturers of android phones keep on improvising its features, to attract the users' because smartphone users are already into using the android operating system. Windows operating system needs lots of improvement in designing features because till date it was unable to attract smartphone users in comparison of other available operating systems in the smartphone market.

5.3: FINDINGS OF CHI-SQUARE TEST APPLIED TO TEST THE HYPOTHESES:

The Chi-square test was applied to explore the association of demographic variables vis-a-vis Perceived Ease of Use, Ease of use, Trust, Usefulness & Price sensitivity of various attributes of Smartphones and Smartphone Shopping Applications, findings of which have been presented in the form of Hypothesis testing in the following paragraphs:

5.3.1: HYPOTHESES-10: The overall opinion of selected Smartphone users on Perceived Ease of Use of Smartphone Attributes has no association with their selected demographic variables such as Age; Gender; Income; Educational Qualifications and Marital Status.

Table Number 5.10: Selected Smartphone Users' Overall opinion on Perceived ease of use of Mobile Attribute vis-à vis; Age; Gender; Income; Marital Status and Educational Qualifications of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Age	Screen size affects online shopping	.058	.934	.810	.570	.452
		Zooming feature helps	.060	.741	.550	.174	.456
2	Gender	Screen size affects online shopping	.495	.620	.446	.428	.378
		Zooming feature helps	.577	.693	.470	.827	.425
3	Marital Status	Screen size affects online shopping	.889	.439	.230	.451	.202
		Zooming feature helps	.556	.602	.830	.606	.657
4	Income	Screen size affects online shopping	.076	.908	.810	.570	.427
		Zooming feature helps	.060	.761	.550	.174	.088
5	Educati on	Screen size affects online shopping	.058	.934	.810	.570	.453
		Zooming feature helps	.060	.741	.550	.174	.878

DV* Demographic Variables

As given in the Table Number 5.10, we accept the null hypothesis as the demographic variables such as Age, Gender, Marital Status, Income & Educational Qualification were found insignificantly associated ('p' value>0.05) with selected criteria related to Smartphone attributes such as Screen Size and Zooming Factor.

It was found that Smartphone users of all age-group, gender, marital status, belonging to different Income group & Educational background, found Smartphone attributes equally important & they all perceived ease of use of handling the smartphone while doing m-shopping, equally important, in all selected cities of Gujarat.

5.3.2: Implications of the research study based on the results of the chi-square test on perceived ease of use vis-à-vis Age, Gender, Income, Educational Qualifications and Marital Status:

The scholar has attempted to bring out the implications based on the selected smartphone users' overall opinion on perceived ease of use of mobile attribute vis-à-visage, gender, income, educational qualifications and marital status. The smartphone is widely available mostly to all the age groups. The purpose of having a smartphone differs from people to people based on their age group and the motive of buying smartphones. The researcher has analysed the screen size of smartphone affecting online shopping and zooming feature that helps to know the product well vis-à-vis age group, gender, income, marital status & educational Background of the smartphone users in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot.

The results based on the chi-square test had indicated that the age group, gender, income, marital status and educational qualification, are insignificantly associated with the size of the smartphone affecting online shopping across the selected cities of Vadodara, Ahmedabad, Surat and Rajkot perceived with the ease of use of smartphone users. The result indicated that the screen size of smartphone & zooming feature has no relationship with the smartphone users irrespective of the age groups, gender, income, marital status and educational qualification, and are having same user interface experience with the screen size of the smartphone and zooming experience, which implies manufacturers of the smartphone should focus on improvising smartphone attributes irrespective of smartphone users' age, gender, marital status, income & educational background.

5.3:3: HYPOTHESES-11: The overall opinion of selected Smartphone users on Price of Smartphone has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

Table Number 5.11:Selected Smartphone Users' Overall opinion on Price of Smartphone vis-à-vis; Age; Income; Educational Qualifications and Marital Status, of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Age	Price of phone decides quality	**.027**	**.003**	**.027**	**.030**	**.024**
		Price affects display of colour	**.016**	**.032**	**.004**	**.002**	**.020**
2	Gender	Price of phone decides quality	**.026**	**.001**	**.011**	**.021**	**.041**
		Price affects display of colour	**.018**	**.003**	**.040**	**.041**	**.037**
3	Marital Status	Price of phone decides quality	.793	.800	.679	.496	.281
		Price affects display of colour	.461	.706	.178	.280	.063
4	Income	Price of phone decides quality	.289	.600	.467	.896	.271
		Price affects display of colour	.261	.386	.108	.280	.098
5	Educati on	Price of phone decides quality	.323	.300	.579	.796	.450
		Price affects display of colour	.101	.721	.167	.230	.092

As given in the above table number 5.11, in case of Vadodara, Ahmedabad, Surat & Rajkot, we reject the null hypothesis as the demographic variables Age Group & Gender was found significantly associated ('P' value <0.05) with selected items concerning the Price of Smartphone. The smartphone users of all age-groups were having a different opinion regarding the price of smartphone & its effect on m-shopping. Similarly, male -Female Smartphone users were found having different views regarding the Price of smartphone and its impact on m-shopping.

As given in Table Number 5.11, in case of Marital Status, Income & Educational Background, we accept the null hypothesis as these demographic variables were found insignificantly associated ('P' value >0.05) with selected criteria concerning the Price of Smartphone and its quality in all selected cities. Users' marital status does not change their views on the relation of the price with the quality of the smartphone, they all agree that price of phone decides the quality which affects its features affecting shopping with applications on a smartphone. Similarly, smartphone users' which have a low or high income, they all believe that price affects the features of the smartphone and that influences the shopping through the smartphone. Education also proved to have no role to play in reality which is self-explanatory that attributes of any smartphones are dependent upon its price, which influence the shopping through the smartphone.

5.3.4: Implications of the research study based on the results of the chi-square test on the price of smartphone vis-à-vis age, income, gender, educational qualifications and marital status.

Pricing of a product plays a crucial role in determining the market share of that particular product. M-shoppers tend to buy products that are fairly priced as per the income, social status and the quality of the product.

The researcher has attempted to find out the relationship of the price of smartphone vis-à-vis age, gender, income, educational qualification and marital status that influence the m-shopping decisions.

The chi-square result indicated that the age has its influence on the relationship with the expected price of phone deciding the quality of smartphone that results in the intention to shop and continuous using smartphone across all the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat. Smartphone manufacturers should consider the display of the smartphone that would be convenient for all the age groups so that they can continue to shop using the smartphone regardless of the price of the smartphones.The chi-square result also indicated that the opinion of male & female also varies with the expected price of phone deciding the quality of smartphone that results in the intention to shop continuous using smartphone across all the selected cities of Vadodara, Surat and Rajkot in the state of Gujarat. Smartphone manufacturers should incorporate the colour enhancement-mode so that female m-shoppers colour discerning ability can be met in selecting product while doing online shopping because display requirements of male & female smartphone users were found different in all selected cities of Gujarat.

The chi-square result indicated that the marital status, income & Educational Background had no relationship with the expected price of phone deciding the quality of smartphone that results in the intention to shop continuous using smartphone across all the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat.

The similar trend found in all selected cities of Gujarat implies that smartphone manufacturers should focus on display features of smartphone irrespective of its price because in smartphone display is the foremost important feature to give the first impression of the product while shopping.

5.3:5: HYPOTHESES-12: The overall opinion of selected Smartphone users on Perceived Usefulness of Smartphone has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

Table Number 5.12:
Selected Smartphone Users' Overall opinion on Perceived Usefulness of Mobile Attribute vis-à-vis; as Age; Income; Educational Qualifications and Marital Status of Selected M-shoppers.

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Age	Applications are Compatible	**.044**	**.048**	**.040**	**.007**	**.017**
		Batteries give enough time to Shop	**.013**	**.032**	**.028**	**.003**	**.021**
		Size of apps consume memory	**.023**	**.010**	**.005**	**.023**	**.002**
		Brightness affects shopping	**.033**	**.012**	**.021**	**.041**	**.027**
		Reduces the physical search	.546	.210	.204	.076	.402
2	Gender	Applications are Compatible	**.020**	**.048**	**.032**	**.032**	**.033**
		Batteries give enough time to Shop	**.035**	**.024**	**.003**	**.033**	**.034**
		Size of apps consume memory	**..044**	**.027**	**.023**	**.028**	**.025**
		Brightness affects shopping	**.047**	**.020**	**.016**	**.043**	**.042**
		Reduces the physical search	.088	.054	.125	.055	.054
3	Marital Status	Applications are Compatible	.730	.733	.849	.809	.827
		Batteries give enough time to Shop	.662	.822	.989	.639	.686
		Size of apps consume memory	.884	.558	.994	.409	.453
		Brightness affects shopping	.393	.718	.814	.297	.388
		Reduces the physical search	.338	.576	.839	.896	.834
4	Income	Applications are Compatible	.444	.948	.240	.277	.498
		Batteries give enough time to Shop	.313	.832	.178	.173	.231
		Size of apps consume memory	.363	.770	.305	.783	.778
		Brightness affects shopping	.373	.862	.081	.051	.202
		Reduces the physical search	.546	.210	.204	.076	.278
5	Education	Applications are Compatible	.404	.944	.200	.207	.224
		Batteries give enough time to Shop	.323	.802	.128	.103	.476
		Size of apps consume memory	.363	.770	.305	.780	.378
		Brightness affects shopping	.373	.862	.081	.051	.139
		Reduces the physical search	.566	.200	.290	.086	.890

As given in the Table Number 5.12, in case of all cities we reject the null hypothesis as the demographic variable Age was found significantly associated ('P' value < 0.05) with selected criteria concerning the mobile attribute except "Smartphone reduces the physical search to collect product information" where the researcher had found that it is insignificantly associated with demographic variable Age as ('P' value > 0.05) in all selected cities and all of the smartphone users were having similar opinion towards the use of smartphone in m-shopping.

As given in the Table Number 5.12, In case of all selected cities like Baroda, Ahmedabad, Surat & Rajkot, we reject the null hypothesis as the demographic variable Gender was found significantly associated ('P' value < 0.05) in case of selected criteria concerning the mobile attribute, only we reject the null hypothesis as it was found insignificantly associated ('P' value > 0.05) on "Smartphone reduces the physical search to collect product information" in case of all selected cities.

In case of all selected cities of Baroda, Ahmedabad, Rajkot & Surat we accept the null hypothesis as the demographic variables Marital Status, Income & Educational Background was found insignificantly associated ('P' value > 0.05) with selected criteria concerning the smartphone attribute and it is practically true also because if a person is using smartphone his or her opinion towards smartphone won't vary because of the status of marriage, it's their responsibility. Similarly, Income & Educational Background were also not having any influence on perceived usefulness of smartphone attributes, as attributes of Smartphone were equally important to all.

5.3.6: Implications of the research study based on the results of the chi-square test on Perceived Usefulness of Smartphone vis-à-vis age, income, gender, educational qualifications and marital status:

In case of all the cities of Vadodara, Ahmedabad, Surat and Rajkot, age & gender were found having a significant relationship with perceived usefulness of mobile attributes.

Age & Gender need special attention by smartphone manufacturer because opinions towards the usefulness of smartphone attributes were found different of various age group & male-female. Manufacturers should design the smartphone keeping in mind the requirement of various age-groups & male-female separately. M-shoppers of young age group like big smartphones while old-aged people want a small phone with large display features. Thus, the requirement of male-female & M-shoppers of different age-groups are different, which should be considered while designing the smartphones.

Smartphone manufacturers should focus on the durability of the batteries that are provided along with smartphones. Not only that, the battery power should last long till the m-shoppers' purpose of the shopping is fulfilled. The study has been conducted to analyse the perceived usefulness of smartphone batteries giving enough time to do online shopping vis-à-vis age, income, gender, educational qualifications and marital status.

The study revealed that the m-shoppers' income, educational qualification, and marital status did not have any significant relationship with the perceived usefulness of the smartphone attributes in online shopping. Smartphones are helpful in m-shoppers to shop anywhere at any time whether indoor or outdoor. Since smartphones display the screen with the help of backlighting technology, smartphone manufacturers should consider the brightness of the screen while producing smartphones.

The finding of chi-square revealed that the age & gender are concerned with the perceived usefulness of brightness of the smartphone affecting the outdoor mobile shopping while income, marital status and educational qualifications don't carry any difference of opinion towards the perceived usefulness of brightness of the smartphone affecting the outdoor mobile shopping.

Since this is the era of information available with the growth and spread of the use of internet network connections and smartphones, collecting information about any product becomes easier. The information available smartphones should help the m-shoppers to reduce the physical search of a product's information, and this was accepted by all selected m-shoppers also. The study revealed that the perceived usefulness of smartphone reducing the physical search to collect product information did not have any significant relationship with age, income, and marital status in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot. The perceived usefulness of smartphone reducing the physical search to collect product information had a significant relationship with the gender in the cities of Baroda, Ahmedabad, Rajkot and Surat.

5.3:7: HYPOTHESES-13: The overall opinion of selected Smartphone users on Trust in Smartphone has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

Table Number 5.13:
Selected Smartphone Users' Overall opinion on Trust in Smartphone vis-à-vis; Age Income; Educational Qualifications and Marital Status of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Age	Smartphone has Safety	**.046**	**.035**	**.005**	**.029**	**.021**
		Price decides the safety	**.027**	**.013**	**.047**	**.020**	**.034**
2	Gender	Smartphone has Safety	**.009**	**.036**	**.035**	**.009**	**.022**
		Price decides the safety	**.026**	**.001**	**.004**	**.002**	**.004**
3	Marital Status	Smartphone has Safety	.153	.483	.586	.720	.540
		Price decides the safety	.793	.800	.811	.251	.879
4	Income	Smartphone has Safety	.153	.483	.586	.720	.489
		Price decides the safety	.793	.800	.811	.251	.262
5	Education	Smartphone has Safety	.153	.483	.586	.720	.548
		Price decides the safety	.793	.800	.811	.251	.786

DV*-Demographic Variable

As given in the Table Number 5.13, considering the result of chi-square test of all cities we reject the null hypothesis as the demographic variable Age & Gender were found significantly associated ('p' value <0.05) concerning the trust on the mobile attribute, while in case of Marital Status, Income & Educational Background we accept the null hypothesis as there was no significant association ('p' value>0.05) was found on trust the mobile attribute and marital status, income and education of the m-shoppers of all four selected cities of Gujarat.

5.3.8: Implications of the research study based on the results of the chi-square test on trust in Smartphone vis-à-vis age, income, gender, educational qualifications and marital status:

Trust plays a vital role in mobile shopping. M-shoppers buy the products that are trustable in quality and durability with the help of a device called smartphone on which users should also trust.

The challenge in mobile shopping is more than in offline shopping such as not having the face to face interaction with the sellers, lack of opportunity to touch and feel the product and not able to inspect before the purchasing is done. With these challenges, additional challenges are of Smartphone attributes.

The researcher has made an effort to study the opinion of smartphone users' demographic variable vis-à-vis Trust on smartphone attributes, and considering the overall opinion of smartphone users about the safety facilities, it was found that there is a significant relationship with age & gender, while income marital status and Education had no significant association with Trust in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot. It means that all the users in all the age groups and of different gender difference in their opinion for trust attribute but smartphone users of different income, marital status and education do not differ in the opinion concerning the Trust & safety facilities in the smartphone. With increasing age consciousness towards safety also increases & male m-shoppers are generally found more particular regarding safety facility, so keeping in mind these changes manufacturer should design the device that should assure safety to its user.

5.3:9: HYPOTHESES-14: The overall opinion of selected Smartphone users on Perceived Ease of Use of Smartphone Application has no association with their selected demographic variables such as Age; Gender; Income; Educational Qualifications and Marital Status.

As given in the table number 5.14, the researcher had found that overall in each of the selected city of State of Gujarat, Age was found insignificantly associated with perceived ease of use of Mobile Application except in case of certain criteria such as "Downloading the app provides better shopping experience"; "Shoppers feel proud in mobile shopping"; "Shoppers enjoy the product description available in the App"; Shoppers enjoy comparing the products online" the opinion of m-shoppers of different age-group were found significantly associated with perceived ease of use of Smartphone application in Vadodara & Ahmedabad cities of Gujarat.

In the majority of criteria, the researcher had found that Gender is insignificantly associated with perceived ease of use of Mobile Application in each of the selected city, except the criteria such as "Shoppers enjoy the convenience of shopping on mobile applications", where the gender of m-shoppers of Vadodara & Surat were found significantly associated with perceived ease of use of Smartphone applications.

In general, Marital Status was found insignificantly associated with perceived ease of use of Mobile Application in selected cities of Gujarat. Only criteria "Downloading the app provides better shopping experience" and "Shoppers' feel proud in shopping through the application" were found significantly associated with Marital status in Vadodara and Ahmedabad respectively, as p values is less than 0.05, so we reject the null hypothesis. While in other cases we accept the null hypothesis as p values is more than 0.05.

Table Number 5.14: Selected Smartphone Users' Overall opinion on Perceived Ease of Use of Smartphone Application vis-à-vis; Age; Gender; Income; Educational Qualifications and Marital Status of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	**Age**	Downloading app better shopping Exp	**.017**	**.037**	.294	.063	.208
		Wait for the special offers &discounts	.053	.196	.552	.673	.169
		Feel proud in mobile shopping	**.046**	**.045**	.304	.144	.937
		Enjoy shopping on the Smartphone	.217	.459	.132	.174	.203
		Enjoy the convenience of apps	.377	.867	.286	.329	.119
		Enjoy the product description	**.043**	**.012**	.392	.655	.292
		Enjoy comparing the products online	**.046**	**.040**	.385	.239	.463
		Attractive layout involves shoppers	.489	.473	.217	.627	.343
		Try-it-On facility attracts shoppers	.673	.121	.407	.808	.254
2	**Gender**	Downloading app better shopping Exp	.867	.229	.074	.938	.923
		Wait for the special offers &discounts	.219	.645	.778	.422	.325
		Feel proud in mobile shopping	.709	.206	.241	.507	.209
		Enjoy shopping on the Smartphone	.362	.408	.164	.642	.602
		Enjoy the convenience of apps	**.019**	**.020**	.241	.750	.068
		Enjoy the product description	.918	.726	.815	.638	.476
		Enjoy comparing the products online	.790	.581	.816	.957	.895
		Attractive layout involves shoppers	.545	.885	.982	.963	.693
		Try-it-On facility attracts shoppers	.168	.439	.876	.278	.769
3	**Marital Status**	Downloading app better shopping Exp	**.043**	.876	.919	.365	.487
		Wait for the special offers &discounts	.765	.247	.349	.999	.823
		Feel proud in mobile shopping	.927	**.014**	.072	.447	.063
		Enjoy shopping on the Smartphone	.415	.060	.073	.457	.094
		Enjoy the convenience of apps	.817	.974	.970	.679	.698
		Enjoy the product description	.712	.271	.318	.554	.546
		Enjoy comparing the products online	.099	.965	.999	.733	.094
		Attractive layout involves shoppers	.589	.101	.125	.592	.178
		Try-it-On facility attracts shoppers	.299	.353	.528	.673	.582
4	**Income**	Downloading app better shopping Exp	**.017**	.737	.294	.063	.075
		Wait for the special offers &discounts	.053	.196	.552	.673	.564
		Feel proud in mobile shopping	**.046**	.085	.304	.144	.342
		Enjoy shopping on the Smartphone	.217	.459	.132	.174	.231
		Enjoy the convenience of apps	.377	.867	.286	.329	.487
		Enjoy the product description	**.043**	**.012**	.392	.655	.052
		Enjoy comparing the products online	.096	**.040**	.385	.239	.093
		Attractive layout involves shoppers	.489	.473	.217	.627	.453
		Try-it-On facility attracts shoppers	.573	.121	.407	.808	.795
5	**Education**	Downloading app better shopping Exp	**.017**	**.037**	**.024**	**.043**	**.002**
		Wait for the special offers &discounts	**.043**	**.029**	**.042**	**.003**	**.023**
		Feel proud in mobile shopping	**.046**	.085	.304	.144	.039
		Enjoy shopping on the Smartphone	**.017**	**.049**	**.002**	**.014**	**.008**
		Enjoy the convenience of apps	**.027**	**.037**	**.026**	**.029**	**.027**
		Enjoy the product description	**.043**	**.012**	**.032**	**.005**	**.006**
		Enjoy comparing the products online	**.096**	**.040**	.385	.029	.046
		Attractive layout involves shoppers	**.049**	**.043**	**.007**	**.017**	**.013**
		Try-it-On facility attracts shoppers	**.003**	**.021**	**.007**	**.008**	**.003**

In case of few cases in Vadodara city, such as "Downloading the app provides better shopping experience"; "Shoppers feel proud in m-shopping";and "Shoppers enjoy the product description available in the App", the p-value was found <0.05, which showed a significant association between Income of m-shoppers & perceived ease of use of smartphone application, so Null hypotheses was rejected.

In the city of Ahmedabad, criteria such as "Shoppers enjoy the product description available in the App"; "Shoppers enjoy comparing the products online the result showed p-value <0.05, which showed a significant association between Income of m-shoppers & perceived ease of use of smartphone application, so Null hypotheses was rejected in these cases while in all other cases and the cities of Surat and Rajkot the Null hypotheses was accepted.

Table number 5.14 revealed that majority of criteria on perceived ease of use of smartphone application were having p-value <0.05, showing a significant association between the educational qualification of m-shoppers & their ease of use of smartphone application, so null hypotheses was rejected except criteria viz., "Shoppers feel proud in mobile shopping", for Ahmedabad, Surat and Rajkot cities where the p-value was >.05, showed insignificant association, accepting the null hypotheses. Similarly, the criteria "Shoppers enjoy comparing the products online" for Surat and Rajkot cities where the p-value was >.05, showed insignificant association, accepting the null hypotheses.

5.3.10: Implications of the research study based on the results of the chi-square test on Perceived Ease of Use of Smartphone Application vis-à-vis age, income, gender, educational qualifications and marital status:

Searching a right product at the expected price has become a tedious job to the m-shoppers as there are a lot of choices available in the market and physical search of a correct product is practically becoming a challenge to the m-shoppers due to fast lifestyle and lack of mobility in the congested cities. Smartphone paves a way to the m-shoppers to do the shopping at ease with multiple choices to compare with and pick up the desired product as they like.

The researcher has attempted to analyse and study the perceived ease of use of smartphone applications vis-à-vis age, income, gender, educational qualifications and marital status in mobile shopping. The study has been conducted in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat.

Result of Chi-square analysis implies that Mobile app developers and the online sales merchants should collaborate themselves to give better shopping experience to the smartphone users by considering their age, gender, income, educational qualifications and the marital status.

The majority of smartphone users in different age group, gender, income, education and marital status all considered downloading good quality mobile shopping applications provide better shopping experience. It means that mobile shopping application developers have met the expectations of the majority of the smartphone users irrespective of their age, gender, income education and marital status. However, perceived ease of use of different age group in Vadodara & Ahmedabad had a significant association with the experience of usage of downloaded mobile applications and. Mobile shopping developers should consider the background of the age group, income and marital status of the smartphone users and provide customized shopping applications to them.

It can be inferred from the study that regardless of all the age-groups, gender, income, educational qualifications and marital status, it was easy to avail special offers and discounts by waiting. Mobile shopping applications merchants should consider giving special offers and discounts to the mobile shoppers at their ease.

While considering the proud mobile shoppers with related to ease of use, most smartphone users consider themselves as proud mobile shoppers. The study also helped to understand that mobile shoppers with different income groups, education and marital status in the city of Vadodara had different opinions regarding the ease of use of proud shopping. The mobile shopping application developers should consider the ease of use of the mobile shoppers considering their income groups, education and marital status by understanding the m-shoppers' need.

The research scholar attempted to analyse the Perceived ease of Use of smartphone users in doing mobile shopping through mobile shopping applications.

The study has revealed that despite age, gender, income, educational qualifications and marital status, most mobile shoppers enjoy shopping in mobile shopping applications. Mobile shopping application developers should focus on making shopping as a joyful experience to the m-shoppers by developing quality shopping applications.

The study has been conducted to identify the ease of use of mobile shoppers' convenience while doing online shopping. Most m-shoppers enjoyed the convenience of shopping in mobile shopping applications in the selected cities of Ahmedabad, Surat and Rajkot irrespective of age, gender, income, educational qualifications, and marital status. The sellers on mobile shopping applications, mobile applications developers and the smartphone manufacture should ensure that the m-shoppers are having the ease of use of convenience while doing shopping on mobile applications.

The study has shown that most m-shoppers enjoy the product description available in mobile shopping applications. The m-shoppers with different age group in the city of Baroda differ opinion on the Perceived ease of Use of product description available in the mobile shopping applications.

M-shoppers in cities of Vadodara and Ahmedabad with various income and educational qualifications had different opinions about the Perceived ease of Use of product description available in the mobile shopping applications. Mobile shopping application developers and the product sellers should give the product description so that the m-shoppers can know the product well and can make a choice to buy. Mobile shopping applications developers should consider the background of the m-shoppers regarding their income and educational background so that the product description or any other details about the product can be available to the m-shoppers.

The study had helped us to infer the information about shoppers enjoys comparing the products online. The boon of online shopping is that a consumer can compare the product by having them displayed side by side in the mobile shopping applications. The research had attempted to study shoppers' ease of use in comparing the products online vis-à-vis age, gender, income, educational qualification and marital status in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat.

The age group, income, and educational qualification of the m-shoppers in the city of Ahmedabad had a different opinion about shoppers' ease of use in comparing the products online. The m-shoppers with various background of age, gender, income, educational qualification and marital status in the other three cities of Vadodara, Surat and Rajkot did not differ in their opinions. The mobile shopping application developers should give choice of comparing multiple products with each other so that the m-shoppers can pick up the products that meet their expectations.

The researcher had made an attempt to study the Perceived ease of Use in attractive appearance/layout of the mobile shopping applications involves shoppers vis-à-vis age, gender, income, educational qualification and marital status in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat. The m-shoppers with the background of age group, gender, income, education and marital status, all of them enjoy the appearance and layout of the mobile shopping applications.

Mobile shopping application developers should consider the tactics to keep the m-shoppers involved in mobile shopping applications. They should develop the applications that can be navigated easily and should eye-catching to the m-shoppers with its layout, appearance and colour combinations.

From the research study, we can infer that the Perceived ease of Use of try-it-on facility increasing the chance to buy more from a shopping application The researcher analysed try-it-on facility to increase the chance to buy more from a shopping applications vis-à-vis age, gender, income, educational qualification and marital status in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot in the state of Gujarat. The study has revealed that there is no significant relationship with the m-shoppers background of age group, gender, income and marital status related to the Perceived ease of Use of try-it-on facility increasing the chance to buy more from a shopping application. They all seem to enjoy the try it on the facility. By developing user interface mobile shopping applications that have the facility to the m-shoppers to try on, mobile shopping application developers can keep their users engaged.

Regarding the Perceived ease of Use of shoppers, it was found that they prefer to test a product or free samples, the researcher had conducted and studied the analysis in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, gender, income, educational qualification and marital status. Most m-shoppers do not have any different opinion about the Perceived ease of Use of shoppers prefer to test the product or free samples regardless of age, gender, income, educational qualification and marital status. However, m-shoppers in the city of Vadodara with the background of age, income and educations qualification had a difference of opinion about the Perceived ease of Use of shoppers prefer to test the product or free samples. Sellers on mobile shopping applications can give free samples to the m-shoppers so that they can get convinced for buying a particular product.

From the study, we can infer information about the Perceived ease of Use of a shopper connecting with other shoppers through online chat forums. The study had been conducted in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, gender, income, educational qualification and marital status.

M-shoppers in the cities of Ahmedabad and Surat had a different opinion about the Perceived ease of Use of a shopper connecting with other shoppers through online chat forums had a difference of opinions based on their age, income and educational qualifications. Mobile shopping developers should create a platform for the m-shoppers where they can connect with other m-shoppers who have a similar interest in buying a product. Word of mouth is a great tool to market a product.

Mobile shopping application developers should concentrate on increasing the platforms through which m-shoppers can share their opinions with the other m-shoppers. In case of educational qualification, it was found that there was a significant association between the ease of use of smartphone application and mobile app hence mobile Application developer of the smartphone should consider the education of the m-shoppers & their perspective while developing the mobile app.

5.3:11: HYPOTHESES-15: The overall opinion of selected Smartphone users on Price of shopping in Smartphone Application has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

Table Number 5.15:
Selected Smartphone Users' Overall opinion on Price of shopping from Smartphone Application vis-à-vis; Age; Income; Educational Qualifications and Marital Status of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Age	Online Products are highly priced	**.004**	**.042**	**.011**	**.000**	**.008**
		Online Products have hidden cost	**.056**	**.024**	**.008**	**.033**	**.408**
		Delivery cost affect shopping	**.048**	**.039**	**.003**	**.044**	**.048**
2	Gender	Online Products are highly priced	.678	.317	.911	.530	.495
		Online Products have hidden cost	.429	.955	.868	.285	.498
		Delivery cost affect shopping	.291	.985	.997	.357	.300
3	Marital Status	Online Products are highly priced	.484	.237	.344	.320	.430
		Online Products have hidden cost	.691	.418	.822	.560	.431
		Delivery cost affect shopping	.282	.317	.511	.462	.210
4	Income	Online Products are highly priced	.604	.842	.591	.500	.641
		Online Products have hidden cost	.456	.424	.968	.933	.549
		Delivery cost affect shopping	.148	.499	.903	.844	.198
5	Education	Online Products are highly priced	.604	.842	.591	.500	.588
		Online Products have hidden cost	.456	.424	.968	.933	.786
		Delivery cost affect shopping	.148	.499	.903	.844	.212

DV*-Demographic Variables

As shown in the table number 5.15, the result of chi-square analysis showed that Age was the only demographic variable, which found significantly associated with Price of shopping through a mobile application in case of selected cities in Gujarat, rejecting the null hypotheses, while in case of all other background variables viz., Gender, Marital Status, Income, and Education variables, the insignificant association was observed and null hypotheses were accepted.

5.3.12: Implications of the research study based on the results of the chi-square test on Price of shopping from Smartphone Application vis-à-vis age, income, gender, educational qualifications and marital status:

M-shoppers used to buy products in a brick and mortar shop where they can interact with the sellers, touch and feel the products before buying a product. They can even bargain with the sellers for the discount on the price of the product. M-shoppers would like to know the price of the product or any hidden cost involved in the online shopping market.

Most m-shoppers with the different demographical background of age, gender, educational qualification, income and marital status do not have a difference of opinion regarding the cost of special express delivery, online products are slightly high priced and the online product is having hidden cost. Sellers on mobile shopping applications should ensure that they do not burden the m-shoppers with over cost than the nearby physical stores or in supermarkets.

In fact, sellers can reduce the price of the products that are sold online, considering the waiting period of the m-shoppers and cost-saving which is not available in a physical store. Setting a competitive price on a product is a winning strategy for a seller especially on mobile shopping applications.

5.3.13: HYPOTHESES-16:

The overall opinion of selected Smartphone users on Perceived Usefulness of Smartphone Application has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

From the table, no 5.16, it is revealed that in case of selected cities null hypothesis was accepted, as the demographic variable Age was found insignificantly associated concerning the perceived quality of mobile Application. But in case of Baroda city null hypothesis was rejected, as the demographic variable Age was found significantly associated ('P' value <0.05) with selected items concerning the mobile Application Quality such as "Playing a video of the product available in the app is useful to know all features of product";" Wish list helps to do the shopping later" and "Mobile shopping apps are easy in navigating from one search to another" and in Surat, we reject the null hypothesis, as ('P' value <0.05) in case of the opinion about "Similar products should be displayed on the mobile shopping app along with the main search with perceived use of Smartphone users".

Table Number 5.16: Selected Smartphone Users' Overall opinion on Perceived Usefulness of Smartphone Application vis-à-vis; Age Group of Selected M-shoppers

Sr. No.	Selected Criteria	Demographic Variable: Age	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	**Ahmedabad**	**Surat**	**Rajkot**	**Overall**
1	Smartphone is useful for anytime shopping		.078	.293	.169	.317	.367
2	Payment option is easy in mobile apps		.154	.482	.508	.707	.019
3	Wish list helps to do the shopping later		**.042**	.190	.863	.714	.720
4	Mobile apps have barrier to Indian languages		.327	.797	.519	.163	.028
5	Unclear image affects the shopping decision		.754	.463	.186	.281	.329
6	Playing video of the product is useful		**.030**	.868	.327	.244	.098
7	Paid apps are better than free apps		.498	.248	.063	.103	.012
8	Mobile app is useful in saving shopping time		.519	.933	.856	.643	.087
9	Product suggestion in mobile app is useful		.091	.204	.497	.135	.096
10	Sellers are approachable through application		.057	.839	.293	.723	.120
11	Display of Similar products is useful		.465	.764	**.018**	.101	.054
12	Shopping apps are easy in navigating		**.016**	.351	.533	.472	.072
13	Tracking of delivery in app is useful		.300	.259	.239	.854	.483
14	Information on stock availability is useful		.272	.232	.182	.204	.182
15	In case of non-availability sending information on availability influence shopping decision		.484	.867	.717	.768	.732
16	Shoppers become more inclined when app is installed		.618	.585	.371	.146	.073
17	Quick response of m-tailors on FAQ		.216	.911	.886	.382	.927
18	Sellers accept exchanges /returns		.127	.481	.277	.492	.292
19	Easy refund encourages online shopping		.090	.969	.739	.372	.981
20	Online sellers refund price of products as soon as they receive product back		.169	.152	.169	.341	.072
21	EMI options on shopping apps affect the shopping decision		.103	.375	.652	.932	.838
22	Shoppers check about the sellers in application		.090	.857	.636	.208	.328
23	Phone number of delivery agent helps a lot		.181	.694	.871	.734	.091
24	Downloading mobile app gives benefits		.135	.871	.541	.794	.068

Table Number 5.17: Selected Smartphone Users' Overall opinion on Perceived Usefulness of Smartphone Application vis-à-vis; Gender of Selected M-shoppers

S.N.	Selected Criteria Demographic Variable: Gender	Result of $\chi 2$ test at 5 Percent level of Significance				
		Baroda	**Ahmedabad**	**Surat**	**Rajkot**	**Overall**
1	Smartphone is useful for anytime shopping	.644	.146	.112	.675	.231
2	Payment option is easy in mobile apps	.678	.239	.111	.443	.872
3	Wish list helps to do the shopping later	**.009**	.485	.820	.940	.786
4	Mobile apps have barrier to Indian languages	.355	.168	.331	.247	.398
5	Unclear image affects the shopping decision	**.021**	.103	**.039**	.944	.083
6	Playing a video of the product available in the app is useful to know all features of the product	.485	.096	.113	.359	.987
7	Paid apps are better than free apps	.479	.187	.566	.606	.576
8	Mobile app is useful in saving shopping time	.415	.291	.462	.646	.675
9	Product suggestion in mobile app is useful in selection of the products	.251	.353	.248	.385	.209
10	Sellers are approachable through application	.357	.201	.139	.965	.084
11	Similar products should be displayed on the mobile shopping app along with the main search	.332	.735	.815	.636	.907
12	Mobile shopping apps are easy in navigating from one search to another	.569	**.043**	.143	.894	.098
13	Tracking of delivery in shopping app gives accurate information	.271	.319	.248	.985	.567
14	Information on stock availability while Looking for a product influence the shopping decision	.658	.451	.875	.743	.675
15	In case of non-availability of product ,option of sending information , as soon as it becomes available influence shopping decision	.803	.576	.534	.432	.436
16	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone	.943	.676	.558	.782	.098
17	Quick response of m-tailors on FAQ affects affect shopping decision	.929	.336	.683	.320	.678
18	Sellers accept exchanges products returned by shoppers	.712	.393	.885	.326	.546
19	Easy refund of Price encourages online shopping	.693	.471	.488	.272	.876
20	Online sellers refund price of products as soon as they receive product back	**.025**	**.047**	.123	.158	.345
21	Availability of EMI options on shopping apps affect the shopping decision	.467	.835	.990	.611	.098
22	Shoppers check the information about the sellers in application	.412	**.036**	.191	.226	.453
23	Phone number of delivery agent provided in message helps a lot	.735	.911	.756	.302	.342
24	Downloading mobile app gives first time benefits	.806	.337	.517	.154	.123

From the table, no 5.17, it can be revealed that in case of selected cities null hypothesis was accepted, as the demographic variable Gender was found insignificantly associated ('p' value>0.05) concerning the Quality of mobile Application.In certain cases, the null hypothesis was being rejected, as the

demographic variable Gender was found significantly associated ('P' value < 0.05) with selected items concerning the mobile Application Quality such as "Wish list helps to do the shopping later", in Baroda city; "Unclear image affects the shopping decision" in only two cities Baroda and Surat; "Mobile shopping apps are easy in navigating from one search to another" in Ahmedabad city; "Online sellers refund the price of products as soon as they receive the product back" in Baroda and Ahmedabad Cities; "Shoppers check the information about the sellers in application" was found significantly associated with Gender in Ahmedabad, where the p-value is <0.05, so null hypothesis was rejected.

From the table no 5.18, it can be revealed that in case of two cities Baroda and Rajkot null hypothesis was accepted, as the demographic variable Marital Status was found insignificantly associated ('p' value>0.05) concerning the Quality of Smartphone Application.

In case of three criteria such as "Playing a video of the product available in the app is useful to know all features of product", "product suggestion in the mobile app is useful in the selection of the products", "In case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision" the significant association was found between the background variable of Marital Status and perceived use of Quality of Smartphone among the m-shoppers of Ahmedabad and Surat cities.

Table Number 5.18:
Selected Smartphone Users' Overall opinion on Perceived Usefulness of Smartphone Application vis-à-vis; Marital Status of Selected M-shoppers

S. N.	Selected Criteria	Demographic Variable: Marital Status	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Smartphone is useful for anytime shopping		.594	.092	.212	.589	.059
2	Payment option is easy in mobile apps		.124	.702	.645	.553	.654
3	Wish list helps to do the shopping later		.098	.292	.578	.170	.098
4	Mobile apps have barrier to Indian languages		.617	.873	.776	.259	.673
5	Unclear image affects the shopping decision		.445	.357	.353	.921	.429
6	Playing a video of the product available in the app is useful to know all features of the product		.153	**.001**	**.015**	.389	.037
7	Paid apps are better than free apps		.983	.459	.510	.896	.764
8	Mobile app is useful in saving shopping time		.470	.961	.741	.431	.345
9	Product suggestion in mobile app is useful in selection of the products		.184	**.018**	**.020**	.162	.096
10	Sellers are approachable through application		.107	.469	.331	.446	.652
11	Similar products should be displayed on the mobile shopping app along with the main search		.799	.915	.982	.605	.324
12	Mobile shopping apps are easy in navigating from one search to another		.750	.091	.108	.454	.198
13	Tracking of delivery in shopping app gives accurate information		.611	.132	.142	.724	.760
14	Information on stock availability while Looking for a product influence the shopping decision		.464	.935	.716	.806	.109

S. N.	Selected Criteria	Demographic Variable: Marital Status	Result of χ2 test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
15	In case of non-availability of product ,option of sending information , as soon as it becomes available influence shopping decision		.904	**.001**	**.012**	.525	092
16	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone		.907	.450	.201	.076	.654
17	Quick response of m-tailors on FAQ affects affect shopping decision		.751	.681	.379	.389	.350
18	Sellers accept exchanges products returned by shoppers		.541	.766	.593	.648	.943
19	Easy refund of Price encourages online shopping		.702	.630	.510	.967	.094
20	Online sellers refund price of products as soon as they receive product back		.232	.213	.068	.983	.310
21	Availability of EMI options on shopping apps affect the shopping decision		.728	.243	.383	.310	.109
22	Shoppers check the information about the sellers in application		.865	.881	.795	.366	.287
23	Phone number of delivery agent provided in message helps a lot		.793	.632	.506	.879	.640
24	Downloading mobile app gives first time benefits		.508	.434	.382	.613	.643

Table Number 5.19:

Selected Smartphone Users' Overall opinion on Perceived Usefulness of Smartphone Application vis-à-vis, the income of Selected M-shoppers

S. N.	Selected Criteria	Demographic Variable: Income	Result of χ2 test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Smartphone is useful for anytime shopping		.078	.293	.169	.317	.875
2	Payment option is easy in mobile apps		.154	.482	.508	.707	.465
3	Wish list helps to do the shopping later		**.042**	.190	.863	.714	.198
4	Mobile apps have barrier to Indian languages		.327	.797	.519	.163	.234
5	Unclear image affects the shopping decision		.754	.463	.186	.281	.676
6	Playing a video of the product available in the app is useful to know all features of the product		**.030**	.868	.327	.244	.056
7	Paid apps are better than free apps		.498	.248	.063	.103	.343
8	Mobile app is useful in saving shopping time		.519	.933	.856	.643	.788
9	Product suggestion in mobile app is useful in selection of the products		.091	.204	.497	.135	.186
10	Sellers are approachable through application		.057	.839	.293	.723	.443
11	Similar products should be displayed on the mobile shopping app along with the main search		.465	.764	**.018**	.101	.054
12	Mobile shopping apps are easy in navigating from one search to another		**.016**	.351	.533	.472	.865
13	Tracking of delivery in shopping app gives accurate information		.300	.259	.239	.854	.809
14	Information on stock availability while Looking for a product influence the shopping decision		.272	.232	.182	.204	.231
15	In case of non-availability of product ,option of sending information , as soon as it becomes available influence shopping decision		.484	.867	.717	.768	.768

S. N.	Selected Criteria	Demographic Variable: Income	Result of χ2 test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
16	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone		.618	.585	.371	.146	.128
17	Quick response of m-tailors on FAQ affects affect shopping decision		.216	.911	.886	.382	.764
18	Sellers accept exchanges products returned by shoppers		.127	.481	.277	.492	.462
19	Easy refund of Price encourages online shopping		.090	.969	.739	.372	.972
20	Online sellers refund price of products as soon as they receive product back		.169	.152	.169	.341	.213
21	Availability of EMI options on shopping apps affect the shopping decision		.103	.375	.652	.932	.980
22	Shoppers check the information about the sellers in application		**.020**	.857	.636	.208	.098
23	Phone number of delivery agent provided in message helps a lot		.181	.694	.871	.734	.535
24	Downloading mobile app gives first time benefits		.135	.871	.541	.794	.092

From the table number 5.19, it can be inferred that for three criteria of Vadodara city, such as "Wish list helps to do the shopping later"; "Shoppers check the information about the sellers in application"; "Mobile shopping apps are easy in navigating from one search to another" and "Playing a video of the product available in the app is useful to know all features of product" null hypothesis was rejected as there was a significant association found in perceived use of Quality of Smartphone application and Income of m-shoppers.

In Surat criteria "Similar products should be displayed on the mobile shopping app along with the main search" had different opinions among the m-shoppers, so null hypothesis was rejected. For all other criteria, the non-significant result was found between perceived use of Quality of Smartphone application and Income of m-shoppers as 'P' value is more than 0.05.

Table Number 5.20:

Selected Smartphone Users' Overall opinion on Perceived Usefulness of Smartphone Application vis-à-vis, Educational qualification of Selected M-shoppers

S.N.	Selected Criteria	Demographic Variable: Educational Qualification	Result of χ2 test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
1	Smartphone is useful for anytime shopping		.078	.293	.169	.317	.673
2	Payment option is easy in mobile apps		.154	.482	.508	.707	.429
3	Wish list helps to do the shopping later		.082	.190	.863	.714	.037
4	Mobile apps have barrier to Indian languages		.327	.797	.519	.163	.764
5	Unclear image affects the shopping decision		.754	.463	.186	.281	.345
6	Playing a video of the product available in the app is useful to know all features of the product		.051	.868	.327	.244	.096
7	Paid apps are better than free apps		.498	.248	.063	.103	.652
8	Mobile app is useful in saving shopping time		.519	.933	.856	.643	.324
9	Product suggestion in mobile app is useful in selection of the products		.091	.204	.497	.135	.198
10	Sellers are approachable through application		.057	.839	.293	.723	.760

S.N.	Selected Criteria Demographic Variable: Educational Qualification	Result of $\chi 2$ test at 5 Percent level of Significance				
		Baroda	Ahmedabad	Surat	Rajkot	Overall
11	Similar products should be displayed on the mobile shopping app along with the main search	.465	.764	**.018**	.101	.673
12	Mobile shopping apps are easy in navigating from one search to another	**.016**	.351	.533	.472	.429
13	Tracking of delivery in shopping app gives accurate information	.300	.259	.239	.854	.037
14	Information on stock availability while Looking for a product influence the shopping decision	.272	.232	.182	.204	.764
15	In case of non-availability of product ,option of sending information , as soon as it becomes available influence shopping decision	.484	.867	.717	.768	.933
16	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone	.618	.585	.371	.146	.204
17	Quick response of m-tailors on FAQ affects affect shopping decision	.216	.911	.886	.382	.839
18	Sellers accept exchanges products returned by shoppers	.127	.481	.277	.492	.764
19	Easy refund of Price encourages online shopping	.090	.969	.739	.372	.351
20	Online sellers refund price of products as soon as they receive product back	.169	.152	.169	.341	.259
21	Availability of EMI options on shopping apps affect the shopping decision	.103	.375	.652	.932	.232
22	Shoppers check the information about the sellers in application	.090	.857	.636	.208	.867
23	Phone number of delivery agent provided in message helps a lot	.181	.694	.871	.734	.933
24	Downloading mobile app gives first time benefits	.135	.871	.541	.794	.204

Result of Chi-square analysis showed that smartphone is related with its use, and Education has no role to play in influencing opinion on Perceived Usefulness of Smartphone Application, because m-shoppers of selected cities showed a similar opinion due to which null hypotheses was accepted for almost all criteria except the criteria viz., "Similar products should be displayed on the mobile shopping app along with the main search" in case of Surat city and "Mobile shopping apps are easy in navigating from one search to another" in case of Baroda city, the hypothesis was rejected as 'P' value is less than 0.05.

5.3.14: Implications of the research study based on the results of the chi-square test on Perceived Usefulness of Smartphone Application vis-à-vis age, income, gender, educational qualifications and marital status:

Most smartphone users use the smartphone for online shopping purpose and tend to go to same online shopping websites frequently if m-shoppers like the service provided by the online sellers. Since m-shoppers visit particular shopping applications often, they expect to to avail the service of the same online sellers' in the form of mobile shopping applications.

The researcher attempted to analyse the perceived usefulness of the smartphone applications across the selected cities of Vadodara, Ahmedabad, Rajkot and Surat vis-à-vis age, income, gender, educational qualifications and marital status.

Regarding the perceived usefulness of wish list helping to do the shopping later, the researcher conducted the research studies in the cities of Vadodara, Ahmedabad, Surat and Rajkot among the smartphone users who do shopping online. Most m-shoppers considered wish list helping to do the shopping later is very useful. The smartphone users in the city of Vadodara with the background of age, gender and income had a difference of opinion regarding the wish list helping to do the shopping later. Mobile shopping developers should consider developing the wish list options to online shoppers.

Considering the perceived usefulness of option of playing the video of the product available in the applications is useful to know all the features of the product, the research scholar conducted the studies in the cities of Vadodara, Ahmedabad, Surat and Rajkot among the smartphone users who do shopping online. Most m-shoppers considered the playing video of the product available in the applications is useful to know all the features of products. Mobile applications developers should consider including the videos of the product in the mobile applications so that m-shoppers can know the product well before buying it. M-shoppers in the cities of Vadodara, Ahmedabad and Surat with different age group, marital status, income and educational status had a difference of opinion about the perceived usefulness of playing video to know the product well. Mobile shoppers in Rajkot did not have much different opinions based on their age, gender, income, education and marital status.

Regarding the criteria 'perceived usefulness of mobile shopping applications is easy in navigating from one search to another' the researcher conducted the studies in the cities of Vadodara, Ahmedabad, Surat and Rajkot among the smartphone users who do shopping online vis-à-vis age, income, gender, educational qualifications and marital status.

Mobile shopping application developers should build mobile shopping applications with good navigations facilities so that the m-shoppers can do the navigation from one search to another. The smartphone users in the cities of Ahmedabad, Surat and Rajkot with different age, income, gender, educational qualifications and marital status did not have much different opinion about the criteria 'perceived usefulness of mobile shopping applications is easy in navigating from one search to another'. The online shoppers with the background of age, income, and education in the city of Vadodara had a difference of opinion about the perceived usefulness of mobile shopping applications are easy in navigating from one search to another.

Before making a purchase of a product, a consumer would tend to check with other similar items. This study has been conducted to know about the criteria 'perceived usefulness of similar products getting displayed on the mobile shopping applications along with the main search' in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. Most m-shoppers agreed with criteria 'perceived useful of similar products getting displayed on the mobile shopping applications along with the main search' in the cities of Vadodara, Ahmedabad,

and Rajkot. Smartphone users in the city of Surat with the background of age, income and educational qualifications had a difference of opinion regarding the 'perceived usefulness of similar products getting displayed on the mobile shopping applications along with the main search'. Mobile shopping application developers along with the online sellers should provide the option of similar products getting displayed on the mobile shopping applications.

The most critical aspect of shopping in the mobile application is the image should be visible clearly. It had been inferred from the research study about the perceived usefulness of unclear image affecting the shopping decision in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. Online shoppers of both the genders in the cities of Vadodara and Surat had a differing opinion about the perceived usefulness of unclear image affecting the shopping decision. Sellers on mobile shopping applications should ensure that clear images are getting posted to the m-shoppers.

M-shoppers should have the privilege of returning the disliked products to the sellers. The study has been conducted on the perceived usefulness of online sellers refunding the price of products as soon as they receive the product back in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. M-shoppers in the cities of Baroda and Ahmedabad on the gender background had a difference of opinion on the perceived usefulness of online sellers refunding the price of products as soon as they receive the product back. Online sellers should arrange the m-shoppers to refund the price of the product once it is returned.

Before making any online purchase, m-shoppers tend to check the background of the seller to ensure that they get value for the money.

The researcher has conducted a study on perceived usefulness of checking the information about the sellers in application among the m-shoppers in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. Most m-shoppers check the background of the sellers in shopping applications. Online sellers should post their information on mobile shopping applications with user experience ratings. M-shoppers can make the order based on the rating given to the users.

The researcher scholar conducted a research study on criteria of 'perceived usefulness of mobile shopping applications suggesting products while selecting a product among the mobile shoppers' in the cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. Mobile shopping application developers should put their efforts into auto-suggesting similar products to the m-shoppers in a way how it is done in a physical store by the salesperson. The m-shoppers in the cities of Surat and Ahmedabad with the background of marital status differed in their opinion about the perceived usefulness of mobile shopping applications in terms of suggesting products while selecting a product.

The study has revealed about the criteria ‘perceived usefulness of in case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision’ in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status. Most mobile shoppers believed about the criteria ‘perceived the facility in case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision’ is useful irrespective of their background of age, gender, and income. The marital status of the m-shoppers in the cities of Ahmedabad and Surat had an influence on the opinion of the m-shoppers related to the criteria ‘in case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision’. Online sellers on mobile applications should have developed the notification system to communicate the m-shoppers when the product is available for a sale.

The researcher had conducted a study on the perceived usefulness of Smartphone being useful for criteria viz., anytime shopping, payment option is easy in mobile shopping applications, mobile apps have barrier to Indian languages, paid apps are better than free apps, mobile app is useful in saving shopping time, sellers are approachable through application, tracking of delivery in shopping applications gives accurate information on stock availability while Looking for a product influence the shopping decision, shoppers become more inclined to do shopping when the shopping application is installed on the smartphone, quick response of m-tailors on FAQ affects affect shopping decision, sellers accept exchanges products returned by shoppers, easy refund of price encourages online shopping, availability of EMI options on shopping apps affect the shopping decision, phone number of delivery agent provided in message helps a lot, and downloading mobile shopping applications gives first time benefits in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot vis-à-vis age, income, gender, educational qualifications and marital status.

The study had revealed that the online sellers of mobile shopping applications and the mobile shopping application developers should pay more attention on the usefulness of Smartphone for criteria viz., anytime shopping, payment option is easy in mobile shopping applications, mobile apps have barrier to Indian languages, paid apps are better than free apps, mobile app is useful in saving shopping time, sellers are approachable through application, tracking of delivery in shopping applications gives accurate information on stock availability while Looking for a product influence the shopping decision, shoppers become more inclined to do shopping when the shopping application is installed on the smartphone, quick response of m-tailors on FAQ affects affect shopping decision, sellers accept exchanges products returned by shoppers, easy refund of price encourages online shopping, availability of EMI options on shopping apps affect the shopping decision, phone number of delivery agent provided in message helps a lot, and downloading mobile shopping applications gives first time benefits.

Smartphone manufacturers should consider the specifications of the smartphone while developing mobile shopping applications. Mobile shopping applications should be compatible with all the m-shoppers irrespective of their age, income, gender, educational qualification and marital status. The

study of m-shoppers perceived usefulness of the mobile applications with its compatibility to the smartphones vis-à-vis age, income, gender, educational qualifications and marital status had been conducted. The chi-square test shown the result that the perceived usefulness of the compatibility of the mobile applications with the smartphone does not have any significant relationship with the age, income, educational qualification and marital status in all the selected cities of Vadodara, Ahmedabad, Surat and Rajkot. The gender has a significant relationship with the compatibility of mobile applications only in the city of Rajkot.

Mobile developers should consider the size of mobile shopping applications while developing them. It should occupy less space in the smartphone. The study has been conducted to analyse the perceived usefulness of smartphone batteries giving enough time to do online shopping vis-à-vis age, income, gender, educational qualifications and marital status. The chi-square test showed the result that the perceived usefulness of size of shopping applications consuming a lot of memory space in smartphone does not have any significant relationship with the age, income, gender, educational qualifications and marital status.

5.3:15: HYPOTHESES-17:

The overall opinion of selected Smartphone users on Trust in Smartphone Application has no association with their selected demographic variables such as Age; Income; Educational Qualifications and Marital Status.

Table Number 5.21:
Selected Smartphone Users' Overall opinion on Trust in Smartphone Applications-à-vis; Age Group of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			V	A	S	R	O
1	Age	Mobile shopping apps are trustworthy	.002	.022	.009	.039	.014
		Review in shopping app affects shopping decision	.031	.035	.026	.041	.031
		FAQs on the shopping apps help in shopping	.028	.018	.013	.018	.001
		Product delivered differ as it appears online	.012	.025	.014	.025	.006
		Customer service of m-tailor will influence repurchasing	.024	.001	.002	.003	.001
		Possibility of wrong item dispatched& delivered	**.127**	**.301**	**.094**	**.090**	**.081**
		Downloading a mobile shopping app can steal the personal information from phone	.029	.008	.003	.042	.042
		Downloading mobile app can cause malicious virus installed on the mobile device	.013	.033	.043	.018	.012
		Online retailers monitor the activities of the shoppers' on the Smartphone	.010	.028	.001	.003	.001
		Frauds may take place in mobile shopping	**.085**	**.145**	**.097**	**.113**	**.322**
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.037	.005	.043	.003	.007
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.019	.022	.045	.018	.021
2	Gender	Mobile shopping apps are trustworthy	.060	.371	.500	.586	.430
		Review in shopping app affects shopping decision	.298	.085	.006	.750	.780
		FAQs on the shopping apps help in shopping	.578	.084	.179	.681	.087
		Product delivered differ as it appears online	.898	**.042**	**.026**	.259	.980
		Customer service of m-tailor will influence repurchasing	.408	.938	.808	.675	.213

Table Number 5.21:
Selected Smartphone Users' Overall opinion on Trust in Smartphone Applications-à-vis; Age Group of Selected M-shoppers

Sr. No.	DV*	Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			V	A	S	R	O
		There is a possibility of wrong item getting dispatched& delivered	.153	.124	.099	.302	.230
		Downloading a mobile shopping app can steal the personal information from phone	**.016**	**.007**	**.020**	**.047**	**.006**
		Downloading mobile app can cause malicious virus installed on the mobile device	.906	.616	.640	.870	.980
		Online retailers monitor the activities of the shoppers' on the Smartphone	.585	.665	.510	.835	.062
		Frauds may take place in mobile shopping	.727	.977	.993	.279	.265
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.146	.217	.372	.902	.120
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.282	.450	.676	.695	.768
3	Marital status	Mobile shopping apps are trustworthy	.677	.490	.531	.301	.448
		Review in shopping app affects shopping decision	.849	.998	.924	.540	.356
		FAQs on the shopping apps help in shopping	.448	**.002**	**.030**	.748	.722
		Product delivered differ as it appears online	.356	.960	.856	.553	.268
		Customer service of m-tailor will influence repurchasing	.722	.494	.697	.140	.144
		There is a possibility of wrong item getting dispatched& delivered	.268	.445	.512	.021	.448

DV* Demographic Variable;V-Vadodara;A-Ahmedabad;S-Surat;R-Rajkot;O-Overall

Table Number 5.21:
Selected Smartphone Users' Overall opinion on Trust in Smartphone Applications-à-vis; Age Group of Selected M-shoppers

		Selected Criteria	Result of $\chi 2$ test at 5 Percent level of Significance				
			Baroda	Ahmedabad	Surat	Rajkot	Overall
3	Marital Status	Downloading a mobile shopping app can steal the personal information from phone	.144	.681	.400	.754	.356
		Downloading mobile app can cause malicious virus installed on the mobile device	**.003**	.605	.150	.762	.727
		Online retailers monitor the activities of the shoppers' on the Smartphone	.273	.540	.300	.903	.146
		Frauds may take place in mobile shopping	.625	.745	.905	.642	.282
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.858	.283	.553	.700	.677
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.347	.385	.318	.469	.849
4	Income	Mobile shopping apps are trustworthy	**.002**	.775	.779	.839	.385
		Review in shopping app affects shopping decision	**.031**	**.025**	**.026**	.141	.775
		FAQs on the shopping apps help in shopping	**.028**	.218	**.013**	.718	.355
		Product delivered differ as it appears online	**.012**	.125	.064	.575	.218
		Customer service of m-tailor will influence repurchasing	**.024**	.451	.772	.803	.125

Table Number 5.21: Selected Smartphone Users' Overall opinion on Trust in Smartphone Applications-à-vis; Age Group of Selected M-shoppers								
			Result of $\chi 2$ test at 5 Percent level of Significance					
		Selected Criteria	Baroda	Ahmedabad	Surat	Rajkot	Overall
3	Marital Status	Downloading a mobile shopping app can steal the personal information from phone	.144	.681	.400	.754	.356
		Downloading mobile app can cause malicious virus installed on the mobile device	**.003**	.605	.150	.762	.727
		Online retailers monitor the activities of the shoppers' on the Smartphone	.273	.540	.300	.903	.146
		Frauds may take place in mobile shopping	.625	.745	.905	.642	.282
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.858	.283	.553	.700	.677
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.347	.385	.318	.469	.849
		There is a possibility of wrong item getting dispatched& delivered	**.027**	**.001**	**.004**	.230	.451
		Downloading a mobile shopping app can steal the personal information from phone	**.029**	.508	.973	.942	.001
		Downloading mobile app can cause malicious virus installed on the mobile device	**.033**	.533	.743	.918	.508
		Online retailers monitor the activities of the shoppers' on the Smartphone	**.010**	.988	.961	.973	.533
		Frauds may take place in mobile shopping	**.015**	.245	.727	.313	.988
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.987	.965	.753	.103	.245
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.369	.972	.945	.468	.965
5	Education	Mobile shopping apps are trustworthy	**.002**	.775	.779	.839	.972
		Review in shopping app affects shopping decision	.331	.355	**.026**	.141	.775
		FAQs on the shopping apps help in shopping	**.028**	.218	**.013**	.718	.355
		Product delivered differ as it appears online	.312	.125	.064	.575	.218
		Customer service of m-tailor will influence repurchasing	**.024**	.451	.772	.803	.125
		There is a possibility of wrong item getting dispatched& delivered	**.027**	**.001**	**.004**	.230	.451
		Downloading a mobile shopping app can steal the personal information from phone	**.029**	.508	.973	.942	.385
		Downloading mobile app can cause malicious virus installed on the mobile device	.093	.533	.743	.918	.775
		Online retailers monitor the activities of the shoppers' on the Smartphone	.110	.988	.961	.973	.355
		Frauds may take place in mobile shopping	.115	.245	.727	.313	.218
		Shoppers prefer shopping products via shopping apps, that are reputed and well known	.367	.965	.753	.103	.125
		It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.369	.972	.945	.468	.451

DV* Demographic Variable;V-Vadodara;A-Ahmedabad;S-Surat;R-Rajkot;O-Overall

As given in the table Number 5.21, Selected Smartphone Users' Overall opinion on Trust in Smartphone Application was found significantly associated with Age Group of Selected m-shoppers, and the null hypothesis was rejected, as the 'p' value was less than 0.05, except two criteria such as "Possibility of

the wrong item dispatched& delivered" and "Frauds may take place in mobile shopping" where the insignificant association was found.

Gender was found having less impact on selected m-shopper's opinion on trust in a smartphone application, except criteria such as "Downloading a mobile shopping app can steal the personal information from phone" where m-shoppers of selected cities were male, and female had given different opinion and in case of criteria, "Product delivered differ as it appears online" where m-shoppers of Ahmedabad and Surat cities were having a different opinion on trust in the smartphone application.

As given in the table number 5.21, in case of all cities we accept the null hypothesis as the demographic variable Marital Status were found insignificantly associated ('p' value>0.05) concerning the trust in mobile Application Quality except few criteria as "FAQs on the shopping apps help in shopping" where the null hypothesis was rejected for Ahmedabad and Surat cities. In the case of criteria 'Downloading mobile app can cause malicious virus installed on the mobile device' where the null hypothesis was rejected for Vadodara city.

In case of Vadodara city background variable Income was found having significant association with trust in the quality of smartphone application except the criteria 'Shoppers prefer shopping products via shopping apps, that are reputed and well known', and 'It is necessary to use a high-security payment gateway like retina scanner, fingerprint, or OTP' the hypothesis is accepted as 'P' value is more than 0.05.

In case of Ahmedabad & Surat cities the two criteria viz.,view in shopping app affects shopping decision" and "There is a possibility of the wrong item getting dispatched& delivered", a significant association was found, and null hypotheses were rejected. In case of Surat city, the significant association was found between the background variable Income and trust in the quality of smartphone application for criteria 'FAQs on the shopping apps help in shopping' as the 'P' value is less than 0.05.

In case of association between Educational Qualification and Trust in Smartphone Application, no significant association was found except in five criteria in Vadodara city such as "Mobile shopping apps are trustworthy"; "FAQs on the shopping apps help in shopping"; "Customer service of m-tailor will influence repurchasing"; "There is a possibility of the wrong item getting dispatched & delivered"; " Downloading a mobile shopping app can steal the personal information from phone" significant association was found. In case of Ahmedabad city significant association was found for criteria "There is a possibility of the wrong item getting dispatched& delivered".

In Surat city for criteria viz., "Review in shopping app affects shopping decision"; "FAQs on the shopping apps help in shopping" and "There is a possibility of the wrong item getting dispatched& delivered", where significant association in the opinion of m-shoppers' towards trust in smartphone application and their educational qualification was observed and null hypotheses was rejected.

5.3.16: Implications of the research study based on the overall opinion of selected smartphone users on trust in Smartphone application vis-à-vis age; income; educational qualifications and marital status.

The dependency of selecting mobile shopping applications was based on the level of trust of m-shoppers on a mobile shopping application. The researcher has attempted to find out the overall opinion of smartphone users about the trust they have on mobile shopping applications vis-à-vis age; income; educational qualifications and marital status.

The age group of smartphone users had a significant influence on the overall opinion about selected criteria viz., the trustworthiness of mobile shopping, frequently asked questions available on the shopping applications are helpful in shopping, customer service of online sellers on mobile applications would influence repurchasing, downloading mobile shopping applications stealing the personal information from the phone, the possibility of the wrong item getting dispatched and customer review in shopping applications affecting shopping decision with related to trust among the selected respondents in the cities of Vadodara and Surat. The mobile applications developers should customize the user experience on mobile shopping applications considering the trustworthiness of mobile applications; the availability of frequently asked questions on the mobile application customer service of online sellers on mobile applications that strengthen the repurchasing intention; care for avoiding the risk of stealing the personal information from the phone while downloading mobile shopping applications, the possibility of the wrong item getting dispatched and customer review in shopping applications affecting shopping decision based on the age group given by the smartphone users when they signed up for the service.

The age group of the m-shoppers in the cities of Ahmedabad and Rajkot did not have a significant relationship with selected criteria such as mobile shopping applications are being trustworthy, frequently asked questions available on the shopping applications are helpful in shopping, customer service of online sellers on mobile applications would influence repurchasing, downloading mobile shopping applications stealing the personal information from the phone, the possibility of the wrong item getting dispatched and customer review in shopping applications affecting shopping decision.

In the cities of Surat, Vadodara and Ahmedabad, the researcher had found that the educational background played an important role in developing the trust of mobile shoppers that influences -the overall opinion on mobile shopping applications are being trustworthy, FAQs available on the shopping applications are being helpful in shopping, customer service of online sellers influencing repurchasing,

the possibility of downloading mobile shopping applications could steal the personal information from the phone, the possibility of the wrong item getting dispatched & delivered, customer review in shopping applications affecting shopping decision, the possibility of the wrong item getting delivered. Mobile shopping application developers should design and customize the mobile applications based on the m-shoppers educational background information collected from mobile shoppers during the signing up activity on mobile shopping applications. Considering the gender of the m-shoppers, their overall opinion on criteria 'product delivered differ as it is appearing online' and 'customer review in shopping applications affecting shopping decision' had differed in the cities of Ahmedabad and Surat.

The researcher inferred that the income of them-shoppers influenced the trust and overall opinion on criteria viz., mobile shopping apps are being trustworthy, FAQs available on the shopping apps are being helpful in shopping, the influence of customer service of online retailers on repurchasing intention, downloading mobile shopping applications stealing the personal information from the phone, a possibility of the wrong item getting dispatched & delivered, customer review in shopping applications affecting shopping decision in the cities of Vadodara, Ahmedabad and Surat. The mobile shopping application developers should focus on customizing mobile applications as per the income group of the m-shoppers. Customized mobile applications as per the income can save the time of the m-shoppers by identifying the right product within their estimated budget.

The research had analysed the marital status influencing the trust related to mobile shopping applications. The study has shown that the marital status of the m-shoppers differed in the overall opinion on trusting the mobile shopping application with related to downloading mobile applications causing malicious virus installed on the mobile device, FAQs available on the shopping apps are being helpful in shopping, a possibility of the wrong item getting dispatched and delivered.

The study has revealed that m-shoppers' opinion on the trust related to criteria viz., Online retailers monitoring the activities of the shoppers' on the Smartphone, frauds taking place in mobile shopping, shoppers prefer shopping products via shopping applications that are reputed and well known and the necessity to use a high-security payment gateway like retina scanner, fingerprint, or OTP did not differ across all the selected cities of Vadodara, Surat, Ahmedabad and Rajkot vis-à-vis age, income, educational qualifications and marital status.

5.3:17: HYPOTHESES-18:

The overall opinion of selected Smartphone users on Quality of Smartphone Application has no association with their Recommendations to others for m-shopping.

Table Number 5.22:

Selected Smartphone Users' Overall opinion on Quality of Smartphone Application vis-à-vis; Recommendation to others for m-shopping

Sr. No.	Statements of Mobile Application Quality	City Wise 'P' Value of X^2			
		Baroda	**Ahmedabad**	**Surat**	**Rajkot**
1.	Smartphone is useful for anytime shopping	.001	.000	.000	.000
2.	Downloading app provides better shopping experience	.000	.000	.000	.000
3.	Payment option is easy in mobile apps	.002	.000	.000	.000
4.	Wish list helps to do the shopping later	.005	.006	.033	.066
5.	Mobile apps have barrier to Indian languages	.005	.007	.006	.016
6.	Unclear image affects the shopping decision	.000	.000	.000	.000
7.	Playing video in the app is useful to	.055	.000	.000	.000
8.	Paid apps are better than free apps	**.472**	**.432**	**.176**	**.258**
9.	Wait for the special offers and discounts to shop online	.082	.000	.000	.002
10	Mobile app is useful in saving shopping time	.018	.000	.000	.000
11	Product suggestion in mobile app is useful	.011	.002	.017	.027
12	Shoppers feel proud in mobile shopping	.000	.000	.000	.000
13	Shoppers enjoy shopping on the Smartphone	.000	.000	.000	.000
14	Shoppers enjoy the convenience of mobile apps	.000	.000	.000	.000
15	Shoppers enjoy the product description in the App	.020	**.954**	**.740**	**.841**
16	Shoppers enjoy comparing the products online	.001	.000	.000	.000
17	Attractive appearance of application involves shoppers	.009	.000	.000	.000
18	Sellers are approachable through application	.000	.000	.000	.000
19	Similar products display in is useful	.002	.000	.000	.000
20	Navigation is easy in mobile shopping apps	.000	.000	.000	.000
21	Tracking in shopping app gives accurate information	.000	.000	.000	.000
22	Information on stock availability while Looking for a product influence the shopping decision	.005	.022	**.112**	**.148**
23	In case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision	.000	.011	.011	**.139**
24	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone	.000	.000	.000	.000
25	The try-it-On facility increases the chance to buy more from that app	.007	**.057**	**.114**	**.345**
26	Mobile shopping apps are trustworthy	.000	.000	.000	.000
27	Customer review in shopping app affects shopping decision	.015	.000	.000	.000
28	FAQs available on the shopping apps help in shopping	.031	.008	.033	**.545**
29	Downloading mobile app gives first time benefits	.000	.000	.000	.000
30	Shoppers prefer test product or free samples	.000	.000	.000	.000
31	A shopper would like to connect with other shoppers through online chat forums	.000	.000	.000	.000
32	Quick response of m-tailors on FAQ affects affect shopping decision	.000	.000	.000	.000
33	Sellers accept exchanges products returned by shoppers	.000	.000	.000	.000
34	Easy refund of Price encourages online shopping	.000	.000	.000	.000
35	Online sellers refund the price of products as soon as they receive the product back	.000	.000	.000	.000

Table Number 5.22:

Selected Smartphone Users' Overall opinion on Quality of Smartphone Application vis-à-vis; Recommendation to others for m-shopping

Sr. No.	Statements of Mobile Application Quality	City Wise 'P' Value of X^2			
		Baroda	Ahmedabad	Surat	Rajkot
36	Availability of EMI options on shopping apps affect the shopping decision	.024	.000	.000	.000
37	Shoppers check the information about the sellers in application	.000	.000	.000	.000
38	Phone number of delivery agent provided in message helps a lot	.002	.000	.000	.000
39	Product delivered differ as it appears online	.000	.000	.000	.000
40	The delivery cost of a product will affect the shoppers shopping decision	**.472**	.002	.015	**.217**
41	Customer service of m-tailor will influence repurchasing	.003	.000	.000	.000
42	There is a possibility of wrong item getting dispatched& delivered	.000	.000	.000	.000
43	Online Products are slightly high priced	.000	.000	.000	.000
44	Online Products have hidden cost	.000	.000	.000	.000
45	Downloading a mobile shopping app can steal the personal information from phone	.000	.000	.000	.000
46	Downloading mobile app can cause malicious virus installed on the mobile device	.000	.000	.000	.000
47	Online retailers monitor the activities of the shoppers' on the Smartphone	.000	.000	.000	.000
48	Frauds may take place in mobile shopping	.000	.000	.000	.000
49	Shoppers prefer shopping products via shopping apps, that are reputed and well known	.000	**.160**	**.148**	**.183**
50	It is necessary to use a high-security payment gateway like retina scanner, finger print, or OTP	.000	.000	.000	.000

As given in the Table Number 5.22, in case of selected cities we rejected null hypothesis as the Quality of smartphone was found significantly associated ('P' value < 0.05) with the recommendation of m-shopping to others. Except for few criteria of Smartphone Application Quality such as "Paid apps are better than free apps," we accepted null hypothesis as ('P' value >0.05) in all four selected cities which showed that the m-shoppers were having similar opinion towards the contribution of the quality of paid applications in recommending m-shopping to others.

The opinion for quality of smartphone application showed insignificant association in Ahmedabad, Surat And Rajkot for three criteria, viz., "Shoppers enjoy the product description in the App"; "Try-it-On facility increases the chance to buy more from that app"; and " Shoppers prefer shopping products via shopping apps, that are reputed and well known", and the null hypotheses was accepted; while in case of criteria "Information on stock availability while Looking for a product influence the shopping decision", m-shoppers of Surat & Rajkot showed insignificant association in their opinion. Criterion "Delivery cost of a product will affect the shoppers shopping decision" the result showed a similar opinion that it contributes towards a recommendation to others or not.

5.3.18: Implications of the research study based on the overall opinion of selected smartphone users on the quality of Smartphone application and recommendations to others vis-à-vis perceived usefulness, Perceived ease of Use, price and trust.

The researcher had studied the overall opinion of the selected smartphone users on the quality of smartphone applications and m-shoppers' intention to recommend to others vis-à-vis perceived usefulness, Perceived ease of Use, price and trust. Word of mouth has more impact on the m-shoppers than the advertisements through media. An opinion of a customer and his expression about the products sold online will influence the shopping opinions of other m-shoppers. The researcher had attempted to study the m-shoppers' intention to recommend to others based on the perceived usefulness, Perceived ease of Use, price and trust.

The study revealed that the perceived usefulness, Perceived ease of Use, price and trust of a m-shoppers have a strong influence in their efforts to recommend others. The researcher had studied the m-shoppers' intention to recommend to others based on perceived usefulness, Perceived ease of Use, price and trust vis-à-vis smartphone being useful for anytime shopping, payment option is easy in applications, mobile shopping applications have barrier to Indian languages, unclear image affects the shopping decision, applications are useful in saving shopping time, suggestion is useful in selection of the products, sellers are being approachable through application, similar products getting displayed on mobile shopping applications along with main search, easiness of mobile shopping applications for navigating from one search to another, tracking delivery in application giving accurate information, installed applications incline shopping, downloading applications give first time benefits, quick response of online sellers affecting shopping decision, sellers accepting product returned by shoppers, easy refund of price encouraging online shopping, sellers refunding price as they receive product back, EMI options affecting shopping decision, shoppers checking information on sellers in applications, and phone number of delivery agent provided helpful in the cities of Vadodara, Ahmedabad, Surat and Rajkot. Online sellers on mobile applications and mobile shopping application developers should focus on improving the usefulness, ease of use, price and trust so that the mobile shoppers would recommend their friends, relatives, colleagues and other mobile shoppers.

Regarding the paid applications being better than free applications, it had no relationship with perceived usefulness, Perceived ease of Use, price and trust in recommending to other shoppers in all the selected cities of Vadodara, Ahmedabad, Surat and Rajkot.

Regarding the smartphone user's opinion on recommending the shopping applications to the other shoppers in the city of Vadodara vis-à-vis the criteria viz., video is being useful to know all features of products, waiting for special offers and discounts to shop online, and delivery cost affecting the shopping decision to continue to shop more from the applications had no relationship with perceived usefulness, Perceived ease of Use, price and trust.

Regarding the smartphone user's opinion on criteria viz., shoppers enjoying the product description available in applications, try-it-on facility increasing the chance to buy, shoppers preferring shopping product in reputed applications vis-à-vis perceived usefulness, Perceived ease of Use, price and trust had no relationship in recommending to others in the cities of Ahmedabad, Surat and Rajkot.

5.3:19: HYPOTHESES-19:

The overall opinion of selected Smartphone users of Quality of Smartphone Application by selected Smartphone users has no association with their Continuance to Purchase.

Table Number 5.23:

Selected Smartphone Users' Overall opinion on Quality of Smartphone Application vis-à-vis; their continuance to purchase.

S.No.	Statements of Mobile Application Quality	City Wise 'P' Value of X^2			
		Vadodara	Ahmedabad	Surat	Rajkot
1.	Smartphone is useful for anytime shopping	.000	.000	.000	.000
2.	Downloading the app provides better shopping experience	.000	.000	.000	.000
3.	Payment option is easy in mobile apps	.001	.000	.000	.000
4.	Wish list helps to do the shopping later	.001	.006	.015	**.081**
5.	Mobile apps have barrier to Indian languages	.001	.001	.002	.001
6.	Unclear image affects the shopping decision	.000	.000	.000	.000
7.	Playing a video of the product available in the app is useful to Know all features of the product	.017	.000	.000	.002
8.	Paid apps are better than free apps	**.466**	**.363**	**.186**	**.422**
9.	I will wait for the special offers and special discounts to shop online	.040	.000	.000	.002
10	Mobile app is useful in saving shopping time	.004	.000	.000	.000
11	Product suggestion in mobile app is useful in selection of the products	.016	.002	.025	.044
12	Shoppers feel proud in mobile shopping	.000	.000	.000	.000
13	Shoppers enjoy shopping on the Smartphone	.000	.000	.000	.000
14	Shoppers enjoy the convenience of shopping on mobile apps	.000	.000	.000	.000
15	Shoppers enjoy the product description available in the App	.005	**.903**	**.745**	**.755**
16	Shoppers enjoy comparing the products online	.000	.000	.000	.000
17	Attractive appearance/layout of the mobile shopping app involves shoppers	.002	.000	.000	.000
18	Sellers are approachable through application	.000	.000	.000	.000
19	Similar products should be displayed on the mobile shopping app along with the main search	.000	.000	.000	.000
20	Mobile shopping apps are easy in navigating from one search to another	.000	.000	.000	.000
21	Tracking of delivery in shopping app gives accurate information	.000	.000	.000	.000
22	Information on stock availability while Looking for a product influence the shopping decision	.001	**.086**	**.260**	**.307**
23	In case of non-availability of the product, the option of sending information, as soon as it becomes available influence shopping decision	.000	.002	.002	.020

Table Number 5.23:
Selected Smartphone Users' Overall opinion on Quality of Smartphone Application vis-à-vis; their continuance to purchase

S.No.	Statements of Mobile Application Quality	City Wise 'P' Value of X^2			
		Vadodara	Ahmedabad	Surat	Rajkot
24	Shoppers become more inclined to do shopping when the shopping app is installed on the smartphone	.000	.000	.000	.000
25	The try-it-On facility increases the chance to buy more from that app	.001	.048	**.062**	**.316**
26	Mobile shopping apps are trustworthy	.000	.000	.000	.000
27	Customer review in shopping app affects shopping decision	.001	.000	.000	.000
28	FAQs available on the shopping apps help in shopping	.025	.001	.003	**.156**
29	Downloading mobile app gives first time benefits	.000	.000	.000	.000
30	Shoppers prefer test product or free samples	.000	.000	.000	.000
31	A shopper would like to connect with other shoppers through online chat forums	.000	.000	.000	.000
32	Quick response of m-tailors on FAQ affects affect shopping decision	.000	.000	.000	.000
33	Sellers accept exchanges products returned by shoppers	.000	.000	.000	.000
34	Easy refund of Price encourages online shopping	.000	.000	.000	.000
35	Online sellers refund the price of products as soon as they receive the product back	.000	.000	.000	.000
36	Availability of EMI options on shopping apps affect the shopping decision	.011	.000	.000	.000
37	Shoppers check the information about the sellers in application	.000	.000	.000	.000
38	Phone number of delivery agent provided in message helps a lot	.004	.000	**.125**	.000
39	Product delivered differ as it appears online	.000	.000	.000	.000
40	The delivery cost of a product will affect the shoppers shopping decision	**.263**	.024	.000	**.590**
41	Customer service of m-tailor will influence repurchasing	.008	.000	.000	.002
42	There is a possibility of wrong item getting dispatched& delivered	.000	.000	.000	.000
43	Online Products are slightly high priced	.000	.000	.000	.000
44	Online Products have hidden cost	.000	.000	.000	.000
45	Downloading a mobile shopping app can steal the personal information from phone	.000	.000	.000	.000
46	Downloading mobile app can cause malicious virus installed on the mobile device	.000	.000	.000	.000
47	Online retailers monitor the activities of the shoppers' on the Smartphone	.000	.000	.000	.000
48	Frauds may take place in mobile shopping	.000	.000	.000	.000
49	Shoppers prefer shopping products via shopping apps, that are reputed and well known	.000	**.203**	**.223**	**.207**
50	It is necessary to use a high-security payment gateway like retina scanner, finger print, or OTP	.000	.000	.000	.000

As given in the Table Number 5.23, in case of all four selected cities, we reject the null hypothesis as the Smartphone Application Quality was found significantly associated ('P' value < 0.05) with selected items concerning Perceived Use in the context of Continuance to Purchase, except one criterion "Paid apps are better than free apps" of Mobile Application Quality where we accept the null hypothesis as 'P' value >0.05 in all cities.

5.3.20: Implications of the research study based on selected Smartphone Users' Overall opinion on Quality of Smartphone Application vis-à-vis; their continuance to purchase:

The researcher has made an attempt to find out the relationship between the Smartphone application quality and mobile shoppers' intention to use the mobile shopping applications continuously for future purchase. In the case of criterion "Wish list helps to do the shopping later" the only opinion of m-shoppers of Rajkot were found insignificantly associated with continuance to purchase,

For the criteria 'Shoppers enjoy the product description available in the App' and 'Information on stock availability while Looking for a product influence the shopping decision' and 'Shoppers prefer shopping products via shopping apps, that are reputed and well known' insignificant associated was found with continuance to purchase in Ahmedabad, Surat and Rajkot cities. Similarly, for criteria 'Try-it-On facility increases the chance to buy more from that app' insignificant associated was found with continuance to purchase in Surat and Rajkot cities, while in case of criteria 'FAQs available on the shopping apps help in shopping' m-shoppers of Rajkot were found having a similar opinion. Similarly, in the case of criterion "Delivery cost of a product will affect the shoppers shopping decision" m-shoppers of Vadodara & Rajkot were found having a similar opinion. In the case of criterion, 'Phone number of a delivery agent provided in message helps a lot, the insignificant association was found in Surat city.

In other criteria "Shoppers prefer shopping products via shopping apps, that are reputed and well known" we reject null hypothesis only in the case of Baroda city as it was found significantly associated while in Ahmedabad, Surat and Rajkot its smartphone application quality was found insignificantly associated with continuance to purchase.

5.3.21: HYPOTHESES-20:

The overall opinion of selected Smartphone users on Smartphone attribtues by selected Smartphone users has no association with their Continuance to Purchase.

Table Number 5.24:
Selected Smartphone Users' Overall opinion on Smartphone attribute vis-à-vis; their continuance to purchase

S.N.	Statements of Mobile Attributes	City Wise 'P' Value of X^2			
		Baroda	Ahmedabad	Surat	Rajkot
1	Screen size of Smartphone affects online shopping	.000	.000	.000	.000
2	Zooming feature helps to know the product well	.003	.001	.006	.018
3	Smartphone displays natural colour of the product	.000	.000	.000	.000
4	Price of the phone decides the Quality of the smartphone	.000	.000	.000	.000
5	Mobile Applications are Compatible to the smart phone	.000	.000	.000	.000
6	Smartphone batteries give enough time to do online shopping	.000	.000	.000	.000
7	Size of shopping apps consume lot of memory space in smartphone	.000	.000	.000	.000
8	Brightness of the smartphone affects the outdoor mobile shopping	.000	.000	.000	.000
9	Smartphone reduces the physical search to collect product information	.000	.000	.000	.000
10	Smartphone has the safety facilities on it	.000	.000	.000	.000
11	Price of the phone decides the Quality of the smartphone	.000	.000	.000	.000

As given in the Table Number 5.24, in case of four selected cities, we reject the null hypothesis as the mobile attributes were found significantly associated ('P' value < 0.05) with selected items with reference to Perceived Use, Trust, Price, Perceived ease of Use and ease of use, in the context of Continuance to purchase.

5.3.22: Implications of the research study based on the overall opinion of selected smartphone users on the quality of Smartphone application and continuance to purchase vis-à-vis perceived usefulness, Perceived ease of Use, price and trust.

The researcher had made an attempt to study the overall opinion of the selected smartphone users on the quality of smartphone applications and m-shoppers' intention to purchase continually and recommend to others vis-à-vis perceived usefulness, Perceived ease of Use, price and trust. The success of mobile shopping industry is based on the m-shoppers' continuous intention to buy.

The study helped to understand whether the perceived usefulness, Perceived ease of Use, price and trust of a m-shoppers exert influence on the continuance intention to purchase. The researcher had conducted a study to get an insight into the relationship between perceived usefulness, Perceived ease of Use, price and trust vis-à-vis m-shoppers' intention to buy continuously.

Significant influence among the mobile shoppers in the cities of Vadodara, Ahmedabad, Surat and Rajkot on their overall opinion about their continuous intention to purchase was found for criteria viz., Smartphone being useful for anytime shopping, downloading application that provides better shopping experience, payment option is easy in applications, easy payment option in mobile applications, the barrier of applications in Indian languages, unclear image affecting the shopping decision, video being useful to know all features of product, waiting for special offers and discounts to shop online, application is being useful in saving shopping time, suggestion is being useful in selection of the product, shoppers feeling proud in m-shopping, shoppers enjoy shopping on the Smartphone, shoppers enjoy the convenience of shopping on apps, shoppers enjoying comparing the products online, attractive layout of application involving shoppers, sellers are being approachable through application, similar product should display on applications along with main search, applications are easy in navigating from one search to another, tracking delivery in applications giving accurate information, availability of the product information influence shopping, installed application incline shopping, applications are trustworthy, customer review in application affecting shopping decision, downloading application giving first time benefits, shoppers preference of testing product or free samples, shoppers connecting with other shoppers through chat, quick response of m-tailors affects shop decision, sellers accepting product returned by shoppers, easy refund of price encourages online shopping, sellers refunding price as they receive product back, EMI options affecting shopping decision, shoppers checking information on sellers in applications, product delivered differ as it appears online, customer service will influence repurchasing, possibility of wrong item dispatched, online product are high priced, online product have hidden cost, downloading applications can steal personal information, downloading application causing malicious virus installed, online retailers monitor activities of shoppers, frauds might take place in m-shopping, and necessary to use high security payment gateway. Smartphone manufacturers and mobile shopping application developers should concentrate on improving the aforesaid parameters to retain the m-shoppers for continuous shopping.

Regarding the Perceived ease of Use of product description available in the application, the overall opinion of smartphone users in the cities of Ahmedabad, Surat and Rajkot had no significant relationship with their continuous intention to shop using mobile shopping applications. The smartphone users in the cities of Surat and Rajkot had no significant relationship with their continuance intention to shop online related to try it on facility available in mobile shopping application.

The smartphone users' opinion in the cities of Ahmedabad, Surat and Rajkot had no significant relationship with the perceived usefulness of mobile shopping applications related to the intention to continuous shopping vis-à-vis paid applications are better than free applications and stock availability influencing shopping decision.

The researcher had conducted a study on the attribute of the smartphone in relation with m-shoppers' continuous intention to shop on mobile shopping applications vis-à-vis Perceived ease of Use, perceived usefulness, trust and price in the cities of Vadodara, Ahmedabad, Surat and Rajkot.

Perceived usefulness of mobile applications is being compatible to the smartphone, smartphone batteries giving enough time to do online shopping, the brightness of the smartphone affects the outdoor mobile shopping and smartphone reducing the physical search to collect product information had a significant influence on the m-shoppers overall opinion of continuous shopping using a smartphone. The smartphone manufacturers should ensure that the compatibility of smartphone for mobile shopping, enough battery power to do online shopping, and brightness of smartphone at par with the expectation of the m-shoppers so that the smartphone manufacturer can retain the mobile shoppers to do the online shopping.

Smartphone manufacturers should make sure that they manufacture a smartphone that displays the natural colour of the product as it having a strong correlation with the m-shoppers' intention to shop continuously across the selected cities of Vadodara, Ahmedabad Surat and Rajkot.

It can be inferred from the research study that the screen size and zooming features in the smartphone had a very significant relationship with the m-shoppers intention to continue the mobile shopping in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot. Smartphone manufacturers should do improve the quality and size of the smartphone, and zooming features as it has a significant correlation with m-shoppers intention to continue to shop online.

The research study resulted in the smartphone users believes that the quality of the smartphone is decided by the price of it. Safety facility in the smartphone also induces m-shoppers to buy online in the future across all the selected cities of Ahmedabad, Vadodara, Surat and Rajkot.

5.3.23: HYPOTHESES-21: The overall opinion of selected Smartphone users on Smartphone attribtues by selected Smartphone users has no association with recommendation to others

Table Number 5.25:
Selected Smartphone Users' Overall opinion on Smartphone attribute vis-à-vis; Recommendation to others

S.N.	Statements of Mobile Attributes	City Wise 'P' Value of X^2			
		Baroda	Ahmedabad	Surat	Rajkot
1	Screen size of Smartphone affects online shopping	.000	.000	.000	.000
2	Zooming feature helps to know the product well	.021	.000	.000	.003
3	Smartphone displays natural colour of the product	.000	.000	.000	.000
4	Price of the phone decides the Quality of the smartphone	.000	.000	.000	.000
5	Mobile Applications are Compatible to the smart phone	.000	.000	.000	.000
6	Smartphone batteries give enough time to do online shopping	.000	.000	.000	.000
7	Size of shopping apps consume lot of memory space in smartphone	.000	.000	.000	.000
8	Brightness of the smartphone affects the outdoor mobile shopping	.000	.000	.000	.000
9	Smartphone reduces the physical search to collect product information	.000	.000	.000	.000
10	Smartphone has the safety facilities on it	.000	.000	.000	.000
11	Price of the phone decides the Quality of the smartphone	.000	.000	.000	.000

The overall opinion of selected Smartphone users on Smartphone Attribute has no association with their Recommendations to others.

As given in the Table Number 5.25, in case of selected cities of Gujarat, we reject the null hypothesis as the variable understudy 'Smartphone Attributes' were found significantly associated ('P' value < 0.05) with selected items with reference to Perceived Use, Perceived ease of Use, Price, and Trust in Smartphone in the context of Recommendation of m-shopping to others.

5.3.24: Implications of the research study based on the overall opinion of selected smartphone users on Smartphone attribute and their Recommendations to others to shop on smartphone application.

The researcher has attempted to study the overall opinion of selected smartphone users on attributes of smartphone considering the factors of perceived usefulness, Perceived ease of Use, trust and price in the selected cities of Vadodara, Ahmedabad, Surat and Rajkot. It can be inferred that screen size of the smartphone, zooming feature, display of natural colour of the product, price of the phone, compatibility of mobile applications to Smartphones, long-lasting battery capacity of the smartphone, the brightness of the smartphone, and price of the phone decides the Quality of the smartphone, which were found having significant association with their recommendations to others for m-shopping. Smartphone manufacturers should focus on the attribute of the smartphone such as screen size, displaying natural colour, good quality phone for an affordable price, brightness and durability of the battery power to continuous shopping online. Some of the features matter a lot and because of which interest in online shopping occurs, once the m-shopper is satisfied only then a recommendation to others .

5.4: FACTOR ANALYSIS OF MOBILE APPLICATION OF QUALITY (MAQ) AND PERCEIVED USEFULNESS (PU):

To measure the suitability of the data for factor analysis, the adequacy of the data is evaluated based on the results of Kaiser – Meyaer – Oklin (KMO) measures of sampling adequacy and Bartiet's test of sphericity (homogeneity of variance). This exercise is done for all the groups of data in which factor analysis is applied.

For all the groups of data, the factor loadings were used to measure the correlation between criteria and the factors. A factor loading close to 1 indicates a strong correlation between criteria and factor, while a loading closer to zero indicated a weak correlation. The factors are rotated with the used of Varimax with Kaiser Normalization rotation method. Principle Component Analysis (PCA) method is used for factor extraction and considers only those factors for interpretation purpose whose values are greater than 0.6.

For all the groups of data, in the table of 'Communalities and Rotated Component Matrix', all the extracted communalities are acceptable and all criteria are fit for the factor solution as their extraction values are large enough.

Table Number 5.26: Mobile Application Quality (MAQ) and Perceived Usefulness (PU) Through KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.823**
Bartlett's Test of Sphericity	Approx. Chi-Square	**15010.835**
	Df	**276**
	Sig.	**0.00**

From the above table number 5.26, it can be interpreted that in case of Mobile Application Quality (MAQ) and Perceived Usefulness (PU) the score of 0.823 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number: 5.27: Total Variance on Mobile Application Quality (MAQ) and Perceived Usefulness (PU)									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent	Total	Percentagegees of Variance	Cumulative per cent
1	5.973	24.888	24.888	5.973	24.888	24.888	4.120	17.167	17.167
2	2.687	11.194	36.082	2.687	11.194	36.082	3.222	13.423	30.590
3	1.933	8.053	44.136	1.933	8.053	44.136	2.460	10.248	40.838
4	1.630	6.792	50.927	1.630	6.792	50.927	2.028	8.448	49.286
5	1.317	5.487	56.415	1.317	5.487	56.415	1.430	5.960	55.247
6	1.238	5.157	61.571	1.238	5.157	61.571	1.319	5.496	60.742
7	1.057	4.404	65.975	1.057	4.404	65.975	1.256	5.233	65.975
8	.975	4.062	70.038						
9	.845	3.522	73.560						
10	.797	3.323	76.883						
11	.762	3.174	80.057						
12	.600	2.500	82.557						
13	.582	2.426	84.983						
14	.525	2.187	87.170						
15	.425	1.770	88.940						
16	.415	1.729	90.669						
17	.397	1.655	92.324						
18	.361	1.503	93.827						
19	.334	1.391	95.218						
20	.273	1.136	96.354						
21	.254	1.059	97.413						
22	.250	1.041	98.454						
23	.215	.896	99.350						
24	.156	.650	100.000						

Extraction Method: Principal Component Analysis. The first seven components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 65.97 per cent of the observed variations in the Mobile Application Quality (MAQ) and Perceived Usefulness (PU).

According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.28:
Communalities and Rotated Component Matrix of Mobile Application Quality (MAQ) and Perceived Usefulness (PU)

S. N.	Selected Criteria	Communalities Extraction	Rotated Component						
			1	2	3	4	5	6	7
01	Smartphone is useful for anytime shopping	.668	.116	**.775**	.165	.042	.149	-.036	-.026
02	Payment option is easy in apps	.630	.074	**.712**	.187	.031	.258	.083	.092
03	Wishlist helps to do the shopping later	.634	.228	.136	.151	.231	**.665**	.213	.020
04	Smartphone Apps have barrier to Indian languages	.770	.102	.037	-.007	.007	.181	.008	**.852**
05	Unclear image affects the shopping decision	.635	.273	.472	.223	.326	-.233	-.111	.339
06	Video is useful to know all features of prod	.875	.012	.064	.001	**.929**	.080	.025	.014
07	Paid apps are better than free apps	.186	.099	.235	-.059	.167	.054	.143	-.258
08	Shopping App is useful in saving shopping time	.547	.010	**.731**	-.073	-.037	-.068	-.021	.023
09	Suggestion is useful in selection of the prod	.632	.034	.192	.121	.079	**.722**	-.180	.138
10	Sellers are approachable through application	.754	**.622**	.490	.188	.148	-.189	.013	.184
11	Similar prod should display on app along main search	.601	.025	**.699**	.169	.110	.192	.161	-.089
12	Shopping apps are easy navigating from 1 search to another	.699	.023	.129	**.814**	-.023	.098	.064	-.074
13	Tracking delivery in app gives accurate info	.621	.546	.397	.222	.213	-.219	.064	.135
14	Stock availability influence shopping decision	.513	.141	.104	.050	.019	.001	**.689**	-.070
15	Information of availability of the prod influence	.853	.050	.058	.022	**.906**	.149	.025	-.055
16	Installed app incline shopping	.728	.032	.152	**.832**	.048	.076	-.021	.052
17	Downloading app gives first time benefits	.754	.062	.060	**.856**	.007	.051	.031	.103
18	The quick response of m tailors affects shop decision	.744	**.842**	-.004	-.014	.079	.100	.131	-.037
19	Sellers accept prod returned by shoppers	.722	**.652**	.210	.108	-.114	-.010	-.477	.014
20	Easy refund of price encourages online shopping	.712	**.634**	.048	-.063	-.090	.149	-.521	-.037
21	Sellers refund price as they receive prod back	.663	.507	.368	.268	.150	-.207	-.066	.359
22	Options affect shopping decision	.443	.287	.331	.071	-.108	.078	.363	.310
23	Shoppers check info on sellers in-app	.740	**.834**	-.038	.048	-.011	.098	.163	.066
24	Phone number of delivery agent provided helpful	.710	**.817**	.062	-.051	.038	.157	.098	.026

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 13 iterations.

The table number 5.28 provides a clear idea about the number of criteria correlated with seven components extracted using factor analysis.

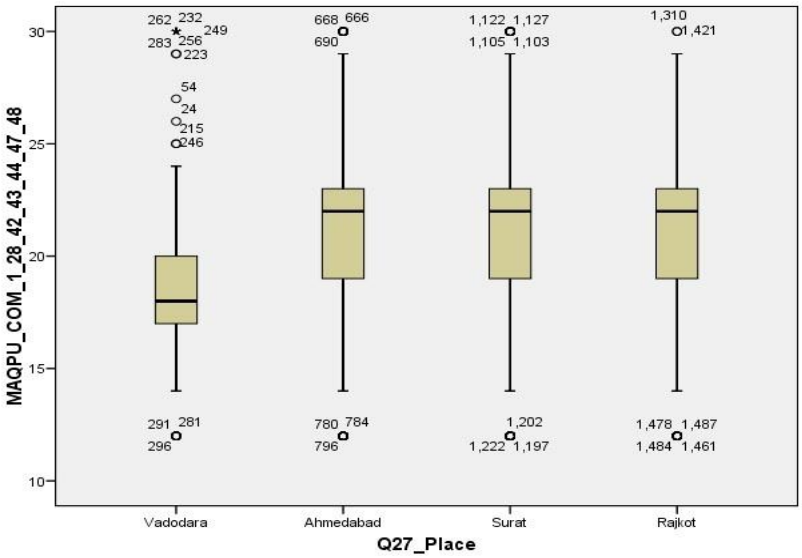
The item at serial numbers 10,18,19,20, 23, and 24 viz., sellers are approachable through the application (0.622), quick response of m tailors affects shop decision (0.842); sellers accept product returned by shoppers (0.652), the easy refund of price encourages online shopping (0.634), shoppers check info on sellers in-app (0.834), and phone number of a delivery agent provided helpful (0.817), were found correlated with component 1. These 06 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The Item at serial number 1, 2, 8, and 11 Viz., the smartphone is useful for any time shopping (0.775); payment option is easy in apps (0.712); the app is useful in saving shopping time (0.731), and the similar product should display on the app along main search (0.699) were found as more correlated with component 2. These o4 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The item at serial number 12, 16 and 17 viz., apps are easy navigating from one search to another (0.814), installed app incline shopping (0.832), and Downloading the app gives first-time benefits (.856) was more correlated with component 3. These o3 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The item at serial number 6 and 15 viz., video is useful to know all features of the product (0.929), information of availability of the product influence (0.906) were more correlated with component 4. These o2 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The item at serial number 3 and 9 viz., wishlist helps to do the shopping later (0.665) and suggestion is useful in the selection of the prod (0.722) was more correlated with component 5. These o2 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The item at serial number 14 namely stock availability influence shopping decision (0.689), was more correlated with component 6. This 01item was found to be equally important for two cities Vadodara and Rajkot Cities. The item at serial number 4 namely, apps have a barrier to Indian languages (0.852) was more correlated with component 7. This o1 item was found to be important for Rajkot city.

Item number 5, 7, 13, 21, and 22 viz., unclear image affects the shopping decision, paid apps are better than free apps, tracking delivery in-app gives accurate info, sellers refund price as they receive the product back, and EMI options affect shopping decision were not found as the determinant of Mobile Application Quality (MAQ) and Perceived Usefulness (PU) as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

5.4.1: IMPORTANCE OF COMPONENTS FOR MOBILE APPLICATIONS QUALITY (MAQ) AND PERCEIVED USEFULNESS (PU):

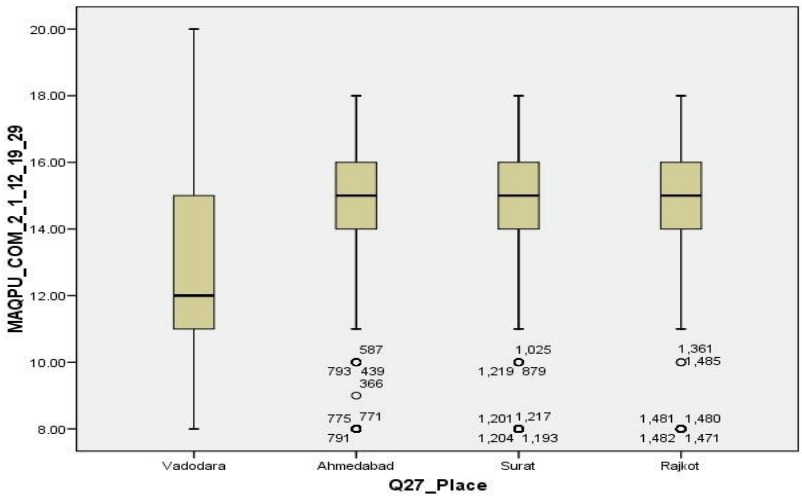
The importance of each component to m-shoppers of selected four cities can be understood with the help of below-given box plots. The following box plot explains the total score of components 1 to 7.

Graph Number 5.1: Importance of Component 1 (ITEM NO.28, 42, 43, 44, 47,48)



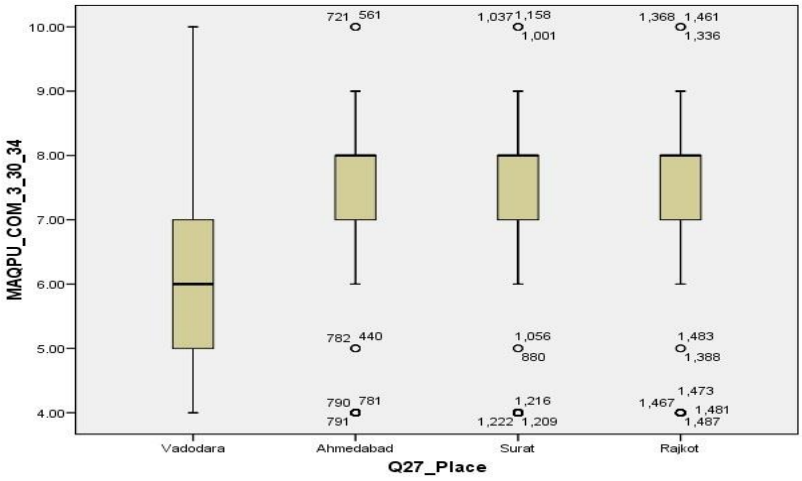
From the above box plot graph no. 5.1 interpretation can be made. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o6 items were found to be equally important for three cities viz., sellers are approachable through the application (0.622); the quick response of m tailors affects shop decision (0.842); sellers accept prod returned by shoppers (0.652); easy refund of price encourages online shopping (0.634); shoppers check info on sellers in-app (0.834), and phone number of a delivery agent provided helpful (0.817).

Graph Number 5.2: Importance of Component 2 (ITEM NO. 1,12,19,29)



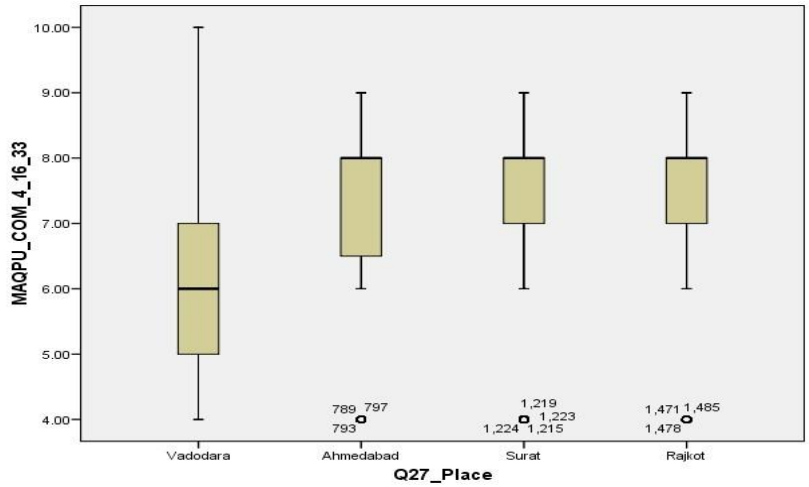
From the above box plot graph no. 5.2 interpretation can be made. The importance of component 2 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o4 items were found to be equally important for three cities viz., the smartphone is useful for any time shopping (0.775); payment option is easy in apps (0.712); the app is useful in saving shopping time (0.731) and the similar product should display on the app along with main search (0.699).

Graph Number 5.3: Importance of Component 3 (ITEM NO. 30, 34)



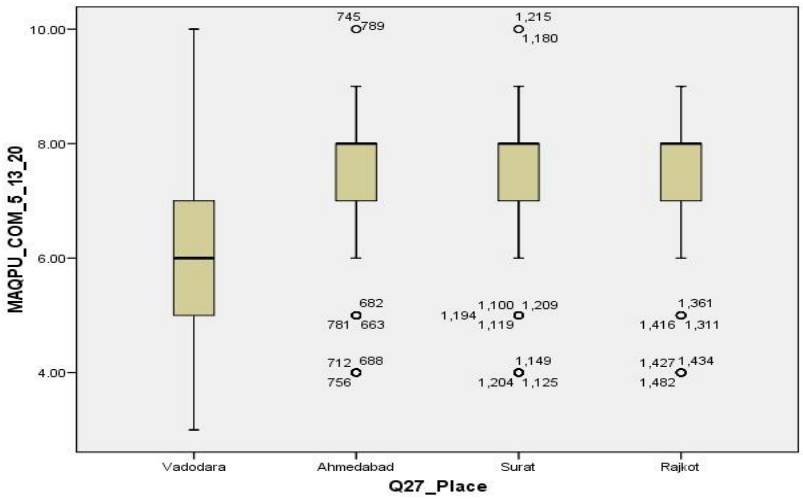
From the above box plot graph no. 5.3 interpretation can be made. The importance of component 3 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These 03 items were found to be equally important for three cities viz., apps are easy navigating from one search to another (0.814), installed app incline shopping (0.832), and Downloading app gives first-time benefits (.856).

Graph Number 5.4: Importance of Component 4 (ITEM NO. 16, 33)



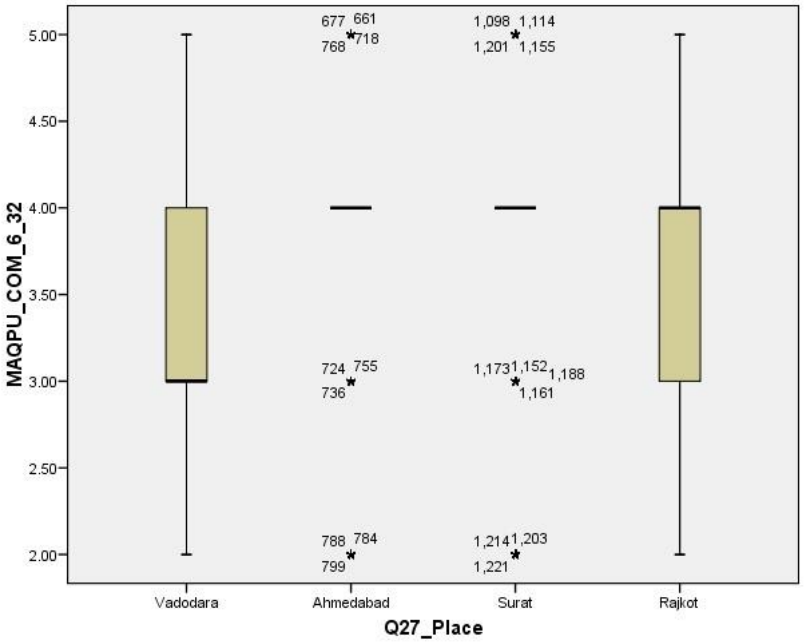
From the above box plot graph no. 5.4 interpretation can be made. The importance of component 4 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o2 items were found to be equally important for three cities viz., video is useful to know all features of the product (0.929), information of availability of the prod influence (0.906).

Graph Number 5.5: Importance of Component 5 (ITEM NO. 13, 20)



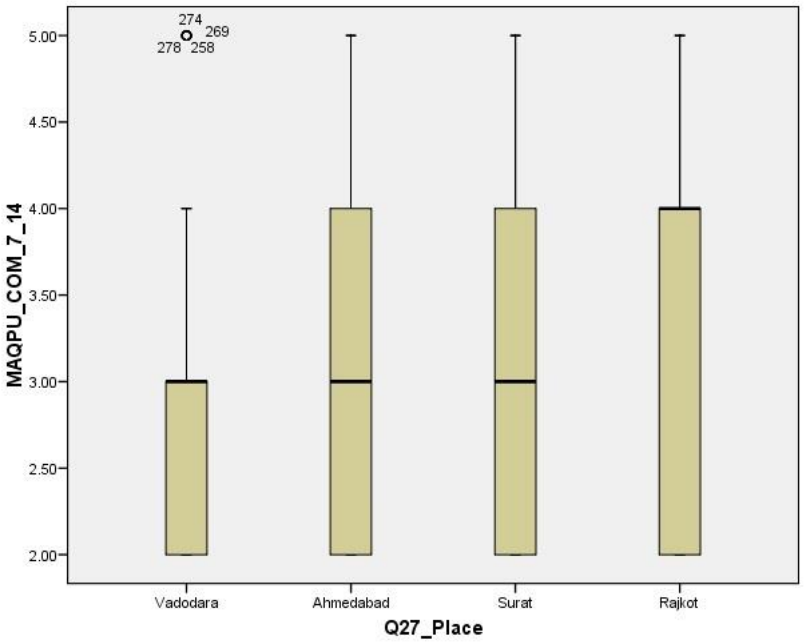
From the above box plot graph no. 5.5 interpretation can be made. The importance of component 5 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o2 items were found to be equally important for three cities viz., Wishlist helps to do the shopping later (0.665) and suggestion is useful in the selection of the prod (0.722).

Graph Number 5.6: Importance of Component 6 (ITEM NO. 14)



From the above box plot graph no. 5.6 interpretation can be made. The importance of component 6 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar to Vadodara and Rajkot cities. This 01 item was found to be equally important for two cities viz., stock availability influence shopping decision (0.689).

Graph Number 5.7: Importance of Component 7 (ITEM NO. 4)



From the above box plot graph no. 5.7 interpretation can be made. The importance of component 7 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to Rajkot cities followed by three cities viz., Vadodara, Ahmedabad and Surat as a median score of Rajkot city is higher than three cities viz., Vadodara, Ahmedabad and Surat. These 01 items were found to be important for Rajkot city viz., 'Smartphone Apps have a barrier to Indian languages' (.852).

5.5: FACTOR ANALYSIS OF MOBILE APPLICATION QUALITY (MAQ) AND PERCEIVED EASE OF USE (PE):

The result of KMO and Bartlett's Test for Mobile Application Quality (MAQ) and Perceived Ease of Use (PE) is presented in table number 5.29.

Table Number- 5.29: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.816
Bartlett's Test of Sphericity	Approx. Chi-Square	5125.808
	df	55
	Sig.	.000

From the above table number 5.29, it can be interpreted that in case of Mobile Application Quality (MAQ) and Perceived Ease of use (PE), the score of 0.816 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis.

Similarly, Bartlett's test of sphericity (0.00) was significant (p<.05), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.30: Total Variance on Mobile Application Quality (MAQ) and Perceived Ease of Use (PE)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent
1	3.841	34.915	34.915	3.841	34.915	34.915	3.192	29.020	29.020
2	1.445	13.137	48.051	1.445	13.137	48.051	1.758	15.979	44.999
3	1.131	10.279	58.330	1.131	10.279	58.330	1.466	13.331	58.330
4	.900	8.185	66.515						
5	.839	7.626	74.141						
6	.736	6.695	80.836						
7	.637	5.795	86.632						
8	.479	4.351	90.983						
9	.434	3.945	94.927						
10	.376	3.422	98.350						
11	.182	1.650	100.000						

Extraction Method: Principal Component Analysis.

As given in table number 5.30, The first three components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 58.33 per cent of the observed variations in the Mobile Application Quality (MAQ) and Perceived Usefulness (PU). According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.31: Communalities and Rotated Component Matrix of Mobile Application Quality (MAQ) and Perceived Ease of Use (PE)

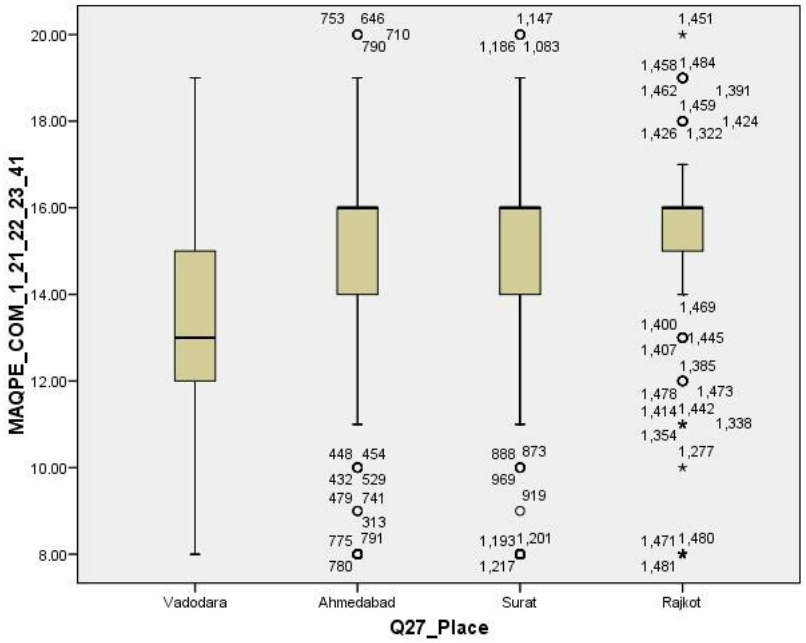
Sr. No.	Selected Criteria	Communalities Extraction	Rotated Component		
			1	2	3
01	Downloading the app provides better shopping experience	.590	.556	.527	.046
02	I will wait for the special offers and special discounts to shop online	.527	.191	.093	**.694**
03	Shoppers feel proud in mobile shopping	.709	**.820**	.084	.170
04	Shoppers enjoy shopping on the Smartphone	.817	**.889**	.149	.066
05	Shoppers enjoy the convenience of shopping on mobile apps	.714	**.827**	.136	.111
06	Shoppers enjoy the product description available in the App	.580	.034	-.005	**.761**
07	Shoppers enjoy comparing the products online	.316	.552	.098	-.050
08	Attractive appearance/layout of the mobile shopping app involves shoppers	.711	.142	**.823**	.119
09	The try-it-On facility increases the chance to buy more from that app	.315	.046	.203	.522
10	Shoppers prefer test product or free samples	.727	.070	**.834**	.163
11	A shopper would like to connect with other shoppers through online chat forums	.410	**.606**	.000	.205

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 8 iterations.

The table number 5.31 provides a clear idea about the number of criteria correlated with three components extracted using factor analysis.The item at serial number 03, 04, 05 and 11 viz., Shoppers feel proud in m shopping (0.820), shoppers enjoy shopping on the Smartphone (0.889), shoppers enjoy the convenience of shopping on apps (0.827) and shoppers connect with other shoppers through chat (0.606) were more correlated with component 1. These o4 items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The item at serial number 8 and 10 viz., the attractive layout of the app involves shoppers (0.823) and shoppers prefer test prod or free samples (0.834) was more correlated with component 2. The item at serial number 2 and 6 viz., waiting for special offers and discounts to shop online (0.694) and shoppers enjoy the product descript available in-app (0.761) items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot.

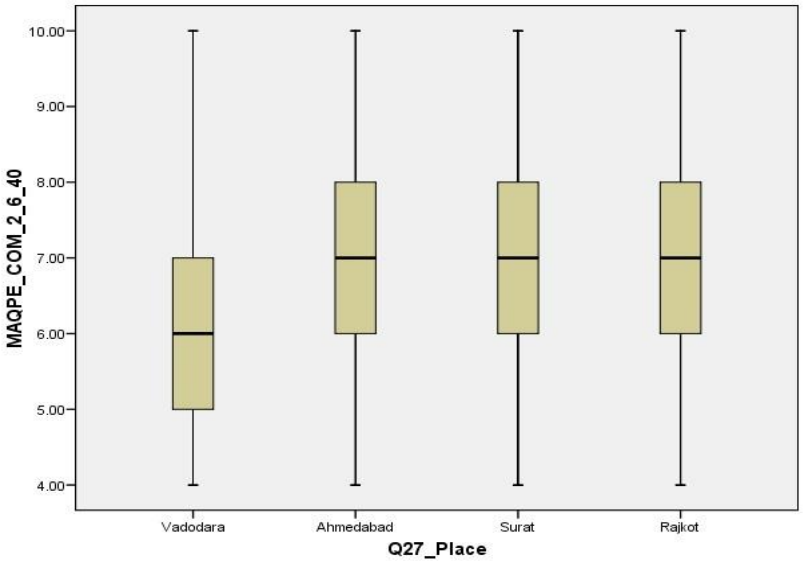
The item at serial number 1, 7, and 9 viz., downloading app provides better shopping experience, Shoppers enjoy comparing the products online and try it on facility increases the chance to buy were not found as the determinant of Mobile Application Quality (MAQ) and Perceived Ease of Use (PE) as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.8: Importance of Component 1 (ITEM NO. 21, 22, 23, 41)



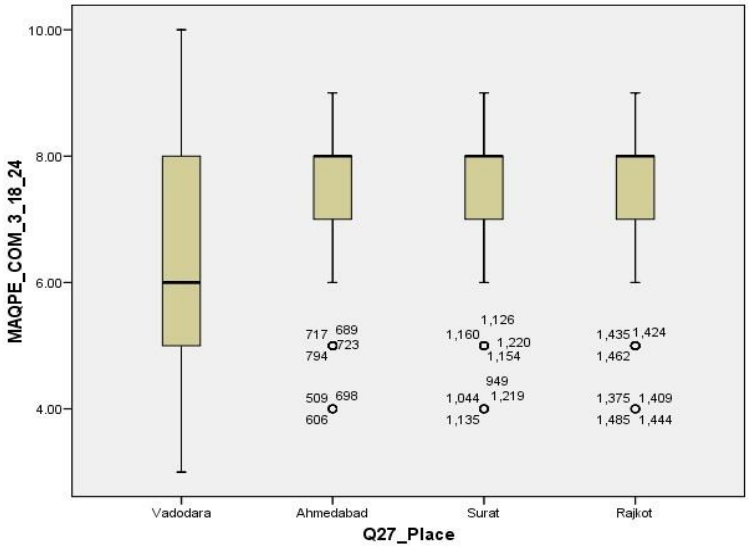
From the above box plot graph no. 5.8 interpretation can be made. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The component 1 includes the criteria 'Shoppers feel proud in m shopping' (0.820), 'shoppers enjoy shopping on the Smartphone' (0.889), 'shoppers enjoy the convenience of shopping on apps' (0.827) and shoppers connect with other shoppers through chat (0.606).

Graph Number 5.9: Importance of Component 2 (ITEM NO. 6, 40)



From the above box plot graph no. 5.9 interpretation can be made. The importance of component 2 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. Component 2 includes the criteria attractive layout of the app involves shoppers' (0.823) and 'Shoppers prefer test prod or free samples' (0.834).

Graph Number 5.10: Importance of Component 3 (ITEM NO. 18, 24)



From the above box plot graph no. 5.10 interpretation can be made. The importance of component 3 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The component 3 includes the criteria 'waiting for special offers and discounts to shop online' (0.694) and 'Shoppers enjoy the product descript available in-app' (0.761).

5.6: FACTOR ANALYSIS OF MOBILE APPLICATION QUALITY (MAQ) AND TRUST (TR):

The result of KMO and Bartlett's Test Mobile Application Quality (MAQ) and Trust (TR) is presented in table number 5.32.

Table Number 5.32:KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.859
Bartlett's Test of Sphericity	Approx. Chi-Square	8253.562
	Df	66
	Sig.	.000

From the above table number 5.32, it can be interpreted that in case of Mobile Application Quality (MAQ) and Trust (TR), the score of 0.859 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.33: Total Variance on Mobile Application Quality and Trust

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent
1	4.762	39.686	39.686	4.762	39.686	39.686	3.750	31.249	31.249
2	1.579	13.159	52.845	1.579	13.159	52.845	1.928	16.067	47.317
3	1.087	9.061	61.906	1.087	9.061	61.906	1.640	13.663	60.979
4	1.019	8.495	70.401	1.019	8.495	70.401	1.131	9.422	70.401
5	.942	7.850	78.251						
6	.721	6.012	84.263						
7	.461	3.845	88.108						
8	.381	3.176	91.284						
9	.349	2.906	94.190						
10	.310	2.586	96.776						
11	.237	1.974	98.750						
12	.150	1.250	100.000						

Extraction Method: Principal Component Analysis.

As given in table number 5.33, The first four components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 70.40 per cent of the observed variations in the Mobile Application Quality (MAQ) and Trust (TR). According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.34: Communalities and Rotated Component Matrix of Mobile Application Quality and Trust						
S.N.	**Selected Criteria**	**Communalities Extraction**	**Rotated Component**			
			1	**2**	**3**	**4**
01	Mobile shopping apps are trustworthy	.751	.183	.335	.777	.050
02	Customer review in shopping app affects shopping decision	.446	.043	.641	.048	.175
03	FAQs available on the shopping apps help in shopping	.676	.036	.363	-.164	.718
04	Product delivered differ as it appears online	.688	.412	.667	.268	-.043
05	Customer service of m-tailor will influence repurchasing	.779	.093	.091	.870	.067
06	There is a possibility of wrong item getting dispatched& delivered	.681	.222	.758	.235	-.041
07	Downloading a mobile shopping app can steal the personal information from phone	.827	.895	.090	.129	.030
08	Downloading mobile app can cause malicious virus installed on the mobile device	.840	.898	.092	.147	.063
09	Online retailers monitor the activities of the shoppers' on the Smartphone	.785	.875	.098	.090	.038
10	Frauds may take placein mobile shopping	.614	.666	.408	.058	.019
11	Shoppers prefer shopping products via shopping apps, that are reputed and well known	.656	.094	-.126	.265	.749
12	It is necessary to use high security payment gateway like retina scanner, finger print, or OTP	.705	.812	.192	.049	.077

Extraction Method: Principal Component Analysis.

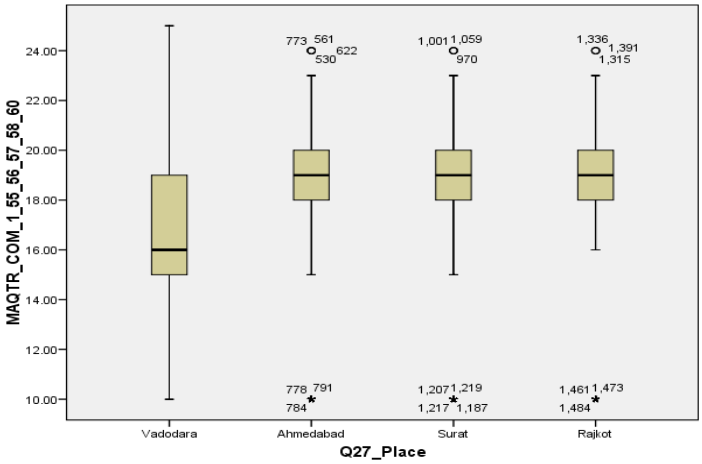
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 8 iterations.

The table number 5.34 provides a clear idea about the number of criteria correlated with four components extracted using factor analysis. The item at serial number 7, 8, 9, 10 and 12 viz., downloading the app can steal personal info (0.895), Downloading app because malicious virus installed (0.898), Online retailers monitor activities of shoppers (0.875), Frauds may take place in mobile shopping (0.666) and Necessary to use high-security payment gateway (0.812) were more correlated with component 1. The item at serial number 2, 4 and 6 viz., customer review in-app affects shopping decision (0.641), product delivered differ as it appears online (0.667) and the possibility of the wrong item dispatched (0.758) was more correlated with component 2. can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score are similar and high compared to Vadodara City. The item at serial number 1 and 5 viz., apps are trustworthy (0.777) and customer service will influence repurchasing (0.870) was more correlated with component 3. The importance of component 3 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city.

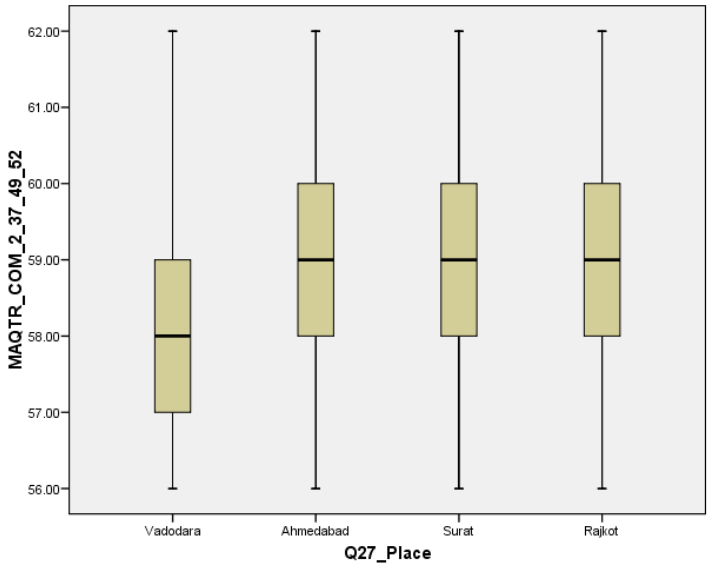
The item at serial number 3 and 11 viz., FAQs available on apps help in shopping (0.718) and shoppers prefer shopping prod in the reputed application (0.749) were more correlated with component 4. The importance of component 4 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City.

Graph Number 5.11: Importance of Component 1 (ITEM NO. 55, 56, 57, 58, 60)



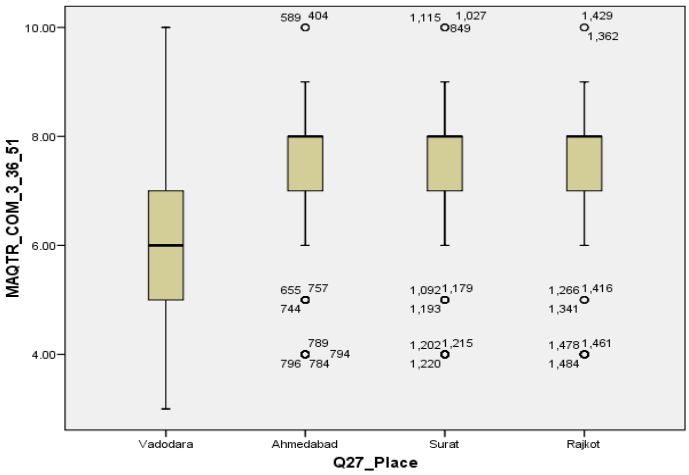
From the above box plot graph no. 5.11 interpretation can be made. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The component 1 includes the criterion 'Downloading app can steal personal info' (0.895), 'downloading application causes malicious virus installed' (0.898), 'online retailers monitor activities of shoppers' (0.875), 'frauds may take place in mobile shopping' (0.666) and 'necessary to use high-security payment gateway' (0.812).

Graph Number 5.12: Importance of Component 2 (ITEM NO. 37, 49, 52)



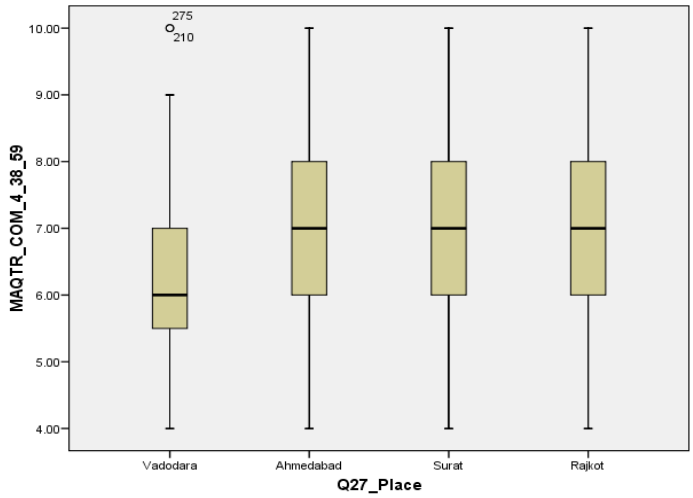
From the above box plot graph no. 5.12 interpretation can be made. The importance of component 2 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. Component 2 includes the criteria at serial number 2, 4 and 6 viz., customer review in-app affects shopping decision (0.641), product delivered differ as it appears online (0.667) and the possibility of the wrong item dispatched (0.758).

Graph Number 5.13: Importance of Component 3 (ITEM NO. 36, 51)



From the above box plot graph no. 5.13 interpretation can be made. The importance of component 3 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. The component 3 includes the criteria 'apps are trustworthy (0.777), and Customer service will influence repurchasing (0.870).

Graph Number 5.14: Importance of Component 4 (ITEM NO. 38, 59)



From the above box plot graph no. 5.14 interpretation can be made. The importance of component 4 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The component 4 includes the criterion 'FAQs available on apps help in shopping' (0.718) and 'shoppers prefer shopping product in the reputed application (0.749)

5.7: FACTOR ANALYSIS OF MOBILE APPLICATION QUALITY AND PRICE:

KMO and Bartlett's Test

The result of KMO and Bartlett's Test for Mobile Application Quality (MAQ) and Price (PR) is presented in table number 5.35.

Table Number 5.35:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.608
Bartlett's Test of Sphericity	Approx. Chi-Square	1077052
	Df	6
	Sig.	.000

From the above table number 5.35, it can be interpreted that in case of Mobile Application Quality (MAQ) and Price (PR), the score of 0.608 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.36: Total Variance on MOBILE APPLICATION QUALITY (MAQ) AND PRICE (PR)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent
1	1.974	49.356	49.356	1.974	49.356	49.356
2	.883	22.079	71.435			
3	.792	19.792	91.227			
4	.351	8.773	100.000			

Extraction Method: Principal Component Analysis.

As given in table number 5.36, The first component (factors) in the initial solution has an Eigenvalues over 1 and it accounted for about 49.35 per cent of the observed variations in the Mobile Application Quality (MAQ) and Perceived Usefulness (PU). According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Number 5.37: Communalities and Rotated Component Matrix of Mobile Application Quality (MAQ) and Price (PR)

Sr. No.	Selected Criteria	Communalities Extraction	Rotated Component
			1
01	Delivery cost will affect shopping decision	.291	.540
02	Online Products are slightly high priced	.736	.858
03	Online Products have hidden cost	.661	.813

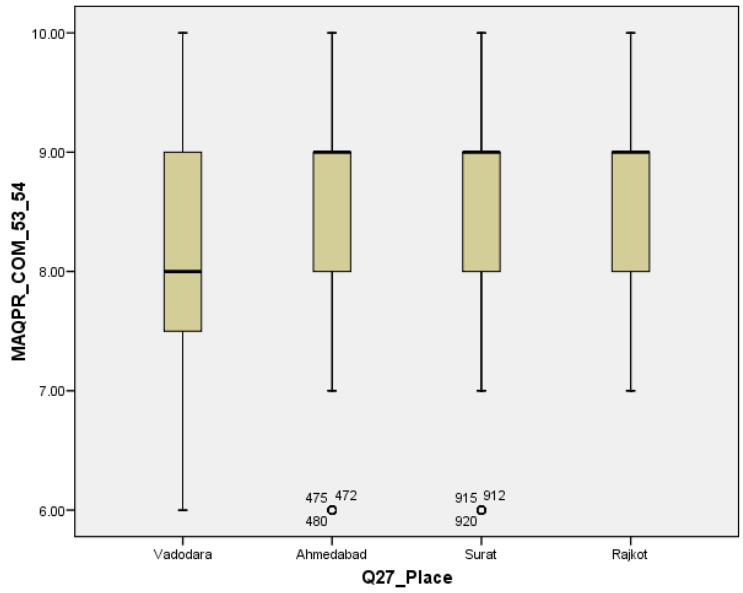
Extraction Method: Principal Component Analysis.

The table number 5.37 provides a clear idea about the number of criteria correlated with one component extracted using factor analysis.

The item at serial numbers 2 and 3 viz., the online product is high priced (0.858) and the online product has hidden cost (0.813) were correlated with component 1. All these items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU) can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city.

The item at serial number 1 viz., the delivery cost will affect shopping decision was not found as a determinant of Mobile Application Quality (MAQ) and Price (PR) as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.15: Importance of Component 1 (ITEM NO. 53, 54)



From the above box plot graph no. 5.15 interpretation can be made. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Price (PR) can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. Component 1 includes the criteria 'Online product is high priced (0.858) and online product have hidden cost (0.813).

5.8: FACTOR ANALYSIS OF MOBILE ATTRIBUTES (MA) AND (PU, PE, TR, PR):

KMO and Bartlett's Test

The result of KMO and Bartlett's Test for Mobile Attributes (MA) and (PU, PE, TR, PR) is presented in table number 5.38.

Table Number 5.38:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.875
Bartlett's Test of Sphericity	Approx. Chi-Square	5142.378
	Df	45
	Sig.	.000

From the above table number 5.38, it can be interpreted that in case of Mobile Attributes (MA) and (PU, PE, TR, PR), the score of 0.875 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.39: Total Variance Explained Mobile Attributes (MA) and (PU, PE, TR, PR)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.304	43.036	43.036	4.304	43.036	43.036
2	1.021	10.214	53.251	1.021	10.214	53.251
3	.866	8.659	61.909			
4	.858	8.577	70.487			
5	.715	7.146	77.633			
6	.632	6.325	83.957			
7	.533	5.335	89.292			
8	.436	4.364	93.656			
9	.415	4.153	97.809			
10	.219	2.191	100.000			

Extraction Method: Principal Component Analysis.

As given in table number 5.39, The first two components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 53.25 per cent of the observed variations in the Mobile Attributes (MA) and (PU, PE, TR, PR). According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.40: Communalities and Rotated Component Matrix of Mobile Attributes (MA) and (PU, PE, TR, PR)

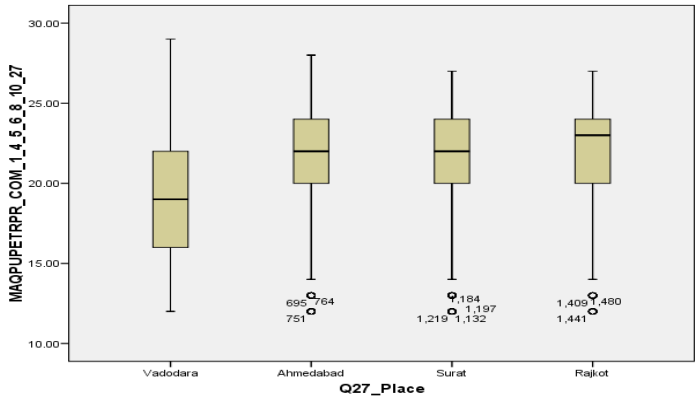
S.N.	Selected Criteria	Communalities Extraction	Component 1	Component 2
1	Screen size of Smartphone affects online shopping	.672	.594	.565
2	Zooming feature helps to know the product well	.706	-.009	**.840**
3	Smartphone displays natural colour of the product	.647	**.638**	.490
4	Smartphone batteries give enough time to do online shopping	.595	**.761**	.122
5	Size of shopping apps consume a lot of memory space in the smartphone	.621	**.770**	.167
6	Smartphone has the safety facilities on it	.338	.188	.550
7	The brightness of the smartphone affects outdoor mobile shopping	.592	**.752**	.164
8	Smartphone reduces the physical search to collect product information	.268	.434	.283
9	Price of the phone decides the Quality of the smartphone	.447	**.647**	.168
10	Shopping Applications are compatible to Smartphone	.439	**.659**	.066

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

The table number 5.40 provides a clear idea about the number of criteria correlated with two components extracted using factor analysis. The item at serial numbers 3, 4, 5, 7, 9 and 10 viz., smartphone displays the natural colour of the product (0.638), smartphone batteries give enough time online shopping (0.761), size of apps consume memory space (0.770), the brightness of smartphone affects outdoor m-shopping (0.752). price of phone decides Quality of smartphone (0.647) and apps are compatible with the smartphone (0.659) were more correlated with component 1. It can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. The item at serial number 2 viz., zooming feature helps know the product well (0.840) was more correlated with component 2. This 1 item was found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot.

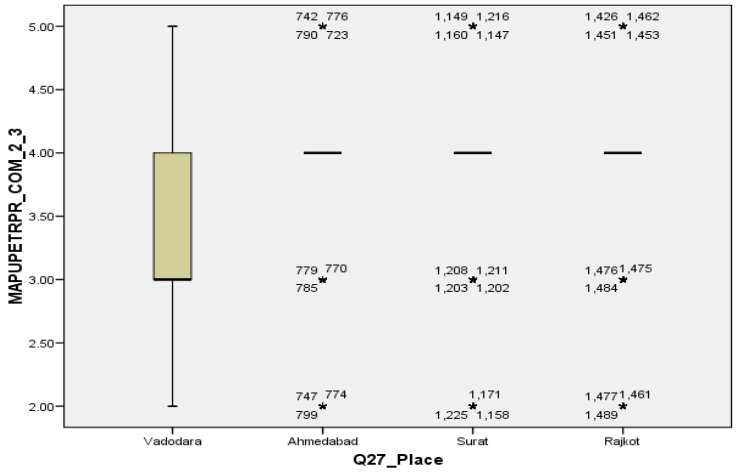
The item at serial number 1, 6 and 8 viz., the screen size of the smartphone affects online shopping., the smartphone has the safety facilities on it and smartphone reduces physical search collect product info were not found as the determinant of Mobile Attributes (MA) and (PU, PE, TR, PR) as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.16: Importance of Component 1 (ITEM NO. 4, 5, 6, 8, 10, 27)



From the above box plot graph no. 5.16 interpretation can be made. The importance of component 1 for factor 'Mobile Attributes (MA) and (PU, PE, TR, PR)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The item for component 1 is displayed at serial numbers 3, 4, 5, 7, 9 and 10 viz., smartphone displays the natural colour of the product (0.638), smartphone batteries give enough time online shopping (0.761), size of apps consume memory space (0.770), the brightness of Smartphone affects outdoor m-shopping (0.752. price of phone decides Quality of smartphone (0.647) and apps are compatible with the smartphone (0.659).

Graph Number 5.17: Importance of Component 2 (ITEM NO. 3)



From the above box plot graph no. 5.17 interpretation can be made. The importance of component 2 for factor 'Mobile Attributes (MA) and (PU, PE, TR, PR)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. The component 2 includes the criterion 'Zooming feature helps know the product well' (0.840).

5.9: FACTOR ANALYSIS OF PERCEIVED USEFULNESS (PU)AND MOBILE ATTRIBUTES [MA]:

The result of KMO and Bartlett's Test for Perceived Usefulness (PU)& Mobile Attributes [MA] is presented in table number 5.41.

Table Number 5.41: Perceived Usefulness (PU)and Mobile Attributes [MA]Through KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.876**
Bartlett's Test of Sphericity	**Approx. Chi-Square**	**19271.275**
	Df	**406**
	Sig.	**0.00**

From the above table number 5.41, it can be interpreted that in case of Perceived Usefulness (PU) [MAQ AND MA], the score of 0.876 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.42: Total Variance on Perceived Usefulness (PU) and Mobile Attributes[MA]

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Percentages of Variance	Cumulative per cent	Total	Percentages of Variance	Cumulative per cent	Total	Percentage Variance	Cumulative per cent
1	7.723	26.633	26.633	7.723	26.633	26.633	7.723	26.633	26.633
2	2.848	9.821	36.454	2.848	9.821	36.454	2.848	9.821	36.454
3	2.066	7.124	43.578	2.066	7.124	43.578	2.066	7.124	43.578
4	1.711	5.901	49.479	1.711	5.901	49.479	1.711	5.901	49.479
5	1.497	5.163	54.642	1.497	5.163	54.642	1.497	5.163	54.642
6	1.272	4.387	59.029	1.272	4.387	59.029	1.272	4.387	59.029
7	1.065	3.672	62.701	1.065	3.672	62.701	1.065	3.672	62.701
8	1.023	3.527	66.229	1.023	3.527	66.229	1.023	3.527	66.229
9	.881	3.037	69.265				.881	3.037	69.265
10	.832	2.868	72.133				.832	2.868	72.133
11	.792	2.732	74.865				.792	2.732	74.865
12	.657	2.264	77.129				.657	2.264	77.129
13	.639	2.203	79.332				.639	2.203	79.332
14	.579	1.998	81.330				.579	1.998	81.330
15	.556	1.918	83.248				.556	1.918	83.248
16	.529	1.825	85.073				.529	1.825	85.073
17	.497	1.713	86.786				.497	1.713	86.786
18	.471	1.623	88.409				.471	1.623	88.409
19	.424	1.463	89.872				.424	1.463	89.872
20	.397	1.369	91.241				.397	1.369	91.241
21	.382	1.318	92.558				.382	1.318	92.558
22	.379	1.308	93.866				.379	1.308	93.866
23	.335	1.155	95.021				.335	1.155	95.021
24	.317	1.092	96.113				.317	1.092	96.113
25	.268	.923	97.036				.268	.923	97.036
26	.250	.860	97.897				.250	.860	97.897
27	.242	.835	98.731				.242	.835	98.731
28	.213	.733	99.465				.213	.733	99.465
29	.155	.535	100.000				.155	.535	100.000

Extraction Method: Principal Component Analysis.

As given in table number 5.42, The first eight components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 66.229 per cent of the observed variations in the Perceived Usefulness (PU) [MAQ AND MA]. According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.43 Communalities and Rotated Component Matrix of Perceived Usefulness (PU) and Mobile Attributes[MA]

S.N.	Selected Criteria	Communalities Extraction	Rotated Component							
			1	2	3	4	5	6	7	8
01	Smartphone is useful for anytime shopping	.677	.277	.083	.756	.139	.028	-.034	.010	.018
02	batteries give enough time online shopping	.517	.611	.069	.279	.201	.085	.005	.113	.008
03	Size of apps consume memory space	.647	.674	.095	.207	.341	.072	-.085	.021	-.108
04	Brightness of SP affects outdoor shopping	.577	.673	.125	.228	.142	.037	.076	.002	.171
05	Smartphone reduces physical search collect product info	.611	.209	.096	.713	.039	.170	.011	.063	-.124
06	Payment option is easy in apps	.630	.201	.070	.715	.187	.028	.072	.179	.026
07	Wishlist helps to do the shopping later	.590	-.120	.307	.263	.285	.323	.115	.399	.234
08	apps have barrier to Indian languages	.744	.289	.030	-.046	-.068	-.049	.003	.791	-.159
09	Unclear image affects the shopping decision	.656	.738	.059	.193	.057	.169	-.107	.119	.111
10	video is useful to know all features of prod	.862	.168	-.016	.045	-.032	.908	.030	.027	.064
11	Paid apps are better than free apps	.846	.112	.022	.049	-.032	.074	-.035	-.049	.906
12	app is useful in saving shopping time	.511	.270	-.038	.637	-.118	-.103	-.004	-.062	.048
13	suggestion is useful in the selection of the prod	.586	-.159	.109	.330	.247	.181	-.264	.511	.127
14	apps are Compatible to the smartphone	.473	.534	.019	.152	.394	-.082	.039	-.002	.033
15	Sellers are approachable through application	.752	.667	.464	.293	.058	.041	.036	-.003	-.024
16	Similar prod should display on app along main search	.602	.185	.013	.695	.173	.100	.137	.008	.160
17	apps are easy navigating from 1 search to another	.689	.145	.005	.114	.804	-.021	.047	-.036	.066
18	Tracking delivery in app gives accurate info	.608	.632	.385	.176	.093	.101	.074	-.034	.055
19	stock availability influence shopping decision	.564	.018	.175	.149	.056	.042	.709	-.041	-.046
20	information of availability of the prod influence	.865	.102	.052	.099	.011	.917	.039	-.004	.002
21	installed app incline shopping	.709	.231	-.010	.131	.795	.040	-.021	.039	-.057
22	Downloading app gives first time benefits	.718	.240	.017	.016	.807	-.008	.034	.077	-.038

S.N.	Selected Criteria	Communalities Extraction	Rotated Component							
			1	2	3	4	5	6	7	8
23	Quick response of m tailors affects shop decision	.752	.170	.840	.023	.002	.092	.099	-.003	.003
24	Sellers accept prod returned by shoppers	.711	.307	.584	.146	.063	-.142	-.472	-.039	-.075
25	Easy refund of price encourages online shopping	.705	.104	.619	.059	-.048	-.073	-.547	.027	-.015
26	sellers refund price as they receive prod back	.638	.689	.330	.143	.108	.028	-.042	.132	-.041
27	EMI options affect shopping decision	.498	.299	.223	.192	.029	-.180	.317	.339	.272
28	Shoppers check info on sellers in-app	.745	.191	.819	-.057	.051	-.017	.117	.103	.084
29	Pho number of delivery agent provided helpful	.722	.151	.822	.090	-.032	.053	.061	.087	.010

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 9 iterations.

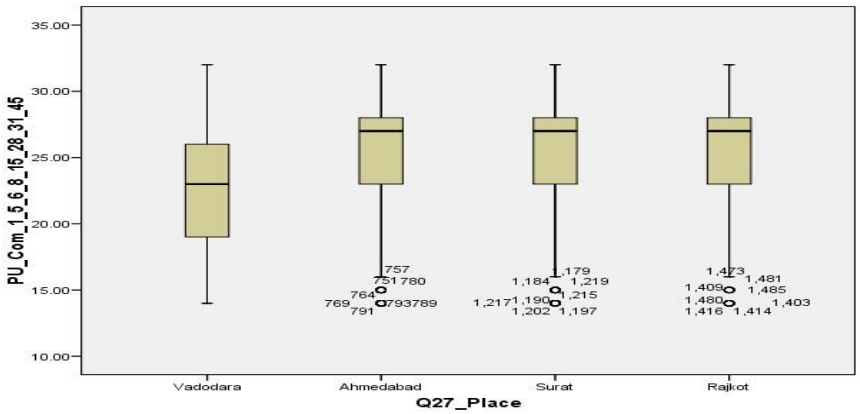
The table number 5.43 provides a clear idea about the number of criteria correlated with seven components extracted using factor analysis. The item at serial number 2, 3, 4, 9, 15, 18 and 26 viz., smartphone batteries give enough time online shopping (0.611), size of apps consume memory space (0.674), the brightness of SP affects outdoor m-shopping (0.673), unclear image affects the shopping decision(0.738), sellers are approachable through the application(0.667), tracking delivery in the app gives accurate info (0.632), and sellers refund price as they receive prod back(0.689) were more correlated with component 1.

The item at serial number 23, 25, 28 and 29 viz., quick response of m tailors affects shop decision (0.840), the easy refund of price encourages online shopping (0.619), shoppers check information on sellers in-app (0.819), and phone number of a delivery agent provided helpful (0.822) was more correlated with component 2. The item at serial number 1, 5, 6, 12, and 16 viz., the smartphone is useful for any time shopping (0.756), smartphone reduces physical search collect product information (0.713), the payment option is easy in apps (0.715), the app is useful in saving shopping time (0.637), and the similar product should display on the app along main search (0.695) was more correlated with component 3. The item at serial number 17, 21, and 22 viz., apps are easy navigating from one search to another (0.804), installed app incline shopping (0.795), and downloading app gives first-time benefits (0.807) were more correlated with component 4. The item at serial number 10 and 20 viz., video is useful to know all features of the product (0.908) and information of availability of the product influence (0.917) were more correlated with component 5. The item at serial number 19 viz., stock availability influence shopping decision (0.709) was more correlated with component 6. The item at serial number 8 viz., apps have a barrier to Indian languages (0.791) was more correlated with component 7. This o1 item was found to be equally important for three cities viz., Vadodara, Ahmedabad, and Surat.

The item at serial number 11 viz., paid apps are better than free apps (0.906) was more correlated with component 8. This o1 item was found to be equally important for four cities viz., Vadodara Ahmedabad, Surat, and Rajkot.

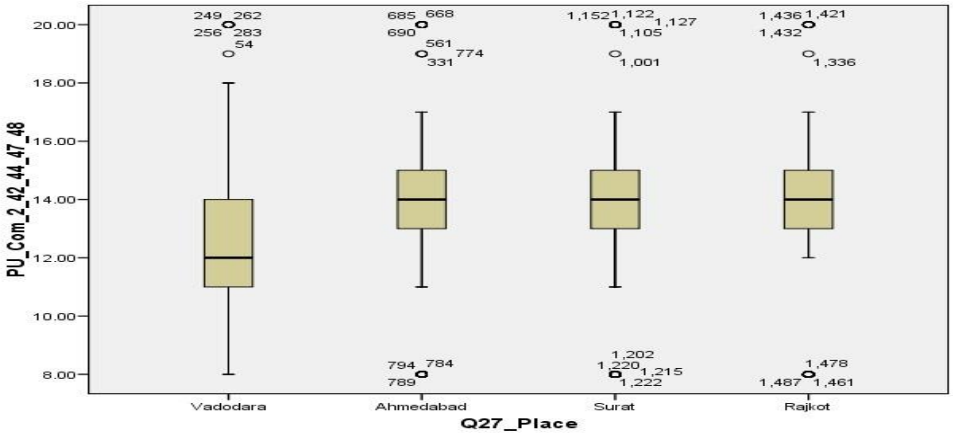
The item at serial number 7, 13, 14, 24, and 27 viz., Wishlist helps to do the shopping later, the suggestion is useful in the selection of the products, apps are compatible to the smartphone, sellers accept product returned by shoppers, and EMI options affect shopping decision was not found as the determinant of perceived usefulness (PU) [MAQ AND MA] are having a score less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.18: Importance of Component 1 (ITEM NO. 5, 6, 8, 15, 28, 31, 45)



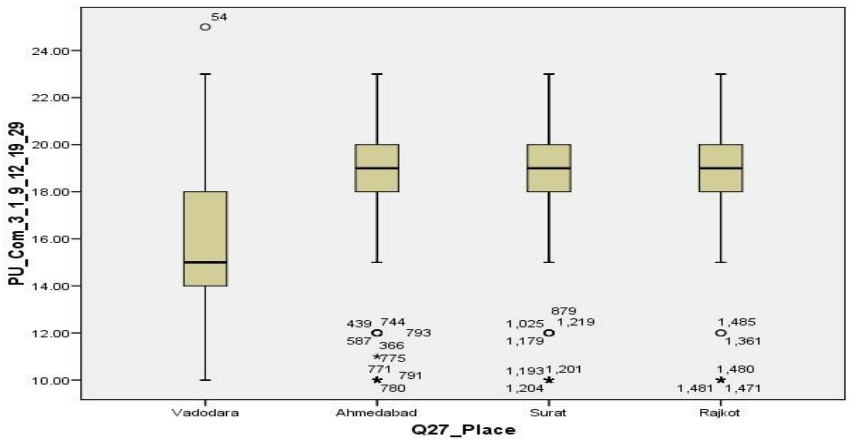
From the above box plot graph no. 5.18 interpretation can be made. The importance of component 1 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o7 items were found to be equally important for three cities viz., smartphone batteries give enough time online shopping (0.611), size of applications consume memory space (0.674), the brightness of smartphone affects outdoor m-shopping (0.673), unclear image affects the shopping decision (0.738), sellers are approachable through the application (0.667), tracking delivery in-app gives accurate info (0.632), and sellers refund price as they receive the product back (0.689).

Graph Number 5.19: Importance of Component 2 (ITEM NO. 42, 44, 47, 48)



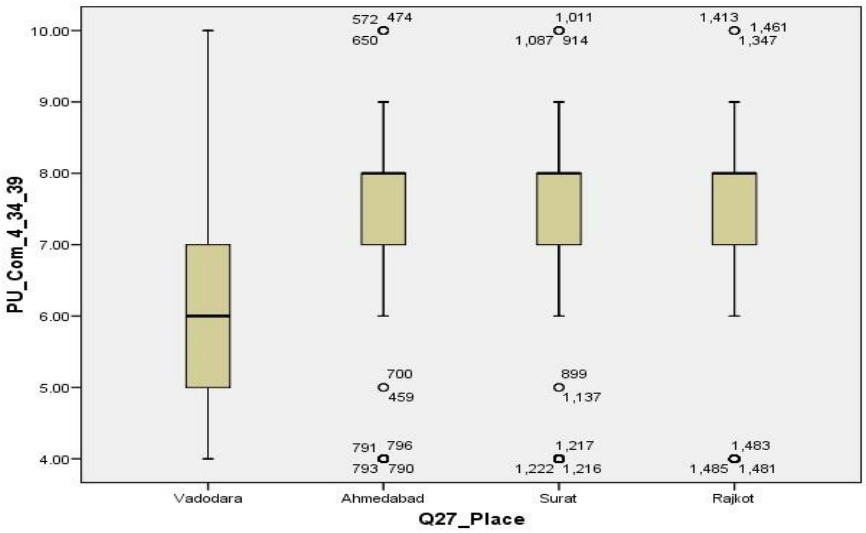
From the above box plot graph no 5.19 interpretation can be made. The importance of component 2 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o4 items were found to be equally important for three cities viz., quick response of m tailors affects shop decision (0.840), the easy refund of price encourages online shopping (0.619), shoppers check information on sellers in the application (0.819), and phone number of a delivery agent provided helpful (0.822).

Graph Number 5.20: Importance of Component 3 (ITEM NO. 1, 9, 12, 19, 29)



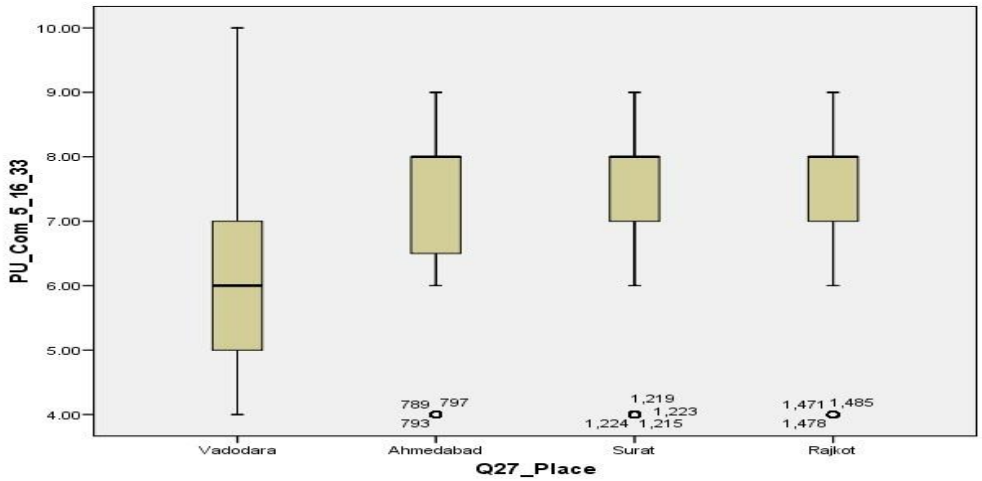
From the above box plot graph no. 5.20 interpretation can be made. The importance of component 3 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o5 items were found to be equally important for three cities viz., the smartphone is useful for any time shopping (0.756), smartphone reduces physical search collect product information (0.713), the payment option is easy in applications (0.715), the app is useful in saving shopping time (0.637), and the similar product should display on applications along with main search (0.695).

Graph Number 5.21: Importance of Component 4 (ITEM NO. 34, 39)



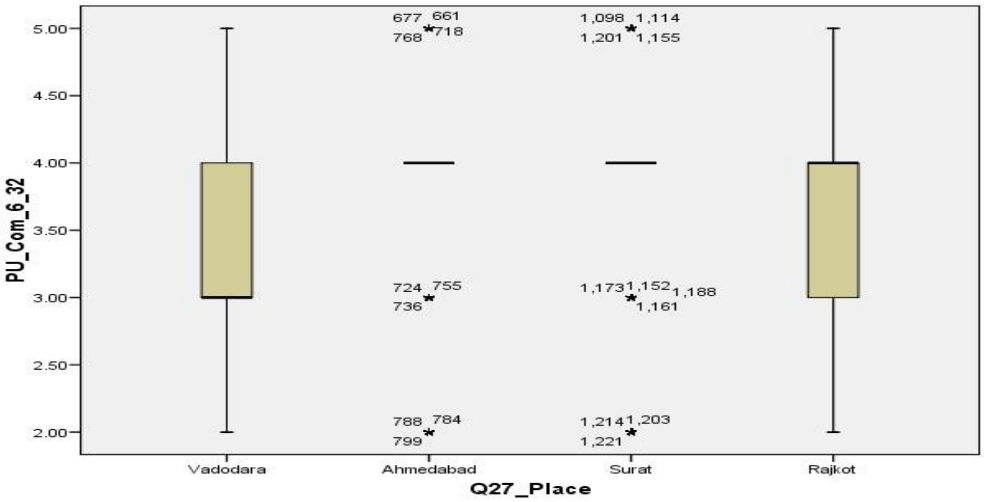
From the above box plot graph no. 5.21 interpretation can be made. The importance of component 4 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These o3 items were found to be equally important for three cities viz., apps are easy navigating from one search to another (0.804), installed app incline shopping (0.795), and downloading app gives first-time benefits (0.807)

Graph Number 5.22: Importance of Component 5 (ITEM NO. 16, 33)



From the above box plot graph no. 5.22 interpretation can be made. The importance of component 5 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These o2 items were found to be equally important for three cities viz., video is useful to know all features of the product (0.908) and information of availability of the product influence (0.917).

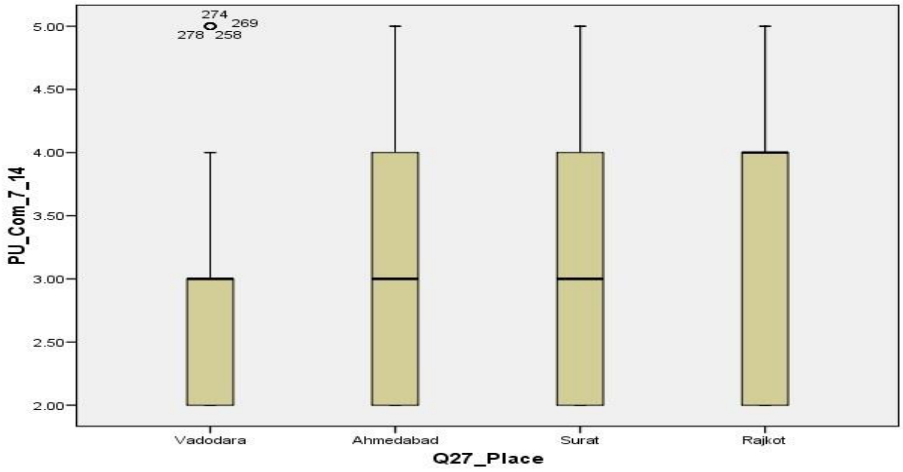
Graph Number 5.23: Importance of Component 6 (ITEM NO. 32)



From the above box plot graph no. 5.23 interpretation can be made. The importance of component 6 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city.

This o1 item was found to be equally important for three cities viz., stock availability influence shopping decision (0.709).

Graph Number 5.24: Importance of Component 7 (ITEM NO. 14)



From the above box plot graph no. 5.24 interpretation can be made. The importance of component 7 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Vadodara, Ahmedabad, and Surat as their median score is similar and low compared to Rajkot city. This o1 item was found to be equally important for three cities viz., applications have a barrier to Indian languages (0.791)

Graph Number 5.25: Importance of Component 8 (ITEM NO. 17)

From the above box plot graph no. 5.25 interpretation can be made. The importance of component 8 for factor 'Perceived Usefulness (PU) [MAQ AND MA]' can be attributed to three cities viz., Vadodara Ahmedabad, Surat, and Rajkot as their median score is similar across all the cities. This o1 item was found to be equally important for four cities viz., paid apps are better than free apps (0.906).

5.10: FACTOR ANALYSIS OF PERCEIVED EASE OF USE (PE) [MAQ AND MA]:

KMO and Bartlett's Test Perceived Ease of Use (PE)and Mobile Attributes [MA]

The result of KMO and Bartlett's Test for Perceived ease of Use (PE) [MAQ and MA] is presented in table number 5.44.

Table Number 5.44:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.829
Bartlett's Test of Sphericity	Approx. Chi-Square	6097.837
	Df	78
	Sig.	.000

From the above table number 5.44, it can be interpreted that in case of Perceived ease of Use (PE) [MAQ and MA], the score of 0.829 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.45: Total Variance on Perceived ease of Use (PE) and Mobile Attributes [MA]

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	305percentages of Variance	Cumulative per cent	Total	305percentages of Variance	Cumulative per cent	Total	305percentages of Variance	Cumulative per cent
1	4.298	33.061	33.061	4.298	33.061	33.061	3.400	26.156	26.156
2	1.467	11.283	44.344	1.467	11.283	44.344	1.792	13.781	39.938
3	1.184	9.106	53.450	1.184	9.106	53.450	1.452	11.171	51.109
4	1.037	7.974	61.424	1.037	7.974	61.424	1.341	10.316	61.424
5	.875	6.728	68.152						
6	.837	6.442	74.593						
7	.726	5.585	80.179						
8	.640	4.923	85.102						
9	.568	4.371	89.473						
10	.430	3.310	92.782						
11	.428	3.295	96.077						
12	.330	2.539	98.616						
13	.180	1.384	100.000						

Extraction Method: Principal Component Analysis.

As given in table number 5.45, The first four components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 61.424 per cent of the observed variations in the Perceived ease of Use (PE) [MAQ and MA]. According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.46: Communalities and Rotated Component Matrix of Perceived ease of Use (PE) and Mobile Attributes [MA]

S.N.	Selected Criteria	Communalities Extraction	Rotated Component			
			1	2	3	4
01	Screen size of Smartphone affects online shopping	.640	.499	.225	.043	.582
02	Zooming feature helps know the product well	.709	.049	.045	.173	**.822**
03	Downloading app provides better shopping experience	.607	.558	.520	.005	.158
04	I wait for special offers and discounts to shop online	.509	.161	.097	**.618**	.303
05	Shoppers feel proud in m-shopping	.684	**.794**	.064	.169	.145
06	Shoppers enjoy shopping on the Smartphone	.815	**.879**	.132	.054	.147
07	Shoppers enjoy the convenience of shopping on apps	.716	**.825**	.126	.097	.100
08	Shoppers enjoy the product descript available in app	.532	.011	.008	**.700**	.205
09	Shoppers enjoy comparing the products online	.312	.544	.091	-.068	.058
10	Attractive layout of app involves shoppers	.708	.136	**.817**	.090	.116
11	Try it on facility increases chance to buy	.508	.092	.218	**.624**	-.251
12	Shoppers prefer test prod or free samples	.729	.079	**.835**	.160	-.007
13	Shoppers connect with other shoppers through chat	.516	**.632**	.002	.283	-.192

Extraction Method: Principal Component Analysis.

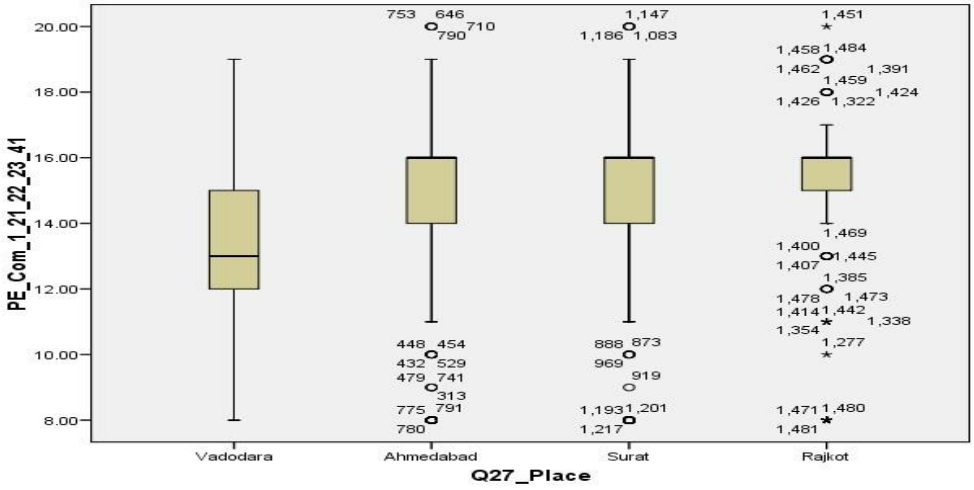
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 15 iterations.

The table number 5.46 provides a clear idea about the number of criteria correlated with seven components extracted using factor analysis. The item at serial number 5, 6 7 and 13 viz., shoppers feel proud in m-shopping (0.794), Shoppers enjoy shopping on the Smartphone (0.879), Shoppers enjoy the convenience of shopping on apps (0.825) and shoppers connect with other shoppers through chat (0.632) were more correlated with component 1. The item at serial number 10 and 12 viz., the attractive layout of the app involves shoppers (0.817) and shoppers prefer test product or free samples (0.835) was more correlated with component 2. The item at serial number 4, 8 and 11 viz., waiting for special offers and discounts to shop online (0.618), Shoppers enjoy the product descript available in the application (0.700), and try-it-on facility increases the chance to buy (0.624) was more correlated with component 3. The item at serial number 2 viz., zooming feature helps know the product well (0.822) were more correlated with component 4. These items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot.

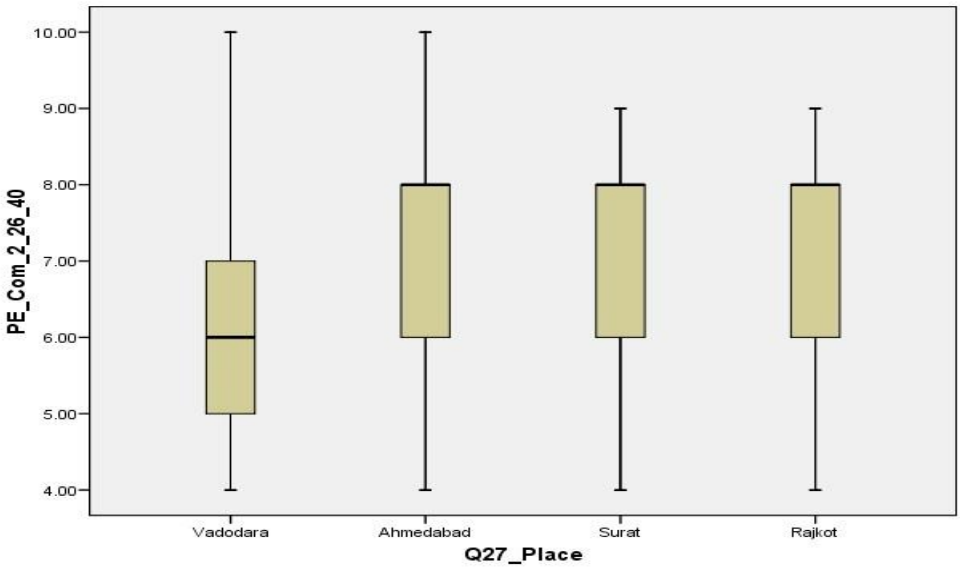
The item at serial number 1, 3, and 9 viz., the screen size of Smartphone affects online shopping, downloading app provides better shopping experience, and Shoppers enjoy comparing the products online) were not found as the determinant of Perceived ease of Use (PE) [MAQ AND MA] as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.26: Importance of Component 1 (ITEM NO. 21, 22, 23, 41)



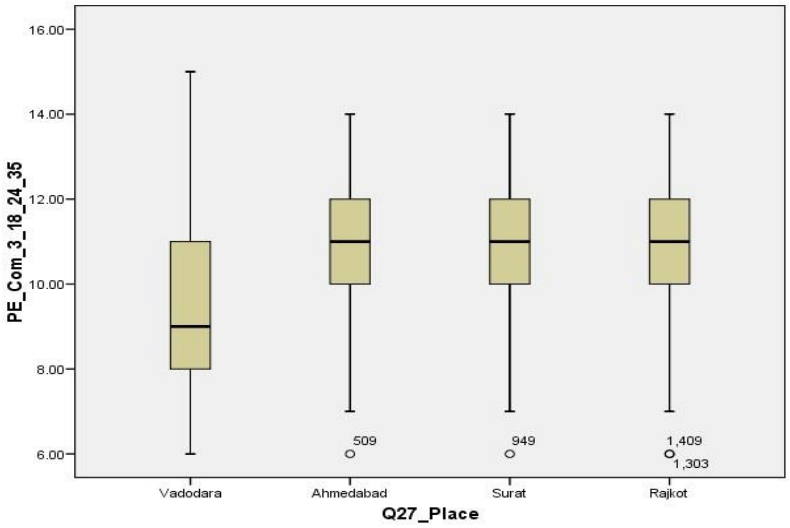
From the above box plot graph no. 5.26 interpretation can be made. The importance of component 1 for factor 'Perceived ease of Use (PE) [MAQ and MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o4 items were found to be equally important for three cities viz., shoppers feel proud in m-shopping (0.794), Shoppers enjoy shopping on the Smartphone (0.879), Shoppers enjoy the convenience of shopping on applications (0.825) and shoppers connect with other shoppers through chat (0.632).

Graph Number 5.27: Importance of Component 2 (ITEM NO. 26, 40)



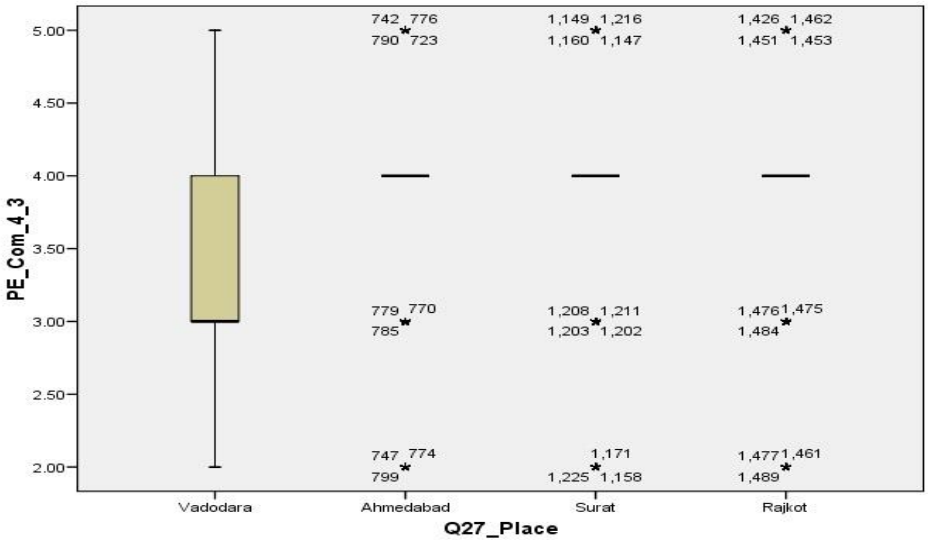
From the above box plot graph no. 5.27 interpretation can be made. The importance of component 2 for factor 'Perceived ease of Use (PE) [MAQ and MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These o2 items were found to be equally important for three cities viz., Attractive layout of the app involves shoppers (0.817), and shoppers prefer test product or free samples (0.835).

Graph Number 5.28: Importance of Component 3 (ITEM NO. 18, 24, 35)



From the above box plot graph no. 5.28 interpretation can be made. The importance of component 3 for factor 'Perceived ease of Use (PE) [MAQ and MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These o3 items were found to be equally important for three cities viz., Waiting for special offers and discounts to shop online (0.618), shoppers enjoy the product descript available in the application (0.700), and Try-it-On facility increases the chance to buy (0.624).

Graph Number 5.29: Importance of Component 4 (ITEM NO. 3)



From the above box plot graph no. **5.29** interpretation can be made. The importance of component 4 for factor 'Perceived ease of Use (PE) [MAQ and MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. This o1 item was found to be equally important for three cities viz., Zooming feature helps know the product well (0.822)

5.11: Factor Analysis Of Trust (TR) and Mobile Attributes [MA] through KMO and Bartlett's Test

The result of KMO and Bartlett's Test for Trust (TR) and Mobile Attributes [MA]is presented in table number 5.47.

Table Number 5.47:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.879
Bartlett's Test of Sphericity	Approx. Chi-Square	9598.634
	Df	91
	Sig.	.000

From the above table number 5.47, it can be interpreted that in case of Trust (TR) and Mobile Attributes [MA], the score of 0.879 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.48: Total Variance on TRUST (TR) and Mobile Attributes [MA]

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	309per cent ages of Variance	Cumulative per cent	Total	309per cent ages of Variance	Cumulative per cent	Total	309per cent ages of Variance	Cumulative per cent
1	5.272	37.655	37.655	5.272	37.655	37.655	4.099	29.279	29.279
2	1.822	13.013	50.669	1.822	13.013	50.669	2.379	16.991	46.270
3	1.094	7.812	58.481	1.094	7.812	58.481	1.606	11.471	57.741
4	1.036	7.399	65.880	1.036	7.399	65.880	1.140	8.139	65.880
5	.990	7.069	72.950						
6	.819	5.848	78.798						
7	.650	4.644	83.442						
8	.553	3.947	87.389						
9	.377	2.695	90.085						
10	.362	2.583	92.668						
11	.344	2.455	95.122						
12	.308	2.197	97.319						
13	.226	1.614	98.933						
14	.149	1.067	100.000						

Extraction Method: Principal Component Analysis.

As given in table number 5.48, The first four components (factors) in the initial solution have an Eigenvalues over 1 and it accounted for about 65.880 per cent of the observed variations in the Trust (TR) [MAQ AND MA]. According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.49: Communalities and Rotated Component Matrix of Trust (TR) and Mobile Attributes [MA]

Sr. No.	Selected Criteria	Communalities Extraction	Rotated Component			
			1	2	3	4
01	Smartphone has the safety facilities on it	.569	**.746**	-.034	.094	.042
02	m-Shopping apps are trustworthy	.761	.177	.386	**.761**	.048
03	Customer review in app affects shopping decision	.418	.031	**.609**	.036	.214
04	FAQs available on apps help in shopping	.665	.034	.307	-.169	**.736**
05	Product delivered differ as it appears online	.689	.370	**.715**	.193	-.062
06	Customer service will influence repurchasing	.756	.092	.132	**.853**	.047
07	Possibility of wrong item dispatched	.654	.195	**.767**	.156	-.055
08	Downloading app can steal personal info	.840	**.896**	.144	.127	.031
09	Downloading app cause malicious virus installed	.842	**.891**	.151	.142	.063
10	Online retailers monitor activities of shoppers	.764	**.854**	.164	.082	.036
11	Frauds may take place in m-shopping	.591	**.615**	.461	-.010	-.008
12	Shoppers prefer shopping prod in reputed app	.596	.092	-.078	.264	**.715**
13	Necessary to use high security payment gateway	**.674**	**.777**	.255	.022	.067

Extraction Method: Principal Component Analysis.

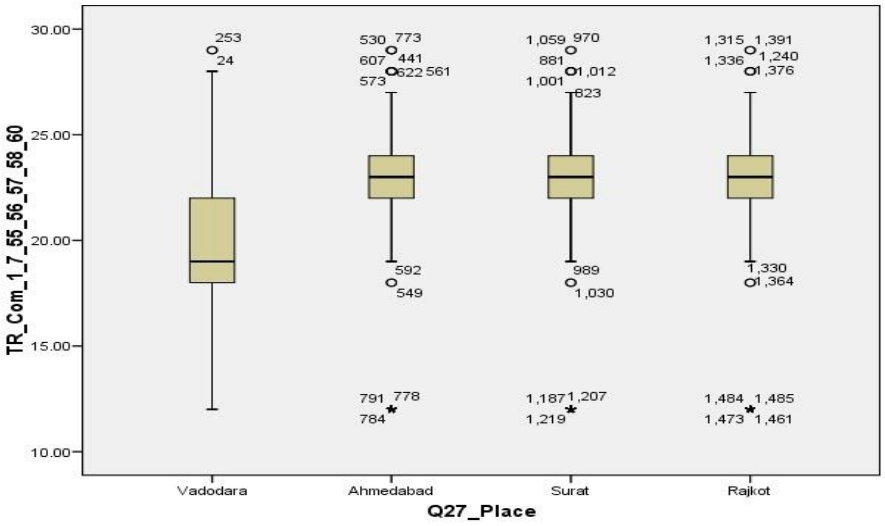
Rotation Method: Varimax with Kaiser Normalization.

A Rotation converged in 6 iterations.

The table number 5.49 provides a clear idea about the number of criteria correlated with seven components extracted using factor analysis. The item at serial number 1, 8, 9, 10, and 11 viz., Smartphone has the safety facilities on it (0.746), Downloading app can steal personal information (0.896), downloading the app because malicious virus installed (0.891), Online retailers monitor activities of shoppers (0.854), frauds may take place in m-shopping (0.615), and necessary to use high-security payment gateway (0.777) were more correlated with component 1. The item at serial number 3, 5 and 7 viz., customer review in-app affects shopping decision (0.609), Product delivered differ as it appears online (0.715), and the possibility of the wrong item dispatched (0.767) was more correlated with component 2.

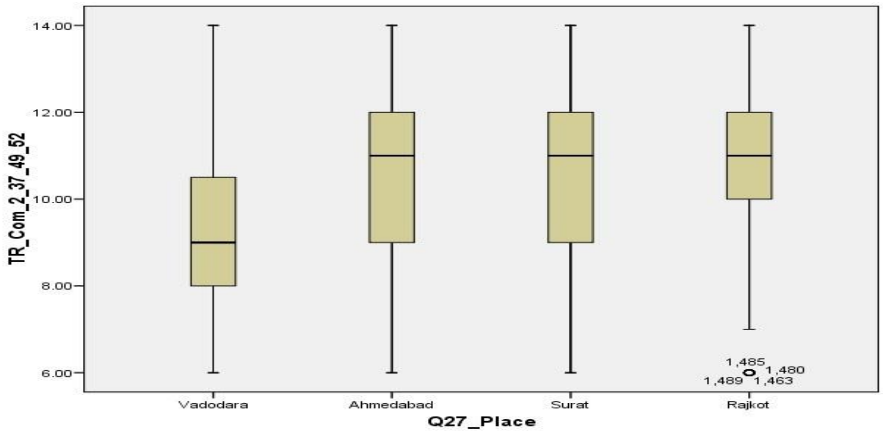
The item at serial number 2 and 6 apps are trustworthy (0.761) and Customer service will influence repurchasing (0.853) was more correlated with component 3. The item at serial number 4 and 12 viz., FAQs available on apps help in shopping (0.736) and shoppers prefer shopping product in reputed applications (0.715) were more correlated with component 4. These items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot.

Graph Number 5.30: Importance of Component 1 (ITEM NO. 7, 55, 56, 57, 58, 60)



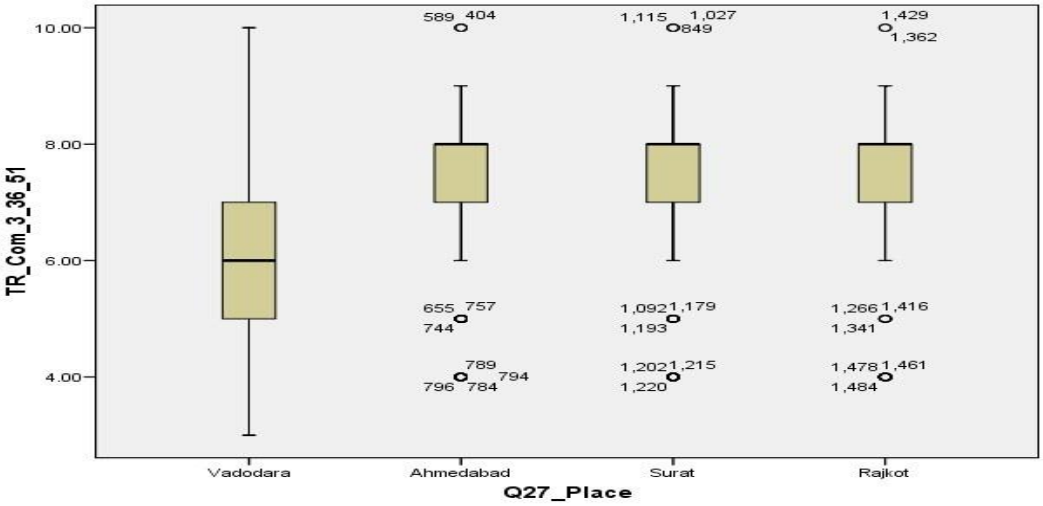
From the above box plot graph no. 5.30 interpretation can be made. The importance of component 1 for factor 'Trust (TR) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o6items were found to be equally important for three cities viz., the smartphone has the safety facilities on it (0.746), downloading the app can steal personal info (0.896), downloading the app because malicious virus installed (0.891), online retailers monitor activities of shoppers (0.854), frauds may take place in m-shopping (0.615), and necessary to use high-security payment gateway (0.777).

Graph Number 5.31: Importance of Component 2 (ITEM NO. 37, 49, 52)



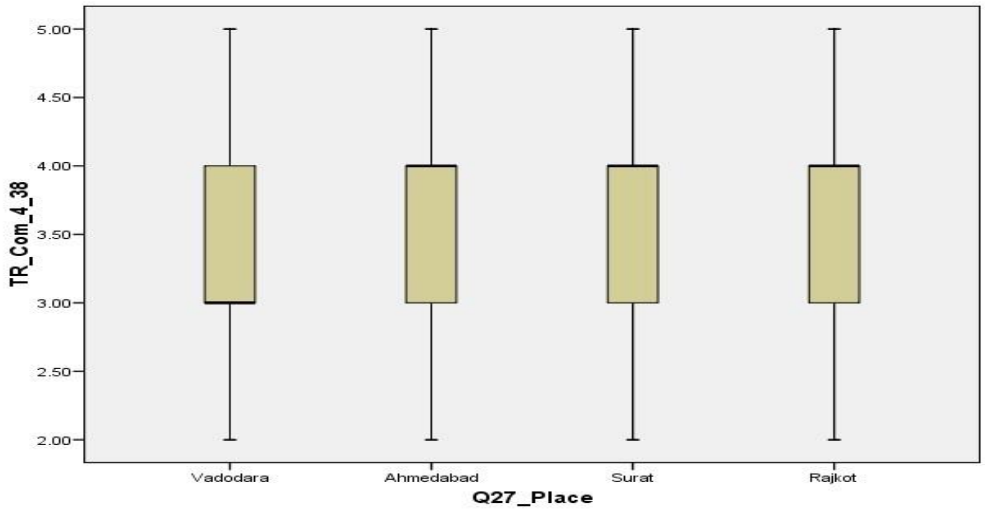
From the above box plot graph no. 5.31interpretation can be made. The importance of component 2 for factor 'Trust (TR) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o3 items were found to be equally important for three cities viz., Customer review in-app affects shopping decision (0.609), Product delivered differ as it appears online (0.715), and the possibility of the wrong item dispatched (0.767).

Graph Number 5.32: Importance of Component 3 (ITEM NO. 36, 51)



From the above box plot graph number 5.32 interpretation can be made. The importance of component 3 for factor 'Trust (TR) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These 02 items were found to be equally important for three cities viz., applications are trustworthy (0.761) and customer service will influence repurchasing (0.853).

Graph Number 5.33: Importance of Component 4 (ITEM NO. 38 and 59)



From the above box plot graph no. 5.33 interpretation can be made. The importance of component 4 for factor 'Trust (TR) [MAQ AND MA]' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara city. These o2 items were found to be equally important for three cities viz., FAQs available on apps help in shopping (0.736) and Shoppers prefer shopping product in the reputed application (0.715).

5.12: Factor Analysis of Price (PR) and Mobile Attributes [MA]

KMO and Bartlett's Test:

The result of KMO and Bartlett's Test for Price (PR) [MAQ AND MA] is presented in table number 5.50.

Table Number 5.50:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.674
Bartlett's Test of Sphericity	Approx. Chi-Square	1421.461
	df	10
	Sig.	.000

From the above table number 5.50, it can be interpreted that in case of Price (PR) [MAQ AND MA], the score of 0.816 of the KMO measure of sampling adequacy indicates that the present data were suitable for Factor Analysis. Similarly, Bartlett's test of sphericity (0.00) was significant ($p<.05$), indicating sufficient correlation exist between the criteria to proceed with the Factor Analysis.

Table Number 5.51: Total Variance Explained Price (PR) and Mobile Attributes [MA]

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.246	44.914	44.914	2.246	44.914	44.914
2	.988	19.760	64.674			
3	.793	15.867	80.541			
4	.622	12.447	92.988			
5	.351	7.012	100.000			

Extraction Method: Principal Component Analysis.

As given in table number 5.51, The first component (factor) in the initial solution has an Eigenvalues over 1 and it accounted for about 44.914 per cent of the observed variations in the Price (PR) [MAQ AND MA]. According to Kaiser Criterion, only the first seven factors should be used because subsequent Eigenvalues are all less than 1.

Table Number 5.52: Communalities and Rotated Component Matrix of Perceived Usefulness Price (PR) and Mobile Attributes [MA]

Sr.No.	Selected Criteria	Communalities Extraction	Component
			1
1	Displays natural colour of the product	.407	**.638**
2	Price of phone decides Quality of SP	.334	.578
3	Delivery cost will affect shopping decision	.214	.463
4	Online Prod are high priced	.660	**.813**
5	Online Prod have hidden cost	.630	**.794**

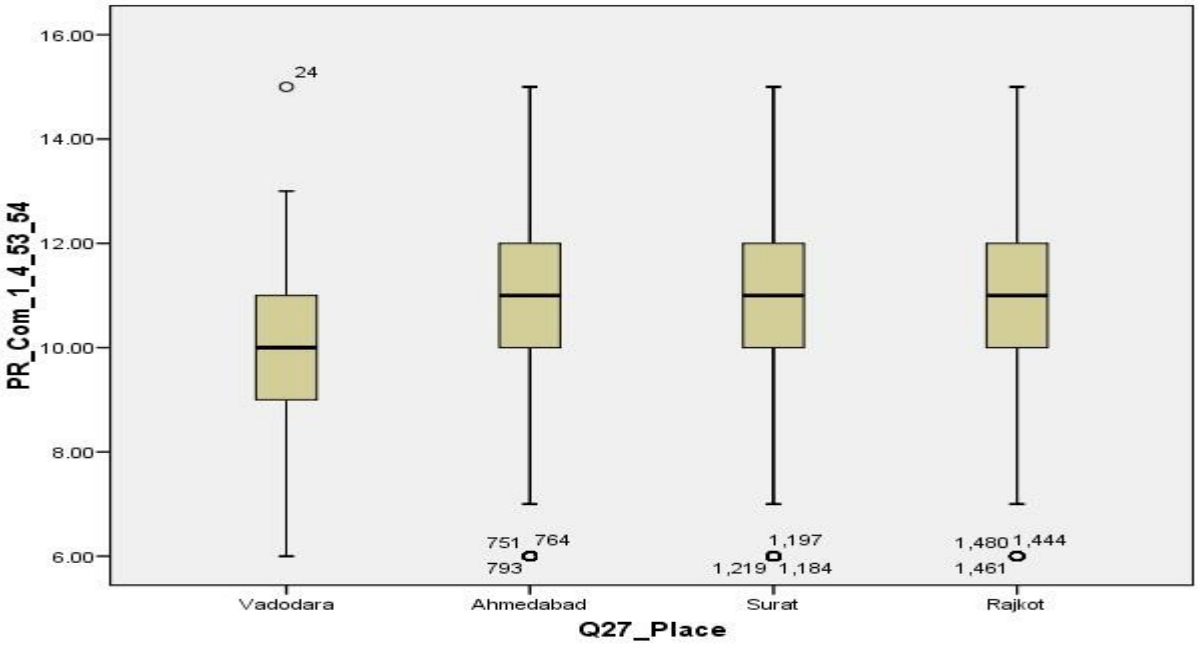
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

The table number 5.52 provides a clear idea about a number of criteria correlated with one component extracted using factor analysis. The item at serial number 1, 4 and 5 viz., smartphone displays the natural colour of the product (0.638), Online products are high priced (0.813) and online product have hidden cost (0.794) were more correlated with component 1. These items were found to be equally important for three cities viz., Ahmedabad, Surat, and Rajkot.

The item at serial number 2 and 3 viz., price of phone decides the quality of Smartphone and delivery cost will affect shopping decision were not found as the determinant of Price (PR) [MAQ AND MA] as having scored less than 0.6. These factors need unique differentiation strategy formulation to be mobile apps developers.

Graph Number 5.34: Importance of Component 1 (ITEM NO. 4, 53, 54)



From the above box plot graph no. 5.34 interpretation can be made. The importance of component 1 for factor 'Mobile Application Quality (MAQ) and Perceived Usefulness (PU)' can be attributed to three cities viz., Ahmedabad, Surat, and Rajkot as their median score is similar and high compared to Vadodara City. These o3 items were found to be equally important for three cities viz., smartphone displays the natural colour of the product (0.638), online products are high priced (0.813) and online product have hidden cost (0.794).

5.13.: Customers' Satisfaction Index (CSI) of the selected Mobile Shoppers' Satisfaction from Mobile Applications Quality and Smartphones Attributes in Selected Cities:

Based on the responses of Selected Mobile Shoppers about their expectations and experiences as separately analysed for selected cities, the researcher has computed 'Mean Importance Ratings' (Im) [Experience] and 'Mean Performance Ratings' (Pm) [Expectations] for each of the selected Mobile Applications Quality and Smartphones Attributes to evaluate whether the shoppers were delighted; satisfied; dissatisfied. These criteria were defined as: (1) Mobile Shoppers were delighted if Im/Pm> 0.95; (2) Mobile Shoppers were satisfied if 0.95> Im/Pm> 0.80; (3) Mobile Shoppers were dissatisfied if Im/Pm < 0.80 **(Table no. 5.53)**.

Table no. 5.53: M-Shoppers' Satisfaction Index (CSI) of the selected Mobile Shoppers' Satisfaction Score (S.S.S.)

Sr. No.	Selected Items	VADODARA				AHMEDABAD				SURAT				RAJKOT			
		Pm	Im	Im/ Pm	SL	Pm	Im	Im/Pm	SL	Pm	Im	Im/Pm	SL	Pm	Im	Im/Pm	SL
1	Smartphone apps_are_Compatible_to_the_phone	3.96	3.20	0.81	S	*4.10*	3.49	0.85	S	4.11	3.52	0.86	S	4.14	3.69	0.89	S
2	Screen size of Smartphone affects online shopping	3.90	3.18	0.82	S	3.97	3.54	0.89	S	3.98	3.54	0.89	S	3.92	3.56	0.91	S
3	Zooming feature helps to know the product well	3.97	3.16	0.80	S	4.04	3.73	0.92	S	4.05	3.74	0.92	S	4.06	3.74	0.92	S
4	Smartphone displays natural colour of the product	3.65	3.14	0.86	S	3.99	3.42	0.86	S	4.00	3.44	0.86	S	4.02	3.47	0.86	S
5	Smartphone batteries give enough time to do online shopping	4.02	3.24	0.81	S	4.09	3.64	0.89	S	4.07	3.64	0.90	S	4.14	3.72	0.90	S
6	Size of shopping apps consume lot of memory space	3.99	3.17	0.80	S	3.97	3.47	0.87	S	3.97	3.48	0.88	S	4.00	3.48	0.87	S
7	Smartphone has the safety facilities on it	3.91	2.92	0.75	DS	4.06	3.51	0.86	S	4.06	3.50	0.86	S	4.08	3.52	0.86	S
8	Brightness of the smartphone affects the outdoor m-shopping	3.90	3.20	0.82	S	3.95	3.53	0.89	S	3.96	3.53	0.89	S	3.94	3.53	0.90	S
9	Smartphone reduces the physical search to collect info	4.09	3.01	0.74	DS	4.08	3.55	0.87	S	4.08	3.57	0.87	S	4.13	3.54	0.86	S
10	Price of the phone decides the Quality of the smartphone	3.98	3.07	0.77	DS	3.92	3.54	0.90	S	3.91	3.56	0.91	S	3.90	3.55	0.91	S
11	Downloading the app provides better shopping experience	4.03	3.20	0.79	DS	3.90	3.55	0.91	S	3.91	3.56	0.91	S	3.89	3.59	0.92	S
12	Payment option is easy in mobile apps	3.97	3.06	0.77	DS	3.95	3.66	0.93	S	3.96	3.67	0.93	S	3.97	3.65	0.92	S
13	Wish list helps to do the shopping later	3.93	3.08	0.78	DS	3.86	3.82	0.99	DE	3.86	3.82	0.99	DE	3.86	3.77	0.98	S
14	Mobile apps have barrier to Indian languages	3.83	2.93	0.77	DS	4.02	3.17	0.79	DS	4.03	3.18	0.79	DS	4.07	3.20	0.79	DS
15	Unclear image affects the shopping decision	3.97	3.28	0.83	S	3.96	3.52	0.89	S	3.95	3.54	0.89	S	3.98	3.57	0.90	S
16	Playing video of the product in the app is useful	3.95	3.03	0.77	DS	3.94	3.42	0.87	S	3.95	3.43	0.87	S	3.97	3.45	0.87	S
17	Paid apps are better than free apps	3.90	2.88	0.74	DS	3.96	3.10	0.78	DS	3.96	3.10	0.78	DS	4.00	3.06	0.77	DS
18	Wait for the special offers and discounts to shop online	3.90	3.14	0.80	S	3.94	3.80	0.96	DE	3.94	3.79	0.96	DE	3.98	3.80	0.96	DE
19	Mobile app is useful in saving shopping time	4.04	3.33	0.83	S	4.13	3.42	0.83	S	4.12	3.42	0.83	S	4.17	3.42	0.82	S
20	Product suggestion in mobile app is useful	3.97	3.03	0.76	DS	4.03	3.62	0.90	S	4.03	3.62	0.90	S	4.06	3.59	0.88	S
21	Shoppers feel proud in mobile shopping	3.97	3.33	0.84	S	3.92	3.86	0.98	DE	3.92	3.87	0.99	DE	3.94	3.89	0.99	DE
22	Shoppers enjoy shopping on the Smartphone	4.05	3.37	0.83	S	4.11	3.76	0.91	S	4.11	3.77	0.92	S	4.15	3.80	0.92	S
23	Shoppers enjoy the convenience of shopping on mobile apps	4.05	3.36	0.83	S	3.92	3.74	0.95	DE	3.91	3.74	0.96	DE	3.96	3.74	0.94	S
24	Shoppers enjoy the product description available in the App	3.99	3.29	0.82	S	3.98	3.75	0.94	S	3.99	3.78	0.95	DE	3.96	3.73	0.94	S
25	Shoppers enjoy comparing the products online	3.74	3.67	0.98	DE	4.10	3.79	0.93	S	4.09	3.78	0.92	S	4.14	3.79	0.91	S
26	Attractive appearance of the shopping app involves shoppers	4.00	3.21	0.80	S	4.04	3.61	0.89	S	4.06	3.60	0.89	S	4.09	3.63	0.89	S
27	Smartphone is useful for anytime shopping	3.99	3.28	0.82	S	3.85	3.78	0.98	DE	3.86	3.81	0.99	DE	3.81	3.83	1.00	DE
28	Sellers are approachable through application	3.95	3.28	0.83	S	4.03	3.70	0.92	S	4.03	3.71	0.92	S	4.03	3.67	0.91	S
29	Similar products should be displayed on the shopping app	3.98	3.04	0.76	DS	4.02	3.72	0.92	S	4.01	3.72	0.93	S	4.03	3.74	0.93	S

Sr. No.	Selected Items	VADODARA				AHMEDABAD				SURAT				RAJKOT			
		Pm	Im	Im/ Pm	SL	Pm	Im	Im/Pm	SL	Pm	Im	Im/Pm	SL	Pm	Im	Im/Pm	SL
30	Mobile shopping apps are easy in navigating	3.98	3.10	0.78	DS	4.09	3.61	0.88	**S**	4.08	3.61	0.88	**S**	4.08	3.62	0.89	**S**
31	Tracking shopping app gives accurate information	3.89	3.21	0.83	**S**	3.95	3.63	0.92	**S**	3.94	3.62	0.92	**S**	4.02	3.59	0.90	**S**
32	Information on stock availability influence the shopping	4.03	3.19	0.79	DS	4.05	3.64	0.90	**S**	4.06	3.63	0.89	**S**	4.06	3.58	0.88	**S**
33	In case of non-availability, option of sending information	4.05	2.99	0.74	DS	4.16	3.52	0.84	**S**	4.16	3.52	0.85	**S**	4.23	3.53	0.83	**S**
34	Shoppers become more inclined to shop when app is installed	4.10	3.08	0.75	DS	4.10	3.55	0.87	**S**	4.09	3.56	0.87	**S**	4.13	3.53	0.86	**S**
35	Try-it-On facility increases the chance to buy from thet app	4.02	3.13	0.78	DS	3.99	3.55	0.89	**S**	3.97	3.53	0.89	**S**	3.97	3.52	0.88	**S**
36	Mobile shopping apps are trustworthy	3.92	2.93	0.75	DS	4.01	3.50	0.87	**S**	4.00	3.52	0.88	**S**	4.07	3.53	0.87	**S**
37	Customer review in shopping app affects shopping decision	4.02	3.03	0.75	DS	3.98	3.47	0.87	**S**	3.99	3.49	0.88	**S**	4.06	3.58	0.88	**S**
38	FAQs available on the shopping apps help in shopping	4.00	3.06	0.76	DS	3.96	3.46	0.87	**S**	3.97	3.45	0.87	**S**	3.97	3.47	0.88	**S**
39	Downloading mobile app gives first time benefits	3.89	3.12	0.80	**S**	3.89	3.50	0.90	**S**	3.91	3.51	0.90	**S**	3.90	3.52	0.90	**S**
40	Shoppers prefer test product or free samples	3.98	3.12	0.78	DS	3.97	3.47	0.87	**S**	3.97	3.47	0.87	**S**	3.97	3.47	0.88	**S**
41	Shopper would like to connect with other shoppers	3.93	3.33	0.85	**S**	4.02	3.47	0.86	**S**	4.03	3.50	0.87	**S**	4.06	3.55	0.87	**S**
42	Quick response of m-tailors on FAQ affect shopping decision	3.97	3.17	0.80	**S**	3.98	3.65	0.92	**S**	3.98	3.64	0.91	**S**	4.02	3.60	0.89	**S**
43	Sellers accept exchanges products returned by shoppers	3.92	3.06	0.78	DS	3.98	3.14	0.79	DS	3.97	3.12	0.78	**S**	4.03	3.16	0.78	DS
44	Easy refund of Price encourages online shopping	3.96	2.90	0.73	DS	4.04	3.04	0.75	DS	4.04	3.01	0.75	**S**	4.05	3.02	0.75	DS
45	Online sellers refund price of products as they receive produc	3.99	3.14	0.79	DS	4.00	3.38	0.84	**S**	3.98	3.38	0.85	**S**	4.03	3.40	0.84	**S**
46	Availability of EMI options affect the shopping decision	3.99	3.26	0.82	**S**	4.10	3.74	0.91	**S**	4.10	3.71	0.91	**S**	4.11	3.71	0.90	**S**
47	Shoppers check the information about the sellers	3.97	3.18	0.80	**S**	3.92	3.72	0.95	**DE**	3.92	3.70	0.94	**S**	3.92	3.67	0.93	**S**
48	Phone number of delivery agent helps a lot	3.96	3.11	0.79	DS	3.96	3.71	0.94	**S**	3.96	3.70	0.93	**S**	3.94	3.66	0.93	**S**
49	Product delivered differ as it appears online	4.03	3.17	0.79	DS	4.02	3.39	0.84	**S**	4.02	3.40	0.85	**S**	4.01	3.44	0.86	**S**
50	Delivery cost of a product will affect the shoppers'decision	3.94	2.95	0.75	DS	3.92	3.30	0.84	**S**	3.92	3.31	0.84	**S**	3.92	3.31	0.84	**S**
51	Customer service of m-tailor will influence repurchasing	3.93	3.15	0.80	**S**	3.97	3.65	0.92	**S**	3.96	3.63	0.92	**S**	3.99	3.63	0.91	**S**
52	Possibility of wrong item getting dispatched& delivered	4.01	3.28	0.82	**S**	4.02	3.43	0.85	**S**	4.01	3.44	0.86	**S**	4.01	3.45	0.86	**S**
53	Online Products are slightly high priced	3.92	3.34	0.85	**S**	4.17	3.66	0.88	**S**	4.16	3.66	0.88	**S**	4.17	3.64	0.87	**S**
54	Online Products have hidden cost	4.14	3.36	0.81	**S**	4.41	3.73	0.85	**S**	4.42	3.74	0.85	**S**	4.46	3.77	0.85	**S**
55	Downloading a app can steal the personal info from phone	4.02	3.29	0.82	**S**	4.31	3.70	0.86	**S**	4.31	3.72	0.86	**S**	4.31	3.70	0.86	**S**
56	Downloading app can cause malicious virus installed on cell	4.14	3.25	0.79	DS	4.52	3.70	0.82	**S**	4.52	3.72	0.82	**S**	4.53	3.71	0.82	**S**
57	Online retailers monitor the activities of the shoppers'	4.03	3.25	0.81	**S**	4.35	3.61	0.83	**S**	4.35	3.62	0.83	**S**	4.39	3.61	0.82	**S**
58	Frauds may take placein mobile shopping	4.02	3.38	0.84	**S**	4.26	3.47	0.81	**S**	4.26	3.48	0.82	**S**	4.29	3.52	0.82	**S**
59	Shoppers prefer shopping products via reputedshopping apps,	4.01	3.23	0.80	**S**	4.42	3.56	0.81	**S**	4.41	3.55	0.81	**S**	4.43	3.50	0.79	DS
60	Use high security payment gateway	4.02	3.28	0.82	**S**	4.36	3.64	0.84	**S**	4.36	3.66	0.84	**S**	4.42	3.64	0.82	**S**

Note: DE= Delighted; S= Satisfied and DS= Dissatisfied

Table number: 5.54: Overall Market performance analysis and customers' satisfaction score

S.N.	Selected Items	Lable	Pm	Im	Im/pm	SL
	Smartphone apps_are_Compatible_to_the_phone	PE1	3.95	3.47	0.88	**S**
	The screen size of a Smartphone affects online shopping	PE2	4.03	3.62	0.90	**S**
	Zooming feature helps to know the product well	PE3	4.09	3.44	0.84	**S**
	Smartphone displays the natural colour of the product	PE4	3.93	3.49	0.89	**S**
	Smartphone batteries give enough time to do online shopping	PE5	3.94	3.66	0.93	**S**
	Size of shopping apps consume lot of memory space	PE6	3.93	3.76	0.94	**S**
	Smartphone has the safety facilities on it	PE7	4.11	3.69	0.90	**S**
	Brightness of the smartphone affects the outdoor m-shopping	PE8	3.95	3.67	0.93	**S**
	Smartphone reduces the physical search to collect info	PE9	3.98	3.76	0.98	**DE**
	Price of the phone decides the Quality of the smartphone	PE10	4.03	3.76	0.93	**S**
	Downloading the app provides a better shopping experience	PE11	4.05	3.53	0.87	**S**
	Payment option is easy in mobile apps	PE12	3.99	3.46	0.87	**S**
	Wish list helps to do the shopping later	PE13	3.97	3.40	0.86	**S**
	Mobile apps have a barrier to Indian languages	PE14	4.01	3.47	0.86	**S**
	Unclear image affects the shopping decision	PR1	3.93	3.38	0.86	**S**
	Playing a video of the product in the app is useful	PR2	3.93	3.23	0.82	**S**
	Paid apps are better than free apps	PR3	4.12	3.59	0.87	**S**
	Wait for the special offers and discounts to shop online	PR4	4.37	3.67	0.84	**S**
	The mobile app is useful in saving shopping time	PU1	3.87	3.70	0.96	**DE**
	Product suggestion in mobile app is useful	PU2	4.08	3.57	0.88	**S**
	Shoppers feel proud about mobile shopping	PU3	3.98	3.41	0.86	**S**
	Shoppers enjoy shopping on the Smartphone	PU4	3.94	3.46	0.88	**S**
	Shoppers enjoy the convenience of shopping on mobile apps	PU5	3.96	3.54	0.89	**S**
	Shoppers enjoy the product description available in the App	PU6	3.87	3.66	0.95	**DE**
	Shoppers enjoy comparing the products online	PU7	3.99	3.43	0.88	S
	The attractive appearance of the shopping app involves shoppers	PU8	3.96	3.49	0.88	**S**
	The smartphone is useful for any time shopping	PU9	3.95	3.35	0.85	**S**
	Sellers are approachable through application	PU10	3.95	3.05	0.77	**DS**
	Similar products should be displayed on the shopping app	PU11	4.12	3.40	0.83	**S**
	Mobile shopping apps are easy in navigating	PU12	4.02	3.49	0.87	**S**
	Tracking shopping app gives accurate information	PU13	4.01	3.61	0.90	**S**
	Information on stock availability influence the shopping	PU14	4.01	3.59	0.89	**S**
	In case of non-availability, option of sending information	PU15	4.06	3.51	0.86	**S**
	Shoppers become more inclined to shop when the app is installed	PU16	3.94	3.54	0.90	**S**
	The try-it-On facility increases the chance to buy from the app	PU17	4.05	3.54	0.87	**S**
	Mobile shopping apps are trustworthy	PU18	4.15	3.41	0.82	**S**
	Customer review in shopping app affects shopping decision	PU19	4.10	3.46	0.84	**S**
	FAQs available on the shopping apps help in shopping	PU20	3.90	3.43	0.88	**S**
	Downloading the mobile app gives first-time benefits	PU21	3.99	3.54	0.89	**S**
	Shoppers prefer test product or free samples	PU22	3.98	3.12	0.79	**DS**
	The shopper would like to connect with other shoppers	PU23	4.02	3.00	0.75	**DS**
	The quick response of m-tailors on FAQ affect shopping decision	PE1	4.00	3.33	0.83	**S**
	Sellers accept exchanges products returned by shoppers	PE2	4.08	3.63	0.89	**S**

S.N.	Selected Items	Lable	Pm	Im	Im/pm	SL
	Easy refund of Price encourages online shopping	PU23	3.93	3.60	0.92	**S**
	Online sellers refund the price of products as they receive product	PU24	3.96	3.58	0.90	**S**
	Availability of EMI options affect the shopping decision	PU25	4.03	3.39	0.84	**S**
	Shoppers check the information about the sellers	PU26	3.93	3.45	0.88	**S**
	Phone number of delivery agent helps a lot	PU27	4.08	3.48	0.85	**S**
	Product delivered differ as it appears online	TR1	4.00	3.39	0.85	**S**
	The delivery cost of a product will affect the shoppers 'decision	TR2	4.01	3.40	0.85	**S**
	Customer service of m-tailor will influence repurchasing	TR3	3.97	3.38	0.85	**S**
	Possibility of wrong item getting dispatched& delivered	TR4	4.02	3.36	0.84	**S**
	Online Products are slightly high priced	TR5	3.96	3.54	0.89	**S**
	Online Products have hidden cost	TR6	4.02	3.41	0.85	**S**
	Downloading an app can steal the personal info from phone	TR7	4.25	3.62	0.85	**S**
	The downloading app can cause malicious virus installed on cell	TR8	4.45	3.62	0.81	**S**
	Online retailers monitor the activities of the shoppers'	TR9	4.29	3.54	0.82	**S**
	Frauds may take place in mobile shopping	TR10	4.22	3.46	0.82	**S**
	Shoppers prefer shopping products via reputed shopping apps,	TR11	4.34	3.48	0.80	**S**
	Use high-security payment gateway	TR12	4.30	3.58	0.83	**S**

Note: DE= Delighted; S= Satisfied and DS= Dissatisfied

Overall m-shoppers were found satisfied, when measured their expectation and experience, concerning mobile attributes and mobile application quality influencing m-shopping.

In case of mobile attributes for the criteria "Smartphone reduces the physical search to collect info" it was found that m-shoppers experienced 'Delight', while in case of quality of mobile application, there were two criteria, in which m-shoppers felt delighted such as "Mobile app is useful in saving shopping time"; and "Shoppers enjoy the product description available in the App".

There were three criteria where m-shoppers felt dissatisfied such as "Sellers are approachable through the application"; "Shoppers prefer test product or free samples" & "Shoppers would like to connect with other shoppers", in these cases m-shoppers experienced less than the expectation.

5.14: IMPLICATIONS ON OVERALL MARKET PERFORMANCE ANALYSIS AND CUSTOMERS' SATISFACTION SCORE:

Overall satisfaction shows that smartphone manufacturers & developers of smartphone applications are working as per the expectations of m-shoppers and there are only a few areas where m-shoppers' expectations are not met, so developers of mobile applications have to give special attention to design application in such a way that shoppers would be able to connect with other shoppers, such as nowadays m-shoppers read the reviews written by other shoppers and get influenced by them, but still there is a chance that reviews may be fake. It would be better if there is a chance to chat with other shoppers or call them, though it will revoke the privacy concern, which shoppers will understand later. In some cases, such as smartphone reduces the physical search, m-shoppers experienced this, rather they must have had a better experience than they might have expected. Similarly, m-shoppers had great experience of saving time in shopping and product description which helped in selecting and comparing products online, so manufacturers of smartphone and developer of smartphone application should maintain this and the criteria where m-shoppers had felt satisfied, still, there is a scope to improve these attributes and quality of smartphone application to change satisfaction into delight.

5.15: FINDINGS OF KENDALL'S TAU CORRELATION:

As the primary data collected from the respondents was not normally distributed and the ties were observed among the two variables Kendall's Tau Correlation was carried out to identify and study the relationships among the selected variables. The significance of the correlation was tested at 0.01 level and 0.05 level using the T-test. The relationships among the variables are said to be positive when a correlation is positive and negative when correlation has a negative sign. Correlation is said to high when $r^2>.50$ and low when $r^2<.50$.

Table Number 5.55,shows the result of the hypothesis "There is no significant relationship between User-Perceived Quality of Mobile Applications and Mobile Attributes with the Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness".

Table Number:5.55: Findings of Correlation between Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness with the Quality of Mobile Applications and Mobile Attributes.

Selected Variables	Quality of Mobile Applications	Mobile Attributes
Perceived Usefulness	.306**	.291**
Perceived Ease of Use	.125**	.149**
Trust	.215**	.130**
Price Relatedness	.153**	.199**
Note: **. Correlation is significant at the 0.01 level (1-tailed). *. Correlation is significant at the 0.05 level (1-tailed).		

Low degree of positive correlation was examined between experiences of Quality of Mobile Applications and Mobile Attributes with the Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness. The results of the research study revealed that with the increase in the experience of Quality of Mobile Applications and Mobile Attribute, experience for Perceived Usefulness, Perceived ease of Use, Trust and Price Relatedness also increases. Perceived usefulness of mobile application for online shopping was the factor which was affected the most by Quality of Mobile Applications, followed by Trust, Price Relatedness and Perceived ease of Use.

Mobile Attributes was also found affecting the most to the Perceived Usefulness of the respondents followed by the Price Relatedness, Perceived ease of Use and Trust of the respondents. Significance of correlation was tested using T-test, and all the correlations were found as significant at 0.01 level. From the T-test of correlation, it was found that there was less than 1 per cent chance of not getting the same results in future. Hence, based on the test of the hypothesis that is hypothesis "There is no significant relationship between User-Perceived Quality of Mobile Applications and Mobile Attributes with the Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness" is rejected.

Table Number:5.56, shows the result of the hypothesis "There is no significant relationship between User-Perceived Quality of Mobile Applications, Mobile Attributes, Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness with the continue to shop more from the shopping application, recommendation for shopping through mobile to others, and satisfaction from the shopping experience with Smart Phone".

Table Number: 5.56:

Findings of Correlation between Quality of Mobile Applications, Mobile Attributes, Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness with the Continuance to Shop more from the Shopping Application, Recommendation for Shopping through Mobile to Others, and Satisfaction from the Shopping Experience with Smart Phone

Selected Variables	Would Continue to Shop More From the Mobile Application	Recommend Shopping through Applications	Satisfied With the Shopping Experience Using Smartphone
Quality of Mobile Applications	.065	.060	.060
Mobile Attributes	.100*	.109*	.103*
Perceived Usefulness	.189**	.192**	.197**
Perceived ease of Use	.182**	.180**	.191**
Trust	.211**	.208**	.211**
Price	.104*	.109*	.114*
Note: **. Correlation is significant at the 0.01 level (1-tailed). *. Correlation is significant at the 0.05 level (1-tailed).			

Low degree of positive correlation was examined between experiences of Quality of Mobile Applications, Mobile Attributes, Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness with the Continue to Shop more from the Shopping Application, Recommendation for Shopping through Mobile to Others, and Satisfaction from the Shopping Experience with Smart Phone. The results of the research study revealed that with the increase in the experience of Quality of Mobile Applications, Mobile Attribute, Perceived Usefulness, Perceived ease of Use, Trust and Price Relatedness there is an increase in Continuous use intention, Recommendation for use of online shopping application and satisfaction of online shoppers.

Continuous use intention, Recommendation and Satisfaction for online shopping application was significantly related by Mobile Attributes, Perceived Usefulness, Perceived ease of Use, Trust, and Price Relatedness. The relation among the variables was statistically significant at 0.01 level for Perceived Usefulness, Perceived ease of Use and Trust; and the relation of Mobile Attributes and Price Relatedness was significant at 0.05 level. The relation of Quality of Mobile Application was found to be not statistically significant at 0.05 level.

5.16: STRUCTURAL EQUATION MODEL:

Figure Number: 5.1: Structural Equation Model Showing Relationship between Perceived Usefulness, Perceived ease of Use, Trust, Price with Overall Satisfaction

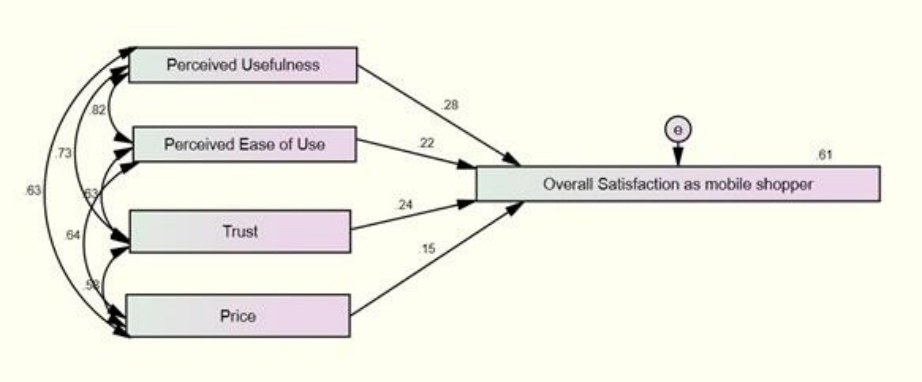


Table number: 5.57: Fit Indices of Measurement Model [Model as Given in Figure Number: 5.1]

Name of the Index	Model fit Indices	Most Ideal Values
CMIN (Chi-square or Minimum Discrepancy Chi-square)	514.351	-
GFI (Goodness of Fit Index)	1.000	1.00
NFI (Normed-Fit Index)	1.000	0.95
RFI (Relative Fit Index)	0.000	0.90
CFI (Comparative Fit Index)	1.000	0.90
AGFI (Adjusted Goodness of Fit Index)	0.709	0.90
RMR (Root Mean Square Residual)	0.000	0.08
RMSEA (Root Mean Square Error of Approximation)	0.587	0.08

In the figure number 5.1, the simple regression model is displayed in which one observed variable, Overall Satisfaction of Mobile Shopper, is predicted as a linear combination of the other four observed factors related with mobile apps and attribute with customers' satisfaction viz., Price (PR); Perceived ease of Use (PE); Perceived usefulness (PU), and Trust (TR) respectively.

As with nearly all empirical data, the prediction will not be perfect. There are some other variables other than selected four variables that also assumed to affect Overall Satisfaction as Mobile Shopper for which the model assumes '1' as standardized regression weights which specifies that other variables must weight 1 in the prediction of preference to stay in next visit. The values shown with single-sided arrow (0.28, 0.24, 0.22, and 0.15) are standardized regression weights. The value 0.61 is the squared multiple correlations of the other four observed factors related to mobile apps and attribute that affect overall Satisfaction as Mobile Shopper.

It means that the overall satisfaction as mobile shopper considering four variables related with customers' satisfaction is influenced mainly by variable, viz., Perceived usefulness (0.28), Trust (0.24), Perceived ease of Use (0.22) and Price (0.15) respectively.

Figure Number:5.2: Structural Equation Model Showing Relationship between Perceived Usefulness, Perceived ease of Use, Trust, Price with Intension to Recommend Through Mediating Variables

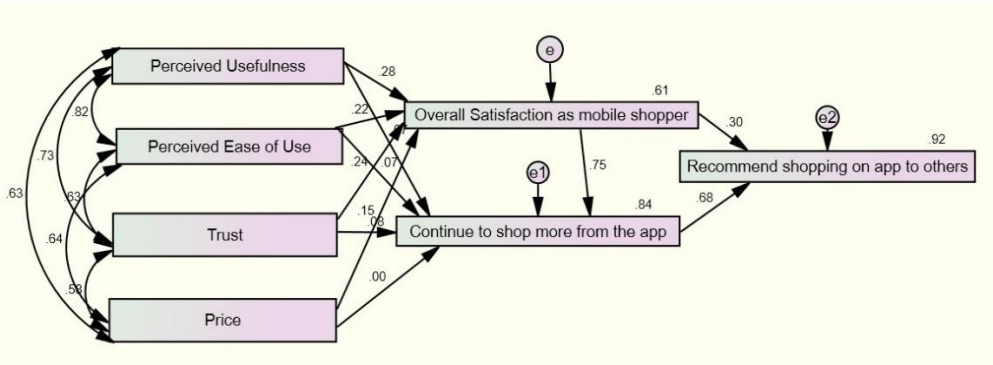


Table number: 5.58: Fit Indices of Measurement Model [Model as Given in Figure Number: 5.2]

Name of the Index	Model fit Indices	Most Ideal Values
CMIN (Chi-square or Minimum Discrepancy Chi-square)	32.728	-
GFI (Goodness of Fit Index)	0.994	1.00
NFI (Normed-Fit Index)	0.997	0.95
RFI (Relative Fit Index)	0.985	0.90
CFI (Comparative Fit Index)	0.998	0.90
AGFI (Adjusted Goodness of Fit Index)	0.957	0.90
RMR (Root Mean Square Residual)	0.040	0.08
RMSEA (Root Mean Square Error of Approximation)	0.069	0.08

The Model Fit Indices as given in table number- 5.56 considering the Structural Equation Model [SEM] showing the relationship between intention to Recommend shopping app to others, intention to continue to use the mobile app, overall Satisfaction as mobile shopper price (PR); Perceived ease of Use (PE); perceived usefulness (PU), and trust (TR)

The above-given **Figure Number 5.2** is the Structural Equation Model using Path Analysis for portraying the influence of price (PR); Perceived ease of Use (PE); perceived usefulness (PU), and trust (TR) through 02 mediating variables i.e., intention to continue to use the mobile app, and overall Satisfaction as a mobile shopper which results in to recommend to others to use mobile apps.

In the above simple Regression Model where 01 observed variables, the 'Recommendation to Others', is predicted as a linear combination of the other 04 observed variables, viz., price (PR); Perceived ease of Use (PE); perceived usefulness (PU), and trust (TR) respectively considering the 02 mediating variables i.e. intention to continue to use the mobile app, overall Satisfaction as a mobile shopper which results into the recommendation to others to use social media.

Each single-headed arrow represents a regression weight. The value shown against two-sided arrows is the correlation between selected observed variables.

Figure Number 5.3: Structural Equation Model Showing Relationship between Mobile Application Quality, Mobile Attributes with Intension to Recommend Through Mediating Variables

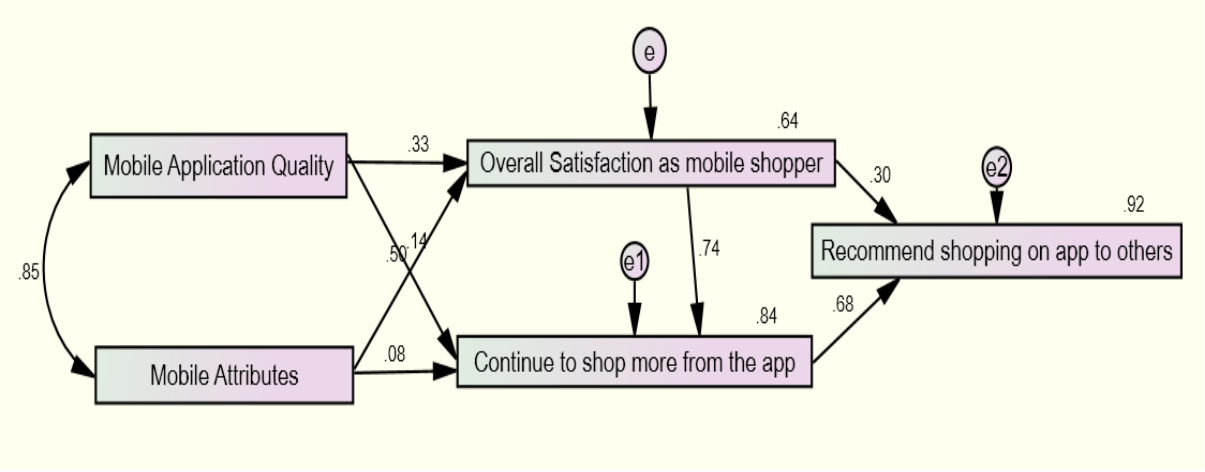


Table number: 5.59: Fit Indices of Measurement Model [Model as Given in Figure Number: 5.3]

Name of the Index	Model fit Indices	Most Ideal Values
CMIN (Chi-square or Minimum Discrepancy Chi-square)	13.573	-
GFI (Goodness of Fit Index)	0.993	0.95
NFI (Normed-Fit Index)	0.997	0.95
RFI (Relative Fit Index)	0.986	0.90
CFI (Comparative Fit Index)	0.997	0.90
AGFI (Adjusted Goodness of Fit Index)	0.946	0.90
RMR (Root Mean Square Residual)	0.085	0.08
RMSEA (Root Mean Square Error of Approximation)	0.092	0.08

The above-given **Figure Number 5.3** is the Structural Equation Model using Path Analysis for portraying the influence of Mobile application quality and mobile attributes through 02 mediating variables i.e. intention to continue to use the mobile app, overall Satisfaction as a mobile shopper which results in to recommend to others to use mobile apps.

In the above simple Regression Model where 01 observed variables, the 'Recommendation to Others', is predicted as a linear combination of the other 02 observed variables, viz., Mobile application quality and mobile attributes respectively considering the 02 mediating variables i.e. intention to continue to use the mobile app, overall Satisfaction as a mobile shopper which results into the recommendation to others to use social media. Each single-headed arrow represents a regression weight. The value shown against two-sided arrows is the correlation between selected observed variables.

Figure Number 5.4: Structural Equation Model Showing Relationship between Mobile Application Quality, Mobile Attributes with Overall Satisfaction, Intention to Continue to Shop and Recommend Shopping App to Others Through Mediating Variables

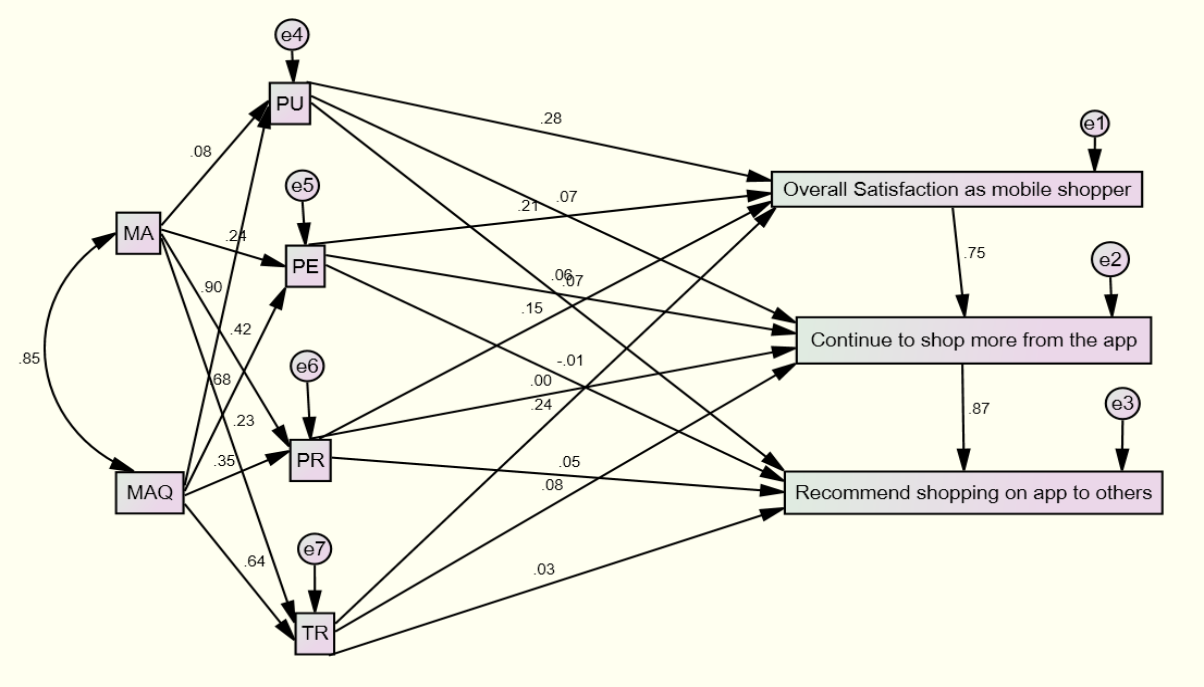


Table Number 5.60: Fit Indices of Measurement Model [Model as Given in Figure Number:6.2]

Name of the Index	Model fit Indices	Most Ideal Values
CMIN (Chi-square or Minimum Discrepancy Chi-square)	13.573	-
GFI (Goodness of Fit Index)	0.993	0.95
NFI (Normed-Fit Index)	0.997	0.95
RFI (Relative Fit Index)	0.986	0.90
CFI (Comparative Fit Index)	0.997	0.90
AGFI (Adjusted Goodness of Fit Index)	0.946	0.90
RMR (Root Mean Square Residual)	0.085	0.08
RMSEA (Root Mean Square Error of Approximation)	0.092	0.08

Finally, this model is showing that intermediary variables, viz., price (PR); Perceived ease of Use (PE); perceived usefulness (PU), and trust (TR) of independent variables such as smartphone attributes and Quality of smartphone are influencing the Overall satisfaction of m-shopper which will lead to a recommendation to others for m-shopping and m-shoppers will continue to purchase online, in this way null hypotheses will be rejected.

5.17: KEY FINDINGS OF THE RESEARCH STUDY:

The research study revealed the key finding that quality of smartphone application and smartphone attributes influence the m-shoppers' buying behaviour in terms of it's perceived usefulness, perceived ease of use , price and trust formed by lots of important points keeping in mind while manufacturing smartphone and developing smartphone application. The expectations and experience towards quality of smartphone application and smartphone attributes were taken in to consideration in the research study and it was found that in majority of cases m-shoppers were satisfied and that overall satisfaction lead to continuous m-shopping and recommendation to others also for m-shopping .

Price was the only intermediating variable which was not having much influence on m-shopping because m-shopping does not depend on price of the smartphone as well as cost of developing application. Product cost as a factor of influencing buying behaviour only has it's impact in m-shopping.

Trust was proved an important factor, in smartphone application because it involves security and payment gateways issues where m-shopper wanted assurance of not using or disclosing personal information to others. In case of smartphone choice m-shoppers related trust to the brand name , where established brand was concerned, m-shopper trusted on that and m-shoppers were concerned about security provisions in smartphone.

Perceved ease of use of smartphone as well as of smartphone application was found as influencing factor towards m-shoppers' buying behaviour . It was obseved that if a smartphone is easy to hold and operate , it was preffered by m-shoppers and made m-shoppers, comfortable in searching & shopping on smartphone. M-shoppers were more concerned towards looks and functionalities of the smartphone and they were ready to change smartphones of low price range frequently . memory space was another important concern, because incase of lack of space downloading of smartphone application was difficult. M-shoppers needed high tech phones, so they eager to upgrade their smartphones in exchange.

Perceived ease of use infact lead to perceived usefulness , which ultimately lead to m-shoppers' satisfaction leading to to continuous m-shopping and recommendation to others also for m-shopping.

Mostly M-shoppers were found engaged in m-shopping fortnightly and afternoon and late evening were the preffered time for m-shopping, keeping them engaged for an hour or less than that. Android being userfriendly operating system was found popular among m-shoppers.

Smartphone shopping applications were preffered on the basis of ease of use as well as easy navigating facility. M-shoppers age was found influencing the acceptance of application for m-shopping.dDesign of application attract the m-shopper but finally product quality, large number of images of products in application affect m-shopping decision. M-shoppers were found largly concerned about on tiome delivery and easy and hassle free return policy.Reviews of previous buyers also affect the shopping decisions. After sale service was alos very much needed by m-shoppers.

Internet connectivity and technical adequacy were found major issues of concern to take extra care in m-shopping.

The success of mobile shopping is mainly dependent on the screen time of a m-shopper. The more the time m-shoppers spend on the mobile shopping applications to know or browse the products, the probability of buying or shopping decision is more. The interesting lay out of the shopping applications or the similar product suggestions with various price range can keep the m-shoppers engaged in the mobile shopping.

The main cause of m-shoppers leaving the mobile shopping is that the delivered products look different than the products that were shown or are displayed online in the shopping applications especially considering its colour, the size, versions and type of a product etc. The mind of a m-shoppers perceives a particular product or mobile application while placing an order of it. Since the shopping environment happens virtually, the imagination of a product or mobile application induces the shopping urge to of the m-shoppers. By thinking of a look of a product or the functionalities of a product, online m-shoppers make the purchase or shopping. Even though the shopping environment is virtual, the product is real and tangible. When the imagination does not meet the reality of a product, m-shoppers get disappointed and anxious about continuing the mobile shopping. So, image of product that is smartphone or mobile handset should resemble the actual product delivered to mobile shoppers.

Mobile commerce is the future of the business. Since, the need for desktop computers has been reduced due to the wide availability of handheld wireless devices of tab and smartphones to a common m-shopper.

Mobile Commerce is purely a trust-based business both for the m-Shoppers and the sellers. M-Shoppers are willing to buy a product from an unacquainted seller and willing to do the money transfer believing that the right product with good condition will be delivered.The smartphone manufacturers and mobile shopping application developers should coin this opportunity. The millennials and the newer generation that are born in the era of information technology are going to be the potential m-shoppers for the mobile shopping. It is going to be the normal for the millennials to order their desired products online than the traditional way of shopping in a Brick and Mortar store. Since, the screen time of the new age shoppers has increased in general, the application developers should retain the m-shoppers on their advanced technology of mobile shopping applications with the interactive functionalities that would keep the m-shoppers engaged online in their smartphones.

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