Project Dissertation

CONSUMER BUYING BEHAVIOUR IN M-COMMERCE

Submitted By :

Giri Mallika Bora

2K13/MBA/29

Under the Guidance of :

Prof. P.K. Suri

Head of Department

Delhi School of Management

DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road, Delhi 110042

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Certificate from the Institute

This is to certify that the Project Report titled "**Consumer Buying Behaviour in M-Commerce**", is a bonafide work carried out by Ms. Giri Mallika Bora of MBA 2013-15 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfillment of the requirement for the award of the Degree of Masters of Business Administration.

Signature of Head of Dept., DSM

Prof. P.K. Suri

Place:

Seal of Head

Date:

Declaration

I, **Giri Mallika Bora**, student of MBA 2013-15 of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 declare that the dissertation on "**Consumer Buying Behaviour in M-Commerce** "submitted in partial fulfillment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge. This Report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

Giri Mallika Bora

Place:

Date:

Acknowledgement

The following Dissertation "**Consumer Buying Behaviour in M-Commerce"** was successfully completed under the guidance of Prof. P.K. Suri, Head, Delhi School of Management, DTU.

I would also like to thank my mentor Ms. Karishma Gulati and Khusbu Madan at Delhi School of Management for providing me with teachings and learning that enabled me to contribute positively.

Gratitude is extended to every unnamed individual who has helped in making this a great learning experience. I also thank my friends for their valuable suggestions, comments and criticism. They have been welcoming enough to provide me with all the required help that has enabled me to make this project a success.

Giri Mallika Bora

2K13/MBA/29

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EXECUTIVE SUMMARY

M-Commerce being so much into vogue is here to stay for the years to come. Hence it is a substantial study to find the consumer buying behavior in case of M-Commerce. Already many researches have been done on the adoption intention of M-Commerce. It has also been found that in many cases the Buying Behavior in case of M-Commerce holds a significant root in comparison with E-Commerce. This study integrates the different factors associated with the Buying Behavior. Also it looks into the aspects of Risk Analysis and Trust. The study mainly deals with the effect of Trust and the perception of Risk on Lead Generation in the domain of M-Commerce. It inevitably sums up that Trust plays an important role in driving Sales for a firm in M-Commerce. Also that Social Influence plays a vital role in motivating the consumers to adopt M-Commerce

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CHAPTER 1

INTRODUCTION

1.1 Introduction to the Project

The cellular phones and telecommunications have revolutionized the world. Probably the concept of internet was inspired from this idea of connecting people anywhere and anytime at any place. If at all, anything has connected the world, it is the explosion at which Data Usage on Smart Phones is on the rise. After E-Commerce the next most pervasive domain for the companies has been the M-Commerce. The term includes the sale of numerous types of goods and services, mobile banking, online services through smart phones like GPRS navigation.

The explosion of M-Commerce is gaining grounds because of many positive factors - the demand for smart phones, the low costs of smart phones making it accessible to one and all. The ever growing mobile consumer base; the growing intent to use mobile platforms for day to day use – all of it can be ascribed to the security issues that has been resolve along with the technological advances. All of it has empowered the wireless handheld devices powerful capabilities and excellent computing capabilities.

M-commerce uses mobile devices like smart phones as well as PDAs along with a wireless network. What makes a mobile network unique is that it can connect a user to the network anywhere and at anytime a user wants to get himself or herself connected to. Keeping in view the scale and growth of operations of M-Commerce people are of the view that the M-Commerce will surpass E-Commerce for revenue generation. The value addition for M-Commerce is something that cannot be neglected. The Japanese people

prefer to use mobile internet over stationary internet. M-Commerce has actually got into the root of many technologies as well as marketing campaigns by the many firms The root can be affirmed by the innovation that brings in continuous strides to develop the connectivity. The traditional ways of doing business has changed since the advent of e-commerce and m-commerce. Nowadays, e-commerce and m-commerce has facilitated the buyers and sellers in ways that no one could ever imagine.

The mode of using M-Commerce has been through the many apps that are abound today in the market through the medium of smart phones as well as tablets. With the increase in the sale and accessibility of smart phones and affordable data consumption rates, the use of M-Commerce to attract consumers through online marketing has been on the rise. The mobile tech developments have infact compelled the firms to change its focus from traditional methods of doing business and make m-commerce a priority. Infact the huge online e-commerce firms like Flipkart and Amazon have turned its attention to the M-Commerce domain to drive its revenue from the immense potential that it holds.

The uses of M-Commerce by firms like PayPal are in fact a sign that tells us that M-Commerce is here to stay.

However studies have revealed that inspite of the huge mobile shopping landscape, the consumers' expectations are yet not fulfilled. Firms like uSamp and iModerate revealed their findings of motivations for consumers, along with preferences. It also discusses the deterrents preventing customer engagement in m-commerce. Surprisingly, the most prevalent consumer concerns for mobile transactions are security of transactions and ease of use leading to user experience and functionality. Security issues and content prioritization are the main problems that are being faced by the consumers.

The problem statement hence is clear that there exists a browsing behavior that leads to revenue generation for the firms while there exists another kind of browsing behavior which does not lead to final purchase.

In this study we have tried to analyze the technology adoption intention for m-commerce, whether it has really made an impact on the intent to buy which is the buying behavior of the customers and brought profits to the firms due to convenience. Also we have tried to study the various factors that affect the formulation of the perception of risk in M-Commerce. The analysis of risk has further changed the browsing behavior of the consumers. Through the use of Data Analytics we have tried to build a predictive model for the companies to benchmark themselves on the Trust Factor of the customers which actually drives the sales for a company.

With this model in place a company can understand what kind of customers are actually interested in their products and what level of trust do they have on the firm. It can also provide a scale to the firms to concentrate on certain Service and Product Level Quality Benchmarks to stick to, to formulate their strategies to attract and retain customers from the M-Commerce domain.

1.2 Objectives of the study

The main purpose of the study has been divided into the following objectives:

1. To analyze the major factors which play an important role in the Risk Analysis when it comes to M-Commerce
2. .To develop a regression model for the Risk Analysis and the factors which play an important role in the development of the perception of risk
3. To analyze the relationship between Sales and Trust
4. To analyze the relationship between Sales and the Perception of Risks

5. To analyze the relationship between Trust and the Perception of Risks
6. To develop a regression model for the Factors Sales, the Trust Factor and the Perception of Risk in M-Commerce.

CHAPTER 2

LITERATURE REVIEW

2.1 Consumer Buying Behavior

As we know the Consumer Buying Behavior mainly comprises of the actions taken by a consumer starting from the exposure to the advertisements of a product, analysis of the options available at hand, purchase intentions, making a choice, buying a product to finally dispose off a product. Now that e-commerce has struck the market as a new mode of channel between the producers and the consumers with the boom of technology, it has also made an evolution into a new mode of distribution channel via the handheld smart devices with the disruptive innovation in telecom domain.

2.2 Evolution of Consumer Buying Behavior in M-Commerce from E-Commerce

Relevant literature reviews of the available researches were extensively studied to build a thorough background for developing the hypothesis. This provided the framework for developing the conceptual construct for our study. Surprisingly, it has revealed that the motivation for using M-Commerce is not exactly the same as that for E-Commerce. It addresses the behavioral features of the consumers in M-Commerce pertaining to the Browsing Behavior arising from the analysis of trust and the perception of risk in M-Commerce. .

Research firms show a huge potential market for services through m-commerce which will encourage the consumer's transactions from "E-decade" to "M-decade".

Apart from these, some researches also tried to correlate the buying behavior in terms of the Trust, Ease of Use, Usefulness, Customer Educational Level, Income level, Age and Perceived Security Risk. Previous research in the context of Canada has shown that mobile devices are the most preferred form of shopping even if a desktop were close at hand. Researchers have also established the application of the various Trust Models in relation to the e-commerce model to M-Commerce Model.

CHAPTER 3

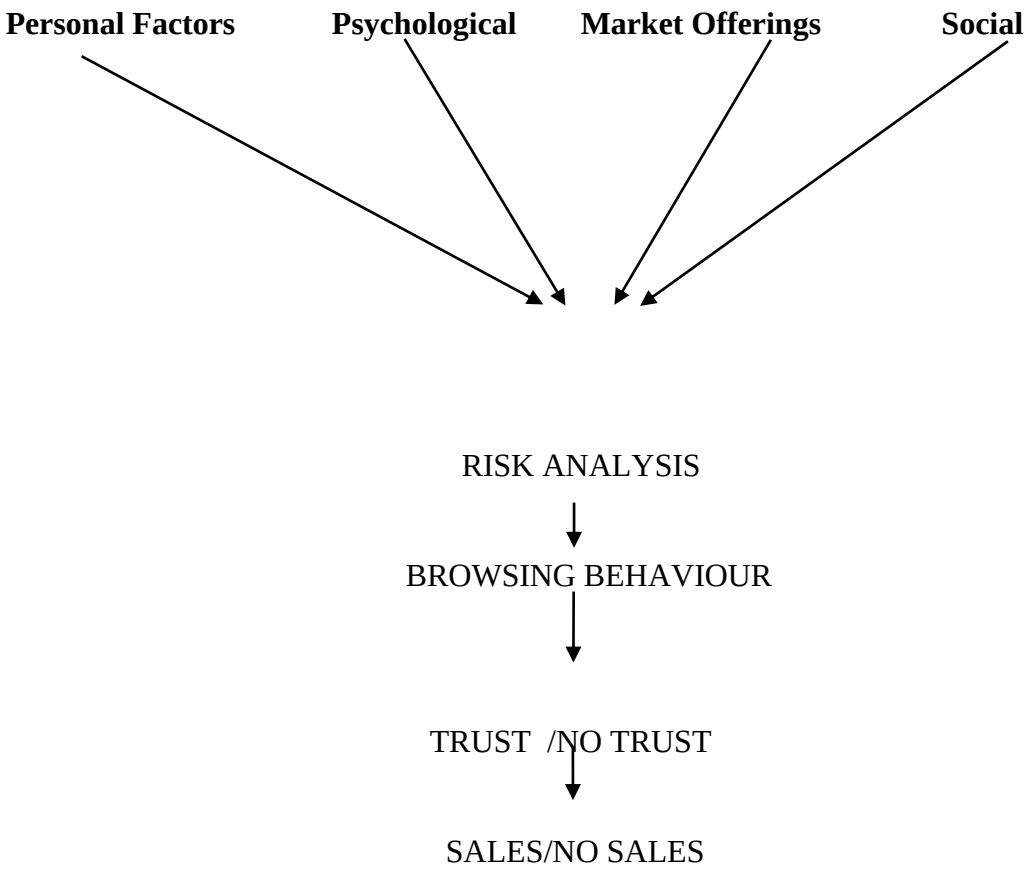
RESEARCH METHODOLOGY

3.1 Research Design

The main aim of this study was to find the consumer behavior in M-Commerce. So initially an exploratory study was done for a qualitative insight into the problem domain. For this purpose a pilot study was done covering the various factors dealing with the Consumer Buying Behavior in the M-Commerce Domain. Further to quantify the metrics developed, a Descriptive Research was adopted via the final survey. The Primary Research was further analyzed through Descriptive Statistics and Hypothesis Testing to arrive at a conclusion.

3.2 Conceptual Model for Risk Analysis in M-Commerce

In this research we have tried to formulate a model which tries to incorporate the consumer behavior in M-Commerce. Of all the factors available for the adoption and usage of M-Commerce we have broadly categorized it into 4 factors – Personal, Psychological, Social and Market Offerings. All of it gives rise to browsing behavior. All of these factors in some way or the other gives rise to the perception of Trust as well as Risks, the other two important variables that we have observed in this phenomenon. Finally, if the sense of Trust exceeds Risks, it gives rise to lead generation or sales. The model discussed has been shown in the diagram as follows:



The model intends to find the relationship of the variables defined in the diagram. It has been seen that the personal, psychological, social and market factors generally give rise to risk analysis by a consumer which finally affects his/her Browsing Behavior. The browsing behavior leading to sales generally implies that there is a positive notion in the minds of the consumer that the m-commerce is safe and convenient for transactions, implying that the sense of trust is more than the sense of risk. However the browsing behavior where purchase does not happen implies that the consumer is still critical about the adoption of m-commerce for one or more reasons.

The factors have been further divided into certain parameters for measurement. These factors have been developed through a pilot survey upon interaction with some of the respondents for the survey. These are described as given below:

3.2.1 Personal Factors

Personal factors are the factors which vary from person to person. The main variables identified in this category are

1. Age
2. Income
3. Education

Age, Income level and Education are predominant factors in the study of the behavior of the consumers.

3.2.2 Psychological Factors

The main variables identified in this category are :

1. Motive - A motive can be defined as a need in a person's desires to achieve an outcome. A set of motives affect actions, not just one. There may be multiple factors which encourages a person to use a technology.

2. Perception – Perception is how we see and form notions about the things around us. Our brain does selective retention of all the facts that it captures , organizes it and make sense out of it. Anything that is perceived through the senses can be termed as an input to form a perception

3. Ability and Knowledge —The use of a technology is to a great extent dependent on how fast the customer is in adopting the new processes and techniques used to learn to use it. An individuals' capacity to learn is basically the ability to learn. This is an important factor. Because with the increase of facts in the

database of the consumer, his notion towards a product changes. Hence, even if the firm provides the facts but due to complex technology or the inability of the consumer to use the technology, the information dissipation can be affected in a negative way. Also the main intent of m-commerce is that it provides convenience and saves time. To be able to use M-Commerce one needs to know the know-how of operating gadgets, the ability to do so also counts in the knowledge

3.2.3 Social Factors

Man is a social animal. His views and notions are developed to some extent on the basis of the society he belongs to. This is because of the interaction with the external environment. It depicts mainly how important is the role of word of mouth in the success of a product. It also depicts the credibility that an individual pays to social relationships. It also The main variables identified in this category are :

1. Customer reviews
2. Brand value
3. Recommendation from friends and family

Most of the times it has been seen that an individual would go through the reviews of a product by the other customers who have already used it.Thus Customer reviews is in other words Word of Mouth. Brand Value depicts the credibility of the Brand in the eyes of the customer – that the brand fulfills the need of the customer in a way that satisfaction is achieved. Recommendations from Friends and Family also cites the importance of word of mouth, and that unconsciously sometimes a person takes to using a product just because it was recommended by a credible source – Family or Friends

3.2.4 Market Offerings

This factor mainly denotes exactly the benefits that the M-Commerce Platform offers in comparison with the traditional forms of commerce. However for our purpose we have identified that mobile apps are the driving force in the sales for M-Commerce. So the main factors that the market injects into the target market to install an app is mainly depicted by this parameter.

The main variables identified in this category are

1. Discounts
2. Product variety

Discounts are the one time offs that a firm offers to the customers to encourage the installation of an app. The most recent example of this trend can be seen in the discounts provided by UBER and GOIBIBO upon installation of their app on the smartphones of the customers. Product Variety denotes the accessibility to the variety of the products through the M-Commerce domain giving the consumer an easy way out to compare the products as well.

3.3 Browsing Behavior

Browsing behavior can be typically segmented into two types – one that aids in information processing – i.e. finding different alternatives for the same product, comparing their prices and finally walking into a store for the purchase. The other one basically leads to lead generation or sales after information processing.

3.4 Element of Trust in Consumer Behavior for M-Commerce

The trust factor denotes that the consumer has firm faith that the services shall be delivered as promised and assured. Zucker developed three types of Trust Production Mechanisms which Luo subsequently extended in ecommerce.

First, *Brand-based trust* relies on similarities between consumers and companies in order to establish trust (e.g., similar sex, ethnicity, or affiliations)

Second, *Process-based trust* refers to trust that is built through a history of past transactions. Luo describes it as a form of gift-giving and sharing of information that is especially important in the business-to-business (B2B) world [8]. For example, companies often create and distribute 'white papers' to promote their company [8].

Third, *institutional-based trust* is deliberately intended to build trust in the holder's ability, integrity and intentions [2]. This is done through third party guarantors such as universities with certified education, associations with professional conduct standards, and medical and law licenses to guarantee ethical practice [2, 8].

3.5 Perception of Risks

Risk denotes the probability that the consumer might not avail the services as expected or as promised. It could entail different kind of mishaps like wrong order delivery, late delivery, product delivered not the same as shown, transaction committed i.e. money transferred from consumers account but due to poor internet connectivity the transaction could not be committed which may result in poor consumer experience, security concerns of paying online.

CHAPTER 4

QUESTIONNAIRE & DATA COLLECTION TOOLS

4.1 Questionnaire

A cross- sectional survey has been employed for this purpose. The survey duration was a period of three weeks in April, 2015. English had been the language which had been used for this purpose after the identification of the many factors that actually influenced the Consumer Buying Behavior in M-Commerce. Most of the questions were close-ended. It comprised mainly of objective questions like age and education level. Also Likhert Scale has been used to rate the parameters as per the perception of the customers. Utmost care has been taken to remove any kind of ambiguity in the questions. This also involved explaining certain terms in a nutshell in the questionnaire itself about which the consumer might not be aware of, just to ensure that the clarity of the question is not compromised on. Thereafter the questionnaire was floated through various social media sites like Facebook, Gmail and LinkedIn.

A social media toll: Facebook has been used to administer the questionnaire via a web link. It has targeted the researcher's own personal network that consists of friends and colleagues. The same set of questions are answered by respondents ina fixed order in the absence of any interviewer. Hence it is called a self administered questionnaire.

For this purpose a detailed questionnaire has been developed touching all the aspects of the model as cited below:

Personal Factors

Age
Gender
Income
Occupation
Education

These factors were captured in the question numbers 1 to 5 of the survey

Social Factors

Rate how has these factors influenced you to use Mobile apps on a 5 point scale

Customer reviews
Brand value
Recommendation from friends and family

The responses to the Social Factor was captured via Question number 6 of the survey

Psychological Factors

Motives

How extensively do you use the features of mobile apps

a)Use app's notification feature about special offers, new services, promotional features

b)Use app's location features –GPS Directions

c)Use apps product list, video/shopping feature

d)Providing feedback

e)Use one touch call and Directory feature

f)Tell a friend

g) Shopping Cart feature

h) Loyalty rewards based on the number of visits

Motive of the use of M-Commerce was captured through Question number 7 of the survey.

Perception

I prefer mobile apps because

a) Covers wide distance
b) Consumer Deals
c) Saves time
d) Saves money
e) Easy Connectivity

Perception of the Use of M-Commerce in the minds of the Customer was captured through the Question number 8 of the survey.

Ability & Knowledge

Rate the following on a 5 point scale

a) I am tech savvy
b) I can easily learn to operate new apps
c) I am an early adopter incase of new apps

Ability & Knowledge of the consumers to adapt to M-Commerce Technology , in general new Technologies has been captured through Question number

Market Offerings

Rate on a 5 point scale to what extent these factors motivated you to install a mobile app on your smartphone?

a) Product Variety
b) Discounts

Market Offerings has been captured in the Question number 9 of the survey.

Browsing Behavior

I spend _____ time regularly on mobile apps

I spend_____ money on an average a month to shop via mobile apps

I use mobile apps only for information processing rather than actually buying through the apps

Browsing Behavior has been captured through the questions - Question number 10 to Question number 12 of the survey.

Perception of Trust

Rate the degree of Brand Based Trust on the mobile apps on a 5 point scale (say I use Flipkarts app because Flipkart is a good brand)

Rate the Process-Based Trust of your favorite app on a 5 point scale(say my favourite app is Flipkart, hence I have trust on the processes adopted by Flipkart to deliver the services and products)

Perception of Trust has been captured through the responses to the questions – Question number 13 and 14 of the survey.

Perception of Risks

Rate on a 5 point scale how the following risks affect you while purchasing through mobile apps

a) Wrong order delivery

b) Late delivery,

c) Product delivered not the same as shown

d) Transaction not committed i.e. money transferred from consumers account but due to poor internet connectivity the transaction could not be committed which may result in poor consumer experience

e) Security concerns of paying online

Perception of Risk has been captured via the question number 15 of the survey.

4.2 DATA COLLECTION TOOLS USED

Out of the many sampling techniques available, Convenience Sampling has been used for this purpose. Basically being a non-probability sampling technique, it involves the sample being drawn at convenience. It is one of the most convenient method of sampling because it saves time and effort in choosing the samples. The data collection for this study has been mainly done through Google Forms. The survey was live for 3 weeks through various social media network like Facebook and Gmail. A random sampling technique was thus used in selecting the respondents for the survey. The total number of respondents for this survey stands at 58 which is the actual usable responses.

CHAPTER 5

ANALYSIS

5.1 Data Pre-Processing

Before representing the data, data pre-processing has been done to make the data suitable for our purpose removing the outliers and taking care of the missing data aspects.

The steps in data pre-processing included:

Step 1: Data Cleaning

The data that is received immediately after the survey can never be trusted upon. More so, because of the many errors it may contain. For this purpose Data needs to be cleaned to avoid Garbage in, Garbage out. In this process extraneous characters and missing data has been taken care of for further processing.

Step 2: Data Processing

The data processing mainly comprises of recoding the data into such format that makes analysis easy. An apt example would be to recode the values of a Likhert Scale into quantitative terms so that the quantitative aspects of the data can be analyzed.

Step 3: Useful Analysis Ready Data

Final dataset was copied from interim data worksheet to the final worksheet. The final data set had 58 records which were completely answered by respondents.

5.2 Main Tools Used

The main tools that had been used for the purpose of analysis have been **Excel and SPSS**.

5.2.1 SPSS

SPSS stands for Statistical Package for Social Sciences.

SPSS is a tool used for statistical analysis and solutions for data management. SPSS is a tool which can take in data in any form and provide pictorial solutions like bar charts, scatter plot, pie charts to make comprehension easy for the purpose of analysis. Apart from the basic statistics it is one of the tool that is used for Hypothesis Testing.

5.2.2 EXCEL

Apart from SPSS, **Excel** has been used. Mostly the data has been represented in the form of charts. The two types of charts used for this purpose comprised of Pie Charts and Bar Charts.

Pie Charts

A pie chart is a graphical chart in the form of a pie which depicts the many components of a pie – it mainly shows the different proportions of a data set assuming the whole pie as a perfect hundred percent. The larger the angle subtended at the center the greater the share of that component.

Bar Charts

A bar chart is a chart that uses bars on X- axis or Y-axis to represent a quantity represented by a variable. The bar chart is a convenient form of representation since it facilitates easy comparison amidst the different values of a variable – say the growth of rice in the different years say 2012, 2013, 2014 and 2015. The values presented would explicitly show the differences in the values.

5.3 Frequency Analysis

A preliminary frequency analysis has been done to understand the characteristics of the data obtained. The survey details as per the frequency analysis are presented here in the pictorial forms.

5.3.1 Personal Factors

Age

The survey respondents belong to the following age group 23-28 years of age. The mean age for the respondents stand at 25 years of age.

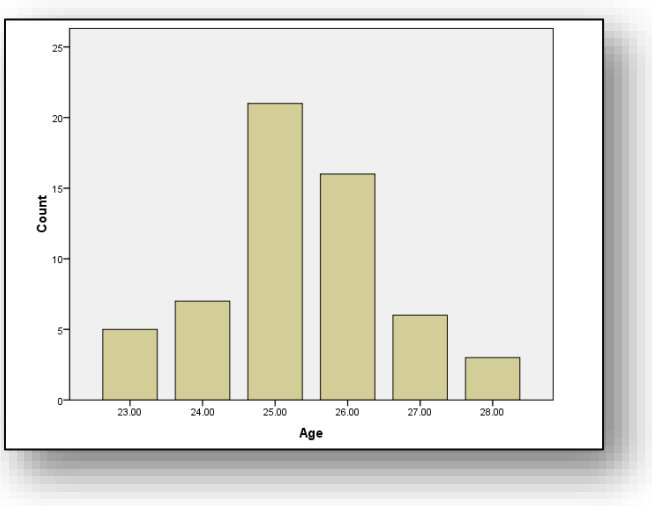


Figure 5.1 Age Distribution

Gender

The gender proportion of the survey respondents stands as depicted by the chart shown below:

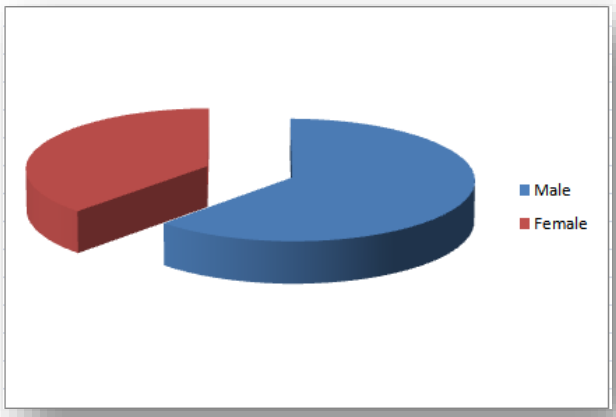


Figure 5.2 Gender Distribution

Male: 62%

Female: 38%

This survey study can in general give an insight into the behavior of male gender which is generally perceived to be gadget freaks since m-commerce is basically al about technology. Also the adoption and intention of use for the female gender can also be studied.

Income Distribution

The income distribution of the respondents has been divided into the following categories:

Table 5.1 Income Distribution

Monthly Income	Frequency

0-15K	31
15-30K	4
30-45K	6
Above 45K	17

The frequency distribution represents the data cited in the form of bar graphs as below:

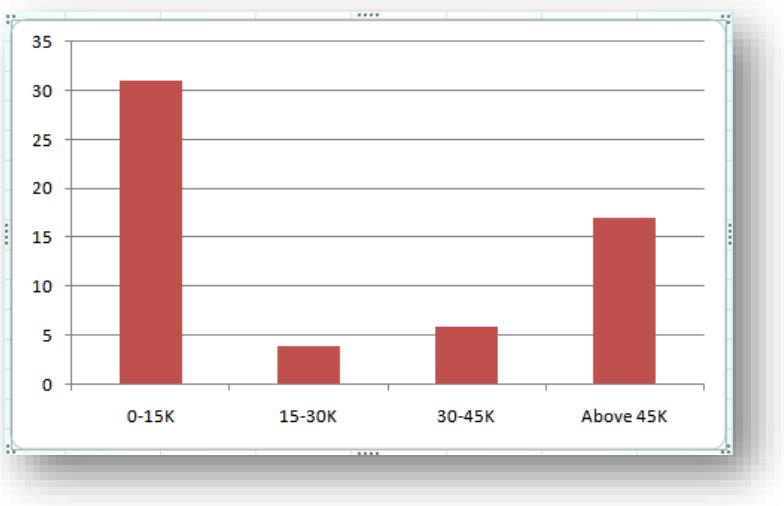


Figure 5.3 Income Distribution

The frequency distribution clearly shows that most of the respondents fall into 0-15k income bracket whereas there also exists respondents in the above 45k bracket.

Occupation

The respondents of this survey mainly belong to mainly the following classes of occupation:

Table 5.2 Occupation Distribution

Occupation	Frequency
Business	3
IT professional	12
Manager	12
Student	31

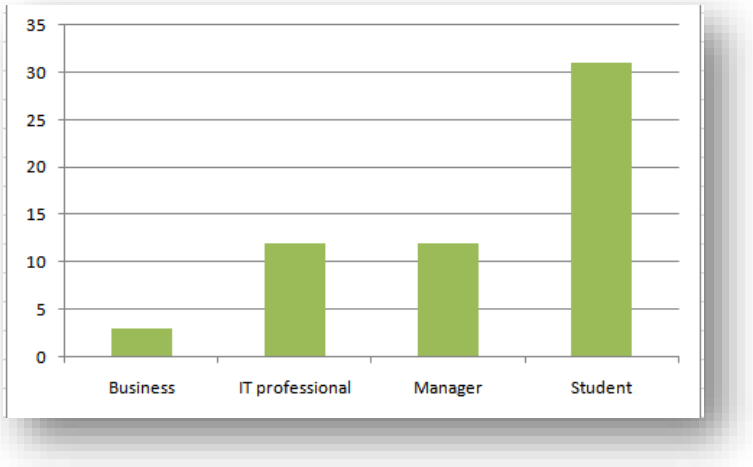


Figure 5.4 Occupation Distribution

As evident most of the respondents belong to the student category. However the other two types of dominant respondents in this survey are the IT Professionals as well as the Managers.

Education Level

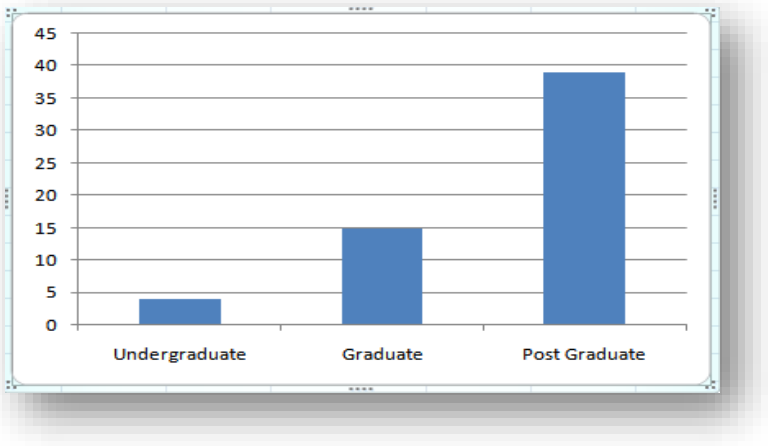


Figure 5.5 Distribution of Education Level

This data shows a bit of anomaly in the sense that if there is more number of Post Graduates then the income distribution of the respondents should have been favorably higher. However a closer look into the data has revealed that most of the respondents who have identified themselves as students are either undergraduates or pursuing Post Graduation. Also the Managers have marked themselves as Post Graduates.

5.3.2 Social Influence

The variable Social Influence has been studied under the following three parameters namely Customer Reviews, Brand Value and Recommendations from Friends and Family. The respondents were asked to rate these three parameters on a likhert scale of 5 point scale ranging from Highly Disagree to Highly Agree. As expected it has been seen that most of the respondents are actually influenced by these there parameters, validating that Social Influence has a lot to do with building the perception and adoption of M-commerce.

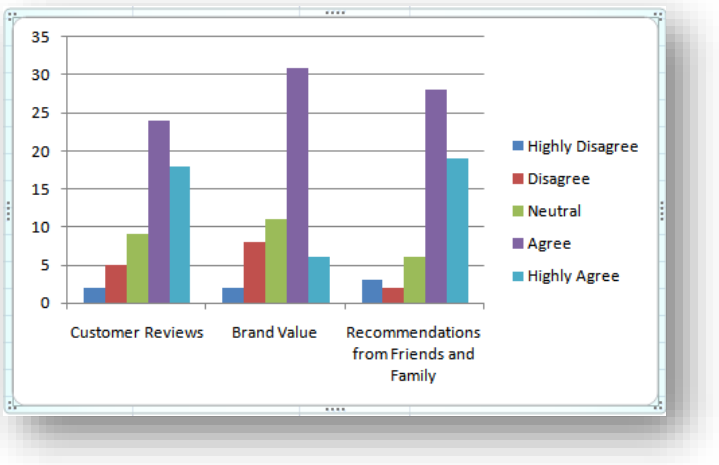


Figure 5.6 Impact of Social Influence

5.3.3 Psychological Factors

The Psychological factors primarily concentrate on the perception of the use of M-Commerce by the respondents. The Psychological factors are being measured by the following parameters – Perception of Use, Motive of Use and Attitude towards learning to use new technology.

Perception of Use

It has been depicted as seen by the following chart:

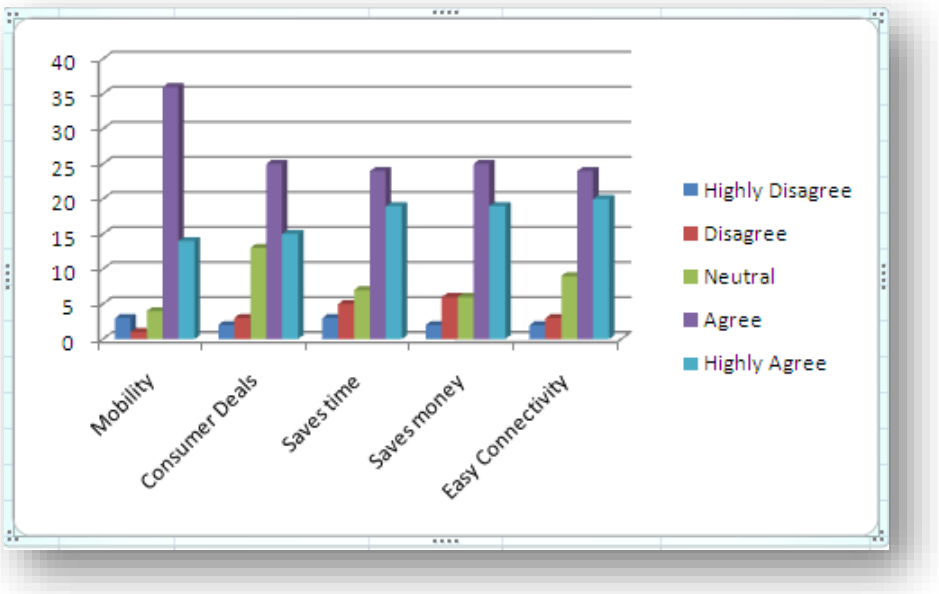


Figure 5.7 Perception of the Use of M-Commerce in the Consumers

Table 5.3 Frequency Distribution of Perception of the Use of M-Commerce in the Consumers

	Mobility	Consumer Deals	Saves time	Saves money	Easy Connectivity
Highly Disagree	3	2	3	2	2
Disagree	1	3	5	6	3
Neutral	4	13	7	6	9
Agree	36	25	24	25	24
Highly Agree	14	15	19	19	20

As seen, the factors like Consumer Deals, Easy connectivity, M-Commerce saves Time, saves Money play a major role in encouraging the consumers to use M-Commerce. However, the interesting observation is that mobility plays the strongest role in the use of M-Commerce.

Motive of Use

The diagram below shows the motive of use of mobile apps which are the main instruments in the forging M-Commerce. The motive of use of mobile apps can show us the extent to which M-Commerce is actually influenced by Mobile Apps.

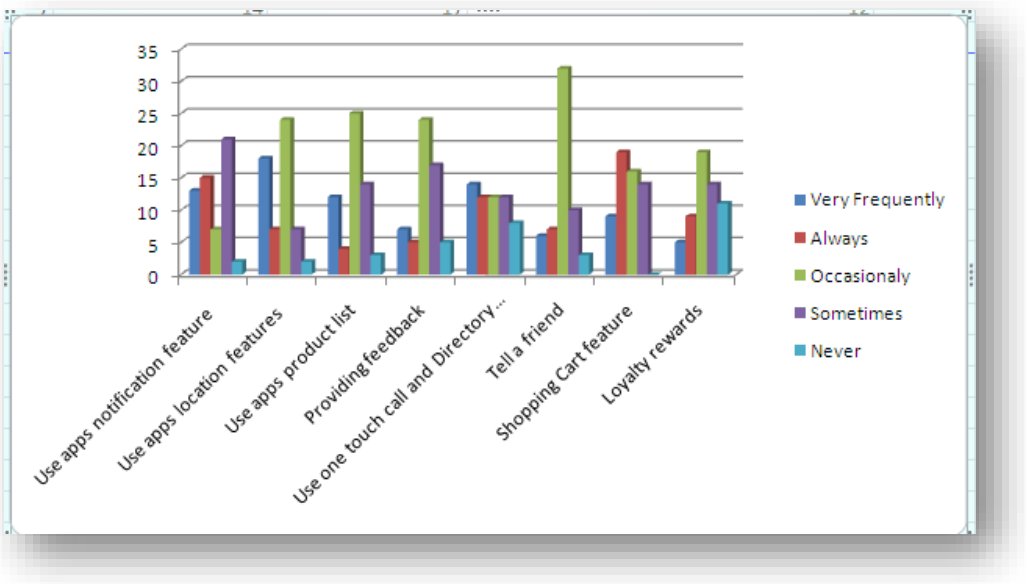


Figure 5.8 Motive of Use of M-Commerce by the Consumers

Attitude towards learning new Technology

Attitude towards learning new technology seems pertinent in adopting new technologies. In this survey respondent set, we can see that most of the respondents who are gadget freaks are good at learning to use new apps and are also early adaptors of new apps. This seems in sync with the demographics we have obtained earlier where most of the respondents are IT Professionals and Managers. A close look at the dataset reveals that most of the students pursuing Post Graduation also contribute to these results.

Table 5.4 Attitude of Consumers Towards Learning New Technology

	Tech-Savvy	Attitude to learn to use new apps	Early adoption of new apps
Highly Disagree	2	3	3
Disagree	6	0	6
Neutral	18	6	19
Agree	18	25	14
Highly Agree	14	24	16

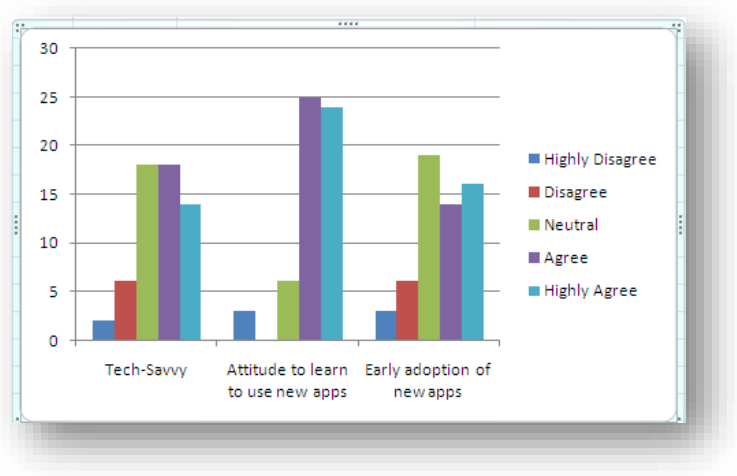


Figure 5.9 Attitude of the Consumers to Learn New Technology

5.3.4 Market Offerings Factor

The Market Factors in terms of M-Commerce has been mainly revolving around Mobile Apps. Now one of the interest of this study is to see what motivates the respondents to install a mobile app on their handsets which is actually a major agent in driving sales in M-Commerce .So this variable has been mainly scaled down into two parameters – Discounts & Product Variety offered by the M-Commerce in comparison with the mom and pop stores. The respondents were asked to rate on a 5 point scale how these factors had influenced them to install a mobile app on their handsets. As seen by the results depicted in the table and the graph below it is pretty evident that most of the mobile apps

are installed by the respondents due to the Discounts and the Product Variety offered by them.

Table 5.5 Impact of Market Offerings on Consumers

	Discounts	Product Variety
Highly Disagree	2	2
Disagree	12	0
Neutral	11	7
Agree	23	28
Highly Agree	18	9

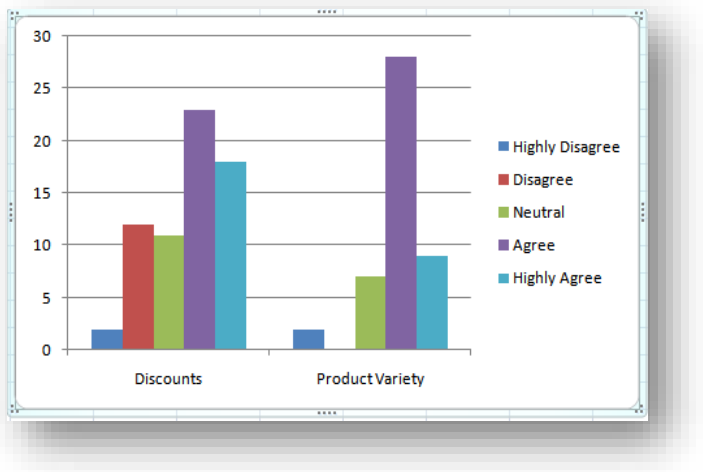


Figure 5.10 Impact of Market Offerings

5.3.5 Browsing Behavior

The Browsing Behavior has been identified into two categories – one that leads to generation of sales and the other that leads to the information processing about the available goods in the market to find the best alternative after comparing prices. Now results show that exactly 50% of the respondents actually buy through M-Commerce and exactly 50% of the respondents use M-Commerce only for information processing.

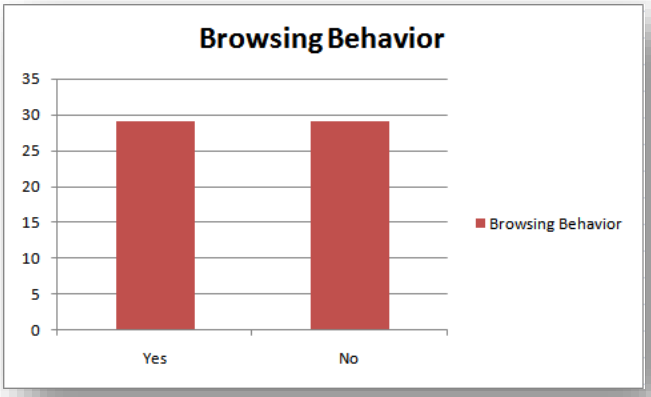


Figure 5.11 Browsing Behavior Exhibited by Consumers

Regular Hours Spent

The Browsing Behavior has been also captured by the factor – The time spent by the respondents regularly on the mobile apps. As shown below most of the respondents spend up to 2 hours regularly on the mobile apps.

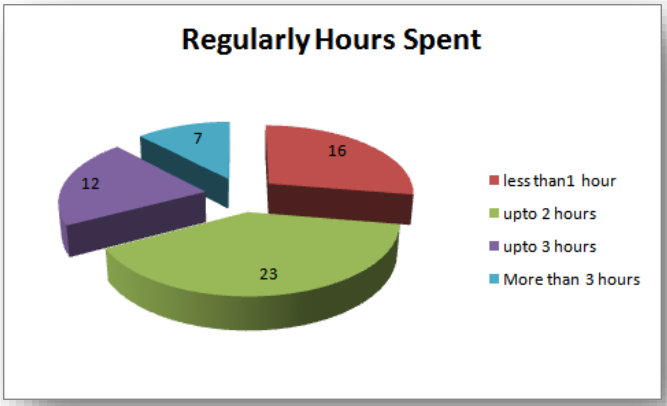


Figure 5.12 Regular Hours Spent on M-Commerce Devices

Monthly Expenditure

Monthly Expenditure shows the actual sales driven by M-Commerce. It has been seen that as per the Browsing Behavior of the respondents where by 50% of the respondents actually preferred buying through M-Commerce, approximately 50% of the respondents spent 0k-1k monthly on buying through mobile apps/M-Commerce.

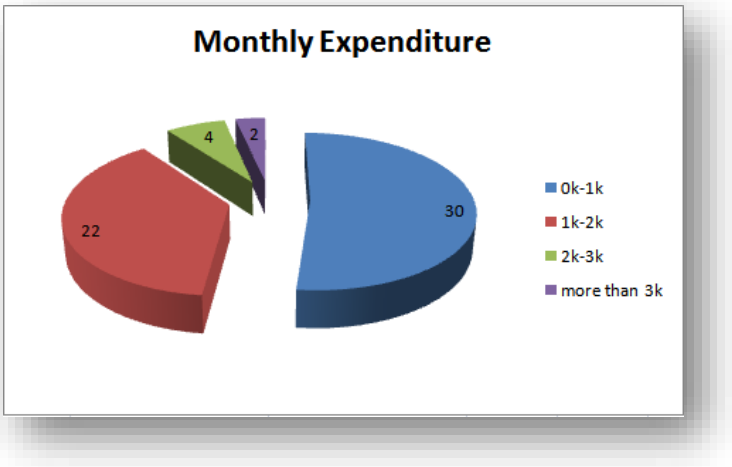


Figure 5.13 Monthly Expenditure through M-Commerce

5.3.6 Degree of Trust

The Browsing Behavior where the respondents believe in buying through the apps on M-Commerce have definitely some amount of trust on the M-Commerce Technology. So the Trust element has been an element of interest in this study. The Trust has been broadly categorized into two types – Brand Based Trust and Process Based Trust. As seen from the results below we can infer that most of the respondents agree that the processes followed by an organization are of immense importance and so also the Brand plays an important role in building the trust of the respondents.

Table 5.6 Degree of Trust

	Brand-Based Trust	Process Based Trust

Highly Disagree		3
Disagree	5	6
Neutral	15	16
Agree	22	29
Highly Agree	12	4

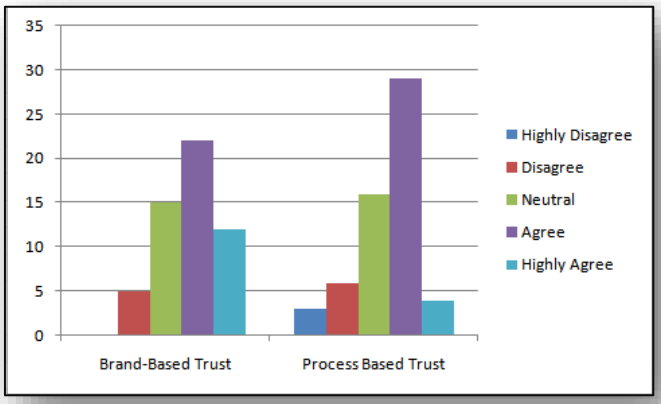


Figure 5.14 Degree of Trust

5.3.7 Perception of Risk

Where there exists Trust element, there definitely exists a sense of risk element. It is a popular notion that with a sense of trust, the sense of risk lowers down. Hence, the risks in this study has been quantified through a 5 point Likhert Scale whereby the respondents were asked to rate the factors which actually seemed like as a deterrent for not adopting M-Commerce for the final purchase. As per the results the most endangering fear most of the respondents fear has been found to be the fear of

Transaction not being committed and the fear that the Product Delivered is not the same as shown on the app.

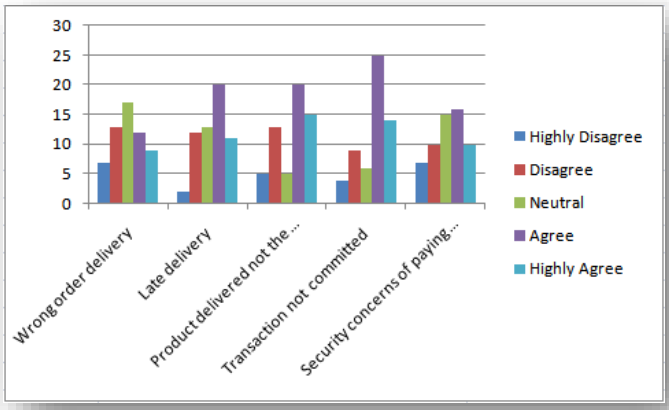


Figure 5.15 Perception of Risks

From all these observations, we have till now seen the characteristics of the respondents – the demographics and the fact that the four factors Personal, Social, Psychological and Market Factors play a significant impact to encourage the respondents to use M-Commerce. However there remains a sense of Risks and Trust displayed through the Browsing Behavior. Hence in this study we have tried to see if the four factors actually play a role in Risk Analysis done by the respondents.

5.4 Statistical Measures Used

In this study we have mainly used Regression and Correlation to validate our findings statistically.

5.4.1 Correlation

The Pearson's correlation coefficient is one of the factors that depict the strength of a relationship of a factor to some other factor. Examples of Correlation can be the study of any relationship between marks secured and the gender, between marks secured and the tuition facilities available for the kids, the income of a household and the expenditure that it does in a month. Correlation finds such subtle relationships. Scatter plot can most often predict if there exists a correlation between the variables.

There exist certain pre-requisites before Correlation is applied to a dataset or the variables. The assumptions that are necessary to be fulfilled are as follows :

1. The variables should be continuous. They should be either ratio scaled or interval scaled.
2. A linear relationship between the variables is inevitable for such a test to be applicable. This can be tested through a scatter plot which can easily tell us whether a inear relationship exists between the variables or not.
3. The correlation formula is an algebra derived distance based formula. Hence Outliers need to be removed for effective measurement of correlation. Also a single outlier can affect the outcome to a great extent. Hence it is necessary to screen the dataset from the outliers.

5.4.2 Regression

Linear Regression is the method of formulating a quantitative relationship between the variables of our study. This is especially helpful in predictive modeling. For example this kind of regression is used for the purpose of Demand Planning, Forecasting the demand for a manufacturing firm, Supply planning. Hence linear regression can be helpful in predicting the future and cutting down on the losses. However for our purpose we have used Multiple Linear Regression.

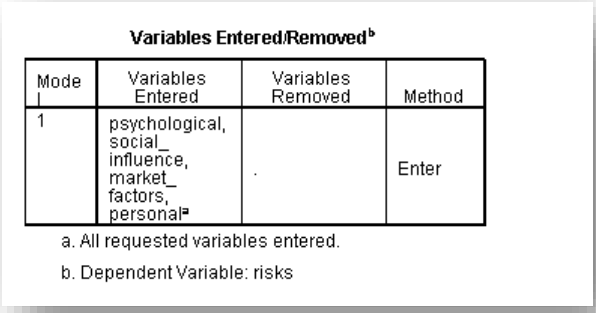
5.5 Statistical Tests Done

5.5.1 Multiple Regression Between Risk Analysis and the Four Independent Factors

We have applied multiple regression on the four factors – Personal, Social, Psychological and Market Factors to find its effect on Risk Analysis. Hence in this test,

Dependent Variable: Risk Analysis

Independent Variables: Personal, Social, Psychological and Market Factors.



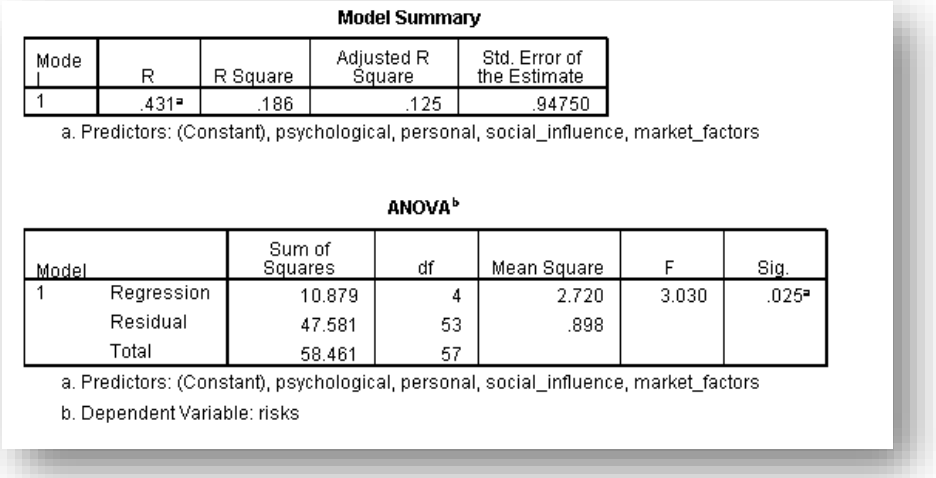
Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	psychological, social_ influence, market_ factors, personal[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: risks

Figure 5.16 Variables for regression on Risk Analysis



Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431[a]	.186	.125	.94750

a. Predictors: (Constant), psychological, personal, social_influence, market_factors

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.879	4	2.720	3.030	.025[a]
	Residual	47.581	53	.898		
	Total	58.461	57			

a. Predictors: (Constant), psychological, personal, social_influence, market_factors

b. Dependent Variable: risks

Figure 5.17 Model Summary for Regression on Risk Analysis

The Model Summary states that the factors explain 43% quality in the level of prediction for the dependent variable. The *F*-ratio test alongwith the significance value shows that the regression model is a good fit for the data.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.302	1.140		2.019	.049
	market_factors	.037	.176	.027	.208	.836
	social_influence	.314	.153	.260	2.051	.045
	personal	-.600	.264	-.295	-2.273	.027
	psychological	.244	.158	.195	1.549	.127

a. Dependent Variable: risks

Figure 5.18 Regression Analysis for Risk Analysis

From the data we can formulate the regression equation for Risk Analysis from the four factors i.e.

Risk Analysis = 2.302 +0.045XSocial_Influence -0.600 x Personal Factors.

This equation has been formed on the basis of the significance values. Only those variables have been taken into consideration whose p values are less than 0.05

5.5.2 Correlation between Sales and Perception of Risk

Correlations

		sales	risks
sales	Pearson Correlation	1	-.356**
	Sig. (2-tailed)		.006
	N	58	58
risks	Pearson Correlation	-.356**	1
	Sig. (2-tailed)	.006	
	N	58	58

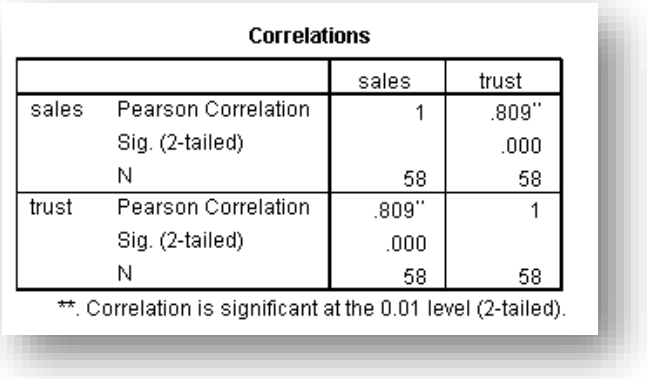
**. Correlation is significant at the 0.01 level (2-tailed).

Figure 5.19 Correlation between Sales and Perception of Risks

Interpretation

There is a negative correlation between Sales and Risks, which is statistically significant (r = -.356, n = 58, p < .05).

5.5.3 Correlation between Sales and Degree of Trust



Correlations

		sales	trust
sales	Pearson Correlation	1	.809**
	Sig. (2-tailed)		.000
	N	58	58
trust	Pearson Correlation	.809**	1
	Sig. (2-tailed)	.000	
	N	58	58

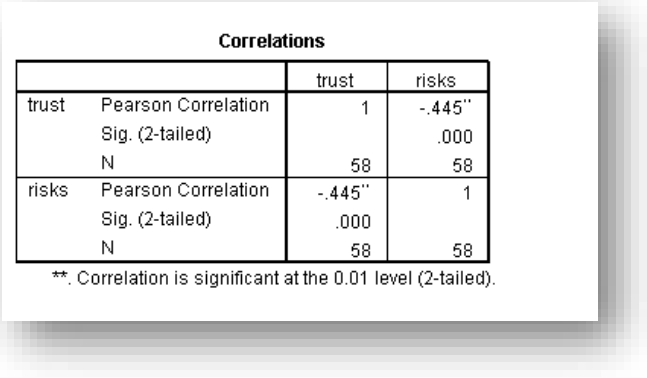
**. Correlation is significant at the 0.01 level (2-tailed).

Figure 5.20 Correlation between Sales and Degree of Trust

Interpretation

Sales and Trust are positively correlated. The results are statistically significant and has not occurred by chance (r = .809, n = 58, p < .05).

5.5.4 Correlation between Degree of Trust and Perception of Risk



Correlations

		trust	risks
trust	Pearson Correlation	1	-.445**
	Sig. (2-tailed)		.000
	N	58	58
risks	Pearson Correlation	-.445**	1
	Sig. (2-tailed)	.000	
	N	58	58

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 5.21 Correlation between Degree of Trust and Perception of Risks

Interpretation

There is a negative correlation between Risks and Trust, which is statistically significant (r = -.445, n = 58, p < .05).

5.5.5 Multiple Regression between Sales, Degree of Trust and Perception of Risks

Linear Regression is a type of quantitative model which depicts the relationship between two variables. However, in the practical sense, it is very less likely that such a situation would occur. Most of the variables in the real world are actually affected by many variables simultaneously. In such a case there exists a single dependent variable and multiple independent variables. Frequency of Online Shopping can be predicted based on the monthly income, gender, and age. Hence Multiple Regression is used for the purpose to solve such a situation. For example in this study we wanted to study the simultaneous effect of trust and risk on sales. For this purpose thus we have used Multiple Regression.

Interpretation

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	trust, risks[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: sales

Figure 5.22 Variables for Regression on Predicted Sales

As shown the Sales is the dependent variable, whereas the independent variables are Trust and Risks

Determining how well the model fits

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.809[a]	.654	.641	501.44515

a. Predictors: (Constant), trust, risks

Figure 5.23 Model Summary for Regression on Predicted Sales

The Model Summary table is the first table of interest. This values of R, R^2, adjusted R^2, and the standard error of the estimate, determines the effectiveness of the regression model. The R value represents the Correlation Coefficient which depicts the extent of relationship between the variables – the independent variables and the dependent variable. A value of 0.809, gives strong relationship between the variables. The "R Square" value represents the proportion of variance of the dependent variable on account of the independent variables used in the test. A value of 0.654 depicts that 65.4% of the variances in the values of the dependent variable is actually explained by the assumed independent variables.

Statistical Interpretation

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.615E7	2	1.307E7	51.995	.000[a]
	Residual	1.383E7	55	251447.243		
	Total	3.998E7	57			

a. Predictors: (Constant), trust, risks

b. Dependent Variable: sales

Figure 5.24 Model of fit

The table shows that the independent variables are statistically significant and the regression model is actually fit for our purpose, $F(2, 55) = 51.995$, $p < .05$

Estimated Model Coefficients

The regression equation to predict Sales from Trust and Risks, is:

Predicted Sales = 521 + 84.4 x Trust

This is obtained from the **Coefficients** table, as shown below:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	521.040	331.541		1.572	.122	-143.383	1185.463
	risks	.667	14.645	.004	.046	.964	-28.682	30.017
	trust	84.480	9.229	.811	9.154	.000	65.984	102.976

a. Dependent Variable: sales

Figure 5.25 Regression Analysis for Sales

The Independent Variables - Interpretation

The statistical significance of each of the independent variables can be tested. As we can see that the independent variable Trust seems to be statistically significant for predicting the sales variable where p value < .05.However the Risk factor doesn't seem to be statistically significant since the p value is 0.964 which is actually more than .05. Hence in predicting the regression equation for Sales, the Risk component doesn't appear in the regression equation.

5.6 CASE STUDY ANALYSIS OF M-Commerce Operations of FLIPKART

Flipkart is one of the E-Commerce firms which has also started operating through M-Commerce. It is majorly through the mobile app of it that flipkart has started its operations through M-Commerce. As a matter of fact 70% of the online shopping is supposed to be generated by M-Commerce. Snapdeal , one of the competitors of Flipkart stated that 50% of its transactions came from mobile based operations.

Flipkart is currently busy getting an edge over the only competitor that has the resources and knowledge to put a dent in their growth – Amazon India. Even though Flipkart is one of the largest eCommerce companies in the country, there are significant threats to its growth over the next few years. However, this does not mean that the future is bleak. In fact, Flipkart may have some very good tricks up its sleeve when it comes to innovating for the future.

Firstly, the company is very well capitalized. It has raised a total of $560 million since its inception. This shows that its investors really believe in the vision of Flipkart and its capability. Over last year, the company has successfully transitioned from a inventory based model to a marketplace model. The company says that it has registered around 1000 merchants on its marketplace platform so far but wants to have lakhs of them in the future. Online sellers are thus a crucial part of its growth strategy. While 1000 merchants may not be much, Flipkart's relentless commitment to technology and customer satisfaction may result in many new features which may compel more merchants to join. Flipkart has also launched Pay zippy, its own payment gateway which doubles up as a online wallet for customers. Finally, they have also started their premium delivery service which costs Rs.90 per item.

Recently in an interview at UnPluggd, Sachin Bansal said that Flipkart will become an m-commerce company in the next 2-3 years. He says that there is compelling evidence that most Indians will use their phones to shop for products very soon. It is already happening and not many companies are paying attention to this trend, even though data

has shown that this might happen. Flipkart has been paying attention to this. Recently, they launched their native apps for iOS and Android. These apps make it extremely easy to find and compare products in addition to a smooth shopping and transaction experience.

The fact that the brand has built a very strong Brand Image with good User Interface, Faster Order Processing, Faster Delivery has gone a long way to improve the trust of the customers. Once the trust has been built, Flipkart has been innovating itself through various ways to keep the customers trust intact – like the refunding policies of the company if the product is damaged, customers can track their products online through the various phases for delivery, the efficient call services for attention to detail, grievance redressal. All of it has reduced the risks that are apparently a cause of concern for the customers. The Brand Equity of Flipkart can also be attributed to the fact that it has earned a lot of reputation through the Word of Mouth – Social Influence. If we look into the young community of mobile users, we can find that the word of mouth has gone a long way to encourage a user to download a mobile app.

M-Commerce is here to stay. Speculations are rife that Flipkart may also close down their website for ever, and enable only mobile app purchase. Few days back, Flipkart's founder had stated that India is no more a 'mobile centric' country, but has become a 'mobile only' nation..

CHAPTER 6

CONCLUSION & LIMITATIONS

6.1 Conclusions

The conclusions from this study are as follows:

1. Out of the four factors (Personal, Social, Psychological and Market Factors) which were considered to influence the Perception of Risk in M-Commerce, only two factors viz Social Influence and Personal Factors are predominant in the formulation of the perception of Risk in M-Commerce
2. There exists a strong positive correlation between Sales & Trust Factor
3. There exists a negative correlation between Sales & the Perception of Risk Factor
4. There exists a negative correlation between Trust Factor and the Perception of Risk Factor
5. In the formulation of Regression equation for Sales, Trust is the vital factor

6.2 Limitations

The limitation of this study is that this study mainly deals with the age group of 23-28. Most of the respondents of this survey are students. Also most of the respondents are Tech-Savvy and are good and fast in adopting new technologies. Hence the study could not majorly capture the perception and degree of Risk and Trust of a wider range of age – group

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ANNEXURE

Consumer Behavior in M-Commerce

A study for the Curriculum Dissertation

* Required

Age *

Sex *

- Male
- Female

Monthly Income *

- 0-15k
- 15-30k
- 30-45k
- Above 45K

Occupation *

Education *

- Undergraduate
- Graduate
- Post Graduate

Rate how has these factors influenced you to use Mobile apps on a 5 point scale from Highly Disagree to Highly Agree *

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Customer Reviews					
Brand Value					
Recommendations from Friends and Family					

How extensively do you use the features of mobile apps *

	Very Frequently	Always	Occasionaly	Sometimes	Never
Use app's notification feature about special offers,new services, promotional features					
Use app's location features –GPS Directions					
Use apps product list, video/shopping feature					
Providing feedback					
Use one touch call and Directory feature					
Tell a friend					
Shopping Cart feature					
Loyalty rewards based on the number of visits					

Rate these factors on why do you prefer to use Mobile apps on a 5 point scale from Highly Disagree to Highly Agree *

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Covers wide distance , mobility					
Consumer Deals					
Saves time					
Saves money					
Easy Connectivity					

Rate yourself on the following parameters *

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
I am tech savvy	○	○	○	○	○
I can easily learn to operate new apps	○	○	○	○	○
I am an early adaptor of new apps	○	○	○	○	○

Rate on a 5 point scale how these factors have influenced you to install a mobile app *

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Discounts	○	○	○	○	○
Product Variety	○	○	○	○	○

Rate the degree of Brand Based Trust on the mobile apps on a 5 point scale (say I use Flipkarts app because Flipkart is a good brand) *

- Highly Disagree
- Disagree
- Neutral
- Agree
- Highly Agree

Rate the degree of Process-Based Trust of your favourite app on a 5 point scale(say my favourite app is Flipkart, hence I have trust on the processes adopted by Flipkart to deliver the services and products) *

- Highly Disagree
- Disagree
- Neutral
- Agree
- Highly Agree

I spend _____ hours regularly on mobile apps *

- less than1 hour
- upto 2 hours
- upto 3 hours
- More than 3 hours

I spend_____ money on an average a month to shop via mobile apps *

- 0k - 1k
- 1k - 2k
- 2k - 3k
- more than 3k

I use mobile apps only for information processing to find the alternatives rather than actually buying through the apps *

- Yes
- No

Rate on a 5 point scale how the following risks affect you while purchasing through mobile apps *

	Highly Disagree	Disagree	Neutral	Agree	Highly Agree
Wrong order delivery	○	○	○	○	○
Late delivery	○	○	○	○	○
Product delivered not the same as shown	○	○	○	○	○
Transaction not committed i.e. money transferred from consumers account but due to poor internet connectivity the transaction could not be committed which may result in poor consumer experience	○	○	○	○	○
Security concerns of paying online	○	○	○	○	○

Submit

Never submit passwords through Google Forms.