



Study to Analyze the Effect of Online Reviews and Smart Phone Buying Behaviour of Customers

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ABSTRACT: Consumer behaviour towards mobile phones is increasingly becoming a focus of marketing research. In particular, consumer buying behaviour in the mobile phones industry, and online reviews of the existing customers from adoption motivation to post-usage behaviour has become a significant focus of research in the field of marketing. The results of the research confirm that online reviews play a vital role and influence consumer behaviour towards mobile phone purchase decisions by affecting their perception, motivation, and lifestyle. India is one of the fastest-growing economies in the world, and the mobile phone industry is growing very fast. For consumers, mobile phones have become essential parts of personal and business life. There is a continuous increase in disposable income; there has been a major shift in the attitude and aspirations of consumers. This research analyses the influence of online reviews and buying behaviour in mobile phone purchases. The recent growth of mobile phone usage is an observable fact that crosses all age and gender boundaries. Hence, this research explores through quantitative analysis some of the key factors believed to affect consumers' attitudes and behaviours towards mobile phone purchases.

Subject Categories and Descriptors

[H.3.5 Online Information Services]: Commercial services; [J.4 SOCIAL AND BEHAVIORAL SCIENCES]: Psychology; [H.1.2 User/Machine Systems];

General Terms: Online Reviews, Product Reviews, User studies, User Interface

Keywords: Online Platforms, Product Reviews, Mobile Phones, Product Recommendations, Product Reviews And User Interfaces: Online Platforms, Product Reviews, Mobile Phones, Product Recommendations, Product Reviews and User Interfaces

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1. Introduction

With the development of e-commerce and the popularity of the internet, more and more people are accustomed to online shopping; they choose to buy commodities and services they need online. Online purchasing has become the main form of daily consumption. In this context, studying online consumers' purchase behavior has become the main field of consumer behavior.

According to a survey report, 97.7 per cent of consumers refer to relevant reviews before making an online purchase. These reviews, as feedback from buyers, largely affect potential consumers' purchase intentions or behavior. Thus, online reviews can be a promising data source for predicting online purchase behavior.

In addition, the risk perception of online purchase (when faced with a buying situation, a consumer perceives a certain degree of risk involved in choosing a particular brand and how to buy it) also affects the purchase intention or decision (Sun et al., 2006). Therefore, risk perception is also a psychological variable that affects consumer purchase behavior (Lawrence and O'Connor, 2000). Of course, the impact of this information on purchase intentions will differ depending on the type of commodities. Consumption of some commodities is common, while others have personal characteristics, making the impact of online reviews and perceived risk different.

Psychologists often use behavioural experiments in the laboratory setting to study the influential factors of consumers' consumption decisions. Most of the methods are adopted to propose research hypotheses under the guidance of theories or based on existing studies and then test these hypotheses under strictly controlled experimental conditions. For example, manipulate the proportion of positive online reviews, risk level and commodity types to explore the purchase intentions under these conditions and then draw causal research conclusions. The biggest advantage of psychological and behavioural research is repeatability, which can withstand repeated tests and get causal inferences.

In recent years, with the popularity of online purchases and the rapid development of computer computing capabilities, people can use digital traces of online purchases to analyse online purchase behaviours to infer the factors that affect people's purchasing decisions and analyse them based on big data. However, it tracks commodities. For example, the sales volume of different commodities can be seen by the proportion of positive online reviews and the risk perception level of commodities. The advantages of this method are (1) these kinds of studies can use people's actual purchase rather than purchase intention, and (2) researchers can obtain a large amount of consumption data without having to collect it with great effort. At the same time, these data are real, real-time, and can be verified repeatedly. However, the conclusion

is based on correlation analysis and is about the correlation between the variables. The reasons behind the inference are not clear. Meanwhile, these kinds of studies are about the commodity rather than the persons who make the purchase.

2. Early Studies

An online review is a positive, neutral or negative statement created by a future, actual or former consumer about a commodity or a company and made available to the public through the Internet. A growing number of researchers focus on the relationship between the quality of online reviews and purchase intention. However, existing studies have found that online reviews' quantity influences consumers' purchase intention, which is positively correlated with the purchase intention (Lawrence and O'Connor, 2000).

Consumers also tend to observe the proportion of positive and negative online reviews. The more positive reviews there are, the stronger the purchase intention is (Zheng, 2008). However, consumers place greater emphasis on negative information when purchasing (Senecal and Nantel, 2004). Negative impulses attract more attention and act as stronger stimuli than positive ones. The work shows that consumers' intention declines when the proportion of negative online reviews about a given commodity rises. When a potential consumer is exposed to many negative online reviews, a negative expectation of the commodity is formed (Chen et al., 2012). Based on the existing studies, this work will further explore the impact of online reviews (positive/neutral/negative) on purchase behavior. There are copious commodity classifications associated with online reviews. A frequently used classification is that of search and experience commodities, which is used by researchers to evaluate consumer purchase intention (Nelson, 1974). A search commodity is one where information on commodity attributes is easily obtained by consumers without purchasing in advance (Hao et al., 2009). Therefore, the information obtained in a search commodity is usually objective and easily compared with other similar commodities, with cameras, cell phones and computers being common examples (Li and Ren, 2017). An experienced commodity is a commodity whose attributes are difficult to obtain. Consumers frequently want to feel and experience the commodity before any assessment. Thus, information about these commodities is mostly subjective, and evaluations conducted are based on previous experience (Hao et al., 2009). Consumers behave quite differently when looking for information on these two types of commodities: they tend to seek more information on other reviews concerning an experienced commodity than on a search commodity (Schlosser, 2011).

However, some studies have pointed out that consumers are more dependent on the information provided by online reviews when purchasing search commodities (Brodie et

al., 2013). The results of previous studies on the relationship between commodity types and purchase intention are inconsistent. Bauer first introduced the perceived risk concept to consumer behavior research to explain such phenomena as information seeking, brand loyalty, opinion leaders, reference groups and pre-purchase deliberations (Bei et al., 2004). Perceived risk is a fundamental concept in consumer behavior that implies that consumers experience pre-purchase uncertainty about the type and degree of expected loss resulting from purchasing and using a commodity (Ma, 2011).

According to the S-O-R theory, consumers will be stimulated externally when they shop online, changing their psychology and perception and then affecting their purchase behavior. Among them, risk perception is the most influential factor. Perceived risk determines the consumer's attitude toward online purchases, subsequently affecting willingness to purchase and actual purchase behavior (Zhao and Ji, 2010). Previous studies have found that risk perception negatively correlates with purchase intention (Zhao and Ji, 2010). The traditional inventory used to measure perceived risk will not apply to measuring internet consumer's perceived risk. Studies have pointed out that shopping risk perception of consumer networks refers to consumers' perception and judgment of possible adverse consequences brought by their shopping behaviours during a shopping network. Online shopping consumer's perceived risks consist of five dimensions:

Perceived store-opportunism risk;

Perceived commodity-performance risk;

Perceived financial risk;

Perceived delivery risk and

Perceived privacy risk (Yu, 2016).

Risk perception is a valuable context to explain barriers to customer purchase behaviour. Online risk perception of consuming refers to consumers' perception and judgment of possible adverse consequences brought by their shopping behaviors (Yu, 2016). The Li et al. study showed a negative correlation between risk perception and consumer purchase behaviour. (Zhihong Li 2019). It has been well-documented that consumers' perception of functional risk influenced their intent to purchase products and services online. (Hashim 2019). Risk perception is the extent to which people feel uncertain about a service or product. (Wang 2020). Online purchasing studies have shown that the factors influencing consumers' online purchase intent are complex and multifaceted. (Hsiao and Chen, 2018, Zhu et al., 2019)

Here we explore how network risk perception influences purchase behavior in the context of network shopping.

3. Purpose

This research aims to study the effect of online reviews and buying behaviour on the sale of mobile phones.

4. Statement of the Problem

A wide variety of mobile phone brands are available on the market. However, consumers prefer a particular brand of mobile phone. In the modern business world, due to the development of science and technology, many new brands are introduced to the market every year; the technological innovation in mobile phone technologies, the products are created beyond what consumers need and want. There are a large number of manufacturers producing and selling different varieties of mobile phones and models into mobile phones and models into the mobile market; therefore creating a huge competition.

In today's world, nothing is permanent except change. We are nowadays witnessing changes in all aspects of today's world. It is said that necessity is the mother of invention. In the often day, there were a lot of unsophisticated ways and means of communication like birds, messengers, postal mail, etc. Today is the era of communication as innovative and novel means of communication exist. E-mail has replaced traditional mailing methods, to a certain extent, with e-mail, and landlines are being replaced by mobile phones. It is reported that after the invention and introduction of mobile phones, the rate of surrounding landlines has decreased, and the number of mobile phone users is increasing day by day. Now, the usage of cell phones is not restricted to urban areas and educated youth only.

5. Research Questions

We intend to study the impact of online reviews on buyers' purchase decisions and their impact on users. The reviews we selected include positive, negative, and neutral reviews. We would investigate customer behaviour, including studying factors that influence decisions while buying phones with variables such as brand loyalty, product features, and price sensitivity. A study of the level of trust the customers have, the context of purchases, and to what extent the trust affects decision-making. We sense that a few issues of social influence, such as peer recommendations and social media, impact user behaviour and how these factors have a role in the decisions. The product features and characteristics may influence, and we examine them, such as brand reputation, technological features, and pricing, to moderate the relationship between online reviews and customer buying behaviour.

The other primary questions include the User's preferences and understanding of the specific features and attributes that customers prioritize in mobile phones based on online reviews and how these preferences influence purchasing decisions. It is expected that positive online reviews will have a direct bearing on customers' buying decisions and

behaviour. Consequently, this pattern may reflect the outperformance of mobile phones in terms of sales.

When the results are available, it may provide insights for evolving suitable strategies of marketing and the firms work on improving it based on the empirical data. The overall data may yield to impact on ecommerce platforms and improvement of overall review systems.

Certainly, here's a simplified conceptual model illustrating the relationship between online reviews, customer buying behaviour, and mobile phone sales:

Conceptual Model:

1. Independent Variable

- Online Reviews
- Positive Reviews
- Negative Reviews
- Overall Ratings

2. Mediating Variables: Customer Buying Behavior

Product Perception: How customers perceive mobile phones based on online reviews.

Trust in Reviews: The level of trust customers place in online reviews.

Decision-Making Factors: Factors influencing the decision-making process (e.g., brand loyalty, product features, pricing).

3. Dependent Variable: Mobile Phone Sales

Sales Volume: The actual number of mobile phones sold.
Market Share: The percentage of the market captured by the brand.

4. Moderating Variables: Product Characteristics Brand Reputation: The reputation of the mobile phone brand in the market.

Technological Features: Unique features and innovations in mobile phones.

Pricing: The cost of mobile phones relative to competitors.

Predicted Relationships

Positive online reviews are hypothesized to positively influence customer perceptions of mobile phones, leading to favorable buying behavior and increased sales.

Negative online reviews may negatively impact customer perceptions, influencing buying behavior and potentially decreasing sales.

Trust in online reviews is expected to mediate the relationship between online reviews and customer buying behavior.

Product characteristics, such as brand reputation, technological features, and pricing, are hypothesized to moderate the impact of online reviews on customer buying behaviour and, consequently, mobile phone sales.

6. Data Collection Methods

6.1. Primary Data Collection

Primary data are collected for the specific research problem at hand, using procedures that best fit the research objective. For this research, primary data are collected through surveys to analyze the consumer behaviour toward mobile phones in the Bhopal market. The questionnaires were distributed as this research uses the quantitative method for primary data collection (Table 1). The survey was done with 100 people living in Bhopal, Madhya Pradesh. The data collected in a spreadsheet were exported to a statistical tool for data analysis. Then, descriptive statistics like cross-tabulation tables were prepared according to the data collected.

6.2. Statistical Tools U-Test

Various research tools were used to analyze the information and interpret it.

6.2.1. Mann Whitney U-Test

The Mann-Whitney U test compares the number of times a score from one sample is ranked above a score from another piece. Once the info is organized, calculations are going to be administered on the ranks. Given the non parametric nature of this statistical analysis, there are fewer assumptions to assess. In statistics, the Mann-Whitney U test may be a nonparametric test of the null hypothesis that, for randomly selected values X and Y

	Ranks			
Values	Online Reviews	N	Mean	Sum of Ranks
	Triggers to Purchase Mobile	25	58.00	3215.00
	Change Attitude for Mobile Purchase	25	53.00	2875.00
	Total	50		

Table 1. Primary data are collected through surveys

from two populations, the probability of X being more significant than Y is adequate for the possibility of Y being more significant than X.

Inference: From Table 2 above, the P-value (0.004) is less significant than LOS (0.05), and H0 is rejected. Therefore, the online review has a positive impact, and changes people’s attitudes toward mobile purchases.

Test Statistics ^a	
	Values
Mann-Whitney U	1268.000
Wilcoxon W	2885.000
Z	.973
Asymp. Sig. (2-tailed)	.004
a. Grouping Variable: Social media purchase	

Table 2. Primary data are collected through surveys and statistical tools used for research

Inference: From Table 2 above, the P-value (0.004) is less significant than LOS (0.05), and H0 is rejected. Therefore, the online review has a positive impact, and changes people’s attitudes toward mobile purchases.

S. No.	Particulars	No. of Respondents	Percentage
1	Facebook	8	16%
2	Instagram	12	24%
3	WhatsApp	9	18%
4	Others	21	42%
Total		50	100%

Table 3. Classification of online reviews on various used platforms likely to buy mobile phones

Inference: From Table 3 above, it is inferred that 42% of respondents liked to buy the mobile from other platforms such as official websites, expert blogs, etc.

S. No.	Particulars	No. of Respondents	Percentage
1	Yes	39	78%
2	No	11	22%
Total		50	100%

Table 4. Classification of Online Review to Purchase a Mobile Phone

Inference: From the above Table 4, it is inferred that 78% of respondents said online reviews triggers purchase of mobile phone.

S. No.	Particulars	No. of Respondents	Percentage
1	Yes	43	86%
2	No	7	14%
	Total	50	100%

Table 5. Classification of Online review Influence Mobile buying Decision

Inference: From Table 5 above, it is inferred that 84% of respondents said that online review influences mobile buying decisions.

S. No.	Particulars	No. of Respondents	Percentage
1	Strongly Agree	14	28%
2	Agree	16	32%
3	Neutral	8	16%
4	Disagree	7	14%
5	Strongly Disagree	5	10%
	Total	50	100%

Table 6. Classification of Social Media Advertisements Influence to Try a new Mobile Brand

Inference: From Table 6 above, it is inferred that 32% of the respondents agree that social media advertisements influence to try a new mobile phone brand.

S. No.	Particulars	No. of Respondents	Percentage
1	Yes	46	92%
2	No	4	8%
	Total	50	100%

Table 7. Classification of the Attitude Towards a Positive Comment about New Brands of Mobile

Inference: From the above Table 7, it is inferred that 92% of respondents said that the positive comments on online reviews create an attitude towards a particular brand of mobile phones.

S. No.	Particulars	No of Respondents	Percentage
1	Strongly Agree	16	32%

2	Agree	18	36%
3	Neutral	6	12%
4	Disagree	6	12%
5	Strongly Disagree	4	8%
	Total	50	100%

Table 8. Classification of the online reviews are more valuable than the traditional advertisements

Inference: From Table 8 above, it is inferred that 54.5% of respondents agreed that online reviews are more valuable than traditional advertisements.

S. No.	Particulars	No of Respondents	Percentage
1	Daily	2	4%
2	1-2 times a week	3	6%
3	3-4 times a week	5	10%
4	Once a month	8	16%
5	Only when needed	31	62%
	Total	50	100%

Table 9. Classification of Social Media Sites that Influence Mobile Purchase on the Day-to-Day life

Inference: From Table 9 above, it is inferred that 62% of respondents said that social media sites influenced them only when they needed time for mobile purchases.

8. Limitations and Conclusions

Some limitations were encountered when drawing the conclusion of this research. The research was conducted on a limited number of respondents for practical reasons. The sample used cannot represent the entire population of the country. Thus, it was difficult to conclude this small sample. The sample mostly focused on people aged 18-35, so this sample does not represent all age categories evenly. As India is a big country in size and population, it was difficult to select samples from every part of the country.

9. Discussion

In the simulation of online purchase behaviour, it is found that the reviews had a significant impact on the purchase intention, and the purchase intention of commodities with a high ratio of positive online reviews is significantly higher

than that with a high ratio of negative online reviews. What is inconsistent is that the analysis of real big data information found that the positive online reward was not significantly correlated with the purchase behaviour, and the neutral and negative online reviews negatively predicted the purchase behaviour of consumers. Because of the default set of good reviews on the website and some measures taken by merchants to get good reviews from buyers, it leads to the low reference value of favourable comments. So, consumers focus more on the relatively true descriptions of neutral and negative reviews in the purchase process. Meanwhile, in shopping online, consumers will form a preliminary impression of the commodity based on the online reviews of buyers. In impression formation and evaluation, more attention is paid to the negative side (Jiang, 2015). Studies indicate that negative ratings have a much stronger effect than positive ones on a buyer's trust level (Sparks and Browning, 2011). Negative online reviews are viewed as an important source of information, enabling online buyers to assess the quality of commodities/services. An important function of reviews is to reduce the risk and uncertainty that online buyers perceive relating to the commodity (Ye and Zhou, 2014).

Therefore, negative information is more likely to receive more attention, and purchase behaviour will be directly affected by neutral and negative online reviews. In psychologically simulated situations, the purchase intention, often as a substitute for purchasing behaviour, also needs to be explored. Intentions are presumed to be an indicator of to what extent people are willing to approach certain behaviours and how many attempts they are making to perform certain behaviours. However, there is a considerable distance between the laboratory situation and the real online shopping context, and the laboratory atmosphere also affects the psychological performance of the subjects. Although intention has been determined as a salient predictor of actual behaviour to shop online, it should be acknowledged that purchase intention does not translate into purchase action (Mo and Li, 2015). Researchers should explore the influencing factors of purchase behaviors in the real online context and provide reasonable suggestions for websites and sellers to generate more consumer purchase behaviors.

The research has considered various online platforms that do the work of networking, such as Facebook, WhatsApp, Twitter, and lots more. The study explains how individuals attend, process, and select knowledge on social media before buying. The findings indicate that individuals pursue an active role in information search on social media compared to mass media. Yet, information exposure is selective and subjective during knowledge search. Results show that social media usage influences consumer satisfaction within data search and alternative evaluation stages, with happiness getting amplified. The consumer moves along the method towards the ultimate purchase decision and post-purchase evaluation.

The results of this study suggest that companies should specialize in being present on social networks, visible on search engines, and providing continuous online feedback.

Finally, the results show that companies should specialize in improving their online perception through customer engagement since it's one of the most common ways in which customers nowadays decide whether to shop for a product or not.

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