

# A Study into the Influence of Technology Driven Tools on Purchase Behaviour of Consumers

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**Abstract:** *As technology continues to evolve, so is the tools that retailers utilise from web browsing to mobile applications to entice customers. Many e-tailers have realized the potential of mobile commerce in multiplying their sales and are witnessing encouraging results. The purpose of this paper is to investigate the effectiveness and reasons behind the use of mobile phone application over the web browsing by customer during online purchase and analyzing various perceived benefits that influence a customer. The results largely favored that mobile phone apps prove to be effective marketing tool over web browsing. One hundred mobile app users participated in the study from city of Bengaluru. Variables such as App features, ease of use, functionality, information value, customer reviews adaptation, best deals, product varieties and customization are used to identify the impact of mobile phone apps on the changing customer base and perceived benefits of consumers is analyzed using factor analysis. Hence e-tailers can improve marketing outcomes by making improved versions, expanding features and adequate differentiation to their respective mobile apps.*

**Keywords:** Web browsing, Mobile applications, E-tailer, Innovative marketing, perceived benefits.

## 1. Introduction

Smart phone growth in urban India is leading way to more people spending their time on mobile applications. A mobile app is a computer program designed to run on smart phones. The popularity of mobile apps has continued to rise, as its usage make tasks more convenient to the user compared to browsing the mobile web. Easy access to inventory, Notifications of special offers, One-touch access to contact information and always visible on phone's home screen are its benefits over the traditional method.

Companies want to be successful in the e-commerce, and they do not want to ignore the specific characteristics of mobile shopping. Many e-tailers have realized the potential of mobile commerce in multiplying their sales and are rapidly adopting innovative tools and are witnessing encouraging results. Flipkart, the largest online shopping experience in India, receives quite a noticeable of its ecommerce orders from customers using mobile devices and plans to increase this number in near future. Thus, online companies are getting aggressive by encouraging the move to mobile commerce. This is leading online retailers promoting their mobile app as much as possible. Leading Indian e-tailers are launching their own version of sale, which requires customers to download the respective e-tailers mobile app to avail of the discounts. This is leading lot of traffic of orders to e-tailers from the mobile device.

## 2. Review of Literature

The number of internet users in India is expected to reach 500 million by June 2018, as reported by Internet and Mobile Association of India (IAMAI) and Kantar IMRB). Siva Nageswara Rao (2014). This internet user group has driving the 10 billion dollar e-Commerce market in India with online travel dominating. E-Tailing is poised to take off as multi-brand retail.

Malviya et.al.(2013)The versatility of smart phone is resulting in the exponential rise of its market share. Brand, social image, technology and durability are playing major role in buying decisions of consumers. People are buying Smart phones irrespective of its prices in the city of Indore, India. Consumers are interested in simple and more convenient way of buying electronic items, groceries, shoes, handbags, and movies tickets Almehairi et.al.(2014). Shoppers are highly concerned about the risks associated with shopping by smart phones. Smart phones are giving way to retailers to directly communicate to customers.

Shankar et.al.(2009) define mobile marketing as "the two- or multi-way communication and promotion of an offer between a firm and its customers using a mobile medium, device, or technology" Heinonen et.al.(2007)the key driver of success of m-marketing is the acceptance and use by customers since the power of mobile marketing depends upon the extent of customer responsiveness. Rashedul et.al.(2010) Mobile application publisher, distributor and service provider are getting large revenue by providing ads as a part of mobile application. The advantage of advertising in mobile application depends on the popularity of the application and its frequency of use.

The designs and attractiveness of mobile apps produce the most desired amount of downloads by Gen Z. Krishnan et.al (2016). Xu et.al. (2014) Mobile app acts as effective channel for media companies to sustain their traffic levels in the increasingly crowded mobile web landscape and app adopters are more likely to visit the company websites and consume content on both channels, the app contributes more to frequency than reach in mobile advertising metrics.

By developing good apps, Hotels can raise their revenue from bookings and generate increasing revenue for an extended period at a fixed cost. Chen et.al (2012) Customers are more attracted to mobile apps with distinguishing

features when compared to similar apps. App level attributes such as free app offers, ranking, quality updates, high user review have positive effects on app sustainability. Lee et.al.(2014)

Cameronet.al. (2012) Nielsen has found that personalization in delivery via the mobile space works as a vehicle for improved customer communication and marketing—a process that stands to benefit the consumer, the retailer, and the manufacturer. The portability of Information Oriented Mobile Applications and ubiquitous access to information anytime, anywhere makes this antecedent especially relevant in this context where users may fill previously unused small blocks of time with mobile applications.

Chenet.al. (2012) the quality of the system (e.g., availability, responsiveness, flexibility) and quality of the process (e.g., ability to localize and personalize the information) lead to greater realization of the expected benefits of the Information Oriented Mobile Applications.

Nielsen (2010) Mobile advertising is increasingly finding its way into mobile apps, with teenagers being much more receptive than their elders. Fifty-eight percent of teens say they always or sometimes look at mobile ads. In general, men of all ages are more receptive to mobile ads than women. Across all operating systems, apps users would prefer to view mobile ads within an app.

Harrison et.al.(2013) in context to usage of mobile phone app , the International Organization for Standardization (ISO) defined usability as the “Extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use”

Lee et.al. (2012) users of apps believe that personalization of apps would affect performance achievement and had high intention to use apps with performance achievement expectancy. Cameronet.al. (2012) Nielsen has found that personalization in delivery via the mobile space works as a vehicle for improved customer communication and marketing—a process that stands to benefit the consumer, the retailer, and the manufacturer.

Perceived enjoyment, usefulness, subjective norm, and ease of use serve as significant predictors of young American consumers’ attitudes toward mobile apps. Yang (2013) Their intent to use mobile apps by perceived behavioral control, usefulness and mobile internet use and actual use of mobile apps can be predicted by perceived usefulness, mobile internet use, mobile apps intent, personal income, and gender. Carroll, J. (2007).Customer adoption and use of mobile app is determinant of its success as a marketing tool.

App and web usage is very balanced. Poll (2014). 42 percent of mobile internet users prefer mobile web for search, and app-web preferences are balanced for shopping, news, and local directory information.

This academic literature has led to this study, were the mobile apps performance is compared to web browsing and

how these technology driven tools influence purchase behaviour of consumers.

### 3. Methodology

#### Data collection

Data for this study was collected by a survey of the users of mobile phone application in the city of Bangalore. Respondents consisted of students, salaried employees, professionals and businessmen. For the purpose of study around 120 questionnaires were distributed to respondents. Among 120 responses received, 100 were found to be complete and usable. Resulting in an effective response rate of 83 percent.

#### Perceived benefits used for the study

This research takes into account nine different perceived benefits ( App features, Ease of use, Functionality, Information value, Customer reviews, Adoption, Customer reviews, Best deals, Product varieties and Customization) to analyse the preferred e-tailer by the respondents.

#### Objectives of Study

- To study the effectiveness and reasons behind the use of mobile phone application over the web browsing by customer during online purchase.
- Analyzing various perceived benefits that influence purchase behavior of a consumer.

Based on the objectives, this study will test the following hypothesis

**H<sub>0</sub>** =There is no relationship between preference of mobile app with perceived benefits

**H<sub>a</sub>**= There is relationship between preference of mobile app with perceived benefits.

#### Scope of the Study

In this era of smart phones, mobile applications are innovative technological tool in hands of the retailers to reach more customers. Using mobile apps a customer can view product, select and place an order at his/her own convenience. The study enhances to find reasons behind the use of mobile apps and its effects. The study also analyses the various perceived benefits that influence a consumer. The marketers have to make an extra effort towards the innovation in the mobile apps and to cater to the customers with more innovative features to survive in the highly competitive market. Due to increase in FDI allowed in the retail market, Indian retailers cannot ignore the existence of global giants carting to the need of untapped Indian online market.

#### Limitations

As with any study, there are limitations to this study. Firstly, The use of convenience method of sampling limits statistical representativeness of the sample and the results cannot be fully generalized to the entire population. Furthermore, the sample analyzed counted 100 respondents who used mobile apps for shopping which were difficult to find and larger sample research would have clearly provided more reliable results.

#### 4. Data Analysis

The data collected is diverse and normally distributed across age, gender, occupation, education and primary purpose of the user's mobile apps. The majority of respondent are male (table 1) as they tend to be early adopters of innovation. These characteristics are consistent with the profile of mobile app users at the time the research was conducted.

**Table 1: Gender**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	60	60.0	60.0	60.0
	Female	40	40.0	40.0	100.0
	Total	100	100.0	100.0	

**Table 2: Occupation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	59	59.0	59.0	59.0
	Salaried employee	32	32.0	32.0	91.0
	Professional	7	7.0	7.0	98.0
	Business	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

**Table 3: Education**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary education	3	3.0	3.0	3.0
	Higher secondary	2	2.0	2.0	5.0
	Graduation	72	72.0	72.0	77.0
	Post graduation	23	23.0	23.0	100.0
	Total	100	100.0	100.0	

**Table 6: Frequent usage of apps by the customers**

	Games	Social Network	Movies/ Videos	News	Map	Banking	Shopping	Productivity	Utility
N	100	100	100	100	100	100	100	100	100
Mean	2.72	3.65	2.92	2.91	2.98	1.96	3.15	3.32	3.01
Std. Dev	1.101697	0.701729465	0.991683	1.015983	0.898708	0.909212	0.8333333	0.851380341	1.01995246
CV	40.50358	19.2254648	33.96173	34.91352	30.158	46.38837	26.455026	25.64398617	33.8854639
Rank	8	1	6	7	4	9	3	2	5

Table 6 gives detailed information about the preference of usage of apps by the customers. The most used app among the respondents are social networking apps as it helps the customers be well connected with their fellow beings. For the day to day requirements of the mobile users, apps on productivity takes the second most used app among the

**Table 7: Reasons of preference of mobile app over web browsing**

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Ease of use	100	1	5	4.55	.892	.795
Performance quality	100	1	5	4.45	.833	.694
Faster	100	3	5	4.68	.530	.280
Interactivity	100	1	5	4.12	1.028	1.056
Personalization	100	1	5	4.30	.990	.980
Advertising	100	1	5	3.88	1.409	1.985
Valid N (list wise)	100					

Table 7 shows the reasons and effectiveness of using the mobile apps over web browsing. One of the strong reason for preference of mobile app over the traditional method web browsing is mobile apps are faster and their

**Table 4: Apps are a great way to personalize phone**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	70	70.0	70.0	70.0
	neutral	28	28.0	28.0	98.0
	disagree	2	2.0	2.0	100.0
	Total	100	100.0	100.0	

Table: 4 shows the percentage of respondents attitude towards the mobile app. 70 percent of the respondents agree that mobile apps aids to personalize each individuals mobile device as he/she can have an easy access to the various apps of his/her interest on the face of the mobile.

**Table 5: Convenient system for getting into a preferred site on smart phone**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	web browsing	27	27.0	27.0	27.0
	mobile apps	66	66.0	66.0	93.0
	no preference	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

The above table 5 shows among the respondents 66 percent of them strongly feel that mobile apps are much easier and faster to enter into a preferred website over the traditional web browsing method. Mobile apps are customized to the needs of the customer and acts as a reminder to the customer with its existence in the phone.

respondents. Indian customers are price sensitive and e-tailers have relived them with innovative apps in helping them shop better keeping in mind the behavior of consumers. Thus shopping apps, with the variance of 26.45 takes the third most used app.

performance quality has no match to web browsing method. A customer in need where ever he/she is can access the app for his/her immediate purchase.

**Table 8:** Relationship between preferences of mobile apps with perceived benefits (ANOVA)

Source of Variation	SS	df	MS	F	P-value	F crit
<b>Rows</b>	742.5625	1	742.5625	13.900552	0.007374752	5.591447848
<b>Columns</b>	280.9375	7	40.13392857	0.7512953	0.642243034	3.78704354
<b>Error</b>	373.9375	7	53.41964286			
<b>Total</b>	1397.4375	15				
<b>Total</b>	10338.66667	26				

From the above table 8, it is found that F value which is greater than the table value leads to the rejection of Null Hypothesis (Ho) and the analysis accepts that there is relationship between preferences of mobile apps with perceived benefits. Mobile application offers better perceived benefits(App features, Ease of use, Functionality, Information value, Customer reviews, Adoption, Customer reviews, Best deals, Product varieties and Customization). Flipkart and Amazon the first Indian and US e-tailers app respectively is mostly preferred by the customers in comparison to the other competitive e-tailers. Flipkart being in the Indian Online Market for the longest time, they have strong loyal customer base and varieties of products carting to the choice and preference of Indian Consumers. But the global giant Amazon which launched in India in 2013 is also preferred and is giving a stiff competition to Flipkart, especially product variety and better deals are offered in Amazon.

## 5. Suggestions and Conclusion

This research enhances our understanding of customers preferring usage of mobile applications over web browsing on smart phone for getting into preferred site indicates that mobile apps are more effective. Ease of use, Speed and personalization are strong reasons behind customers demand for mobile application. Empirical evidence suggests that social networking apps are used at large. In the present scenario where technology has become the basic requirement in the change in trend, it's a challenge for e-tailers to improve their marketing outcomes by making advanced versions, expanding features and adequate differentiation in their respective mobile apps to survive in midst of large competing e-players. The present study is an attempt to fill the academic research in the area of mobile applications. However, the sample size for the study is small when compared to the total population which can be increased further to improve the accuracy of the results. In depth study for other demographic variable like income and widening the age group could be carried out, taking more e-tailers existing in the e-market.

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