

THE FACTORS THAT IMPACT THE ADOPTION OF MOBILE TECHNOLOGY BY KIRANA (GROCERY) SHOPS IN PUNE CITY AREA

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ABSTRACT

Globalization, computerization and free trade are becoming very old concepts now. Today we talk about Industry 4.0, block chain, Artificial Intelligence and so on. There is one very different concept of Democratization of Technology, that changes life of all. One form of this concept is mobile phones in the hands of the poorest of poor people and their capability to transact online using mobile applications- Apps. The transactions can be of very small values and there is no need of rounding of figures to complete the transaction. A payment of Rs. 17.70 can be done through your mobile and there is no problem of lower denomination change. The UPI payment system has transformed the way people transact in India. The retail sector is no exception to this change. Till recent times technology has not touched this sector of great importance. This has led the authors to look into the aspect of adoption of mobile technology while handling a Kirana Shop. The topic is of importance as it deals with our day-to-day life requirements. The high-tech malls are booming in India but the 13.38 million Kirana shops cannot be still replaced for so many reasons. Now obvious question comes to the mind that how a Kirana shop can compete with the high-tech malls and what can be the technology platform for them as a weapon to combat the existential battle. This study is an attempt to find the factors controlling the adoption of mobile technology platform for the Kiran Shops to be competitive.

Key words: Mobile Technology in Retail, Retail Technology Management, Kirana Shop and App, Adoption of Mobile Technology, Grocery Shop Apps, Mobile Apps for Kirana, Mobile Technology for Grocery Shop.

INTRODUCTION

Kirana or grocery stores are part and parcel of our everyday life. All our daily needs are mostly taken care by these shops. In the supply chain of consumer market, a retailer becomes the last part of the supply chain. By this concept the Kirana shop also becomes a retail unit dealing with the consumer needs on daily basis. In the retail industry we observe that there are two types of retail organisation sectors viz. Organised Retail and Unorganised Retail. Traditionally, a distribution channel starts from the Manufacturer and reaches to the consumer via various chains depending upon the industry requirements. These chains consist of the C&F agents, wholesalers, and distributors, value added partners, & dealers. Kirana shop becomes the last part of the distribution channel in the unorganised retail sector. Whereas *Reliance Fresh, Big Bazar (now defunct), More, Walmart, & D Mart* are some of the examples of organised retail where the gap between Manufacturer and the consumer is tried to be reduced to a great extent, and the saved margin becomes the competitive advantage. The current study tries to deal with the Kirana shops

and explore what factors impact the adoption of fast changing field of mobile technology into a Kirana Shop. The development of computer software changed the way corporate companies transacted and benefited from the online transactions. The unorganised sector of Kirana shop was away from these technical developments. In recent years, advancements in the mobile technology made it possible to port a software to the mobile easily in form of an App (short for Application). This led to the usage of mobile technology platform in various fields like messaging and making commercial transactions including payments. So, there are mobile Apps that cater to the requirements of a Kirana shop's commercial transactions on purchase as well as sale side. This study aims to find the factors that affect the selection of a mobile app for a Kirana shop.

LITERATURE REVIEW

The extant literature available on the subject is very vast but mainly limited to the consumer centric studies. There is lack of B2B orientation to these papers. So, we have studied the literature available and trying to relate the similar trends from the business-to-business point of view.

In his paper named "Consumer technology traits in determining mobile shopping adoption: An application of the extended theory of planned behaviour", K Yang dealt with the concept of extended Theory of Planned Behaviour (TBP). He studied the factors like technological effectiveness, innovation and the skill in the usage of the mobile Apps. It was found that not only ease of use but the joy-of-buying to be the deciding factor for the usage of that particular App. Thus, a proper attitude towards the App is created by the joy as well as the easy interface, which leads to the correct attitude towards the App and thus adopting it. All such points can be effective while a Kirana shop owner buys the App for his commercial transactions. (Yang, 2012).

Phutela et al. studied in their article "Who Leads the Game in Indian Retail: Web or Apps? – a Case of Flipkart", the insight into the web-site based selling and the mobile-app based selling in the retail sector of India. The conclusion was that the Indian customer demands the commerce to take place at all the places irrespective of his/ her home or work, making internet available for such transactions. The User Interface (UI) of these Apps needs to be very easy to handle, customisable, offering individualistic benefits, having suitable payment-gateways, and leading to consumer delight. The increasing number of mobile users has increased the App based solution to be offered and most of the players of organised sector are deploying these Apps in the market to capture the customer base (Phutela, Vashisht, & Wadhwa, 2016).

Shukla et al. studied the attitude of the customers who want to use Apps more than the web purchases. They also gave importance to the user-experience (UX) in that study. The results indicated that the users today expect a lot of ease of use in their shopping experience and that mainly comes from the mobile Apps. The study suggests implementing a multi-channel distribution strategy with more emphasis on the mobile App development along with current web based or any other strategy. Thus, the consumers can have exposure to their brand with opportunity to see. The next thing is to understand what the real needs are and the way the consumer needs them to be fulfilled. It calls for a very careful implementation of multi-channel strategy implementation with emphasis on the mobile App selling system. In current situation this is going to be the best strategy to lure the consumers and gain the customer confidence (Shukla & Nigam, 2018).

The paper by V Shankar et al. studied the mobile App from its spread point of view and what the consumers want from these shopping experiences. They defined this Marketing as ‘the planning and execution of all the mobile based marketing activities that influence a shopper from mobile shopping trigger, to purchase, consumption, repurchase and recommendation stages.’ Their observation is that around a quarter of their overall online purchase is from this Mobile App purchases. They found that there are 4 key points that can be treated as take-aways of this study. The first is concerned with process of the purchase- ample choices to be available, the ease of purchase and equation between the purchaser and the shop. The second point is related to surfing experiences as a good User Interface (UI) giving excellent ways to check earlier customers’ evaluation of the purchase, easy access, good comparison of other available products and then the information about buying it. The third one is about the what accessories/ promotional items come along with the product that attract the preferences of the buyer and overall analysis of the product to finally chose between the comparable ones. The fourth one is about after buying, how the buyer shares his/ her experience with friends and on the net making others to buy or not buy it. Thus, the authors conclude that the User Experience is very much important because if this experience happy, then it is going to remain with the customer for long time and that can bring him/ her back to purchase the same again and again as well as it will be shared with the friends creating positive resonance about the product. (Shankar, et al., 2016)

The paper by DB Shinde, deals with the Organized Retail and strategies to enhance the organized sale at shopping malls. Overall retail is growing very fast in India with major increase seen from Organized retail. Shopping malls are one of the most attractive channels for Organized retail which started with 3 malls in 1999 to 190 in 2010 and current scenario where number is around 280. (Shinde, 2017)

A report from KPMG states that the key challenges identified in Indian market are non-homogeneous market, insufficient supply chain infrastructure, soaring real estate costs, competition from unorganized sectors, taxation issues, issues due to wrong deliveries / product returns. All these lead to the growth of e-commerce and online retailing. (KPMG Report, 2014)

The paper by Dr. Giridhari Mohanta et al. concerns with various Digital India initiative & its goals and characteristics. It also explores the effect on technology, economy, social sector, environment and agriculture sector. Thus, it summarises that the Digital India initiative will boost several economic sectors including the retail sector. (Mohanta, Debasish, & Nanda, 2017)

The paper by Mr Sazid brings out the issues of cashless economy post demonetization due to lack of cash. But there are some issues need to be taken care of so that the cashless economy can be successful. It calls for making arrangements like devices to connect with each other, like smart mobile-phones, required internet services’ availability at all areas including remote places, cyber security, making people understand the intricacies of technology and usage of credit or debit card etc. If these issues are sorted then the cashless economy can be a reality and not remain far from it (Sazid, 2017).

The paper by Shamim on digital India deals with issues related to vision and important aspects of Government, and society. Setting of key performance indicators related to digital economy like the social and economic metrics that can speed up the process of digitization. Ultimately, it’s going to help retailing adopting the digital technology. (Shamim, 2016)

The paper by Mallapragada et al. deals with e-retailing software handling various products and the functions of the websites. The frontend of software, the user interface and the customer experience on the software are very crucial aspect of e-tailing. The ease of use in handling online

platform and how to place orders on the same are important in adapting the on-line platform at retailing (Mallapragada, Chandukala, & Liu, 2016).

The paper by S. Lissitsa et al. deals with the online adaptation and response of Gen X & Gen Y to this new way of trading. The way e-tailing was accepted by people has influence of age factor on it to a great extent. The result of the study found that there are a greater number of Gen Y compared to that of Gen X. The Gen X was predominantly buying online the durable items and luxury items like travel plans. The study also has revealed that men buy more online than women. Conclusion was that the traders should focus on younger Gen X as they have time and more purchasing power (Lissitsa & Kol, 2016).

The paper by R. Musa et al. deals with the thinking and value system of the customers towards smartphone shopping. Preferences of the customers were towards seeking the info from the net and then disclosing the info on the net. The behavioural aspects moved around these characteristics and it has little impact on the buying decision of the product/ services. Surprisingly the outcomes did emphasise on the easy usage of the app while security and confidential info took back seat (Musa, et al., 2016).

In their paper R. Wang et al. studied consumer purchase pattern with respect to the size of the purchase order and their frequency with what kind of items they procure. The outcome of the study tells that the more consumers become habituated to mobile shopping (M Shopping), more are the benefits to the traders. The products bought were the same purchased earlier and they were dairy products, products for little babies, fruits, tea-coffee and small electrical- electronic equipment. If the retailers keep on delivering value to consumers, the same order gets repeated over and over again (Wang, Malthouse, & Krishnamurthi, 2015).

In their paper Agrebi & Jallais studied the model for smartphone shopping behaviour. They constructed a model named “Technology Acceptance Model” with extension, that explains the level of adaptation to the technology and then the use of it thereof. The adoption determines the attitude that determines the usage. So, an easy-to-use app will lead to consumers buying more products though that app. The any-time, any-where usability of the smartphone supported by the intention will lead to buying experience being good one and that will lead to consumer delight and a repeat purchase (Agrebi & Jallais, 2015).

The paper by Pantano & Priporas deals with the user experience from the mobile consumer point of view and its effect on their retailing behaviour. With mobiles, the retailing has transformed into M shopping or e-tailing where the purchase is on mobile (online) and the delivery is offline. The outcome of study is that the traders must use the mobile app that gives excellent UX- user experience. This experience should be customized one with personalised deals, info and about new items included (Pantano & Priporas, 2016).

The above reviews have revealed that the following aspects of the mobile App are essential so that they can be effectively used as a perfect marketing strategy for any business:

1. Features like- technological effectiveness, innovation, the skill in the usage, customizable, ample choices to be available, customer reviews, good comparison of other available products
2. Good User Interface (UI), providing the joy-of-buying to customer, leading to consumer delight, the ease of purchase
3. Infrastructure- Making internet available for such transactions.
4. Price and Benefits- Offering individualistic benefits, having suitable payment-gateways
5. Marketing Strategy- Multi-channel distribution strategy with more emphasis on Mobile App, what accessories/ promotional items come along with the product that attract the preferences of the buyer, Post purchase behavior

Problem Definition

The literature review brought us to the above points that are important for adopting the mobile App in a Kirana shop. As discussed earlier the above points refer from the customer point of view. But for a Kirana Shop owner to buy a mobile App, they are not sufficient so we decided to conduct a pilot study and decide on the factors affecting App implementation for a Kirana Shop owner. A questionnaire was formed with discussions with some experts and statistical advisor. The area under scope was Pune city area.

Objective of study: The objective was to study the factors that impact the adoption of mobile technology by Kirana (grocery) shops.

RESEARCH METHODOLOGY

A Research Plan is an overall outline of the study that explains the logical steps that are followed in the study to arrive at a logical conclusion. They are as follows:

1. Research Design: Explorative
2. Type of Research: Quantitative
3. Population: The Kirana Shops in the Pune City
4. Sample: A sample of 50
5. Sampling: Non- probabilistic
6. Source of Data: Primary Data
7. Research Instrument: Structured Questionnaire
8. Data Collection Method: Personal Interviews of the Kirana Shop owners

Sample Size

The Sample size of 50 is sufficient as the objective of the research is to find the factors that impact the adoption of mobile technology. The full survey will be conducted when the exact extent of the impact will be calculated.

Questionnaire

The Structured Questionnaire consists of closed ended questions having pre-determined answers. The questions were kept very simple, as short as possible, and free of jargon. The same questions were asked to every interviewee and the answers were on a 5 points Likert scale with Strongly Disagree-Disagree-Neutral-Agree-Strongly Agree as 5 options to be selected. The 40 questions were grouped into 9 groups as follows:

1. Demography questions:	05
2. Retailer's preference- Price:	04
3. Retailer's preference- Product Availability:	04
4. Retailer's preference- Product Quality:	04
5. Retailer's preference- Product Delivery:	04
6. Familiarity with Mobile technology Solution:	06
7. Online Trading Transactions:	04
8. Security & Privacy:	05
9. Likelihood of a Retailer engaging in online shopping	<u>04</u>
Total	40

Thus, there are overall 40 Questions divided into 9 groups. The analysis is discussed in the next paragraph.

Data Analysis & Interpretation

The relationship between the possibility of using the mobile App by the Retailer for various reasons is cumulated and tested with the above various factors. The analyses and the interpretations are shown in the following figures with descriptions.

Table 1 CORRELATION BETWEEN RETAILER USING MOBILE APP AND RETAILER'S PREFERENCE- PRICE			
		Retailer using Mobile App	Retailer's preference - Price
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed) N	1.000 50	.758** 0.000 50
Retailer's preference - Price	Pearson Correlation Sig.(2-tailed) N	.758** 0.000 50	1.000 50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Retailer's preference- Price is said to be significant as p is less than 0.05 as shown in the table 1.

Table 2 CORRELATION BETWEEN RETAILER USING MOBILE APP AND RETAILER'S PREFERENCE- PRODUCT AVAILABILITY			
		Retailer using Mobile App	Retailer's preference - Product Availability
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed) N	1.000 50	.470** 0.000 50
Retailer's preference - Product Availability	Pearson Correlation Sig.(2-tailed) N	.470** 0.000 50	1.000 50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Retailer's preference- Product Availability is said to be significant as p is less than 0.05 as shown in the table 2.

Table 3 CORRELATION BETWEEN RETAILER USING MOBILE APP AND RETAILER'S PREFERENCE- PRODUCT QUALITY			
		Retailer using Mobile App	Retailer's preference - Product Quality

Retailer using Mobile App	Pearson Correlation Sig.(2-tailed) N	1.000 50	.323** 0.022 50
Retailer's preference - Product Quality	Pearson Correlation Sig.(2-tailed) N	.323** 0.022 50	1.000 50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Retailer’s preference- Product Quality is said to be significant as p is less than 0.05 as shown in the table 3.

Table 4
CORRELATION BETWEEN RETAILER USING MOBILE APP AND RETAILER’S PREFERENCE- PRODUCT DELIVERY

		Retailer using Mobile App	Retailer's preference - Product Delivery
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed) N	1.000 50	.549** 0.000 50
Retailer's preference - Product Delivery	Pearson Correlation Sig.(2-tailed) N	.549** 0.000 50	1.000 50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Retailer’s preference- Product Delivery is said to be significant as p is less than 0.05 as shown in the table 4.

Table 5
CORRELATION BETWEEN RETAILER USING MOBILE APP AND FAMILIARITY WITH MOBILE TECHNOLOGY SOLUTION

		Retailer using Mobile App	Familiarity with Mobile Technology Solution
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed) N	1.000 50	-0.540** 0.000 50
Familiarity with Mobile Technology Solution	Pearson Correlation Sig.(2-tailed) N	-0.540** 0.000 50	1.000 50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Familiarity with Mobile technology Solution is said to be significant as p is less than 0.05 as shown in the table 5.

		Retailer using Mobile App	Online Trading Transactions
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed)	1.000	0.047** 0.745
	N	50	50
Online Trading Transactions	Pearson Correlation Sig.(2-tailed)	0.047** 0.745	1.000
	N	50	50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Online Trading Transactions is said to be not significant as p is not less than 0.05 as shown in the table 6.

		Retailer using Mobile App	Security & Privacy
Retailer using Mobile App	Pearson Correlation Sig.(2-tailed)	1.000	-0.017** 0.721
	N	50	50
Security & Privacy	Pearson Correlation Sig.(2-tailed)	-0.017** 0.721	1.000
	N	50	50
**: Correlation is significant at 0.05 level (2-tailed)			

The correlation between Retailer using mobile App and Security & Privacy is said to be not significant as p is not less than 0.05 as shown in the table 7.

Findings & Conclusion

As per the analyses and interpretations, we can conclude that:

- 1) Correlation between Retailer using mobile App and Retailer's preference- Price is 0.578 and the p value is 0.000. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Retailer's preference- Price is significant. So, the correlation is positive between the both.
- 2) Correlation between Retailer using mobile App and Retailer's preference- Product Availability is 0.470 and the p value is 0.000. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Retailer's preference- Product Availability is significant. So, the correlation is positive between the both.
- 3) Correlation between Retailer using mobile App and Retailer's preference- Product Quality is 0.323 and the p value is 0.022. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Retailer's preference- Product Quality is significant. So, the correlation is positive between the both. Correlation between Retailer using mobile App and Retailer's preference- Product Delivery is 0.549 and the p value is 0.000.

Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Retailer's preference- Product Delivery is significant. So, the correlation is positive between the both.

- 4) Correlation between Retailer using mobile App and Familiarity with Mobile technology Solution is -0.540 and the p value is 0.000. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Familiarity with Mobile technology Solution is significant. Thus, the correlation is negative between the both, or they are inversely related to each other; when one increases, the other decreases.
- 5) Correlation between Retailer using mobile App and Online Trading Transactions is 0.047 and the p value is 0.744. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Online Trading Transactions is not significant. Thus, the correlation does not exist between the both.
- 6) Correlation between Retailer using mobile App and Security & Privacy is -0.017 and the p value is 0.721. Thus, the correlation coefficient between Likelihood of a Retailer engaging in online shopping and Security & Privacy is not significant. Thus, the correlation does not exist between the both.

In summary:

Note: Retailer using Mobile App is used in place of Likelihood of a Retailer engaging in online shopping for the sake of brevity in statistical analysis.

Limitations

Utmost care is taken in the entire research for data, interviews and the statistical calculations. However, there are some limitations that can be out of the control, or unavoidable from the research point of view. They are:

1. Respondent's reluctance to answer questions asked by unknown interviewers about things they consider private
2. Busy people may not want to take out the time for survey
3. Persons may try to help by giving pleasant answers
4. Persons unable to answer because they cannot remember or never gave a thought to what they do and why they have done that
5. Person may wrongly interpret the team decision to buy the industrial product
6. Person's own bias may reflect the true answer
7. There can be some error due to convenient sampling used by the researcher
8. Interviewer's perception may add ambiguity to the question
9. Personal moods (interviewer & interviewee) may affect the outcome of the interview
10. Persons may answer in order to look smart or well informed.

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