ANNEXURE III

Complete the activity by putting the listed words in the correct space:

1. I am getting very _____ with this entire business.
2. Richard was a _____ teacher.
3. The _____ began locking.
4. _____ is a very common food made from flour.
5. The rooms were spacious, with tall windows and high _____.
6. A _____ is a number of musical notes played at the same time.
7. Austin wants to put his recommendation before the _____ at a meeting tomorrow.
8. He had _____ his guilt for many years.
9. I thought a fifteen minutes _____ from his work would do him good.
10. I was born and _____ in the highlands.
11. _____ wax is a hard red substance that melts quickly.
12. We used so many lights that we needed four extension _____.

Ceiling, bored, cords, bread, board, break, sealing, born, bred, chord, brakes, borne

Answer
bored,born,brakes,bread, ceiling, chord, board, borne, break, bred, sealing, cords

Factors of mobile applications affecting consumer buying behavior

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1. Abstract:

1.1 Purpose:

This study is being conducted to investigate the factors of mobile application affecting the decision of consumer buying through mobile application.

1.2 Design:

For accomplishment of the objectives of the study, a sample of 85 consumers was taken by using snowball and judgemental sampling. Primary data is collected. Moreover, 4 important factors i.e. ease of using app, interactivity, preference (exciting), usage intention towards mobile app were selected and analysed through the use of correlation, multiple regressions analysis, Mann Whitney U test and Kruskal Wallis test.

1.3 Findings:

a) Among the four factors we studied only the effect of usage intention towards mobile apps is significantly predicting the consumer buying behaviour.

b) There is no significant impact of gender on consumer buying behaviour.

c) The age group 24 to 27 is significantly affecting the consumer buying behaviour.

1.4 Practical implications:

a) The research gives us the clear idea at which area we should invest our time and money to attract consumers to purchase and that is clearly predicted here that he will buy only if he wanted to, and the other 3 factors also do not have any negligible impact so they must also needs to be presented in the mobile app.

b) The age group 24 to 27 is more impulsive in buying through mobile apps so we just have to attract them by providing attractive offers and discounts which they otherwise would not get. And clearly shows the compared price offered of the websites and the app.

c) The study gives us clear indication of the segmentation that we can use same strategy for both males and females but target age group here is 24 to 27.

2. Introduction:

User base of mobile application users is continuously increasing of which apple store and android stores hold the maximum market share. Till 2014 android was leading player with 1.3mn application in there Google store making them leading player in the market followed by apple store with 1.2mn applications. In 2014 the 80% of time spent by users using internet on mobiles was on mobile application only 20% was on mobile web.

All the e-commerce websites are shifting their focus from web based selling to app based selling. As app based selling is cheaper than web based selling. Extensive mobile application

promotional offers is a proof to that, that all major players in market are designing their strategies keeping mobile applications in their mind.

For example Myntra, owned by Flipkart, 90% of its traffic came from mobile devices, announced by them in February, 2015. In six months to a year, its website may disappear altogether. "We get 70% of our business from mobile," says Prasad Kompalli, head, ecommerce platform, Myntra. "This platform helps us deliver our value proposition to the customer better, with more personalised offerings.".

Also, flipkart always have some apps only discount offers on their products. All the e-commerce companies like Jabong , Yepme , etc. are providing heavy discounts and promotional offers for first time application download by users. Snapdeal too is placing mcommerce at the centre of its strategy, as it closes in on the acquisition of Freecharge, an online provider of recharge services for a variety of products, for a Rs 2,800 crore. "For every new strategic initiative and every new marketing campaign, we think mobile first," says Ankit Khanna, vice-president, product management, at Snapdeal.

Even companies from different industries like Uber, Ola cabs which are taxi booking service providers, Make my trip, goibibo from travel industry and paytm and freecharge which were first established as prepaid mobile recharging websites are now entering into e-commerce in India, are promoting themselves heavily via promotional offers on mobile applications. As these internet commerce companies launch mega sales to bring in customers, mobile is a key platform to keep them buying — companies get 50-70% of sales from them and say this could increase by 10-15% as mobile data coverage and speeds improve.

If the elephant is beginning to dance, the flyweights aren't ducking for cover. New startups are standing up to be counted. For example, in Mumbai, TinyOwl, a food ordering startup, hasn't even bothered with a web presence. Instead, the company proudly calls itself a mobile-only (as opposed to a mobile-first) venture. "Many people have used the internet for the first time on smartphones,"

says Harshvardhan Mandad, a cofounder of the startup. "The future is mobile and we want to build a company for it."

Already, global giants such as Google, Amazon and Facebook are investing heavily in mobile wallets, and more Indian firms could follow suit. "We will have around 100 million mobile wallets by the end of the year," says Vijay Shekhar Sharma, founder of Paytm.

So it is clearly evident that the role of mobile application in business is continuously increasing. In this research we have tried to identify those factors of the mobile applications which have the most effect on the buying behaviour of the consumers.

3. Literature review:

A consumer is anyone in the market who consumes goods and services of the firms from marketplace for their personal use. Consumer can be an organization as well as an individual. The consumer buying behaviour is a 5 step process which starts with the recognition of need for the product, then searching information of product, evaluation of product, purchase and finally feedback of product. However these factors of consumer buying behaviour are affected by both environmental and individual determinants.

Consumer buying behaviour is affected by these two major factors which are individual and environmental. Individual factors affecting consumer behaviour mainly comprise of demographics, perception, consumer knowledge, learning, motivation, beliefs, personality,

attitudes and life styles. The second category of factors is environmental factors. Environmental factors are those factors outside in the environment that affect individual consumer's decision making process. These factors include culture, reference group, social class, household and family. These factors are the major determinants of consumers behind their decisions to make a choice between given goods or services.

Mobile applications also called as mobile apps, are the Internet applications that run on smartphones, tablets and other mobile devices. Mobile applications are usually designed to help users by connecting them to Internet services which are otherwise normally accessed on desktop or notebook computers. A mobile app can be a mobile Web site bookmarking utility, Gmail for mobile, instant messaging mobile-based client, and many other types of applications. Purchases through applications are a growing business and e-commerce players has witnessed it recently, and also it is cheaper to maintain a mobile application than to maintain a computer website.

As consumer buying behaviour is affected by individual and environmental factors, in the same manner the consumer buying behaviour is affected by some factors when consumers do purchases through mobile application. We are trying to analyse the relationship between such factors of mobile application and its impact on consumer buying behaviour. These factors are:

- **Ease of use ability for application,**

The definition of usability in the ISO 9241 standard is:

“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"

This definition can be expanded, and made more comprehensive, by including five characteristics which must be met for the users of a product:

- Effective: Effectiveness is the completeness and accuracy with which users achieve specified goals
- Efficient: Efficiency can be described as the speed (with accuracy) in which users can complete the tasks for which they use the product
- Engaging: An interface is engaging if it is pleasant and satisfying to use.
- Error Tolerant: The ultimate goal is a system which has no errors. But, product developers are human, and computer systems far from perfect, so errors may occur. An error tolerant program is designed to prevent errors caused by the user's interaction, and to help the user in recovering from any errors that do occur.
- Easy to Learn: An interface which is easy to learn allows users to build on their knowledge without deliberate effort.
- Interactivity with users: Interactivity is the communication process that takes place between humans and computer software. The most constant form of interactivity is typically found in games, which need a continuous form of interactivity with the gamer. Database applications and other financial, engineering and trading applications are also typically very interactive.
- Preference: (excitement factor, i.e. weather application is able to excite their consumers), It means the apps that stir the consumer up, is new and unfamiliar to him, is varied and contrasting, are surprising and exciting and are bright and colourful.
- Usage intention of the consumer: It is the intention of the users to use the application or to make the purchases through website. It includes would consumer purchase an item

from this app, would consumer recommend this site to a friend and would consumer register at this site.

4. Problem statement :

The purpose of this research is to understand what factors of a mobile app make consumers to purchase on any particular app. And to find out whether the demographics i.e. age and gender affect consumer buying behaviour.

5. Objectives of the study :

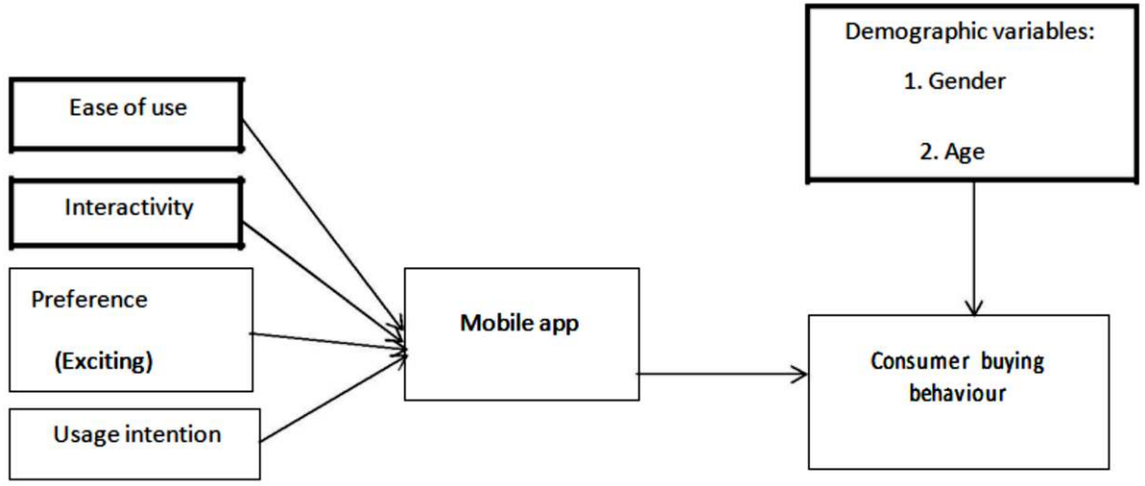
a. To study the impact of mobile application of companies on consumer buying behaviour.

b. To study the impact of demographics i.e. age and gender on consumer buying behaviour.

6. Need for study:

The need for study arises because no research has been done in this area till now to find out the factors of mobile applications of companies which affect the consumer buying behaviour. And as we know now about the internet world every business wants to sell through an app or till now through ecommerce websites. So this is the very important and emerging issue which needs to be studied in order to make the purchase effective. And not to spend money on those activities which consumers

8. Conceptual model of the study:



The variables used in the study are:

Independent variables: ease of use, interactivity, preference (exciting), usage intention

Dependent variables: consumer buying behaviour

Demographic variables: age and gender

Hypothesis formulated:

H1a : There is a significant relationship between ease of use dimension of mobile app and consumer buying behaviour.

H1b : There is a significant relationship between interactivity dimension of mobile app and consumer buying behaviour.

H1c : There is a significant relationship between preference dimension of mobile app and consumer buying behaviour.

H1d : There is a significant relationship between usage intention dimension of mobile app and consumer buying behaviour.

H1e : There is a significant difference of gender on consumer buying behaviour.

H1f : There is a significant difference of age on consumer buying behaviour.

9. Research methodology:

Research design:Descriptive studyMethod of Data Collection:Survey (online)Type of Hypothesis formulated:Alternate HypothesisSample size:85Sampling technique:Snowball and judgemental sampling

To collect the data for this study, a survey was done with the help of a questionnaire. The questionnaire was distributed online to respondents of the sample and their responses have been

collected. Data was collected through an online survey. For selection of respondents snowball and judgemental sampling is used. The questionnaire has been mailed to some of the friends and then they have forwarded to their friends and it is also filled by some of management students who have used some mobile apps.

10. Data analysis and interpretation:

10.1. Reliability analysis

The data was first tested for reliability using Cronbach's alpha to assess data reliability. The results are shown in Table below. As most research methods guides treat a value higher than 0.7 as acceptable, the values in the table indicate that the data collected from the survey are reliable and

Table 1:

Measured variables	Question item	Source	Cronbach's alpha
Mobile app	**15**		
Ease of use	4	Montoya-Weiss, Voss, and Grewal (2003).	0.830
Interactivity	3	Sicilia, Ruiz, and Munuera (2005)	0.789
Preference(exciting)	5	Menon and Kahn (2002)	0.692~0.70
Usage intention	3	Bart et al. (2005)	0.848
Consumer buying behaviour	**9**	Peck and Childers (2003)	0.785

10.2. Shapiro Wilk's test for normality:

The Shapiro–Wilk's test is a test of normality in frequentist statistics. The Shapiro–Wilk test utilizes the null hypothesis principle to check whether a sample came from a normally distributed population. Shapiro Wilk's test is shown below for independent variables i.e. Ease of use, interactivity, preference (exciting) , usage intention.

Table 2:

	Consumer buying behaviour	Shapiro-Wilk Significance
Ease of use	2	0.044
	3	0.000
	4	0.000
Interactivity	2	0.044
	3	0.000
	4	0.001
Preference	2	0.046
	3	0.000
	4	0.000
Usage intention	2	0.046
	3	0.000
	4	0.000

Interpretation:

The null-hypothesis of this test is that the population is normally distributed. Thus, if the p value is less than the chosen alpha level (0.05), then the null hypothesis is rejected and there is evidence that the data tested are not from a normally distributed population. In other words, the data are not normal. On the contrary, if the p-value is greater than the chosen alpha level, then the null hypothesis that the data came from a normally distributed population cannot be rejected.
Since the p value of the Shapiro-Wilk Test here is less than 0.05, hence the data is not normal.

10.3. Correlation analysis

A correlation analysis indicates that whether the independent variables i.e. Ease of use , interactivity , preference , usage intention and the dependent variable consumer buying behaviour significantly co-vary with each other or not. Here in, we focus on the Spearman's correlation coefficients. The correlation coefficients take on values between −1 and +1, ranging from being negatively correlated (−1) to uncorrelated (0) to positively correlate (+1).

The sign of the correlation coefficient (i.e., positive or negative) defines the direction of the relationship. The absolute value indicates the strength of the correlation.

Table 3:

	Spearman's rho correlation	Ease of use	Interactivity	Preference	Usage intention
Consumer buying behaviour	r	0.195	0.034	0.117	0.356**
	Significance (2 tailed)	0.074	0.756	0.286	0.001
	N	85	85	85	85

r= correlation coefficient, N=total respondents.

**correlation significant at 0.01 level (2 tailed).

Interpretation :

H1a : There is a significant relationship between ease of use dimension of mobile app and consumer buying behaviour. → **not accepted**

H1b : There is a significant relationship between interactivity dimension of mobile app and consumer buying behaviour. → **not accepted**

H1c : There is a significant relationship between preference dimension of mobile app and consumer buying behaviour. → **not accepted**

H1d : There is a significant relationship between usage intention dimension of mobile app and consumer buying behaviour. → **accepted**

10.4. Regression analysis

It is used when we want to predict the value of a variable based on the value of another variable. The variable we want to predict is called the dependent variable (or sometimes, the outcome variable). The variable we are using to predict the other variable's value is called the independent variable (or sometimes, the predictor variable).

Table 4:

Model	Unstandardized Coefficients
	B
(constant)	1.378
Ease of usage	0.146
Interactivity	-0.032
Preference	0.077
Usage intention	0.301

Interpretation :

The dependency of consumer buying behaviour on the independent factors is represented by following equation:

Consumer buying behaviour = 1.378 + 0.146*(ease of use) – 0.032*(interactivity) + 0.077*(preference) + 0.301*(Usage Intention)

10.5. Mann Whitney's Test

The Mann-Whitney U-test is a statistical comparison of the mean. The U-test is a member of the bigger group of dependence tests. Dependence tests assume that the variables in the analysis can be split into independent and dependent variables. We are applying m Mann Whitney's test here to analyse the relation between gender and consumer buying behaviour of respondents.

H1e : There is a significant difference of gender on consumer buying behaviour. ànot accepted

Table 5:

Ranks

	Gender	N	Mean Rank	Sum of Ranks
Consumer Buying	male	69	43.62	3009.50
	female	16	40.34	645.50
	Total	85	80.96	3655.0

This table shows us the mean ranks of both the genders.

Table 6:

Test Statistics[a]

	Consumer Buying behaviour
Mann-Whitney U	509.500
Wilcoxon W	645.500
Z	-.553
Asymp. Sig. (2-tailed)	.580

Interpretation :

Here it is clearly visible that level of significance is higher than 5%, i.e 58%, hence our null hypotheses is excepted which is, there is no significant difference of gender on consumer buying behaviour.

10.6. Kruskal-Wallis H test

The Kruskal-Wallis test is a rank-based nonparametric test that can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. It is considered the nonparametric alternative to the one-way ANOVA, and an extension of the Mann-Whitney U test to allow the comparison of more than two independent groups.

H1f : There is a significant difference of age on consumer buying behaviour. à accepted

Table 7:

	Age	N	Mean rank
Consumer Buying Behaviour	18 to 21	3	32.50
	21 to 24	54	40.75
	24 to 27	9	62.44
	27 to 30	19	41.84
	Total	85	

	Consumer buying behaviour
Chi-square	8.879
Df	3
Asymp. Sig.	0.031

a. Kruskal Wallice test
b. Grouping variable: age

Interpretation

A Kruskal Wallis H test showed that there was a statistical significance in age group and consumer buying behaviour of respondents, $\chi 2 = 8.8790$, $p = 0.031$, with a mean rank score of 32.50 for age group 18-21, 40.75 for age group 21-24, 62.44 for age group 24-27 and 41.84 for age group 27-30.

11. Conclusion:

From the study these are the following conclusions:

1. The consumer now is expecting that the features like ease of use that means that he will easily find what he wanted to, will be there on the apps he is using. So this is not going to make any impact on his buying behaviour. As the result shows that the change in consumer behaviour will be only 14.6% due to 1 unit change in ease of use.

2. Similarly interactivity will affect his behaviour to buy any product through mobile app by just 3.2% and preference means excitement towards any apps will not make him to change his buying behaviour by more than 7.7%.

3. The only important factor which has a significant impact on his buying behaviour is usage intention which will change his buying behaviour by 30.1%.

4. The age group of 24-27 leads in predicting the consumer buying behaviour in favour of usage intention of mobile apps.

5. Gender does not play any role in predicting consumer buying behaviour in favour of usage intention of mobile apps. That means both males and females have more or less the same opinion.

12. Limitations:

a) All the factors of mobile apps have not been covered which can affect the consumer buying behaviour. So it is the future scope of the project.

b) Attitude towards the app has not been studied which may also bring different results. So it is to be studied in future.

c) Only the residents of Chandigarh, Panjab, Delhi, Ghaziabad have been surveyed.

d) Only the age group 18 to 30 is considered here in our research. The results might be different for other age group.

e) The buying behaviour may be affected by many other factors but due to lack of time and resources only the gender and age effect is considered.

13. Implications to the industry:

1. As the factor usage intention of mobile apps is playing an important role in affecting the consumer buying behaviour. So the mobile apps companies have to make promotional strategies accordingly like by making leads, and referring through friends to each other. But also not compromising on the other factors which consumer is expecting to be presented otherwise.

2. The age group 24 to 27 is more impulsive in buying through mobile apps so we just have to attract them by providing attractive offers and discounts which they otherwise would not get. And clearly shows the compared price offered of the websites and the app.

3. The study gives us clear indication of the segmentation that we can use same strategy for both males and females but target age group here is 24 to 27.

Appendix:

Questionnaire:

https://docs.google.com/forms/d/1sAXkSMFt9cXVIvh-PYyV3NUQN_X1SPz7VxIHe3v4hVU/viewform

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