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A.M. Priyangani Adikari

Abstract- This study examines the determinants of mobile phone among the university students special reference to Rajarata University of Sri Lanka. The sample is selected by using stratified sampling method. The data collected through 10 mixtures of open and closed questions. The study used mainly primary date but secondary data too used in books and internet sources. This research is hypotheses that monthly income is the most effective factor for university students' demand on mobile phone and phone's facility is positively affect to mobile phone demand. Results of the study reveals that there is a possitive and significant relationship between mobile phone demand and income levels among university students and facilities provided by the phone is not possitively affects on mobile phone demand . However, the study suggested that a country level study in this regard will be more helpful for mobile phone producers and their marketing strategies.

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I. Introduction

Communication is a common habit among all living beings in the earth. But human beings have more advanced and improved communication channels than animals. Communication methods can be classified as traditional methods and modern methods.Because of the new technology innovation communication is also improving day by day. Being on this environment mobile phone is also obtained as improved way of communication among human beings. The effort made by Richard H.F.and Joel S.E.led the foundation for the development of mobile phone communication(http://www.ideafinder.com/history/inventions/mobilephone.htm).At present mobile phone can be highlighted as one of the most common information sources. According Population Reference Bureau Country Statistics in 2006, mobile phones are one of the most common information access devices with almost 31% of the global population having access.

People are using mobile phones not only voice communication but also other purposes as Short Message Services (SMS), Multimedia Message Services (MMS), recording, calculating, playing games etc.

This study based on determinants of mobile phone demand among university students. Therefore, researcher selected as the study area, Rajarata University of Sri Lanka that the students are from various regions. It is located in Anuradhapura District as well as near to Mihintale. This university started in 1996 and there are five faculties as Faculty of Management Studies, Faculty of Social Sciences and Humanities, Faculty of Medicine and Allied Science, Faculty of Applied Sciences and Faculty of Agriculture. Present day, there are 3915 students includes 3390, 189, 100, 2 Sinhala, Muslim, Tamil and other students respectively. There are 995 students in Faculty of Management Studies, 883 students in Faculty of Social Sciences and Humanities, 713 students in Faculty of Medicine and Allied Science, 662 students in Faculty of Applied Sciences as same as Faculty of Agriculture (Field survey, 2011). The university is located in North Central Province. But, there are many students who come from all over the provinces in Sri Lanka.

II. Research Problem

University students are facilitated common land phone facilities inside university promises and hostels. Most of the university students in Sri Lanka still depend from their parents' income and very little of them are engaging part time jobs or full time jobs. Normally researcher saw that many of students are using Mobile Phones even they are child of the low income level families. Therefore, the research problem can be indicated as: what are the determinants of mobile phone demand among university students.

III. Objectives

The general objective of this research is to study the determinants of mobile phone demand among University students. Specific Objectives are:

- To estimate the demand function for Mobile phone
- To find out the most usage mobile phone brand among the students.
- To identify the problems faced by university students when they use the mobile phones.

IV. Hypothesis

H_1 = "Income is the most effective factor for university student's demand on Mobile phone".

H_2 ="Facility of the phone is positively affects on mobile phone demand".

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V. Literature Review

The 21st century can be interpreted as info-communication age. When new communication technologies spread among the people, one of them is the mobile communication. Researcher thinks how choose a mobile device is an interesting question, which parameters are important in the decision, and which are not. How we use the new technologies in everyday life, when and for what we use it because; in researcher opinion the technological development and the usage habits are interdependent. Researcher would like to examine consumer behavior in the field of mobile phone, so researcher think it should consider the mobile marketing as well.

Kimiloglu H. et al (2010) noted that, pragmatic consumers are found to give high importance to functional, physical and convenience based attributes of the product mobile phone from their research report "Discovering behavioral segments in the mobile phone market". This research aims to discover consumer segments with different behavioral profiles in the mobile phone market. As a research design, they employed factor analysis on 32 different attributes to which consumers attach in purchasing a mobile phone. The study proved pragmatic consumers are found to give high importance to the functional, physical and convenience-based attributed of the product.

Ongondo F.O. et al. (2010) pointed out from their report, "The potentially significant environmental and economic impacts; a large scale survey of students at 5 UK universities was conducted to assess the behavior of students with regard to their use and disposal of mobile phones". Additionally, a small scale trial mobile phone take back service at one of the universities was carried out. The findings indicate that many students replace their phones at least once a year; replacing broken phones, getting upgrades from network operators, remaining fashionable and a desire to have a handset with a larger battery life are the main reasons for such rapid replacement. Almost 60% of replaced phones are not sent to reuse or recycling operations but, are stockpiled by students mainly as backup phones. Although many students are aware of UK mobile phone take back services, only a moderate number have previously used the services. Students' recycling of other waste materials such as paper and glass did not have a significant impact on their disposal actions for their unwanted mobile phones, although students who often recycled these waste materials were also the most willing to participate in mobile phone take back services. Monetary incentives such as cash payments and vouchers have the greatest influence over students' willingness to utilize take back services, followed by convenience and ease of use of the services.

James D et al (2005) published report named "Exploring Addictive Consumption of Mobile Phone technology". This paper examines addictive consumptions of mobile phones within the domain of consumer behavior. Specifically, it explores what characterizes addictive users of mobile phone technology, factors that increase their usage, and adverse consequences from addiction. Two exploratory studies undertaken in Brisbane are the basis for a larger project now in progress. Ten semi-structured interviews were conducted in March 2005, followed by a focus group containing six participants in June 2005. A judgment sample of eight consumers of mobile phone technology was used in this study. These subjects represented a broad spectrum of the population in terms of usage levels, occupation, and age. Interviews were recorded on audio cassettes and transcribed. The focus group was a convenience sample of six young people, enrolled full-time at university. This research was found that these users had a long established relationship with their phone with an average of 6.5 years, and all subjects were using their third to fifth mobile phone upgrade. Usage time was high ranging from 1.5 to 5 hours per day, and the average bill per month was $140, which is expensive given restricted student incomes. In this study, both attitudinal and behavioral characteristics were found among mobile phone users who self- identified as problematic. Further, the results revealed adverse consequences of mobile phone consumers as damaging relationships, falling stress and feeling emotional stress.

According to Endre A. (2009) noted on his research "Mobile phone usage and device selection of university student". The research took place in May 2009, and researcher used an online inquiry form. The respondents were students of the Corvinus university of Budapest, and the most of them were 1st year university student. For dada base 642 questionnaires proved to be appreciable. Researcher asked the respondents to rank for main categories (price, available features, look, shape and brand) of the mobile device selection. After ranking, the next group of questions was a list of properties according to mobile device. The respondents had to consider how important are each listed aspect for them. Data present using graphs and charts and also find correlations. According to this study, the university students prefer to choose their phone by good price, look and shape. The brand and the available applications are less important. The most important features of the mobile phones are technical parameters, like good battery or durability of the device. Beauty is the most important feature among appearance parameters. Mobile phone has determinant importance for the young, and they rather use it more in public situations or places, than in private ones. The time-management applications are used more often than other information based ones. They use clock, alarm clock and calendar

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most often, while sound recorder and internet are used most rarely.

Chakraborty S. (2006) studies his research, "Mobile phone usage pattern amongst university students: A comparative study between India and USA". This study investigated motivations of usage, common usage scenarios and the attitude towards mobile phones in public settings among university students in a mature market (United States) and a rapidly growing new market (India). This research is intended to be a questionnaire- based exploratory study to investigate the cross-cultural usage patterns of mobile phones. The survey had both closed and open ended questions. It collected demographic information like age, gender and educational level. Then the survey moved on to collect usage and behavioral characteristics such as, individual use or shared use phone, and time of use. Respondents were also asked to rank their pre dominant usage of the phone. Participants for the study included only university students above the age of 18 years from India and the United States. Responses were accepted regardless of full-time or part-time, undergraduate or graduate student status. In this study, it used convenience sampling method. This study gives an insight in to the similarities and the differences in the usage of mobile phones across two very different countries. There were marked similarities with the usage of phones to communicate with others and there were similarities in the perception of mobile phone usage in public settings. Many participants felt the need for etiquette or guidelines for mobile phone usage in public settings. According to Ahmed I. (2011) research report named "Mobile phone adoption and consumption patterns of university students in Pakistan" try to study explores buying and re-buying activities of mobile phone; preferences for brands, purchasing features and network providers, account recharge activities and calling and testing patterns of mobile phone users in Pakistan. Students were selected as population and simple random sampling technique was used consisting of 500 respondents as tool sample size. 400 students responded back comprising 80% response rate for this study. For this purpose questionnaires were used as data collection tool. To encompass all important activities related to mobile phone usage. Questionnaire was designed and major portion of questionnaire was taken from the research report conducted by Market Analysis and Consumer Research Organization (MACRO) in May 2004. The overall reliability of the questionnaire was estimated to be 0.81. Then, collected data was analysis using SPSS 17.0. Data present only by using tables. Majority of mobile phone users have started using mobile phone at 10-18 years of their age and they consider mobile phone as necessity of life. This leads to conclude that mobile phone users in Pakistan are not exhibiting addictive or over excessive usage pattern of mobile phone, they are loyal customers of network providers and consider almost all features of mobile phone at the time of purchasing.

Selian A.N (2004) done a study named "Mobile phones and youth: A look at the US student market". Through this research a wide variety of information about the characteristics and trends of the youth market for mobile phones has been compiled both through extensive secondary research and through the execution of an independent survey on a small sample of 12-29 year old individuals in their respective phases of high school, undergraduate and/or graduate education. This survey was undertaken as part of a study of mobile technology and youth, and was designed to independently explore the relationships between gender, age, behavioral trends and mobile phone usage patterns of teenagers and young people. The sample of survey respondents consisted of 189 teenagers and young adults across a spectrum of socioeconomic, cultural and ethnic backgrounds in the area of Boston, Massachusetts. All respondents were students in high school, college, or graduate school; questionnaires were distributed at the Rindge Latin High School in Cambridge, Ma, as well as to undergraduate students at Tufts University, and graduate students at the Fletcher School (both located in Medford, Ma.)The findings revealed that mobile usage in the context of educational settings are strong, reflecting a higher group penetration level than on average in the United States.

Richards F.et al. (2006) published his research named "Determinants of 3G mobile video adoption by the south African Mobile consumer". This paper explores what factors the South African mobile user regard as most likely to influence the intention to adopt 3G mobile video. Since there is minimal literature on 3G mobile video, this research relied on Diffusion of Innovations Theory, Technology Acceptance Model and Theory of Planned Behavior. The objective of this research is to determine the factors determining (intended) 3G mobile video adoption in South Africa. Consequently, the proposed hypotheses relate to the factors identified that could possibly affect adoption. Intention to adopt has been identified as the dependant variable that all the other variables were analyzed again. Positivism will be used as the major philosophy to obtain quantifiable data that can be statistically analyzed. The time horizon was cross-sectional. The research strategy was survey/questionnaire based. The sample considered for the study was thus limited to the general public living in South Africa. In order to collect a non-biased and representative sample of respondents, a few Cape Town malls were visited. The research questionnaire was developed in both hard-copy and online format. To overcome geographical constraints, an internet website was used to host the online survey questionnaire. The test items were based on previous studies, this hypothesis proves that adoption of mobile technology is very closely related to cost in a negative

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way. Consumers are aware of cost implications for 3G mobile video as they associate these with 2.5G services like GPRS and MMS. Although the sample was relatively small, the results seemed to be fairly conclusive in terms of isolating the four most important factors which are likely to influence the South African user adoption of 3G mobile video when it becomes available. These four factors are (in order of importance): the complexity of the technology, the level of technological (Internet) experience, the cost and the perceived compatibility with the user's lifestyle.

VI. Methodology

This study use both primary data and secondary data but, mainly based on primary data. Secondary data collected by using, Books, Journals, Magazines and Internet sources. Primary data collected by using Questionnaire and group discussions. This study includes 10 mixtures of open and closed questions.

Total population of this research is total student population in Rajarata university of Sri Lanka. There are 3915 students (Field survey, 2011) and researcher selected sample size as 80 students by using Stratified random sampling method. Under this scientific selection give equal chance to each five faculties, each batches and gender such as total population divided in to five faculties and each faculty divided in to four batches and each batches divided in to male and female. After that number of students divided from total population and multiple by sample size (80) then can select a sample.

VII. Results and Discussion

a) Testing Hypothesis

Using multiple regression analysis, researcher built demand function for mobile phone demand.

Table 1 : Coefficient Table

Model	Unstandardized Coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.864	1.587		3.064	0.003
Close communication	-0.107	0.200	-0.062	-0.538	0.592
Taste (Fashion)	0.003	0.218	-0.002	0.015	0.988
Facilities of phone	-0.207	0.157	-0.157	-1.318	0.192
Monthly Expenditure	-0.183	0.206	-0.154	-0.890	0.377
Monthly Income	0.446	0.160	0.433	2.796	0.007

Source : Author Calculation using Survey Data (2011)

Table 2 : Anova table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.095	5	4.619	2.346	.049
Residual	145.705	74	1.969		
Total	168.800	79			

Source : Author Calculation using Survey Data (2011)

According to above coefficient table demand function can be derived as:

$Qd=4.864-0.107X_1+0.446X_2+0.003X_3-0.207X_4\ 0.183X_5$

In this demand function openion on using mobile phone is dependent variable. Opinion found by giving a statement as "Usage of mobile phone is needed for university students" and ask respondents' idea about to this statement as: strongly agree, agree, neutal, disagree, strongly disagree and rank it using Likert Scale method. X_1(close commiunication),X_2(Monthlyincome),X_3(Taste/fashion),X_4 (other offered facilities), X_5(Monthly expenditure) are independent variables. According to "t' test, only monthly income (X_2) is in significant and other factors are not significant. But, overall model is significant (at.95%) according to the F value in Table 2.

Table 1, shows that the determinants of mobile phone among university students .The results reveal that monthly income is the most effective factor for university students' demand for mobile phone and facility of the phone is negatively affected to mobile phone. Therefore, hypothesis one is accepted and the second hypothesis is rejected.

b) Problems Faced by Mobile Phone Users

Some problems arise when using mobile phones such as problems due to unknown numbers, scarcity of signals, disturb to education, spend extra cost, bad affect to health, not protect secrecy of users

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etc. According to the research many of respondents are that means 38.8% of them faced scarcity of signals problem. It negatively affect to their mobile phone using activities. And also 30% of them most suffering problem is happen to bear extra expenditure. Many of university students' are still dependents and therefore this extra expenditure for mobile phone is big problem to them. 10% of them said that it is bad situation due to problems arise unknown numbers and persons. 8.8% and 7.5% of them agree to problems they faced due to mobile phone as bad affect to health and phone disturb to their education respectively. 2.5% of them agree about not protect secrecy and also 2.5% of some respondents response that they faced other problems than these problems.

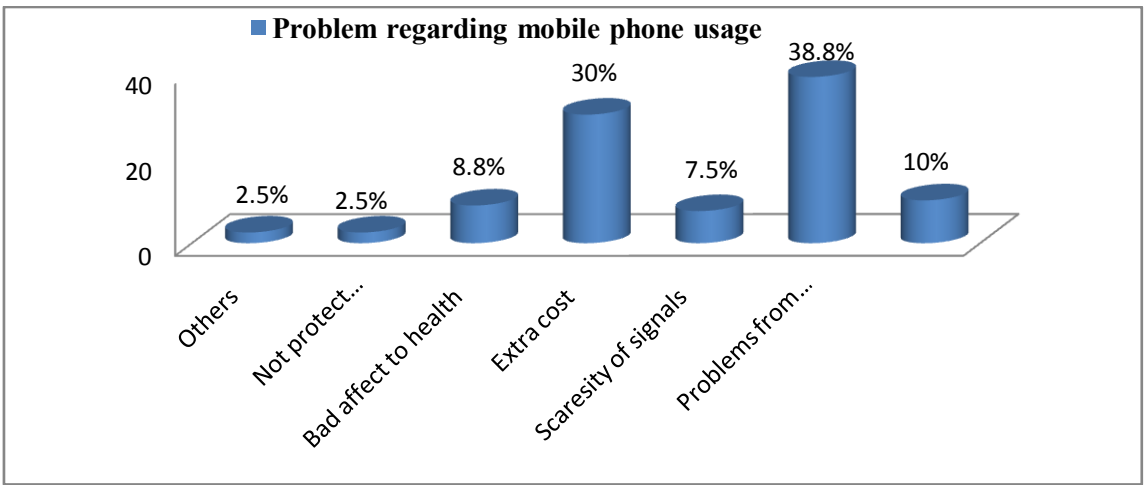


Figure No.1

Source : Field Survey, 2011

c) Usage of Mobile phone brand among the University students

The figure no.2 shows the usage of mobile phone brand names and its percentage according to study sample.

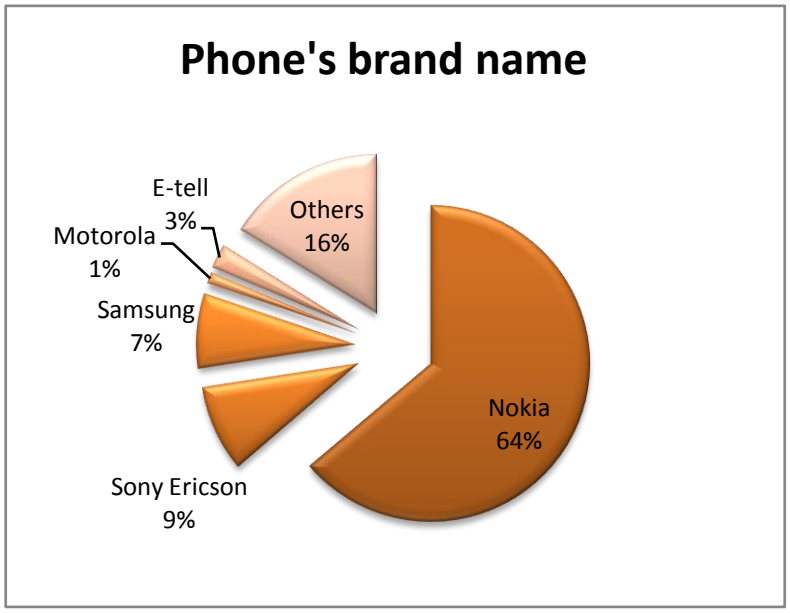


Figure No. 2 : Phone's brand name

Source : Field Survey, 2011

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The researcher use mainly five famous mobile phone brand and tried to find out students' usage through those brands. According to above pie chart, students' percentage of usage brand can clearly found. Relevant to those data, most of the students' are use Nokia brand phone and their using percentage is 63.8% of students use Sony Ericson brand phone and 7.5% students use Samsung phone. 2.5% and 1.2% of students use E-tell and Motorola brand phone respectively. Many of them use Nokia brand phone and also secondly 16.2% of them are used other brands than Samsung, Sony Ericson, Motorola and E-tell.

VIII. Conclusion

There are many studies on determinants of mobile phone demand among university students in the world. But, a few studies in Sri Lankan case. Therefore the researcher tried to fill this gap. The study examines the determinats of mobile phones demand among university students for the case of Sri Lanka.Results of the studty prove that there is a possitive and significant relationship between mobile phone demand and income levels among university students.

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