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Consumer Behaviour Toward Information Technology Adoption on 3G Mobile Phone Usage in India.

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Abstract

Mobile phones have grown to be the most widely used portable device in the world. Mobile phones' usage is rapid growth to the public in India. Moreover, the understanding of the people toward adoption of information technology in 3G mobile phones' usage shows relatively low in India. So, it is vital to find out the exact situation among consumers' behavior on 3G mobile phones. This study investigates consumers' awareness and perceived ease of use and their influence of information technology adoption in 3G mobile phones. The results show that the two hypotheses are valid. Based upon the research findings, implication, limitations and suggestions for future

research are drawn, which include a proposition of a way forward in addressing the consumers' adoption on information technology toward 3G mobile phones' usages in India.

Keywords: **3G mobile phone; information technology; usage; consumer; awareness; perceived ease of use and India.**

INTRODUCTION

The theory of mobile telephony was discovered in AT&T's Bell labs in 1970's In 1980's, the first generation (1G) launched with commercial deployment of advanced mobile phone service cellular networks and in 1990's, the second generation (2G) materialized when mobile operators deployed two competing digital voice standards. According to International Telecommunication Union (ITU), third generation (3G) of mobile telephony standards International Mobile Telecommunications 2000 (IMT-2000) to facilitate growth, increase bandwidth, and support more diverse applications. 3G mobile technology enabled with speedy data transmission, large network capacity and more advanced network services such as multimedia services, video call, mobile Internet and mobile TV and its spectral efficiency (rate of information transfer) is faster than 2G technologies.

The International Telecommunication Union (February, 2013), there are 6.8 billion mobile users around the world, i.e. equivalent to 96 percent among the world population (7 billion) and includes 2.09 billion 3G mobile users who equal to 30.1 percent in world population. Indian telecommunication industry is one of the world's largest in terms of the number of subscribers, and the worlds' fastest growing markets in terms of the number of new subscribers (Ministry of Finance 2009; BBC News 2010; IBEF 2011; Economic Times 2010).

The Indian mobile industry has 2.5 times more customer base than the United States (Wee, 2011). India had 906 million mobile phone subscribers i.e equivalent to teledensity 73.33 percent among the India population (1.27 billion) at the end of May 2013 (TRAI Press release No.60/2013) and includes 70.6 million 3G mobile users. 3G Mobile phone penetration is relatively low in India; it is contrasted to huge population within the country. People still lack of knowledge in adoption to use 3G mobile phones due to its high technologies, advanced features, applications and lack of adoption of 3G services in India. 3G phones did not initially perform well in the market (Tseng and Lo, 2011).The availability of 3G handsets will also play a crucial role in determining the success of 3G services (Evalueserve,2012).

Today, 3G technologies have been established over the smart phones (PDA, Blackberries and I-Phones), enhanced high speed web browsing capabilities and distributing information communication technology applications via mobile such as mobile education, mobile banking, mobile health, mobile commerce, and so on. (Chong et al., 2012) also declared that 3G enabled new business models and applications available to users, such as mobile banking, downloading videos and music through their mobile phones, and mobile gaming and suggested that conduct a study of 3G growing market in other developing countries.

This research aims to provide a deeper understanding of how usage of mobile phones correlates with individual activity space, which is one of the most important characteristics of technology adoption. The study used two indicators such as awareness, perceived ease of use, which influence on consumers' adoption on information technology in 3G mobile phones in India.

RESEARCH PROBLEM

Several new and complex functions have been added in 3G mobile phones to make smooth the consumers' lifestyle and to make consumer life easier. Enhanced functionality and greater levels of 3G mobile and its services require an in-depth understanding of consumer perceptions and behavior. 3G adoptions are early stage in many developing countries (Chong et al., 2011) and using applications in 3G handsets is more complex than other 2G handsets (Pandit and Upadhyay, 2012). Evaluserve (2012) confirmed that awareness is one of the critical success factors to determine 3G adoption, and most of the consumers were unaware of 3G services in India (Octane Research, 2013). It seemed that many consumers have tended to show unaware of the properties and services the new models of the 3G mobile phones. Most importantly, those consumers might not be familiar with new technical properties and their purposes of use.

Based on the above, the objectives of the research are:

1. To find out the relationship between consumers' awareness and information technology adoption in 3G mobile phones' usages.
2. To find out the relationship between consumers' perceived ease of use and information technology adoption in 3G mobile phones' usages.

LITERATURE REVIEW

Awareness

Awareness is one of the key determinants to consumers' adoption behavior, which is decided through acquaintance of the particular product. Early researcher Lionberger (1968) proposed that awareness was one of the best-known acts for utilizing the innovative product. In other words, Islam and Grönlund (2011) stated while awareness is a person's degree of attentiveness and ability to depict beliefs in a certain time and space as an object, influence is the process of creating this awareness. Mobile users' awareness study is still new and emerging one due to introducing new mobile technology such as 3G. Most of the consumers could hesitate to utilize new mobile technology, because they lack of knowledge within the context of mobile phone's design, interface, contents, navigations and its applications. Sudhir et al., (2012) also confirmed that lack of awareness was one of the hurdles to the consumers for not using mobile phones. Consumer usage rate of current 3G value-added services remain low (Kuo and Yen, 2009), in telecommunication services. Awareness is one of the antecedents of consumer brand preference (Alamro and Rowley, 2011), there is needed for research to improve this key drive for adoption of information technology in 3G mobile gadgets. Consumers normally less familiar with new mobile technology, (Nicolás et al., 2008) found that they are hesitant to use their mobile phones to access them. Most of the consumers expect mobile services to become increasingly complex in the emergence of context-awareness (Reuver and Haaker, 2009), due to up-gradation of its technology.

Buchinger et al.,(2011) confirmed that context-awareness as well as its deployment seems to be an important and growing topic nowadays. Context-awareness was a valuable technique to address these issues, as it enabled to adapt application behavior to each situation Curiel and Lago (2013).

Due to grown up of 3G mobile technology, Mahatanankoon and Ruiz (2007) stressed that consumer unawareness occurs when consumers are not aware of what mobile applications are available to them. Many researchers revealed that most of the consumers were low aware of adopt mobile banking services (Cruz et al., 2010; Sangle and Awasthi, 2011;Devi et al.,2011). In mobile commerce, (Persaud and Azhar, 2012) stated that consumers were unwilling to engage in mobile shopping due to lack of awareness or uncertainty regarding its benefits. Lack of awareness was one of the major barriers to mobile marketing and showed that the mobile phone users' adoption of mobile shopping was low (Megdadi and Nusair,2011).

Awareness was considered as direct factor and influenced the intention to adopt mobile advertising (Khan and Allil, 2010). Kowalski and Goldstein (2006) examined that the relationship between the consumers' awareness and adoption of security functions in mobile phones among different user categories and found that almost half of the users were unaware of the functions. In the text message technology, Jacucci (2011) identified that awareness involved in designing integration of functionalities such as messaging, media sharing in mobile phones. In mobile education, Canuel and Crichton (2011) raised that awareness was vital to mobile technology for academic libraries and suggested that was needed to address the lack of mobile content and services.

Consumers' awareness of mobile phones is also not exempted in the current trends of sustainable development, Li et al., (2012) stated that awareness is one of the key factors to construct the sustainable management of retired mobile phones. Finally, Tanakinjal (2012) confirmed that awareness was a very essential component in the innovation and stressed that future research should also include awareness of the innovation in an in-depth matter in the new mobile phones. Mahatanankoon and Ruiz (2007) also suggested that researchers can further investigate unawareness to expand the existing knowledge and theories in new mobile phones. Hence, awareness was examined in this study of the recognition of people towards intentions to use 3G mobile phone technologies.

Perceived ease of use

Perceived ease of use is an individual's assessment to the extent to which interaction with a specific information system or technology is free of mental effort (Davis, 1989). It is one of the major behavioral beliefs influencing user intention to technology acceptance in both the original and the revised TAM models. According to changing of mobile technology from time-to-time, it is necessary to study about consumers' perceived ease of use that will impact for intention to use newest mobile devices. In mobile phone context, perceived ease of use, as key determining factor that influenced toward behavioral intention to use the mobile service through mobile application (Vatanparast,2010; Silva et al., 2011), to adopt advanced mobile phone services (Islam et al., 2013), as a mediating factor to adopt to mobile phone applications and tools (Milena, 2010), as an antecedent of electronic customer relationship management performance in mobile phone services industry (Wahab et al.,2010) and played as a key

role in user attitudes toward mobile adoption (Abad et al.,2010). Few researchers, (Liao et al., 2007; Suki, 2012) confirmed that perceived ease of use was responsible in determining the consumers' intention to use of 3G mobile service and perceived ease of use was most important factor to increase consumer's behavioral intention to use 3G mobile value-added services, and contrary to this, perceived ease of use was not significant with consumers' intention to adopt 3G (Chong et al., 2012). Mardikyan et al. (2012), Pandit and Upadhyay (2012) examined that perceived ease of use was one of the factors, which influenced on consumer perception and adoption on 3G mobile technologies. Consumers' adoption in m-commerce is continuous to grow, Kim et al.,(2009) investigated that the effect of perceived ease of use in mobile phone users' attitude toward mobile communication, mobile commerce, and mobile technology use intention for shopping. Ko et al., (2009) explored that the potential of a consumer adoption in shopping was factorized with perceived ease of use. Perceived ease of use was a vital predictor for users' behavioral intentions to use mobile commerce (Nassuora, 2013). In mobile banking, (Singh et al., 2010; Dasgupta et al., 2011; Abadi et al., 2013; Kumar and Ravindran, 2012) revealed that perceived ease of use as one of the antecedents to behavioral intention of mobile banking usage. On the contrary, consumers felt difficult to use m-banking due to perceived ease of use not a significant with usage intentions toward m-banking (Wessels and Drennan, 2010). Particularly, text messages (SMS) and multimedia messages (MMS) are very popular in 3G mobile phones. Mobile users' perceived ease of use, as one of the major factors in adoption of SMS (Kim et al., 2008), influenced to use SMS based mobile chatting services (Wel et al., 2013), and in shaping users' attitude and intention to use multimedia messaging services (Kim et al., 2011). Perceived ease of use was a key determinant of consumers' acceptance in mobile payment services (Schierz et al., 2010; Kim et al., (2010). (Yan et al., 2009; Viehland and Leong, 2010) proved that perceived ease of use influenced the consumers' intention to use the m-payment services. Credit cards also can swipe in android 3G mobile phones for payment processing, (Amin, 2008) indicated that perceived ease of use on mobile phone credit cards were important determinants to predicting the consumers' intention to use it. Mobile wallets are rapidly increasing in android 3G mobile gadgets, Shin (2009) empirically extended the UTAUT model with perceived ease of use was one of the key antecedents to individuals' behavioral intentions toward mobile wallets. Mobile advertising includes video, mobile display ads; banners (MMS) and text messaging (SMS), (Bamoriya, 2012) proved that consumers' intentions to receive SMS advertising through TAM's belief perceived ease of use. On contrary, Jung et al., (2013) identified that consumers perceive as hard to use, is more likely to decrease in determining consumer acceptance of mobile advertising. Mobile learning adoption in perceived ease of use, as a tool (Adeyemo et al.,2013), was hypothesized also in the mobile system acceptance model (MSAM) which influenced mobile student information system (Asif and Krogstie, 2011). Lin (2013) pointed out that impact of perceived ease of use to adopt ubiquitous learning in mobile phones. Thus, perceived ease of use was examined in this study as a component that mobile users think it's important for them in using 3G mobile phone technologies.

RESEARCH METHODOLOGY

The research model was proposed with variables derived from the Technology Acceptance Model (TAM) and included the determinants of awareness and perceived ease of use were determined on information technology adoption in 3G mobile phones. The primary source of data is self-completed questionnaires provided by 552

respondents. Employers, homemakers, retired people and students were asked to evaluate their perceptions in relating to information technology adoption in 3G mobile phones' usages by completing the survey. Secondary data was gathered from online journals, periodicals, reports and white-papers published in magazines, databases, web sites and newspapers. From the discussion of above, two hypotheses were formulated to compare as independent variables, which were awareness and perceived ease of use while the dependent variable was information technology adoption in 3G mobiles. Thus, the following hypotheses were proposed:

H1: Awareness is positively associated with information technology adoption in 3G mobile phones' usages.

H2: Perceived ease of use is positively associated with information technology adoption in 3G mobile phones' usages.

DATA ANALYSIS

Structural Equation Model

The study used partial least squares (Smart PLS 2.0M3) to validate the data and test the hypotheses. Partial Lease Square (PLS) techniques in the recent years have gained popularity for testing structural models (Nils and Federik, 2010) and most suitable for covariance-based structural equation modeling. Since predominantly covariance-based SEM techniques have been used to estimate models in marketing, PLS-SEM use often requires a more detailed explanation of the rationale for selecting this method (Chin 2010). This study adopted two- step assess, which are evaluated of the outer model and the evaluated of the inner model. There are two benefits for using PLS, PLS would be assessed for both formative, reflective measurements and doesn't make any assumptions or impose for normality conditions on independent variables. This study assessed both formative and reflective measurements; it is important to see that the terms ''formative'' and ''reflective,'' as well as the connotation which is associated with the classification of ''causal'' and ''effect,'' point at a difference between the characterization of the latent variable measurement models' mode (Henseler et al., 2009).

Table 1 - Structural model specification: Cronbach's alpha, Composite reliability and AVE and Loadings of latent constructs for both formative and reflective measurements

Measures	Constructs	Cronbach's Alpha	Composite reliability	AVE	Loadings
Formative	Adoption	0.8707	0.9052	0.8579	0.8086
	Awareness	0.8783	0.9081	0.8243	0.7873
	Perceived ease of use	0.9236	0.9402	0.9637	0.8504
Reflective	Adoption	0.8707	0.9045	0.8582	0.8087
	Awareness	0.8783	0.9082	0.8242	0.7872
	Perceived ease of use	0.9236	0.9401	0.9635	0.8503

From the Table 1 above, reliability analysis showed that both Cronbach's alpha and composite reliability were computed for each variable to test for reliability. According to Nunnally (1967), the Cronbach's alpha score for each of the constructs should be greater than 0.6 to ensure it is reliability and composite reliability is considered as a

stronger test for reliability, a composite score higher than 0.70 is acceptable to support the reliability of the data model (Werts et al, 1974). Hayes (1998) confirmed that an alpha value around 0.9 can be considered as “excellent," 0.8 as “good," 0.6 and 0.7 as “adequate” and below 0.5 is unreliable reliability. The Cronbach’s alpha and composite reliability scores are greater than 0.80, which is significant to consider that data model of this study is reliable for both formative and reflective measurements. For convergent validity, a stronger internal consistency among the data models an average variance extracted (AVE) score of 0.5 is acceptable (Fornell and Larcker,1981; Dillon et al., 1984;Chau 1997) with loadings of the respective constructs above 0.70. The AVE and factor loadings are greater than 0.7 respectively. Therefore, convergent validity parameters are satisfactory for both formative and reflective measurements, and the measurement model is absolutely reliable in this study.

In discriminant validity, the extent to which the measures for the model are unique from other measures in the same model. In PLS context, the criterion for discriminant validity is that a construct should share more variance with its measures than it shares with other constructs in the given model (Hulland, 1999). The discriminant validity was examined by testing the correlations between the measures of potentially overlapping constructs and must be different from unity (Anderson and Gerbing 1988). Gefen and Straub (2005) proved that the square root of the AVE of each constructs should be larger than all the cross-correlations between the construct and items should load more strongly on their related construct than on other constructs.

Table 2: Reliability and correlations for latent constructs

Constructs	Composite reliability	Adoption	Awareness	Perceived ease of use
Adoption	0.9052	**1.0000**		
Awareness	0.9081	0.6321	**1.0000**	
Perceived ease of use	0.9402	0.6974	0.7455	**1.0000**

As shown in Table 2, the square root of AVE for each constructs surpassed the correlations between that and all other constructs and all items load more strongly on their own construct than on other constructs. Furthermore, composite reliability was evaluated and all constructs were greater than 0.70 (Fornell and Larcker 1981).

The results confirmed that discriminant validity is satisfactory. Cross-loadings offer another check for discriminant validity. If an indicator has a higher correlation with another latent variable than with its respective latent variable, the appropriateness of the model should be reconsidered (Henseler et al., 2009). Patnayakuni et al. (2006) stressed that each item’s correlation with its intended to construct represents a “loading,” whereas its correlations with other constructs represent the “cross-loadings”. Cross-loading items represented that prime candidates for removal from subsequent analysis of the goal of improving a model fit (Farrell and Rudd, 2009).

Structural Model

The hypotheses were examined through the structural model, used Smart PLS 2.0M3. The PLS-SEM is to encourage in analyzing the model's strengths simultaneously emphasizing possibly problematic issues. The structural model includes estimating the path coefficients, which indicates the strength of the relationships between the independent and dependent variables. The bootstrapping procedure was used to determine the significance of each path coefficient within a structural model because the data are not normally distributed in PLS-SEM. So, PLS relies on a nonparametric bootstrap procedure (Davison and Hinkley 1997; Efron and Tibshirani 1993), which involves repeated random sampling with replacement from the original sample to create a bootstrap sample, to obtain standard errors for hypothesis testing. The process assumed that the sample distribution is a reasonable representation of the intended population distribution. Henseler et al (2009) also stressed that bootstrap facilitated the assessment of path coefficients' significance level in PLS-SEM.

Table 3- Significance of structural model path coefficients (Results based on cases= 200 and samples = 552)

Hy.No	Hypotheses	Path Co-efficient	Mean	Standard Deviation (STDEV)	Std Error (STERR)	T Statistics (|O/STERR|)	Significance (two-tailed)	Supported
H1	AW ⟶ AD	0.2575	0.2583	0.0550	0.0550	4.6828	P<0.01	Yes
H2	PEOU ⟶ AD	0.4076	0.4084	0.0494	0.0494	10.279	P<0.01	Yes

Note: AD= Adoption;AW= Awareness;PEOU= Perceived ease of use.

As shown in Tables 3, the study used 552 samples in bootstrapping, and all the hypotheses' path coefficients are extremely significant($p<0.01$)at two –tailed level. In bootstrapping analysis, the large number of identified bootstrap samples is drawn from the original sample with replacement, which stated that each time an observation was drawn at random from the sampling population, it is returned to the sampling population before the next observation is drawn. Thus, an observation for a certain subsample can be selected more than once, or may not be selected at all for another subsample. The number of bootstrap samples should be high but must be at least equal in the number of valid observations in the dataset. The recommended number of bootstrap samples is 5,000.

Table 4- Significance of structural model path coefficients (Results based on cases = 552 and samples = 5,000)

	Constructs	Path Co-efficient	Mean	Standard Deviation (STDEV)	Std Error (STERR)	T Statistics (|O/STERR|)	Sign. (two-tailed)	Supported
Formative	AW ⟶ AD	0.2575	0.2607	0.0765	0.0765	3.3643	P<0.01	Yes
	PEOU ⟶ AD	0.5076	0.5061	0.0668	0.0668	7.5892	P<0.01	Yes

Note: AD= Adoption;AW= Awareness;PEOU= Perceived ease of use.

As shown in Table 4, the study also used 5000 samples in bootstrapping analysis and all the indicators' path coefficients are extremely significant($p<0.01$) at two –tailed level.

Assessment of Fit

Assessment of fit determined how perfectly the research model fits the sample data (McDonald and Ho, 2002) and also validated, which recommended model has the most superior fit. PLS Path modeling was assessed by conducting goodness-of-fit (GoF) measure (Tenenhaus et al., 2004). The GoF refers to the geometric mean of the average communality and average R2 for all endogenous constructs. The recommended GoF value ranges between small (GoF = 0.1), medium (GoF = 0.25) and large (GoF = 0.36) (Wetzels et al (2009).

$$GoF = \sqrt{\overline{A}\,\overline{VE} * \overline{R}^2}$$

The GoF value for our model is 0.676 (average of R^2 was 0.52 and geometric mean of AVE was 0.880). This study obtained a GoF value of 0.676, which exceeded the cut-off value of 0.36 for large effect sizes of R^2 (Cohen 1988). The GoF value provides adequate support to validate the PLS model.

Confirmatory Factor Analysis

The study also used LInear Structural Relations (LISREL 8.8) to assess the goodness of fit for the factor structure on the research model. Factor structure can be analyzed and stated into zero and nonzero factor loadings, which is one of the major advantages using Lisrel. Confirmatory factor analysis was used to assess the factorial validity of the models through Lisrel is more user-friendly (Jöreskog, 1973; Sorbom, 1974).

Goodness-of-Fit

This study used three factors and evaluated for goodness-of-fit indices to fit the data surely in a given research model. The model fit is evaluated with following fit indices such as Chi square normed index (X^2 /df), p-value of the model, comparative fit index (CFI), goodness-of-fit index (GFI), adjusted goodness of fit index (AGFI), standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA). The recommended thresholds of these fit indices are, X2 /df < 3 (Byrne,1998), p-value < 0 .05, CFI ≥ 0.95 (Hu &Bentler, 1999; Kline, 2005), GFI > 0.95 to > 0.80 (Miles and Shevlin, 1998; Hooper et al., 2008; Saris and Stronkhorst, 1984), AGFI > 0.80 (Saris and Stronkhorst, 1984; Gefen et al.,2000), SRMR < 0.08 (Hu and Bentler, 1999) and RMSEA ≤ 0.05 to ≤ 0.08 (Hu & Bentler, 1999; MacCallum et al, 1996; Browne and Cudeck 1992). The results of CFA in the first measurement model depicted that the following fit indices, X2 /df = 3.77, p-value = 0.0031, CFI = 0.75, GFI = 0.81, AGFI =0.75, SRMR = 0.085 and RMSEA = 0.072. After removal of several unfair data in the dataset, the model was refined and involved CFA again. On contrary with prior measurement model, the new model showed that the following improved fit indices, X2 /df = 1.16, p-value = 0.0000, CFI = 0.97, GFI = 0.90, AGFI =0.87, SRMR = 0.068 and RMSEA = 0.052. Hence, the fit indices indicated that research model of this study is acceptable to fit.

DISCUSSION

The study showed that consumers' adoption of information technology in mobile phone usages was determined by awareness, perceived ease of use. In PLS-SEM analysis, the results of reliability analysis indicated that Cronbach's alpha and composite reliability values of both formative and reflective measurements of constructs can be considered as "excellent" and "satisfactory." In convergent and discriminant validities, AVE values

of constructs were satisfactory and the square root of AVE for each constructs outshined the correlations between that and all other constructs, all items load more strongly on their own construct than on other constructs, which supported both convergence and discrimination; it seemed that construct's validities were agreeable. For cross-loadings, the every single latent construct represents it own construct and is not loading into another constructs with greater than 0.7, which also proved the good model fit. For hypothesis's testing, both hypotheses were extremely significant at ($p<0.01$ and 99 % confidence) two-tailed and that were also proven in 5000 samples in bootstrapping analysis. Furthermore, the assessment of fit (GoF=0.676) value provided sufficient support to validate the PLS model. In confirmatory factor analysis by Lisrel, Goodness of fit analysis also showed that (RMSEA = 0.052) research model of this study was acceptable to fit. Both hypotheses were supported in this study. The results of H1 also supported with Kaul (2011) who showed that awareness levels in 3G services have risen from 64 percent in November 2010 to 80 percent in July 2011, which seemed that will increase in future and revealed that upgrade in mobile handset for consumers are largely driven by them seeking more advanced features on their phones such as 3G services. The findings implied that consumers were liable in understanding of functionality concepts must be taken into consideration during adoption of information technology in 3G mobile phone. Besides, the results of H2 contrary with Chong et al., (2013) who found that perceived ease of use was not found to have a significant with consumers' intention to adopt 3G and consistent with Suki (2012) who proved that the positive intention to use 3G mobile service is due to the reasons that subscriber's learned to use 3G services quickly and unearth that it is easy to use it. The findings illustrated that consumers could adopt information technology in mobile phone when they found it easy to use those technologies, and they felt that mobile phone applications would accomplish things more quickly. Therefore, the findings confirmed that 3G mobile phone applications have been developed well in India, and many people intended to use 3G mobile phone service in their daily routine life.

PRACTICAL IMPLICATIONS

Based on the results, the study proposed for mobile phone manufacturers and consumers should absolutely take several adequate measures to enhance utilization of information technology in latest 3G mobile phones, with respect to further significant improvement of awareness, perceived ease of use influenced on consumers' adoption. Manufacturers should conduct the awareness campaign or training program to the customers for making better understanding and knowledge in utilization of information technology in the 3G mobile phones by providing sufficient information about the benefits of its features, applications. Manufacturers should be testing the usability of branded new 3G phones with consumers as a trial, or before it is purchased and providing mentoring, advice in creative ways, which ensuring consumers' confident in utilization of them. Manufacturers should provide with instruction's booklet or guideline of all phones should be written in simple English or consumers' mother tongue or their national language. Mobile phone companies offer comprehensive support, including customer care through an online FAQ page, chat and email contacts in order to boost awareness of 3G mobile phone usages. Consumers must find themselves which 3Gmobile phone is the best suit for their needs and should compare different types of provisions and functionalities. Mobile phone vendors should design an effective marketing campaign to potential consumers for upcoming mobile phone technologies as well as promote through word-of-mouth communication. Marketers must distribute the

appropriate instruction leaflets and manuals to potential consumers during marketing the latest 3Gmobiles with welcoming helpdesk should be available. Consumers should inquire about latest mobile phones' features and its applications through their friends who earns on awareness of mobile phones. Thus, the study suggested that it is necessary for the manufacturers should make awareness strategies to the mobile users, and customers understand themselves about the availability of latest 3G mobile phone technologies, and its value-added features would have a greater impact on awareness in adoption of 3G mobile phones. Perceived ease of use is one of the key's behavioral factors that influenced consumers' intention toward adoption of specific information technologies. Manufacturers should be taken into consideration while designing the 3G mobile phones' applications, features that would be clear; understandable to use; consumers feel very comfortable with those to accomplish things more quickly with voice call, video call, text messaging, camera, alarm, calendar, address book and browsing services via fulfill their basic needs. Consumers are looking for phones that are easier to use because of the growing complexity, mobile specialists must make the simplest design of the 3G mobile devices to make calls and texts, offer large screens with bigger fonts, high-resolution displays, well spaced keypads, loud vibrant and easy navigating menus that make easy to use and very attractive for all age group of customers. Today most of the latest 3G mobile phones with internet facility, GPS and complicated features are intentionally frustrated in order to avoid this; mobile specialists should make simplified browsing services with large, bright and color fonts, which make consumers easily read the emails, surfing the web, access mobile banking and using GPS software. Mobile companies should educate or train the consumers to appreciate about convenient to adoption of information technology in mobile phones that can be fitted into their daily routines. Currently, touch screens are becoming more popular in 3G and in upcoming 4G mobile phones. So, mobile specialists must be taken into consideration in designing of these phones with the larger display screen, that should be logically organized display contents such as menu, contacts, settings and so on, presents clearly and uncluttered screens in order to reduce the time consumption for searching options. Manufacturers should promote the dissemination of mobile value-added features such as high-speed data connectivity, high streaming multimedia applications and high-speed internet bandwidth in 3G mobile phones will facilitate watching movie, play interactive games and download data (magazines, ring tones, icons, music), it would enhance consumers' ease of use. Latest 3G mobiles should be enabled with GPRS (General Packet Radio Services) and EDGE (Enhanced Data for Global Evolution) compatible, which provides the consumers connect internet directly, and stays connected at high-speed that will make easier to interact with. Hence, the study suggested that latest 3G mobile phones need to be provided with enhanced user-friendly applications, features, which are easily accessible and convenient to use.

LIMITATIONS AND FUTURE STUDIES

The limitations in this study, firstly, 3G mobile phone adoption is still relatively new in India, and is the lack of relevant literature review in the area of study. The information that is collected for this study is mostly based on the other countries, which might not accurately reflect the adoption of information technology in 3G mobile phones, due to the differences in culture and situation. Secondly, this research has been conducted in India. However, it would be interesting to conduct this research in other countries and compare the results with this study. Finally, people adoption of 3G mobile technology is still under development in India and sampling all the practical users of the 3G mobiles was not

feasible. In addition, the questionnaire was used the LikertScale method which did not give any freedom to the respondents to provide their own opinions. Therefore, it can be biased in the survey responses. For future research, firstly, to identify under what condition consumers' adoption of newest 3G mobiles may or may not be affected by their experiences with the previously adopted mobile gadgets. Secondly, additional factors such as trust, perceived mobility, perceived cost, perceived risk, satisfaction and those other relevant factors which should be considered, and it could improve the ability to predict intention to adopt more accurately. Thirdly, the study focused on information technology adoption in mobile phones in general, and future study should be focused it on branded wise such as Nokia, Samsung, SonyEricsson, etc., which would be given beneficial insights for manufacturer side.

CONCLUSION

The current trend of adoption in 3G mobile phones in India is slowly growing up towards for consumers' trustworthy. This paper provides some new empirical evidence that stresses the factors which influenced consumers' adoption on information technology in 3G mobile phones in India. On hand, there were two hypotheses, which were tested by using structural equation modeling and confirmatory factory analysis respectively. The results showed that, both hypotheses were valid and confirmed to fit in this study. As latest mobile phone such as 3G is relatively new in India, an understanding about the factors affecting consumers' intention to use latest 3G mobile phones may influence its acceptance. In this case, it would increase the consumers' confidence towards information technology adoption in 3G mobile phones. Firstly, to increase the awareness among the consumers, the consumers need to be educated to increase the 3G mobile phone's self-efficiency and also to promote the newest 3G mobile's features by launching direct awareness to the consumers. While perceived ease of use was strongly influenced in this study, mobile specialists should be designing a straightforward way for consumers to utilize 3G mobile phone's technology and should also endeavor to maximize the convenience on newest 3G mobile gadgets. Finally, there is a strong potential for people who are using information technology effectively in 3G mobile phones in India and mobile industry should be co-operating with governments, regulators and consumer groups to offer a wide range of tools to assist mobile phone users to manage their daily routines. The mobile telecommunications industry and mobile content providers are members of a scheme that would introduce user-friendly 3G mobile gadgets in all respects.

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