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Adoption according to Rogers and Shoemaker (1971) is the decision to use and accept an innovation in the form of a new idea, product or service and in our specific case acceptance and continued use of Internet banking. Rogers categorised the adopters into five categories as (1) Innovators (2) Early adopters (3) Early majority (4) Late majority and (5) Laggards (Rogers, 1962)

1. **Innovators:** The first 2.5% of adopters are called "Innovators". These are people who love risk and want to try on new things, and want to be seen as the first to get to know of new ways of doing things and are always on the look - out for what is new. Innovators are venturesome and educated, have multiple sources of information and show greater propensity to take risks. They appreciate technology for its own sake and are willing to tolerate initial problems. They do not follow the status quo, they believe change is a constant phenomenon. Innovators are willing to take risks, youngest in age, have the highest social class, have great financial lucidity, very social and have closest contact to scientific sources and interaction with other innovators.
2. **Early Adopters:** The next 13.5% of adopters are "Early Adopters". People in this category are educated, well respected in the society and normally are some kind of opinion leaders in their local communities and they tend to be among the first group of people to get hold of new products or ideas. These individuals have the highest degree of opinion leadership among the other adopter categories.

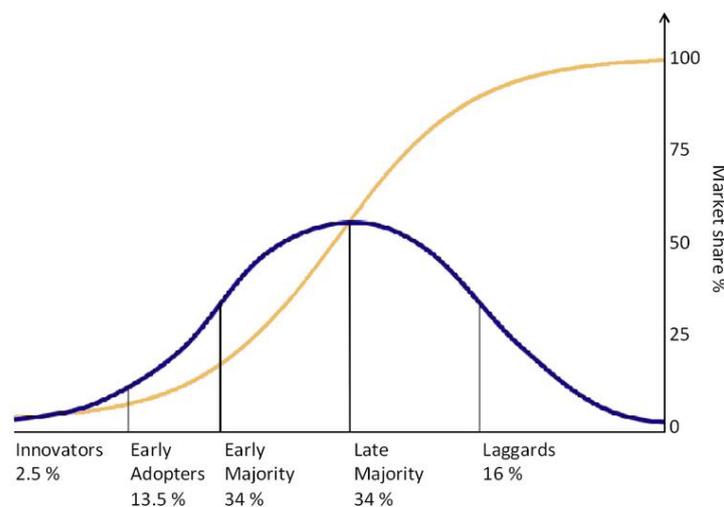
They are the visionaries in their market and are looking to adopt and use new technology to achieve a revolutionary breakthrough that will achieve dramatic competitive advantage in their industries. They are typically younger in age, have a higher social status, have more financial lucidity, advanced education, and are more socially forward than late adopters (Rogers 1962). They are attracted by high-risk, high-reward projects and are not very price sensitive because they envision great gains in competitive advantage from adopting a new technology.

3. **Early Majority:** The next 34% of adopters are formed by the "Early Majority". These people look up to the innovators and early adopters to know how a product works before they go in for it. They mostly make their decisions based on recommendations from people who are already using the product or service and deliberate upon it a while before making a decision to adopt it. Rather than looking for revolutionary changes to gain productivity enhancements in their firms, they are motivated by evolutionary changes. Individuals in this category adopt an innovation after a varying degree of time. This time of adoption is significantly longer than the innovators and early adopters.
4. **Late Majority:** The next 34% of adopters are the "Late Majority", who are more skeptical about an innovation, traditional and of lower socio-economic status. They adopt products after the average people have done so. They normally adopt when a product or service becomes very popular and there is mass consumption. They are very price sensitive and require completely preassembled, bulletproof solutions. They are motivated to buy technology just to stay even with the competition and often rely on a single, trusted adviser to help them make sense of technology.
5. **Laggards:** The last 16% of the adopters consists of "Laggards", who take quite a long time before they adopt. This category also includes those who never actually adopt at all. They are more conservative and are sceptic of change agents and innovations. Laggards are technology skeptics who want only to maintain the status quo. They tend not to believe that technology can enhance

productivity and are likely to block new technology purchases. These individuals typically have an aversion to change-agents and tend to be advanced in age.

In several studies, it is observed that the youth adopt to a new product or service or technology quickly because they like to try out new things and are generally risk lovers whilst the older people like to get stuck in the old ways of doing things. According to Rogers users with higher levels of personal innovativeness are more willing to cope with the uncertainty of innovative technologies.

Rogers showed that a diffusion process in a social system follows an S-Curve in which the adoption of a technology begins with slow change, is followed by rapid change and ends in slow change as the product matures or new technologies emerge. He also held that people adopt new technological innovations at different times and at different rates. The diffusion of innovations according to Rogers is diagrammatically represented as follows.



With successive groups of customers adopting the new technology (shown as bell curve), its market share (curve go upward from left to right) will eventually reach the saturation level.

4.1-Models on Customer Adoption

The problem of user acceptance of Information and Communication Technology (ICT) is focused by researchers in a variety of fields and with different research strategies. As a consequence, the literature on acceptance is broad, ranging from case

studies of accepted technologies, to the individual psychological characteristics of acceptors or resisters. The dominant theoretical framework for analyzing Internet banking adoption behavior has been the Extended Technology Acceptance Model developed by Davis and Venkatesh (2000). Technology Readiness Index (TRI) (Parasuraman 2000), Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980), the Technology Acceptance Model (TAM) (Davis 1989), Theory of Planned Behavior (TPB) (Icek Ajzen) and the Theory of Diffusion Of Innovation (DOI) (Everett Rogers, 1962) provide the theoretical foundation for the development of the model for the present study.

4.1.1 Technology Readiness Index (TRI)

In 2000, Professor Parasuraman published his landmark paper on the Technology Readiness Index (TRI) in the Journal of Services Research. The TRI of contains four factors which influence technology adoption

1. *Optimism*: the degree to which people with a positive view of technology believe it offers increased control, flexibility and efficiency in their lives;
2. *Innovativeness*: the degree to which people are technological pioneers and thought leaders;
3. *Discomfort*: the degree to which people perceive a lack of control over technology and feel overwhelmed by it; and
4. *Insecurity*: the degree to which people distrust technology and are skeptical of its ability to work properly.

Parasuraman (2000) illustrates that optimism and innovativeness are drivers of technology readiness, while discomfort and insecurity are inhibitors. These findings suggest that, if customers are non-adopters, they are likely to express discomfort and insecurity about the service and feel less optimistic and innovative about the technology.

4.1.2 Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) is a well-known model in the social psychology domain. TRA, developed by Martin Fishbein and Icek Ajzen (1975), is a well-researched intention model which has been proven successful in predicting and explaining behavior across a wide variety of domains – including research of technology

acceptance. It was derived from previous research which started out as the theory of attitude, which led to the study of attitude and behavior. The components of TRA consist of three general constructs: Behavioral Intention (BI), Attitude (A), and Subjective Norm (SN). In other words, a person's performance of a specified behavior is determined by his or her behavioural intention to perform the behaviour, and behaviour is jointly determined by the person's attitude and subjective norms concerning the behaviour in question. (Algahtani and King, 1999). The definition shows that a person's voluntary behavior is predicted by his attitude towards that behavior and how he thinks other people would view them if they performed the behavior. Attitude consists of beliefs about the consequences of performing the behavior multiplied by his valuation of these consequences. Subjective norm is seen as a combination of perceived expectations from relevant individuals or groups along with intentions to comply with these expectations.

TRA can be expressed in the following mathematical model

$$BI = (AB)W_1 + (SN) W_2$$

BI = behavioral intention

(AB) = one's attitude toward performing the behavior

W = empirically derived weights

SN = one's subjective norm related to performing the behavior.

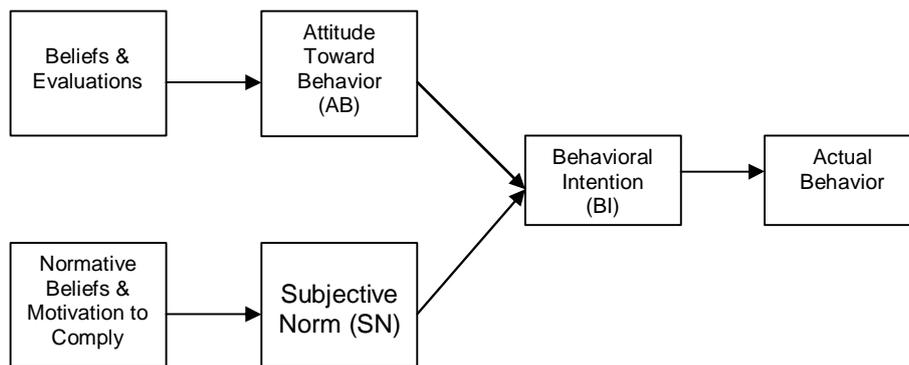


Figure: The Theory of Reasoned Action (TRA)

Miller (2005) defines each of the three components of the theory as follows and uses the example of embarking on a new exercise program to illustrate the theory:

1. **Attitudes:** The sum of beliefs about a particular behavior weighted by evaluations of these beliefs. The example introduced by him is related to the decision to do physical exercise. A person, say Mr. X, may have the belief that exercise is good for your health, that exercise makes look good. But at the same time, it takes too much time, and it is uncomfortable. Each of these beliefs can be weighted. In this case, health issue is more important than the issues of time and comfort.
2. **Subjective Norms:** Looks at the influence of people in one's social environment on his behavioral intentions; the beliefs of people, weighted by the importance one attributes to each of their opinions, will influence one's behavioral intention
3. **Behavioral Intention:** A function of both attitudes towards a behavior and subjective norms toward that behavior, which has been found to predict actual behavior.

4.1.3 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was developed by Fred Davis and Richard Bagozzi (1989). The model discusses on how users come to accept and use a technology. This model was supposed to explain why people accept or reject new technologies. According to this model, when a new technology is presented among the proposed users, a number of factors are influenced in the decision about how and when they will use it. The key components of this model are (1) Perceived Usefulness (PU) and (2) Perceived Ease-Of-Use (PEOU). Fred Davis defines perceived usefulness (PU) as "the degree to which a person believes that using a particular system would enhance his or her job performance" and Perceived Ease-Of-Use (PEOU) is defined as "the degree to which a person believes that using a particular system would be free from effort".

The TAM was specifically developed with the primary aim of identifying the determinants involved in computer acceptance in general; secondly, to examine a variety of information technology usage behaviors; and thirdly, to provide a parsimonious theoretical explanatory model (Davis, Bagozzi, & Warshaw, 1989). It is rooted in social psychology and draws on Fishbein's and Ajzen's Theory of Reasoned Action (TRA)

Model (1975), TAM replaces many of attitude measures of TRA with the two technology acceptance measures - ease of use, and usefulness.

The TAM suggests that attitude would be a direct predictor of the intention to use technology, which in turn would predict the actual usage of the technology. Davis and Venkatesh (1996) however, suggest that attitude would not play a significant role but rather that perceived ease of use (expectation that a technology requires minimum effort) and perceived usefulness (perception that the use of a technology can enhance performance of a task at hand) would determine the intention to use a technology

Although there is a large body of research which supports the TAM as a good model to explain the acceptance of information systems or IT applications (IS/IT), it is controversial whether the model is applicable to analyse every IS/IT adoption and implementation. To cope with the fast change of IS/IT application, a lot of research has been carried out to extend TAM with integrating more factors to examine different IT applications thoroughly, such as including trust, social influence, and so on. These extensions at the same time also testify that TAM as a base model is quite useful for investigating the acceptance of IS.

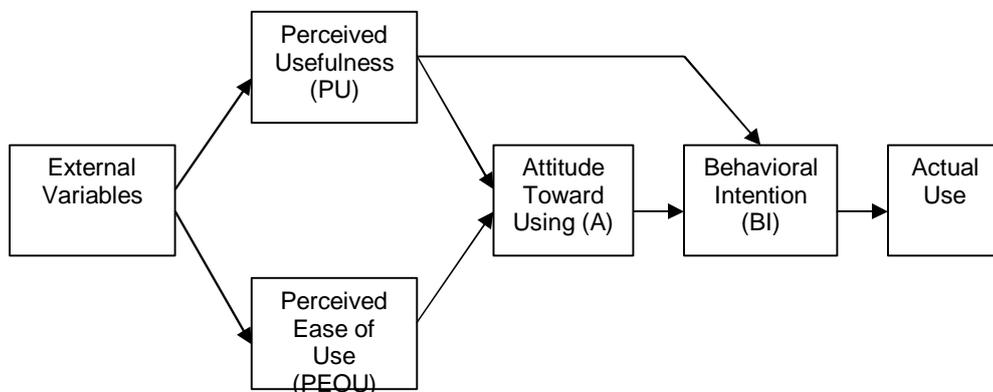


Figure: The Technology Acceptance Model (TAM)

Venkatesh (2000) adds that the TAM is a good model but that it does not help to understand and explain the acceptance of a technology in a way that promotes the development of a strategy having a real impact on the usability and acceptance of the technology. He therefore proposed a modified model. To the TAM, he added

determinants to perceived ease of use, that is, four personal anchoring factors (computer self-efficacy, perception of external control, anxiety towards computers, and computer playfulness) and two adjustment-based factors that develop with experience (perceived enjoyment and objective usefulness).

Kelman suggested that changes in attitudes and actions produced by social influences may occur at different “levels. ” In his view, the nature or level of changes that take place correspond to differences in the *process* whereby the individual accepts influence. In other words, the underlying processes in which an individual engages when he adopts induced behavior may be different, even though the resulting overt behavior may appear the same. Kelman distinguished between three different processes of social influence that affect individual behavior: compliance, identification, and internalization.

- *Compliance*: when an individual adopts the induced behavior not because he believes in its content but with the expectation of gaining rewards or avoiding punishments.
- *Identification*: when an individual accepts influence because he wants to establish or maintain a satisfying self-defining relationship to another person or group.
- *Internalization*: when an individual accepts influence because it is congruent with his value system.

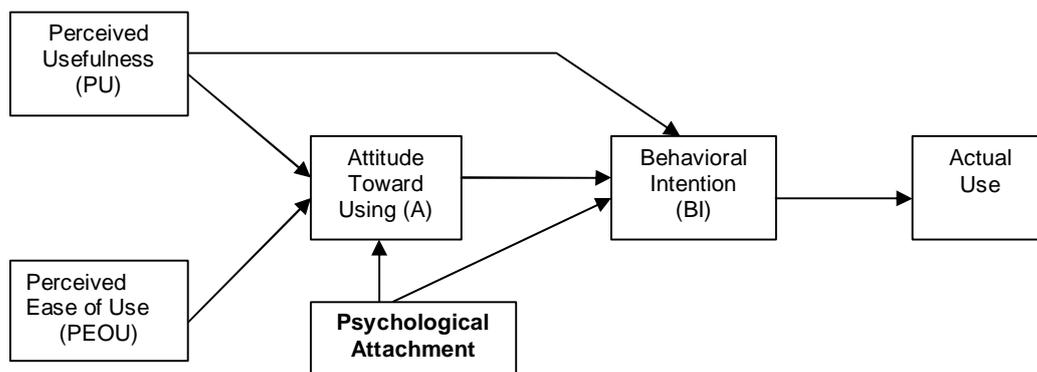


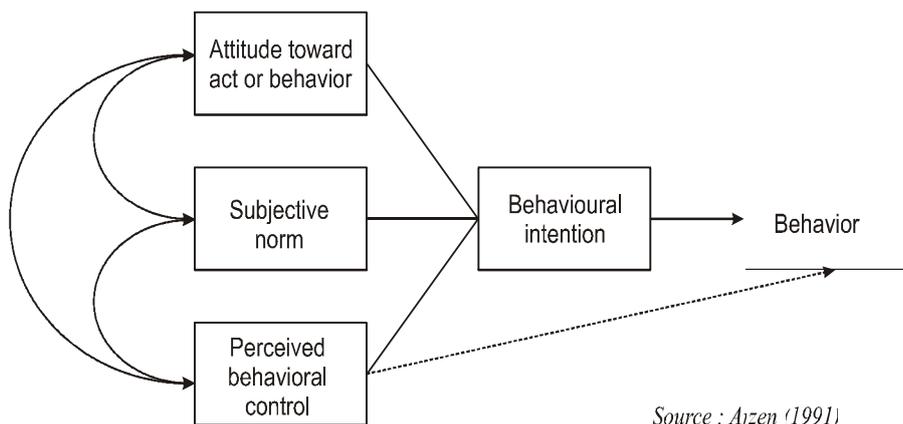
Figure: TAM Extended to Account for Social Influences

The number of citations of Davis et al. (1989) alone is over 700 to date, and the stream of research in the TAM tradition is impressive in its volume and scope (Lee, Kozar, and Larsen, 2003).

The main strength of TAM is its parsimony: intentions to use a technology influence usage behavior, and perceived usefulness (PU) and perceived ease of use (PEU) determine intentions to use.

4.1.4 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is a theory about the link between attitudes and behavior. It was proposed by Icek Ajzen (1985) as an extension of the Theory of Reasoned Action (TRA). It is one of the most predictive persuasion theories, which has been applied to studies of the relations among beliefs, attitudes, behavioral intentions. The Theory of Planned Behavior seeks to explain why people perform certain actions. They do so because they form an intention to carry out the action. The stronger the intention to perform a particular behavior, the more likely the person is to perform that behavior. Intentions are influenced by the person's beliefs, the social pressure to conform to the wishes of others, and their perceived ability to carry out the action. These are known as beliefs, salient referents and perceived behavioral control. According to Ajzen, intention is an immediate predictor of behavior. This intention is loaded by Subjective Norm (SN) (i.e. perceived social pressure), PBC (the beliefs about the ability to control the behavior) and one's attitude towards a behavior. The theory is be diagrammatically represented as follows:



Attitude Towards Behavior: Attitude toward a behavior is the degree to which performance of the behavior is positively or negatively valued. It is defined as the individual's positive or negative feelings about performing a behaviour. It is determined through an assessment of one's beliefs regarding the consequences arising from a

behavior and an evaluation of the desirability of these consequences. Formally, overall attitude can be assessed as the sum of the individual consequence x desirability assessments for all expected consequences of the behavior.

Subjective Norm: Subjective norm is the perceived social pressure to engage or not to engage in a behavior. It is defined as an individual's perception of whether people important to the individual think the behavior should be performed. The contribution of the opinion of any given referent is weighted by the motivation that an individual has to comply with the wishes of that referent. Hence, overall subjective norm can be expressed as the sum of the individual perception x motivation assessments for all relevant referents.

Behavioral Control: Perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. It is defined as one's perception of the difficulty of performing a behavior. TPB views the control that people have over their behavior as lying on a continuum from behaviors that are easily performed to those requiring considerable effort, resources, etc.

4.1.5 Diffusion of Innovation Theory (DOI)

Technology adopters are generally more innovative, less risk averse, perceive an innovation as being less complex and as offering relative advantages. Diffusion of Innovations is a theory of how, why, and at what rate new ideas and technology spread through cultures. The concept was first studied by the French sociologist Gabriel Tarde (1890) and by German and Austrian anthropologists such as Friedrich Ratzel or Leo Frobenius. However, Everett M. Rogers is widely known as the inventor of the "Diffusion of Innovation" theory from his research on how farmers adopt agricultural innovations. Rogers reviewed the existing studies on diffusion of innovations from educational, medical and marketing domains and found considerable similarities among these different disciplines. This theory was popularised by the text book titled as '*Diffusion of Innovations*' by Everett Rogers (1962). Diffusion is defined as the communication process by which a new idea or new product is accepted by the market, while the rate of diffusion is defined as the speed that the new idea spreads from one customer to the next. Adoption, similar to diffusion, also deals with the psychological

decision making processes of the individual, rather than those of an aggregate market. Theory of Innovation Diffusion states that the adoption by customers of innovations is affected by a number of factors including the perceived usefulness of, and advantages offered by, the innovation, its visibility, trialability and ease of use, and its compatibility with users. The theory of innovation diffusion describes five innovation attributes that help explain innovation adoption rates: relative advantage; compatibility (degree to which the service is consistent with the customer's values, experiences and needs), complexity, trialability (degree to which the service can be experimented with prior to making the decision whether to adopt) and observability (degree to which the service can be observed being successfully used).

Rogers defines several intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation. According to this theory, the decision to adopt an innovation depends on, among other things, the perceptions of the members of a social system regarding five specific attributes of the innovation in question, namely:

- **Relative Advantage:** The relative advantage is how improved an innovation is over the previous generation.
- **Compatibility:** The level of compatibility that an innovation has to be assimilated into an individual's life.
- **Complexity:** If the innovation is too difficult to use an individual will not likely adopt it.
- **Trialability:** It determines how easily an innovation may be experimented with as it is being adopted. If a user has a hard time using and trying an innovation this individual will be less likely to adopt it.
- **Observability:** An innovation which is more visible will drive communication among the individual's peers and personal networks and will in turn create more positive or negative reactions.

4.1.6 Technology Acceptance Model 2 (TAM2)

Venkatesh and Davis (2000) extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence and cognitive

instrumental processes. The original TAM model was based on Aizen's TRA model but did not include the subjective norms construct. Previous studies agreed upon the need for adding other variables to serve as determinants of the major construct since the original model lacked such determinants for PU & PEOU.

TAM2, an extension of TAM, includes additional key determinants of perceived usefulness and usage intention constructs which are meant to explain the changes in technology acceptance over time as individuals gain experience in using the targeted technology. The new model incorporates additional theoretical constructs covering *Social Influence Processes* (Subjective Norm, Voluntariness, and Image) and the *Cognitive Instrumental Processes* (Job Relevance, Output Quality, Result Demonstrability, and Perceived Ease of Use). These two processes were considered to be crucial to the study of user acceptance.

1. Social influence processes:

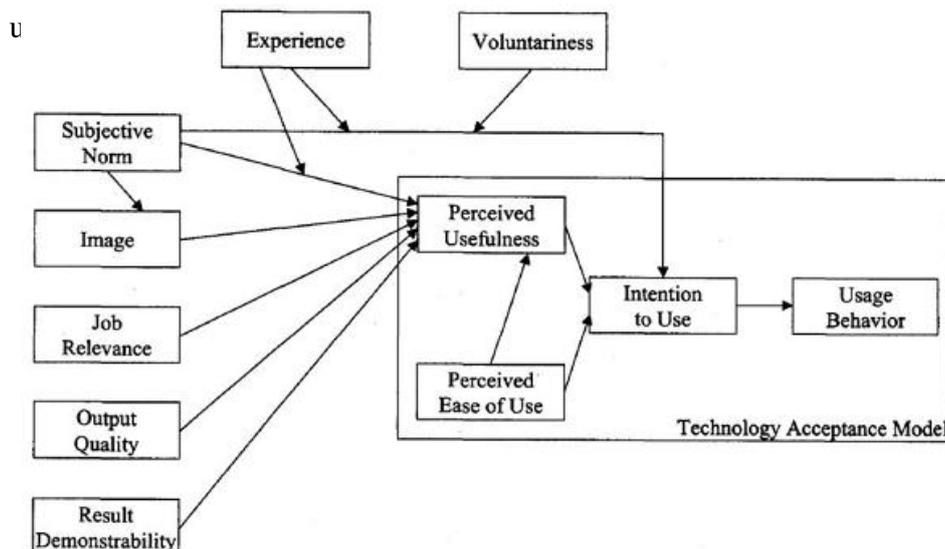
- Subjective Norm" is a direct determinant of behavioral intention and also a key factor of the theoretical foundation of TAM. TAM 2 proposes that subjective norm is the medium of social influence processes; which is defined as "a person's perception that most people who are important to him think he should or should not perform the behavior in question"
- "Voluntariness" was proposed to distinguish usage contexts into mandatory and voluntary settings. In TAM2, voluntariness is set as a moderating variable and defined as "the extent to which potential adopters perceive the adoption decision to be non-mandatory"
- "Image" refers to the belief of a group important to an individual that a certain behavior should be implemented and implementation of this behavior by the individual can persistently enhance the quality of internal works of the organization

2. Cognitive Instrumental Processes:

- Job Relevance: Job relevance is defined in TAM2 as "an individual's perception regarding the degree to which the target system is applicable to his/her job". It is

a key component of the matching process in which a potential user judges the effects of using a particular system on his/her job.

- Output Quality: Output quality” is defined as “the degree to which an individual judges the effect of a new system. ” In other words, it is the degree to which one thinks that a new system can perform required tasks.
- Result Demonstrability: Result demonstrability, which is defined as the “tangibility of the results of using the innovation,” will directly influence perceived usefulness. This implies that users will have more positive perceptions of the usefulness of a system if positive results are readily discernable.
- Perceived Ease of Use: TAM2 retains “Perceived Ease of Use” from TAM as a direct determinant of “Perceived Usefulness. ” If an innovative system can be used with less effort, it will be used to a greater extent. This is consistent with the definition of perceived ease of use. Many studies have empirically revealed that perceived ease of use is significantly linked to intention to use, both directly and indirectly, via its impact on perceived usefulness.
- Experience: Venkatesh and Davis incorporated “experience” also as a moderator variable into TAM2. Users’ acceptance of an innovative system could vary with increase in their experiences. Thus, their acceptance was tested at three time points, including the time before system implementation (before use), one month after implementation (during use), and three months after implementation (after use).

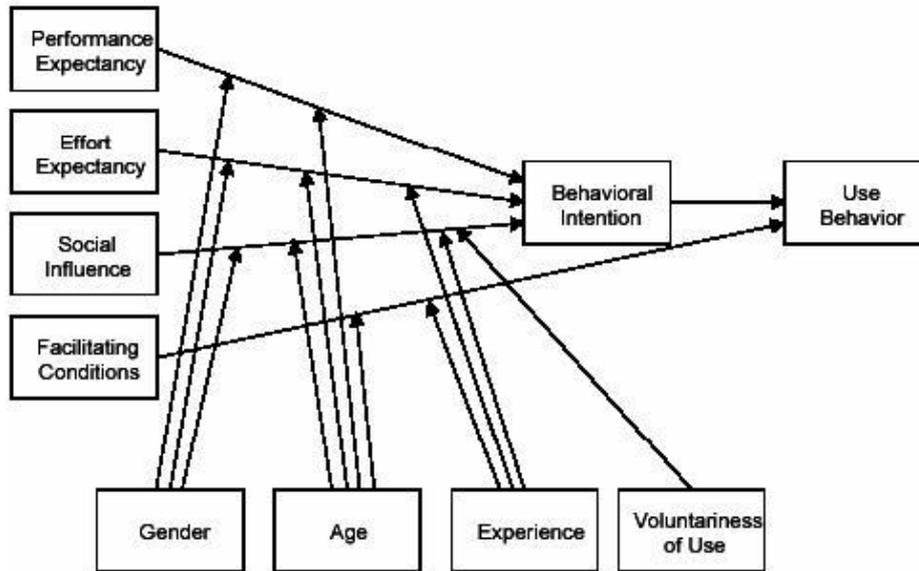


TAM2 proposes that individuals rely on the match between their job goals and the outcomes of using the system (job relevance) as a basis for their evaluation of the system usefulness (usefulness perceptions). The same is valid when it comes to result demonstrability and output quality; if both are effective then the system used is perceived as useful. Such relation does not change with increased experience.

In an attempt to integrate the main competing user acceptance models, Venkatesh et.al. formulated the Unified Theory of Acceptance and Use of Technology (UTAUT). This model was found to outperform each of the individual models

4.1.7 Unified Theory of Acceptance and Use of Technology (UTAUT)

Unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model formulated by Venkatesh and others in "User acceptance of information technology: Toward a unified view". The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior. The theory holds that four key constructs (Performance expectancy, Effort expectancy, Social influence, and Facilitating conditions) are direct determinants of usage intention and behavior. Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on usage intention and behavior. The theory was developed through a review and consolidation of the constructs of eight models that earlier research had employed to explain information systems usage behavior (Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model, Theory of Planned Behavior, a combined theory of planned behavior/technology acceptance model, model of personal computer use, Diffusion of Innovations (DOI) Theory, and Social Cognitive Theory). Subsequent validation of UTAUT in a longitudinal study found it to account for an impressive 70% of the variance in BI and about 50% in actual use.



Source: Venkatesh et al. (2003)

4.2-Adoption of SSBT and Influencing Variables

Customer dissatisfaction with branch banking because of long queuing and poor customer service is an important reason for the rapid movement to electronic delivery (Karjaluoto et al., 2002). Bill Gates (2008) announced that « *banking is essential, banks are not* ». This quotation indicates that the traditional bank branch is going to vanish in order to be surrogated by electronic banking which continues to attract new users.

Electronic banking (e-banking), is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels (Sathye, 1999). Daniel (1999) defines electronic banking as the delivery of banks' information and services by banks to customers via different delivery platforms that can be used with different terminal devices such as a personal computer and a mobile phone with browser or desktop software, telephone or digital television.

Automated teller machines (ATM) substitute cashier tellers, the Internet surrogates mail, electronic cash and smart cards replace traditional bank operations, the bank branch is displaced by call centers,... For this reason, it seems worthy to note that the impact of information technology has been significant in the banking and financial services industry as it was mentioned by Bughin (2004).

Christoslav et al (2003) in a research asserted that ATM services are highly profitable for banks, and banks aggressively market the use of ATM cards. ATMs that are off bank premises are usually more profitable for banks because they attract a higher volume of non-bank customers, who must pay service fees.

The internet offers a potential competitive advantage for banks, this advantage lies in the areas of cost reduction and more satisfaction of customer needs (Bradley & Stewart, 2003 ; Jaruwachirathanakul & Fink, 2005). Due to the speed and convenience, Internet banking, has been widely accepted by customers as a service innovation (Klopping & McKinney 2004). It remains one of the cheapest and more efficient delivery channels (Pikkarainen et al., 2004). It is believed that the e-banking will help banks to cut costs, increase revenue, and become more convenient for customers (Halperin 2001). Parasuraman (2000) found that the degree to which people with a positive view of technology believe it offers increased control, flexibility and efficiency in their lives.

Banking on net save money by eliminating overhead costs such as buildings and tellers, and they pass on these savings to their customers in the form of higher yields, lower fees, and more generous account thresholds (DiDio, 1998, Orr, 1999). It is believed that the e-banking will help banks to cut costs, increase revenue, and become more convenient for customers (Halperin 2001). According to Mishkin and Eakins (2008), e-banking facilities have enabled banks to lower the cost of bank transactions by having the customer interact with electronic banking facilities rather than with a human being. Sathye (1999) stated that Internet banking brings a number of benefits for both the provider and the customer. From the bank's perspective these are mainly related to cost savings. Sathye also added that encouraging customers to use the Internet for banking transactions can result in considerable operating costs savings. Other rationales for the adoption of such services are related to competition as it helps to retain existing customers and attract new ones (Robinson, 2000). Further, mass customization, more effective marketing and communication at lower costs are among the benefits of internet banking services (Tuchila, 2000).

4.2.1-Demographic Variables

Demography encompasses the study of the size, structure and distribution of populations, and spatial and/or temporal changes in them in response to birth, migration, aging and death. Demographic analysis can be applied to whole societies or to groups defined by criteria such as education, nationality, religion and ethnicity. The demographic factors significantly affect online banking behavior (Laforet & Li, 2005).

Individuals' willingness to use e-banking technologies is tied to "socioeconomic and demographic characteristics (Anguelov 2004). Wealthier households, those who have college degrees and those who live in the suburbs are the most likely groups to use online banking (Kolodinsky, Hogarth, and Hilgert 2004). Karjaluoto (2002) found a typical user of online banking in as highly educated, relatively young and wealthy person with good knowledge of computers and, especially, the internet. The result of the study of Rogers (1995) shows that earlier adopters of technological innovations are often stated to be relatively young, to have higher incomes, to be better educated and to have higher social status (professional, technical and managerial) occupations. Swinyard and Smith (2003) concludes the study by comparing with non-users that on-line banking users tend to be younger, more affluent, better educated, have higher computer literacy, and spend more time on their computer and on the internet. Education, gender, income and training play an important role in usage of internet banking. Inhibitory factors like trust, gender, education, culture, religion, security and price can have minimal effect on customer mind set towards internet banking. (Srivastava, Rajesh Kumar 2007). Thus it has been widely recognised that the demographic factors have a great impact on the attitudes and behavior of bank customers towards technological banking services.

4.2.1.1-Gender

Although Technology Acceptance Model (TAM) was introduced in the latter part of the 1980s, the gender dimension was only included in the model in 1997 (Gefen and Straub 1997). As a result, few studies have paid attention specifically to the gender variable. Using TAM, Fathul Wahid (2007) found that the internet adoption among women is affected by Perceived Ease of Use rather than Perceived Usefulness. On the

other hand, the internet adoption among men is affected by Perceived Usefulness rather than Perceived Ease of Use.

In various studies, it was found that women tend to lag their men counterparts in Internet adoption. Males get better exposure to new things than females. Therefore, they are likely to adopt new channels earlier. According to Morahan Martin (2000) women have greater fear and less interest in new technologies such as the internet. Gender has not been found to have a direct effect on adoption of technology in general, but men and women appear to have different acceptance rates of specific computer technologies, with men are more likely to adopt (Gefen and Straub 1997). A study in America conducted by Venkatesh and Morris (2000) found that the decision to adopt a technology by women is mostly influenced by their perception of the usefulness of technology. In that study, it was also found that the impact of perceived ease of use on adoption among women has been found to be stronger than men. Sharman Lichtenstein & Kirsty Williamson (2006) found that female users were mostly doing internet banking at home rather than at work, even when they had part-time or full-time jobs outside the home. The study of internet banking customers conducted by Shergill and Li's (2005) shows that women regarded privacy protection and ethical standards more seriously than did men.

According to Ozdemir & Kilic, (2011), men have a greater percentage of shopping online as compared to women. Sex preferences for purchasing online typically depend upon the types of products purchased. Men preferred to purchase products such as books, personal computers, cell phones, and televisions. Women preferred to purchase products such as clothing and perfume. However, there were no sex differences for preference for purchase of products such as vitamins and water purifiers (Girard, Korgaonkar, & Silverblatt, 2003). Thus, as regards the technology is concerned, researches have shown that technology is not gender neutral, and gender plays an important role in the use and acceptance of IS (Gefen et al. 2007; Cyr et al., 2007; Imhof et al., 2007)

4.2.1.2-Age

Cleaver (1999) reported that older users prefer internet sites that do not demand complicated manipulation of software and hyperlinks the equipment, simply in order to

browse. They appreciate functions that make on-line navigation easier and more convenient; for instance, simple, clear, and polite messages. The study of Bednar (1995) identified that young people under the age of 25 is the group showing the strongest preference for personal banking technologies and innovations. According to Trocchia and Janda (2000), older customers are found to have problems with new technologies and hence, are expected to have negative attitudes towards innovations. A person ages with respect to two types of changes: (a) Psychosocial and (b) Biophysical (Kennett 1995).

- (a) Psychosocial aging includes both psychological and social aging. Psychological aging means increasingly thinking of oneself as an old person, while socially aging is related to the roles associated with old age such as retiree, grandparent etc.
- (b) Biophysical aging may be due to physical and health impairments like decline in vision, which may leads to the decline in the manner and speed with which information is processed and handled.

According to Howcroft (2002), younger customers give less importance to face-to-face contact and value the convenience or time saving potential of online and mobile banking more when compared to older customers. Lumpkin (1985) found that mature customers greatly appreciate helpful sales staff sympathetic and accommodative to the needs of an elderly customer. Reader-friendly labels and tags can influence them more. (Judd, 2000) observed that older people need separate internet sites, or at least modifications of existing ones, incorporating for instance, larger font sizes and simpler graphics.

4.2.1.3-Level of Education

Educated people are likely to be more receptive to adopt better changes. Literacy levels of customers affect their willingness and ability to adopt e-banking services. It plays a major role with regard to their attitude toward technology use.

Customers with higher education such as university graduates are more comfortable in using technology, like the internet and other forms of e- banking. A reason for this is that education is often positively correlated with an individual's level of IT literacy (Burke, 2002; Al-Somali *et al.*, 2010). Experience that an individual has

gained over years of educational learning systems is important because it contributes to understanding at least some innovation attributes. Sundarraaj and Wu (2005) linked the level of education with experience and observe that graduate students have more experience, and, can, therefore, see the increased benefits of online banking compared to undergraduate students. Education, trust and resistance to change have significant impact on the attitude towards the likelihood of adopting online banking (Sabah Abdullah Al-Somali, Roya Gholami & Ben Clegg 2009). Polatoglu and Ekin (2001) states that a well-educated people, who are familiar with the Internet and e-mail, should not find Internet banking to be complex.

Thus, previous research studies suggest a positive relationship between education and use of technological services and indicates that more educated customers tend to use newly introduced banking service channels more when compared to less educated customers who prefer traditional channel.

4.2.1.4-Occupation

The study Sakkthivel A. M. (2006) revealed that occupation have significant impact on consuming different categories of services online. Those who have high-level occupations are more likely to use internet banking as they have easy accessibility of internet even during office hours. But lower-level job holders are forced to adopt banking channels which are available after office hours. The results of the study of Heikki et. Al. (2002) shows that demographic factors, especially, occupation and household income have a heavy impact on online banking behavior.

4.2.1.5-Monthly Income

Income exhibited a positive relationship with the adoption of internet shopping (Donthu and Garcia 1999, Susskind 2004). According to the study of Heikki Karjaluoto & Tapio Pentto (2003), household income and education were found to have a significant effect on the adoption of the Internet as a banking channel. Stronger need for managing financial resources arises when the household income of a person is high. A high household income would mean that the customer has more financial resources to manage, and thus a stronger need for banking channels that offer a high level of flexibility (Mattila 2003). Thus high income groups opt for banking channels which

offer a high level of flexibility. The results of the study of Heikki et. al. (2002) also shows the impact of household income on online banking behavior. Singh (2004) outlined that males used mobile banking more than females, and mobile banking users tended to come from high-income groups.

4.2.2-Compatibility

Compatibility is the extent to which a new product or service is consistent and compatible with customers' needs, beliefs, values, experiences, and habits. The compatibility construct has provided a consistent explanation of technology adoption decisions (Tornatzky & Klein, 1982). It is described to capture the consistency between an innovation and the experiences, values, as well as needs of potential adopters (Rogers, 1995). It is an important aspect of compatibility that customers are able to integrate services and technologies into their daily life (Jayawardhena & Foley, 1998; Lee et al., 2003; Shon & Swatman, 1998). Individuals are more likely to adopt an innovation when they find it compatible with their past experience, beliefs and the way they are accustomed to work (Agarwal & Prasad, 1998; Tornatzky & Klein, 1982). Compatibility is viewed as an indicator of how well the service or technology fits with the way the customers manage and control their finances and how it suits their lifestyle. Several researchers have reported that the level of technological exposure may influence the potential adopters' behavioral intention to adopt technological banking services.

The study of Patten (2003) shows that exposure to the technology will increase both users' Perceived Ease of Use (reduce user's perception complexity) and Perceived Usefulness (relative advantages) as well as decreasing users' perceived risk. Whether the system is good or bad depends on how the user feels about the system. If the users do not rely on the system and its information, their evaluation and behavior towards system use can be negative.

According to Dickerson and Gentry (1983), the willingness of a customer to adopt a new technology is affected by his prior pattern of adopting related technologies. Customers' continued use and frequency of use of internet banking depends upon an individual's capability and capacity to engage with these proliferated service delivery channels (Walker & Johnson 2006). Polatoglu and Ekin (2001) found that those who use

the internet banking services for the longest time or who use more of its services find internet banking to be very reliable. Brown (2003) pointed out that those with greater mobile phone experience are more likely to use mobile phone banking

New product innovators in technology-based products are likely to be drawn from heavy users of other products within the product category. Adopters who adopt earlier than others are likely to gain more from the use of the product and hence have a greater usage propensity (Gatignon and Robertson).

The innovators or adopters of a technology are from those with significant experience concerning the products in similar product categories. Heavy users of similar products have obtained better knowledge structure and ability to predict the outcomes of using similar products. Feldman and Lynch (1988) pointed out that people are more likely to form an attitude towards an object spontaneously if they have direct experience of it than when they simply read information about it. Adaptability, technical self-efficacy and knowledge of the internet banking application have been found influential, suggesting that individual characteristics affect the adoption decision (Thornton and White 2001). According to Heikki Karjaluo, Minna Mattila 2002 online banking usage correlates positively with prior computer experience, personal banking experience, computer attitude, overall attitude, education, occupation, income, and household size. According to the findings of the study of Black (2001) complexity in conducting financial transactions over the Internet was inversely related to a customer's experience with computers. Experience in successfully using a simple function at an online banking site (e.g., checking account balances) may demystify the use of a more complex function, e.g., transferring funds between accounts. The more functions an individual becomes familiar with, the more likely they are to perceive an increased ease of use (Riquelme, *et. al.*, 2009). The frequency of use has been found to capture the customer's use of a technology (Lang and Colgate 2003). Another valid representation of technology use is the duration of the experience with the technology (Ricard *et al.*, 2001). Au and Enderwick (2000) states that the more experience a customer has about technology, the better understanding the customer will have about new technologies. Thus, a better understanding of technology allows the customer to better appreciate the added value brought by new technological improvements.

4.2.2.1-Computer Experience

It is argued that the adoption of complex products depends on the adopter's ability to develop new knowledge and new patterns of experience. This ability can be enhanced by the knowledge gained from related products. Karjaluoto *et al.* (2002) showed that 'prior experience' with computer and technology along with 'attitudes' towards computer, influence both attitude and behavior towards online banking. Prior experience of computers has greater effect on attitudes than demographic characteristics (Levin and Gordon 1989). Igbaria (1995) suggested that acceptance of computer technology depends on the technology itself and the level of skill or expertise of the individual using the technology. Furthermore, Sarel and Marmorstein (2003) pointed out that prior experience with computers and technology seems to be a key correlate of early adoption. Similarly, Mattila (2001) found that attitude towards IB and actual behavior were both influenced by prior experience of computers and technology as well as attitudes towards computers. Black (2001) states that the adoption of online banking depends on the compatibility of the new channel with the individual's personality, his computer skills, and the chance to try the services offered.

4.2.2.2-Internet Experience

Adoption of computer technology by internet users often creates a belief in their ability to use internet for commercial purposes (O'Cass and Fenech 2003). Guerrero (2005) pointed out that the knowledge of current financial customers' internet-related behavior will help to identify those most likely to adopt IB services. Researchers believe that maintaining experience of the internet by bank customers could be very important, at least with those segments who need more internet experience before using online banking (Aladwani, 2001).. Lee and Lee (2001) found that the previous experience of customers with the internet technology or their current use of other electronic banking services enhances the likelihood of one adopting internet banking. Tan and Teo (2000) assessed Internet experience in terms of number of years of use, frequency and intensity of use, diversity of use, and Internet skill level. They found that the greater the experience with using the Internet, the more likely that Internet banking would be adopted.

4.2.2.3-Computer Knowledge Level

When customers gain knowledge, they gain confidence and with gradual increases in computer usage, they tend to be more accustomed to the use of new technology (Thornton & White, 2001). Chan and Lu (2004) report that *subjective norms* and computer *self-efficacy* have a significant effect on intentions to adopt IB, whereas, *perceived ease of use* had only an indirect significant effect on intention to adopt IB, through *perceived usefulness*. The lack of knowledge on how to use the technology and the low computer literacy are other contributing factors for not adopting electronic business (Knol and Stroeken, 2001). Shanmugham (2004) found that age and educational qualifications of electronic and conventional banking have no significant impact on E-banking adoption. Instead, they argued that accessibility to the Internet, awareness of E-banking and customers' resistance to change are the main factors influencing the adoption.

4.2.2.4-Extension of Brick & Mortar to Click & Mortar

The reputation of bank is an influencing factor as it is an important aspect of trustworthiness. Users of Internet banking have to trust the bank in addition to the electronic channel when they perform Internet banking transactions. The reputation of the bank is considered when a customer opt for online banking. When customers feel that an online bank has a poor or bad reputation, they would be discouraged from using that Web site (Ba 2001).

The result of several studies shows that the trust in brick & mortar system of a bank influenced the customers to adopt technology-enabled services in the same bank itself. There is an association between online customer trust and bricks-and-mortar perceived characteristics. If a customer trusts in a bricks-and-mortar bank, he may be trusted to use the online services offered by the same bank on the assumption that the trusted bank will be similarly trustworthy in the new online division. Thus, brick-and-mortar trustworthiness forms an intangible active, which may create a competitive advantage in the new online distribution channels. The decision to use the internet as a financial channel might depend on how the bank is assessed from its bricks-and-mortar perspective (Lynch, 2000). According to Carlos Miguel (2006), if a customer trusts in a

bricks-and-mortar bank, it is possible that he feels more motivated to use the online services offered by the same bank. The customer infers that the trustworthiness of the traditional bank will be similar in the new online division.

The above studies reveals that the customers' perceptions of their traditional bank influence their decision to adopt the services offered by the same bank for adopting SSBT services. In India, new generation banks (NGB) such as ICICI Bank, HDFC Bank entered into the banking service in India with technology-enabled services whereas the then existing banks such as public sector banks were adding ICT enabled services with their brick & mortar system. Therefore, the present study attempts to confirm whether such differences exist among different sectors of banks.

4.3-Perceptions & Practices of Bank Customers

4.3.1-Visit of Bank's Website

Banking institutions use the websites as an information delivery tool, a channel for conducting transactions and a tool to improve customer relationship (Diniz, 1998). The main factor in a successful online banking web site is providing the customer with an interface that is focused on the expectations, needs, and desires of the user (Bruno-Britz, 2006; Cooper, 2006). According to (Liao & Cheung, 2002), good experience of security and privacy on the banking website has a positive influence on customer trust. By keeping in view of the above facts, data related to the frequency of visiting bank's website was collected analysed.

4.3.1-Practice of Changing PIN/Password

Research has shown that more than 85 percent of passwords used can be broken through the use of a dictionary or a simple exhaustive search of short passwords (Braz and Robert, 2006). One possible solution to several of these threats includes having a password policy where users must create strong passwords and change them often. This decreases several threats previously identified such as guessing, capture and replay, and brute force. However, it often leads to poor security habits by users, such as a user not being able to remember their password and having to write it down on a piece of paper that easily be obtained by unauthorised individuals (Adams and Sasse, 1999) In the

present study, an attempt is made to get an insight about the frequency of changing PIN/passwords of SSBT Services.

4.3.2-Reduction in the Number of Bank Visits

SSBT services enable the customers to do almost all banking transactions. According to Peterson (2006), technological banking services helps in expediting banking transactions, reducing the cost and ensuring that the customers can utilise various banking services in his living room or even while travelling thousands of miles away from your home. When the customers start adopting technology-enabled self-services such as ATMs, internet banking, tele-banking and mobile banking, the branch banking transactions of the bank customers reduce (Mols et al., 1999).

On the other side, IT-based distribution channels reduce personal contact between the service providers and the customers, which inevitably leads to a complete transformation of traditional bank-customers relationships (Barnes and Howlett, 1998). Nancy *et al.* (2001) viewed that customers like to interact with humans rather than machines. They found more possibilities for asking questions and believe that bank clerks are less prone to errors. It is thus essential that any face-to-face transactions are carried out efficiently and courteously.

Based on the findings of earlier studies, it was felt to know whether there is considerable reduction in the number of bank visits due to the adoption of SSBT services.

4.3.4-Reduction in Personal Attention

In several studies, the necessity of personalised banking service has been pointed out in the technology-enabled banking environment. The finding of O'Donnell (2002) is that the banking customers generally prefer personalised human interactions with their bank as a means of communication, and that this is especially pronounced for smaller businesses. Roth and Van der Velde (1989) suggest that the role of human interactions within the bank branch will be even more critical in the future, despite the increasing popularity and acceptance of new banking technologies.

According to Emerson (1998), whether the use of IT is to improve customer service with the assistance of database management, or to provide selective and relevant

information, an interactive based communication can be effective for building stronger relationships. According to Han (1997), the characteristics of the firm's and the customer's technological ability provide the basic conditions for the interaction in terms of the degree to which the parties are matched in technology level. Substantial technological differences between the firm and the customer can make co-operation more difficult and prevent both parties from understanding each other. On the contrary, matching technology levels can make this co-operation more easy and effective. It has been argued that when the technology level is matched (no IT gap), both parties will experience an efficient and satisfactory relationship.

According to Mishkin and Eakins (2008), e-banking facilities have enabled banks to lower the cost of bank transactions by having the customer interact with electronic banking facilities rather than with a human being. Yang et al. (2003) suggested that personalization should be done in the form of individual attention. According to them, personalization can be done through customization. Customization would be the customization of the interface that the customer might enjoy as mentioned by Field et al (2004). Van Riel et al (2003) mentioned that customization is to adapt with the customer's needs.

The impersonal nature of self service technologies could have either a positive or negative effect on relationships. The greater the change, the greater the resistance is likely to be. Even in the case of successful innovations, resistance may occur. Thus, innovation resistance is seen as a normal customer response to the change to existing habits or practices necessitated by adopting an innovation. This resistance can hamper or even prevent the adoption of innovation, and must therefore be overcome before adoption may commence (Ram 1987).

4.3.5-Competency of Bank Employees

In the study by Shah and Siddiqui (2006), it was identified that in the implementation of internet and electronic device projects, the shortage of readily skilled human resources can be a severe handicap. Alawneh and Hattab (2009) found that the lack of trained and up to date IT personnel may affect value creation in the banking sector.

Bowen *et al.*, (2000) found that employee morale is strongly related to customer satisfaction; that is, when bank customers perceive front-line employees are happy with their work, bank customers are more likely to be satisfied with the service they receive. But the bank employees may not be persuasive and can transfer the negative perceptions to customers (Bowen *et al.*, (1999).

Banks normally assign their managers responsibility for the promotion of the use of electronic channels to customers (Lymeropoulos, and Chaniotakis,2004). Their input as delivery staff is important. It is also the manager's responsibility to ensure that branch staff is professional, well-trained and knowledgeable about the range of services provided by the bank (Moutinho, 1997).

It is a common belief that youngsters can perform better in the computerised environment. By keeping this in view, opinion of the respondents are collected to know whether the bank employees, employed before the introduction of ICT in banks, are equally competent as newly recruited employees.

4.3.6-Sources of Collecting Information about SSBT Services

The role of social influence in an individual's decision whether or not to use a technology is complex and subject to a wide range of contingent influences (Venkatesh *et al.* 2003). According to Dolen satisfied customers may be effective promoters of the organization's products and service. Similarly, substandard service quality leads to negative word-of-mouth, which may result in a loss of sales and profits for the service firm with customers migrating to competitors.

Gould (1995) states that a loyal customer can be defined as one who not only uses the goods or services, but satisfaction is such that it speaks to his entourage. A loyal customer will disclose to others of good assessments and encourage them to attend the same company or buy the same brand. It is therefore to free publicity for the company. Therefore, Word-of-mouth is an important indicator of loyalty. According to (Dichter, 1966), Word-of-mouth (WOM) is as an informal type of communication between private parties concerning the evaluation of goods and services. It exerts a strong influence on customer choice, so that companies have a good opportunity to increase their market share by developing positive WOM among customers (Chung and Darke, 2006).

A positive WOM has a greater role in the adoption of SSBT Services among customers. In the present study, data was collected to evaluate the role of WOM for the transmission of SSBT related information among the customers. For this purpose, respondents were asked to rank different sources of SSBT information such as (1) Advertisement, (2) Bank employees, (3) Brochures & Booklets, (4) Friends & Relatives (WOM) (5) Training & Demo and (6) Bank Website

4.3.7-Factors Considered while Selecting a Bank for SSBT Services

Akinci et al. (2004) find that the selection of an internet banking service provider is effected by security, privacy, reliability and trust. Larger banks that maintain expensive branch networks tend to have the greatest incentive to adopt e-banking services. In comparison, smaller banks have higher start up costs and tend to have a high initial technological cost in developing e-banking services (Treadwell 2001) Reputation of a service provider is an important factor affecting trust. Doney and Cannon (1997) defined reputation as the extent to which customers believe a supplier or service provider is honest and concerned about its customers. The research of Ulengin (1998) in Turkey and Almosawi (2001) in Bahrain concluded that ATM network in convenient locations was a dominant factor in bank selection decision-making of customers in those countries.

In order to ascertain the influencing variables which influence the bank customers while selecting banks for availing SSBT services, respondents were requested to rank against different options such as (1) Latest hi-tech services, (2) Number of ATMs, (3) Personal attention, (4) Proximity to branch, (5) Public image, (6) Salary Credit A/c.

4.3.8-Preferred Method to Access Accounts & to do Transactions

Heinonen (2004) and Forman and Sriram (1991) found that some customers simply prefer to deal directly with a bank clerk instead of utilizing “arms-length technology” (e.g. mobile banking). According to Wendy, Chung and Cheri (2005), selection of a particular channel of service by a customer is based on eleven factors such as (1) Efficiency of the services delivered by the channel, (2) Convenience of the location of the channel, (3) Convenience of the operating time of the channel, (4) Speed of the service provider/system in delivering services, (5) Provision of financial services, (6) Provision of financial information, (7) Provision of professional financial

consultation, (8) Ease of use, (9) Clarity of service instructions, (10) Security of customer information and (11) Accuracy of transaction information.

Customers appear to be much more concerned with the security of the internet banking than they are with that of traditional banking (Minjoon and Shaohan, 2001). Howcroft *et al.* (2002) demonstrated that younger customers value the convenience or time-saving potential of online services more than older customers, and they care less about the importance of face-to-face contact. Research has found that customers may actually prefer using technology based self service over traditional brick-and-mortar service because it also helps to avoid interaction with employees (Dabholkar and Bagozzi 2002). According to a survey done by Customer Technographics in 2005 of North American banking customers, there is a direct relationship between age and branch preference. 77% of customers who are age 65 and older prefer to use the branch for their banking activities (Pilecki *et al.*, 2006).

According to (Patricio *et al.* (2003), it would be highly important for service providers to understand and improve each channel within the overall service offering rather than concentrating efforts on improving one delivery channel in isolation. Howcroft *et al.*, (2002) states that bank customers prefer a mix of several channels rather than a single channel.

In the present study, in order to know the customers' preference to different services channels for doing financial transactions, respondents were requested to rank against the options such as (1) ATM (2) Internet, (3) Mobile phone and (4) At Branch for doing financial transactions.

Similarly, for understating the customers' preferred way of getting accounts related information, respondents were also requested to rank against the options such as (1) ATM (2) Internet, (3) Mobile phone, and (4) Passbook

4.4-Purpose and Extent of Utilisation of SSBT Services

SSTBs provide advantages for service providers and customers alike (Bitner *et al.*,2002; Brown, 1997; Dabholkar,1996). Benefits for the end users are numerous and include mainly convenience of the service (time saved and globally accessible service), lower cost of transaction and more frequent monitoring of accounts among others

(Pikkarainen et al., 2004). Banking on net save money by eliminating overhead costs such as buildings and tellers, and they pass on these savings to their customers in the form of higher yields, lower fees, and more generous account thresholds (DiDio, 1998, Orr, 1999).

Despite the many benefits that technological banking services provide to both banks and their customers; acceptance of this technology has not been equal in all parts of the world (Karjaluo, *et. al.*,2002). The correlation between technological advancements and increase in business productivity is feasible only if they are accepted by the intended users (Venkatesh *et al.* 2003). According to Kim & Malhotra (2005), it is vital to concentrate on the customer's continued and frequent use of a particular product or service rather than solely on their acceptance of the service.

Calisir and Gumussoy (2008) compare the customer perception of internet banking and other banking channels and report that internet banking, ATM and phone banking substitute each other. Lewis (1991) found that users mainly used ATMs for withdrawal of cash and obtaining account balances

4.5-Influencing Factors for the Adoption of SSBT Services

Customers with a more positive attitude to new technologies will be more motivated to using new bank on line products and its financial services (Guerrero., et al., 2007). Kolodinsky et al. (2004) show that relative advantage, complexity/simplicity, compatibility, observability, risk tolerance, and product involvement are important variables that affect the decision of adoption or intention to adopt three e-banking technologies. Gurau (2002) examined the prospects and challenges of adopting online banking in Romania, and found that the adoption of online banking depends on the quality and security of internet network, the level of internet knowledge of the population, the government support, as well as the internet strategy of the bank and the reliability of online banking services. Gerrard and Cunningham (2003) who conducted a study among Singapore bank customers identified eight characteristics relating to the adoption of internet banking such as social desirability, compatibility, convenience, complexity, confidentiality, accessibility, economic benefits and PC proficiency as eight influential factors of adoption.

Berger (2007) argues that a sound understanding of client is required for improvement of e-banking. Thus, all relevant information about the clients should be taken into account and a client-centric strategy should be developed. Banks must understand the factors which influence the customers' adoption of e-banking services in order to formulate strategies to increase patronage (Cheng *et al.*, 2006).

In the present study also, due importance is given to understand the influencing variables (motivational factors of the customers) for the adoption of SSBT services. Based on earlier literature, 7 variables were identified as (1) Perceived Usefulness (PU), (2) Perceived Ease of Use (PEOU), (3) Privacy & Security, (4) Reliability & Trust, (5) Efficiency, (6) Economy and Cost Aspects, (7) Demonstrability & Trialability.

4.5.1-Perceived Usefulness (PU)

Perceived Usefulness (PU) is defined as the degree to which “a person believes that using the system will enhance his or her performance” (Davis, 1989). In the study of Chang *et al.* (2005), it was found that perceived usefulness has no direct impact on behavior intention but has significant on attitude, which consequently has an impact on behavior intention of using the system. With regard to the acceptance of new technology, Sathye (1999) points out that unless, the specific need of a customer is fulfilled, customers may not be prepared to change from present familiar ways of operating. According to Lewis (1991), the reason of customers' switching from traditional delivery channel to electronic self-service is due to the dissatisfaction with their present services such as the slow speed of service in branches, inconvenient branch opening hours or places and the small number of branch staff available to serve customers, etc. Perceived usefulness is seen as an equivalent concept to Rogers' relative advantage. The use of technology-enabled services is greater convenience to the customers as it can reduce their waiting time. Customers prefer these types of services to eliminate the need to visit the service provider personally and also to engage in personal discussion. Therefore, the perceived benefits or belief to get relative advantages over the traditional way motivates the customers to opt for technology-enabled services.

Centeno (2004) argues that speed, the convenience of remote access, 7/24 availability and price incentives are the main motivation factors for the customers to use

internet banking. Convenience means saving time, being easy to use and quick to access. Ease of use and accessibility obtain priority for the customers and are recorded as main satisfactory items (Jun & Cai, 2001). Liao and Cheung (2002) found that individual expectations regarding accuracy, security, transaction speed, user friendliness, user involvement and convenience are the most important attributes in the perceived usefulness of Internet-based e-retail banking. Zahid *et al.*, (2010) observed that people who adopt a particular technology presume that the use of the technology and information system in question would enhance their performance.

As the Perceived usefulness (PU) has a positive effect on the behavioral intention to use technological banking services, it is asserted in the present study that perceived usefulness is one of the most determinant of a customer's decision to adopt SSBT services.

4.5.2-Perceived Ease of Use (PEOU)

Perceived Ease of Use (PEOU) is defined as the degree to which “a person believes that using the system will be free of mental effort” (Davis, 1989). There are several studies to prove that there is a significant effect of perceived ease of use (PEU) on usage intention, either directly or indirectly. The greater the perceived usefulness and the perceived ease of use, the better are people's reactions towards the innovation and the higher their intention to adopt it (Hernandez & Mazzon, 2007). Al-Somali *et al.*, (2004) found that security, quality of Internet connection and awareness about Internet banking and its benefits have significant effects on the perceived usefulness and perceived ease of use in Internet banking acceptance. Durkin *et al.* (2008) notes that the simplicity of the products offered via internet banking facilitates the adoption of internet banking by customers. Complexity is considered as the exact opposite of ease of use, which has been found to directly impact the adoption of the Internet (Lederer, Maupin *et al.* 2000).

4.5.3-Privacy and Security

Privacy and security are major concerns against ICT adoption (Turban *et al.*, 2000; Shah and Siddiqui, 2006). Lallmahamood (2007) shows that perceived privacy and security have the most important impact on the intention to use internet banking. The importance of privacy and security to the acceptance of banking technologies has

been noted in many banking studies also. (Howcroft *et al.*, 2002; Pikkarainen *et al.*, 2004; Ramayah *et al.* 2003, Sathye, 1999, Wang *et al.*, 2003). When security and privacy concerns of the customer are properly attended, credibility is achieved in the banking system (Adesina Aderonke and Ayo Charles, 2010). Security and privacy have a powerful effect on customer trust in online transaction (Lee and Turban, 2001). Security risks consists of three dimensions-reliability, safety, and privacy (Polatoglu & Ekin, 2001).

Privacy is defined as the ability to control and manage information about oneself (Belanger, Hiller and Smith, 2002). Warren and Brandeis (1890) defines privacy as the right of a person to be left alone and to be able to have control over the flow and disclosure of information about him or herself. Privacy risk means a customer may sacrifice their privacy when they are required to provide private information in making e-commerce transaction (Vijayasarathy, 2002). Privacy policy including privacy notice can serve as a useful tool to customer's trust building (Milne and Culnan, 2004). Customers who adopt Internet banking services are more likely to perceive problems related to loss of privacy, as the Internet apparently allows outsiders to access their private information easily (Gattiker *et al.*, 2000; Jones *et al.*, 2000).

There have been several major challenges and issues faced to the e-banking growth and the e-business in general. One major obstacle addressed most is the security concern (Feinman, *et al.*, 1999; Financial Service, 2001). Security perceptions are defined as “the subjective probability with which customers believe that their private information will not be viewed, store and manipulated during transit and storage by inappropriate parties in a manner consistent with their confident expectations” (Pavlou 2001). Security threats can be classified into several categories from internal to external, human or non-human, and intentional or non-intentional (Loch, *et al.*, 1992); Whitman, 2003).

Security is a crucial factor in determining the adoption level as customers fear the high risk involved in performing financial transactions via website (Aladwani, 2001; Black *et al.*, 2001; Gerrard and Cunningham, 2003; Sathye, 1999). Security, which involves the use of technical advancements like cryptography, digital signature and certificates aimed at protecting users from risk of fraud, hacking or “phishing”, has a

positive influence on the intention to purchase online (Liao and Lin, 2008). Customers perceive a greater uncertainty when a transaction is carried out using the Internet and are very concerned about security in the online context (Casaló, *et. al.*, 2007). Potential customers mentioned Internet security, online banking regulations, customers' privacy, and bank's reputation as the most important future challenges of online banking adoption. (Aladwani 2001). Sathye (1999) confirmed security concerns are a burning issue for financial transactions done over the Internet. Thus, it is expected that only individuals who perceive using Internet banking as low risk undertaking would adopt it.

Customers attach much more importance to security than to convenience or time-saving. Thus, in order to improve the rate of adoption of online banking, the security issue must first be addressed (Laforet & Li, 2005; Zhao et al., 2008). Customers' main concern is that they don't know who is gathering the data and what is being done with the data (Culnan, 2007). In India, slowly but steadily, the Indian customer is moving towards Internet banking. But they are very concern about security and privacy of internet banking (Malhotra and Singh, 2009).

4.5.4-Reliability and Trust

Reliability is associated with the proper functioning of service at the desired time and involves consistency of performance and dependability. Trust is "willingness to rely on an exchange partner in whom one has confidence" (Moorman 1993). Trust exists "when one party has confidence in an exchange partner's reliability and integrity" (Morgan and Hunt 1994). Trust consists of two components: confidence in ability and intention (Deutsch 1960).

Trust has been identified as an important factor for those financial related online services; moreover, empirical study supports that customers make many online decisions almost solely on the basis of trust (Avinandan & Prithwiraj, 2003; Urban, Sultan and Qualls, 2000). Many researchers have argued that an understanding of trust is essential for understanding interpersonal behavior in economic exchanges (Doney, and Cannon, 1997). In general, the level of trust is positively connected to customers' manner and intention to use the Internet banking service. (Liao & Cheung, 2002). Though security is essentially a perception component usefulness of Internet Banking outweigh security

concerns, trust emerge as the single most important variable in the use of Internet Banking (Singh and Beekhuyzen, 2006). Trust is central to the development of successful service relationships in business-to-business markets and for the achievement of customer loyalty (Rauyruen & Miller, 2007).

The issue of how the perceived customers would trust in the system and adopt it is a great concern for the success of SSBT services. An effective customer-company relationship requires trust and for the company, such relationships are crucial to managing trust, because a customer typically must buy a service before experiencing it (Morgan and Hunt, 1994). Trust is seen as being of considerable importance in the process of building and maintaining relationships, although it is also recognised as being difficult to manage (Bejou 1998). Trust factor is critical in adoption of internet banking, because customers may feel that they do not have much control over the misuse or abuse of personal information transmitted via the internet. The issue of trust arises due to the risk in economic transactions. It has been defined in different ways by different authorities.

There should be something attractive which makes the service provider interesting to a given customer. The attraction can be based on financial, technology or social constructs. According to (Grönroos, 2001), trust towards a system depends not only on the laws, industry regulations and contracts but also on the professionalism of the other party. Aladwani (2001) identified customers' trust as an important future challenge of online banking. The extent to which a customer trusts on the electronic system is likely to correlate with their overall trust when engaging in online banking (Lee and Turban, 2001). Kim and Prabhakar (2000) developed a conceptual model that leads us to believe that trust in the electronic channel and perceived risks of e-commerce are the major determinants of the adoption behavior.

While evaluating the trust element, several factors are affected in the adoption such as Network connectivity and reliability, Uninterrupted power supply, Competency of the electronic system (Hardware & Software), Attack of unauthorised persons like hackers in the network, Effectiveness of existing cyber laws, Reputation of the bank, Openness of the bank towards customers, Assurance to compensate the loss due to mistake from banker's part etc.

For online banking, trust plays an extremely important role for the acceptance and use, which has been supported by both research and empirical studies, especially in developing countries (Benamati and Serva, 2007). As in traditional exchanges trust has been considered crucial in the online transaction process perhaps more so given the impersonal nature of the online environment (Brynjolfsson and Smith, 2000).

One of the main reasons of why banking customers do not trust Internet technology is due to the uncertainty of the reliability of the Internet services (Lee and Turban, 2001)

Customers may deem to perceive new technology based service as a threat and would cause them to reject it. Therefore perceived risk is associated with reliability and system failure (Walker et al., 2002). Customers often lack confidence in trusting the Internet technology mainly due to system security issues, non confidence of bank websites and doubts about the reliability of Internet services (Min and Galle, 1999; Ratnasingham, 1998). Trust is especially critical when two situational factors are present in a transaction: uncertainty (risk) and incomplete product information (Swan and Nolan, 1989).

By considering the above facts and also on the basis of findings of earlier studies, the extend of trust in the bank by the customers is being evaluated in the present study to know whether the trust factor influenced the adoption of technological banking services.

4.5.5-Efficiency

Liao and Cheung (2002) stated that willingness to use Internet banking depends on the expectations of accuracy, security, network speed, user-friendliness, user involvement, and convenience. Liao et al. (2003) suggest that customer perceptions of transaction security, transaction accuracy, user friendliness, and network speed are the critical factors for success in Internet banking.

4.5.6-Cost/Economy

Traditionally, customer perceived value has been seen as the trade-off between benefit and sacrifice, where quality is the benefit and price/cost is the sacrifice. Transaction cost economics theory suggests that people will choose the cheaper method to transact when choosing between electronic or traditional services (Huang, 2002).

Burnham (2003) identified procedural, financial and relational costs considered by customers when switching between various types of service offerings. According to Barczak, Ellen and Pilling (1997), customers will not adopt a new financial product unless it reduces their costs. Ram and Sheth (1987; 1989) stated that it was not viable for customers to change their way of performing their banking tasks without offering a strong performance-to-price advantage.

Howcroft *et al.*, (2002) found that the most important factors encouraging customers to use online banking are lower fees followed by reducing paper work and human error, which subsequently minimise disputes (Kiang *et al.*, 2000). Adoption of e-business reduces transaction costs, increase transaction speed and reliability, and extract maximum value from transactions in their value chains (OECD, 2002). In several other studies, it was found that the cost of internet connections is one of the important aspects in adoption of internet banking services Li & Worthington, (2004), Sohail & Shanmugham, (2003) and Zheng & Zhong (2005)

4.5.7-Demonstrability and Trialability

The characteristics that determine an innovation's rate of adoption were Relative advantage, Compatibility, Complexity, Trialability and Observability to those people within the social system (Rogers 1983). Customers' perceptions related to the perceived usability and perceived trialability features were identified as influencing their internet banking adoption (Ndubisi & Sinti 2006).

Trialability is defined as "the degree to which an innovation may be experimented with on a limited basis". It allows the individuals to "test drive" an innovation before it is being adopted. Rogers (1983) defined trialability as the extent to which users would like an opportunity to experiment with the innovation prior to committing to its usage. On the importance of trialability, Rogers (1983) suggests that the trialability contributes to achieve some sort of comfort among the customers and the users who may later become more willing to adopt this innovation.

Customers learn about goods and services to a large extent by the development of experiences from trial and error. Customer experiences are a major determinant of customer choice and preferences (Bettman and Park, 1980; Foxall, 2003). According to

Tan and Teo (2000) if customers are given the chance to try the innovation, it will minimise certain unknown fears, especially when customers found that mistakes could be rectified and thus providing a predictable situation. On the importance of trialability, Agarwal and Prasad (1998) stated that potential adopters of new technology, who are allowed to experiment with it, would feel comfortable with it and thus be more likely to adopt it. When the user get the chance to try a new technology, this would lessen his feelings of fear concerning the usage of this technology. Individuals typically do banking transactions privately. The acts are not observable and visible to others. (Tan and Teo, 2000). The opportunity to conduct a trial may help to convince reluctant customers (Black *et al.*, 2001). Hernandez and Mazzon (2006) show that relative advantage control, compatibility with lifestyle, image, subjective norm, self-efficacy, relative advantage of security and privacy, demonstrability and trialability influence to use internet banking.

4.6-Reasons for the Restricted Use of SSBT Services

Several research studies have been conducted to know the reason for the partial use of banking technologies by the customers. Some people fear to use SSBT services extensively while some are simply shy and they will just say they do not like it and want no part of it. Among the users, some customers are not happy with the use. One fear is that SSBT services leads to a paperless business environment. The customers of this group fear that if they do not have written proof of transactions, they will lose the ability to prove anything. For those who want hardcopy of their transactions, can take printout of the same and keep a file of monthly statements.

Koskosas and Paul (2004), state that the use of new distribution channels such as the internet increases the importance of security in information systems as these systems become sensitive to the environment and may leave organizations more vulnerable to system attacks. Polatoglu and Ekin (2001) found that low levels of email usage and a preference for doing over-the-counter transactions at bank branches are the main reasons for not using e-banking.

Mittelstaedt *et al.* (1976) shows the following three possible reasons for non-adoption of an innovation.

- An innovation may be symbolically rejected when an individual decides on the basis of information available that it is not for him
- An innovation may be symbolically accepted but an individual is for other reasons unwilling or unable to adopt the innovation
- An innovation may be symbolically accepted but an individual may postpone adoption until an appropriate time or situation for use

Gatignon and Robertson (1991) explain the non-adoption of an innovation through postponement and rejection. They argue that postponers are undecided as to whether they should adopt the innovation and are unwilling to commit at a given point in time, requiring more information than they currently have or more time for information processing. Rejecters in contrast, have processed the information they need to make the decision and have decided against adoption. This line of thought assumes a two dimensional perspective in non-adopter behavior.

Szmigin and Foxall (1998) identified three forms of resistance in retail payment methods. They categories the non-adopters of internet banking into three groups with different intentions about adopting an innovation. The three forms of innovation resistance are (1) Rejection, (2) Postponement and (3) Opposition. They argue that rejection is the most extreme form of resistance and that it is generally a result of a new product not offering any worthwhile advantage to a particular customer. Postponement, on the other hand, is often caused by situational factors, while opposition may be a result of many reasons, such as habit resistance, situational factors and perceived relative disadvantage. The first group, the postponers, intend to adopt a given innovation within a year, while the second group, called the opponents, intend to adopt the innovation but have not yet decided when, but certainly not within a year. Finally, the last group, the rejecters, do not intend to adopt an innovation at all. This study explores the differences in the resistance to internet banking between these groups of customers.

The findings of the study conducted by Philip Gerrard, J. Barton Cunningham & James F. Devlin (2006) among bank customers who were not the users of internet banking identified the following eight factors which explain why customers are not using.

4.6.1-Inaccessibility

Customers, especially who live in remote area may not be in a position to use ATM, Internet banking, Mobile banking etc. due to the lack of efficient networking and hardware systems. Shanmugham (2004) also argued that accessibility to the Internet, awareness of E-banking and customers' resistance to change are the main factors influencing the adoption.

4.6.2-Inertia

There are customers who are technologically competent but are not bothered as they are not being sufficiently motivated.

4.6.3-Lacking the Human Touch

Automated technology oriented service systems are having the lack of a human touch. Even highly technology oriented customers would like to enjoy a human touch.

4.6.4-Lack of Knowledge about the Service

Customers may not use ICT based services due to the lack of knowledge regarding the advantages, features, requirements, procedures etc. Bank customers who know only basic functions of a mobile phone may not be ready to opt for mobile banking and those who are not familiar with internet may not try for internet banking.

When customers gain knowledge, they gain confidence and with gradual increases in computer usage, they tend to be more accepting of changes in the use of new technology (Thornton & White, 2001). Without appropriate financial literacy and ICT training, e-banking will remain a sphere reserved only for financially literate, well-educated, high-income customers (Lisa & Robert 2008). A study conducted by Lacovou et al., (2005) found that the owner's lack of awareness of the technology and perceived benefits is a major factor to a take up of electronic business.

4.6.5-No Perceived Need

There are customers who feel that the conventional branch banking is sufficient to meet their requirements.

4.6.6-Cost Concerns

Cost includes the investment in computer and mobile phones and operating costs such as mobile subscription, internet charges and service charges levied if any by the banks. Gerrard *et al.*, (2006), found that a number of customers expressed concern about having to buy a personal computer along with its accessories in order to become an internet banking user. The customers were of the opinion that such a capital outlay was largely uncalled-for. Transaction cost economics theory suggests people will choose the cheaper method to transact when choosing between electronic or traditional services (Huang, 2002).

4.6.7-Risks Involved

Security risks, associated with the use of internet and mobile banking. Privacy and the concern that internet-delivered instructions might not be acted upon were among the reasons mentioned by respondents. A large number of studies incorporated the construct perceived risk which is of a particular relevance in a service context (Lockett and Littler 1997, Black *et al.*, 2001). A high level of perceived risk is considered to be a barrier to propagation of new innovations (Ostlund, 1974). According to Murray and Schlacrer (1990), services are seen to be riskier than goods, particularly in terms of social risk, physical risk and psychological risk. Security is perhaps the most feared problem on the internet. Banks and customers take a very high risk by dealing electronically (Mukti, 2000; Chung and Paynter, 2002). Lack of trust is one of the most frequently cited reasons for customers not purchasing through Internet (Lee and Turban, 2002). Nsouli and Schaechter (2002) argue that internet banking is not only susceptible to the risks involved in the normal banking business but it also increases them with additional risk elements such as compliance, transactional, liquidity and reputation risks.

4.6.8-IT Fatigue

IT fatigue is highly reflected among the employees who spend their whole official time in front of PC.

4.7-Reasons for the Non-use of Advanced Mobile Banking

Previous studies indicate that factors contributing to the adoption of mobile banking are related to convenience, access to the service regardless of time and place, privacy and savings in time and effort (Suoranta, 2003). Laukkanen (2007) found that one of the most promising mobile banking services was that of checking bank account balance immediately anywhere at any time, to avoid, for example, queuing in front of an ATM to check an account balance.

However, Mobile banking is not much penetrated and the reason for the same may be due to its complexity, fear of theft etc. Cheung, Chang & Lai (2000) defined complexity as the degree to which an innovation is considered relatively difficult to understand and use and found it to negatively influence the adoption of Internet. Laforet and Li (2005) found that the lack of understanding of the concepts and benefits was a main barrier to customers using mobile banking. Lee (2007) indicates that the well developed electronic banking services are significant barriers to mobile banking adoption. In this study also, it is revealed that one of the inhibitors of mobile banking usage was the lack of knowledge regarding the available services and their usage. According to the result of the study of Glen Fest (2009), most of the bank customers fear that the mobile features might be easily blocked by inherent safety features in mobile devices. They also fear that hackers will gain remote access to phones and the data will be stolen via a wireless signal. Some of the customers worry about their phone being stolen.

The cost consideration may prevent many people from choosing mobile banking service (Luarn & Lin, 2004). Luarn and Lin (2004) argued that financial cost was one of the greatest concerns in adoption of mobile banking services. According to Nah, Siau, and Sheng (2005), the cost of mobile devices and mobile services were identified as an investment concern. The price of banking services may have an opposite effect with respect to the adoption of mobile banking, which may result in customers preferring the traditional banking services (Laukkanen et al, 2007).

The somewhat limited input and display capability of current mobile devices is seen as limiting the use of mobile banking applications (Pousttchi, & Schurig, 2004;

Laukkanen, & Lauronen, 2005). However, Laukkanen (2007) found that when customers had experience in using a mobile phone service, they did not stress the importance of screen size in the service, but rather focused their attention on the spatial issues in the service consumption. Therefore device features may not be an issue for bank customers when considering using mobile banking

Littler and Melanthiou (2006) have proposed that customers are uncertain regarding technology problems such as hackers, as well as unauthorised access to their accounts. A study conducted by Wang et al. (2003) found that computer self-efficacy had significant positive influence on behavioral intention. According to them, bank customers are likely to adopt mobile banking when they have ability to perform it. Perceived self-efficacy can be improved in oneself if an education program, seminar, and even short-course are organised to instill the skills and knowledge of individuals pertaining to mobile banking.

4.8-Level of Customer Satisfaction on SSBT Services

The felicity of an innovation can be measured by the volume of use, looking at the effects the innovation has on organizations or by measuring user satisfaction. (Delone and McLean 1992). Customer satisfaction has been a focus of attention of managers worldwide for several years and in various sectors. The main reasons for this is that high customer satisfaction has been linked to customer retention, market share, loyalty, and by extension, higher company's profits (Szymanski and Henard, 2001). Satisfaction has generally been presented as an emotional state arising from the non-confirmation of positive or negative initial expectations for the experience of possession or consumption (Oliver Richard L, 1980). According to Szymanski and Henald (2001), a high positive correlation between quality and satisfaction was found to exist with some variation between products. According to Geyskens, Steenkamp, & Kumar, (1999) satisfaction can be raised by economic conditions (eg. monetary benefits) or psychological factors (eg. ease of relationships with retailers).

Customer satisfaction is the antecedent of trust (Garbarino & Johnson, 1999). Recent studies have validated the positive effect of satisfaction on trust in the e-commerce environment (Pavlou, 2003). Customers' post-trust level is affected directly

by the level of satisfaction (Singh & Sirdeshmukh, 2000). The result of the study of Rexha (2003) shows that trust and satisfaction have an influence on electronic banking adoption, although satisfaction, is moderated, by the level of customer trust. Despite the level of satisfaction with internet banking, customers are still using multiple channels to conduct their banking transactions Joseph and Stone (2003), Patricio et al (2003), Kam and Riquelme (2007).

Perceived risk is one of the major factors affecting customer adoption, as well as customer satisfaction, of online banking services (Polatoglu and Ekin, 2001). Kam and Riquelme (2007) found a positive relationship between frequency of use and internet banking customer satisfaction.

Yang et al. (2003) suggested a different perspective in service quality dimensions of the online retail business. The authors' service quality definition consists of eight dimensions that are driven/measured by a bank's responsiveness such as (a) prompt delivery, timely response, (b) credibility that includes confidence and good reputation, (c) ease of use that includes user friendly, easy navigation, (d) reliability that includes accurate order, keeping promises, (e) convenience that includes convenient shopping in time and place, (f) communication that includes up to date information, (g) access that includes the accessibility through almost every channel and lastly, (h) competence that includes representative knowledge to resolve problems.

In the present study, 8 variables were identified for analyzing the level of satisfaction among bank customers regarding SSBT services such as (1) Information provided by the bank, (2) Website of the bank, (3) Competency of the bank, (4) Efficiency of the bank, (5) Economy, (6) Supporting factors, (7) Educating the customers, and (8) Customer Relationship Management

4.8.1-Information Provided by the Bank

Online banking information system (OBIS) is a web-based information system that has the potential to increase customer satisfaction as well as the performance of the banks (Alsajjan and Dennis, 2010; Al-Somali et al., 2009; Hiltunen et al., 2004; Wang et al., 2003). Communication is found to play a great role in building a bank-customer trust relationship on the Internet. Speed of response, quality of information and openness are

important to create trust among customers (Avinandan Mukherjee & Prithwiraj Nath 2003).

Based on Chang et al. (2005), information quality has been defined by the degree to which users are provided with quality information regarding their needs. Information quality also represents the users' perception of the output quality generated by an information system and includes such issues as the relevance, timeliness and accuracy (DeLone and McLean, 2003). Although success is not necessarily dependent on the technical quality of the system (Ives 1983), it is obvious that if the system cannot provide the needed information the user will feel dissatisfied and will abandon the system.

4.8.2-Website of the Bank

Banks are using their websites not only to provide classical operations such as fund transfer or account details, but also to provide stock trading in world markets, bill payments, check book request, credit card request and investment advice (Guru et al., 2003). Layout of bank's website has an effect on user acceptance of Internet banking in terms of TAM constructs (Vrechopoulos, & Atherinos, 2009). Fogg, et. al. (2002) conducted a number of large empirical studies on how customers evaluate websites and developed guidelines for encouraging trustworthiness on websites. White and Nteli (2004) found that customers ranked the security of bank's website as the most important attribute of internet banking service quality. The research of Zhu et al. (2002) showed that many specialty functions of banking website can enhance customers' satisfaction. Ahn (2007) found that web quality (i.e. system, information, and service quality) significantly affects the perceived ease of use, playfulness, and usefulness of a retail web site. The quality of a bank web site for internet banking may be evaluated in terms of (a) The simplicity of use of the website in its initial stages, (b) The speed with which the users can find what they are looking for, (c) The perceived ease of site navigation in terms of time required and action necessary in order to obtain the desired results and (d) The ability of the users to control what they are doing, and where they are, at any given moment.

According to Sayar and Wolfe (2007), websites can be evaluated either from users, providers or both together. For evaluating the websites of banks, different

categories have been developed by the researchers. In Jordan bank websites have been evaluated by using quantitative evaluation method (QEM), in order to minimise the subjective evaluation of web site attributes as suggested by Evans and King (1999). But most of the researchers (e.g. Joseph, et al., 1999; Jan and Cai, 2001; Wail, 2004; and Yang et al., 2004) employed subjective evaluation factors such as accuracy, security, content, timeliness, aesthetics etc. According to Miranda et al. (2006), website of a bank sophisticated to internet banking include; site content, speed, accessibility and navigability. Santos (2003) in this regard discussed e-service quality dimensions as consisting of ease of use, web-appearance, linkage, structure and layout, content as the incubative dimensions; reliability, efficiency, support, communication, security, and incentive as active dimensions. According to Chang et al. (2005) a credible website needs to safeguard personal information from unauthorised access or disclosure, accidental loss and alteration or destruction.

White and Nteli (2004) found that customers ranked the security of bank's website as the most important attribute of internet banking service quality. Therefore, an insight about the quality of service encounter or the web site of the bank is very important.

4.8.3-Competency of the Bank

The competency of a bank increases confidence among customers. Customers who do not feel confident about a virtual address (virtual banking) will not be loyal and will not make business with the bank even if they are satisfied with it (Lee, Kwon and Schumann, 2005; Gerrard and Cunningham, 2003; Anderson and Srinivasan, 2003)

4.8.4-Efficiency of the Bank

A major challenge in e-business (including e-banking) is the quality of delivery service - including both delivery speed and delivery reliability (Furst, et al., 2000). Moutinho and Phillips (2002) found that Scottish bank managers considered efficiency and enhancement of customer service to be two perceived advantages of Internet banking. Similarly, Aladwani (2001) highlighted faster, easier, and more reliable service for customers, and improvement of the bank's competitive position to be the most important drivers of online banking among bank and IT managers in Kuwait.

4.8.5-Economy

Cost effectiveness stands out as the most significant factor influencing anagement adoption of electronic banking services (Bughin, 2001; Sayar and Wolfe, 2007).

4.8.6-Supporting Factors

According to Durkin et al. (2008) and Kumbhar (2011) age of customer, security concerns, willing to adopt online banking are some factors that contribute to adoption of Internet Banking, plus, inadequate knowledge and support are very important barriers in using Internet Banking.

4.8.7-Educating the Customers

According to Dunphy and Herbig (1995), an important reason for the failure of many products and services is the lack of acceptance by the "pragmatists" ie. those who believe that the cost of learning the innovation far outweighs the benefits it may have offer them.

According to Tan and Teo (2000) greater the trialability, the more likely that Internet banking would be adopted. One of the problems faced by bank customers is that they are unable to try out online banking services before adoption. The result of the study conducted by Mattila (2003) shows that even expert IB users, initially complained that nobody had trained them or even showed them how to use IB in practice. Learning on how to use IB by observing other users is difficult because of privacy and other users' considerations. Therefore, it is pointed out in the study that banks need to pay more attention to educate customers on how to use IB, and integrating personal services with the internet bank interface. Some banks have solved this problem to some extend by developing websites which allow potential users to try out internet banking services. The opportunity to conduct a trial may confirm how easy it is to use internet banking and provides the necessary confidence to customers with high perceived performance risk.

4.8.8-Customer Relationship Management (CRM)

Relationship banking is the most efficient way to satisfy the mutual benefit of both the banker and the customer (Peltoneime, 2004). The study of Petersen and Rajan (1994) showed that an unbalanced relationship might be a potential cause of different

types of costs for banks. Positive relationship between the banker and the customers in one way can reduce the cost. Any banking decision must be viable in terms of cost benefit aspects and attracting new customers.

Lee (2000) found that the Customer Relationship Management (CRM) efforts of the banks themselves have the real influence on who accesses online self-service tools than any other factor. Technology-enabled services allow interactive communication between the service provider and the customer and enhance the relationship with the service provider (Rust & Thompson 2006). According to Lannon and Cooper (1983) ease of relationships can be built through the development of brand image and thus make customers become part of the brand. Accordingly, it seems that a strong image will lead to better customer satisfaction. Lee (2005) argued that the interactivity is an influential source of trust.

Lee et. Al. (2005), asserts that innovative technologies save costs, improve customer experiences at service encounters and enable effective customer relationship management for service providers. Tyler and Stanley (1999) argued that banks can build close and long lasting relationships with customers only if trust, commitment, honesty and cooperation is developed between them.

4.9-Problems Faced by Customers while Using SSBT

According to Lee (2009), the scope of the adoption decision is large, it depends on customers' benefits and risks perceptions and it includes both positive and negative factors: "perceived benefits" and "perceived risks" of online banking. Beckett et al. (2000) states that the emergence of new forms of technology has created highly competitive market conditions for bank providers. However, the changed market conditions demand for banks to better understanding of customers' needs.

Moutinho *et al.*, (1997) pointed out that each ATM could carry out the same, essentially routine, transactions as do human tellers in branch offices, but at half the cost and with a four-to-one advantage in productivity. Buyers in online marketplaces have to rely on electronic information without having the ability to physically inspect the product; hence, they are vulnerable to additional risks because of potentially incomplete or distorted information provided by sellers (Lee, 1998).

Nancy *et al.*'s (2001) study found that customers' complain about computer logon times which are usually longer than making a telephone call. In addition, respondents felt that they have to check and recheck the forms filled in online, as they are worried about making mistakes. Frequent slow response time and delay of service delivery causes customers to be unsure that the transaction has been completed (Jun and Cai, 2001).