

Master's Thesis
Computer Science
Informatics



The three dimensional relation between user system experience, user satisfaction, and user acceptance

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This thesis is submitted to the Faculty of Computing at Blekinge Institute of Technology in partial fulfillment of the requirements for the degree of Master of Science in Computer Science with a specialization in Informatics. The thesis is equivalent to 20 weeks of full time studies.

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ABSTRACT

Context. The topic explored in this research is the resistance people often experience towards IT induced change and their striving to maintain their current situation when implementing a new information system. If no strategy is set to deal with it, there is a high risk that resistance to change will lead to Information System failure.

Objectives. In this study, the author investigates how to anticipate and handle resistance to change in order to succeed when implementing a new information system. Factors affecting user satisfaction are introduced, as it is argued that user satisfaction in turn affects user acceptance of IT induced change.

Methods The data collection involves interviews in order to assemble appropriate, justifiable and relevant data, in addition to surveys to measure and validate the hypotheses in this thesis. The banking sector in Lebanon was selected as a source of data collection.

Results. Three main factors jointly appear to affect user satisfaction and hence to affect the user's acceptance of change. These three factors are Perceived ease of use (PEOU), Perceived Usefulness (PU), and User Involvement

Conclusions. Based on the studies conducted so far with respect to this topic, it appears that there exists an indirect relationship between the three factors discussed in this thesis: the user system experience, the user satisfaction, and the user acceptance. The more the user finds the system easy to use (providing a simple way to work with less effort) and useful (the extent to which a person's work is improved) and the more he/she is involved in the change process, the more he/she is satisfied and hence the more he/she is willing to accept the change, which in turn enhances the probability of a successful information system implementation..

Keywords: User Involvement, Perceived Usefulness, Perceived Ease of Use, Resistance to change, User satisfaction.

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1 FIRST CHAPTER-INTRODUCTION

This chapter will introduce the reader to why the question “How do ease of use, usefulness, and user involvement affect user satisfaction, which in turn affects user acceptance of a new information system?” was chosen as a topic for this Master’s thesis. Firstly, the background is explained concerning why this subject is relevant and interesting for investigation. Secondly the area of investigation is narrowed down to the identified problem. Third, the specific purpose of the thesis is clarified and finally the research questions are also identified.

1.1 Background

For many decades research has been conducted concerning Information system success and failure. This study area has been a major focus for researchers because information systems are not only a component of nowadays life, but they have become a necessity for organizations to gain a competitive edge.

Today, with competitive pressures in most economic sectors, well advanced information systems are required and strongly needed to empower end users which in turn will enable organizations to compete with their rivals. It is not only important to have a highly advanced information system; simplicity of design, which allows employees to use the system easily and to find what they need by following a simple path, is highly important.

Organizations invest money, time, and effort to implement a new information system. By such investment, the system, if accepted, would increase productivity and organizational efficiency. Also by such investment, whether tangible or intangible, their failures should be minimized and risk models should be developed. However, many organizations are not satisfied because the employee/user- human part- is not satisfied.

The human component is basic in determining the success/failure of the information system. One of the common occurrences when a new information system is implemented and contributing to failure is user resistance (Adams, Berner, & Wyatt, 2004). It is only natural for the employees to resist when there are changes in the way they are used to performing their work.

Reif (1968) points out that “Resistance will be inevitable as some functions are combined in the name of greater operating efficiency” (Reif, 1968). However, being aware of this expected resistance, establishment of a suitable climate for change within the organization could overcome the resistance to change. But how to provide such a climate? What causes users to accept, use, and be satisfied with a new information system?

Among many variables that may impede system satisfaction and hence system acceptance, three main variables are of major importance: user involvement, ease of use, and usefulness.

User involvement: refers to having the “user” contribute to creating his own product through participation in several or all phases of system activity: system planning, system study, system development, post audits. User involvement strategy helps users feel it is their system.

Ease of use: refers to less effort (whether mentally or number of steps to perform a task) in performing a task. It is claimed that an easy to use system is more likely to be accepted by users.

Usefulness: is related to enhancement in employee’s performance. It is claimed that a useful system is more likely to increase user satisfaction.

Formulating the main variables listed above in the negative – that is, as “lack of” – has relevance for system acceptance, too: Lack of involvement, system appearing “unfriendly”, users not being aware of the system bringing benefits, lead to user resistance to change.

In this thesis, the banking sector’s ICT has been selected for the empirical study: One bank implementing a 16 years old information system before implementing the new one, one bank implementing a 14 years old banking information system before implementing the new one. Studies were focused on user’s satisfaction with the information system and user’s acceptance/resistance to the new IS.

1.2 Problem Issue

Today, companies invest in new information systems. Such investments often run into difficulties and might fail. One of the problems goes back to users’ resistance to IT induced change. People’s tendency to resist change, or preference for the known situation over an unknown future, explains this behaviour. People’s normal behaviour is to avoid and ignore the new and unknown, if possible. People are often not confident of their ability to cope with new procedures.

If the user perceives a new information system negatively in terms of ease of use and usefulness, he will often express this in the form of user resistance behaviour. Therefore, perceptions of new IT system will have an impact on employee’s behaviour. This explains the need to have a proper change introduction of IT. Getting the user involved from the beginning of the project is a critical point as this would positively impact the users.

The problem discussed in this thesis is resistance to change and the possible ways to handle it focusing on user acceptance and user satisfaction.

User satisfaction: refers to the extent a user is happy with a system.

User acceptance: refers to the extent the user accepts to work with the new support (whether new system or new change in system).

The following are the problems tackled in this thesis:

- Users often find it difficult to accept IT-induced change and resist in different ways
- The way information systems are introduced and implemented impacts the users’ perception of the system.
- Change management is a key factor in system success, as many studies show. There should be strategies to manage different states of changes.
- Studies conducted by Davis (1989), Bailey, Pearson and other researchers show that User involvement, perceived ease of use, and perceived usefulness have a direct relationship with user satisfaction and indirect relationship with user acceptance.

1.3 Purpose

The purpose of this thesis is to investigate how resistance to change can be lead to information system’s failure and how to adjust to such situation by introducing some main rescuers. User involvement/participation, ease of use, and usefulness serve as rescuers to

welcome the new change and hence to succeed in implementing new IS. These factors do not lead to happy ending directly but rather lead to user satisfaction and user acceptance which contribute to a climate which is open to change.

Because it is not enough to acquire the most advanced hardware and software, the third component the “User” should accept, user, and be satisfied with the acquired system. The objective of this study is to show that if the users are provided with proper, flexible, and easy way to use systems, get involved in at least one of the development phases, and perceive the system as being useful, then the system will be accepted and no resistance to change will take place.

Figure 1 represents an illustration of the proposed model by the author. It describes two sets of relationships: User involvement, Usefulness, Ease of use as factors affecting user satisfaction, and the effect of user satisfaction on user acceptance. Concept of user acceptance is related to user satisfaction. Theories show that the ease of use, usefulness, and user involvement are fundamental determinants of user satisfaction. Developing a better measure for explaining acceptance and satisfaction will help in suggesting solutions for some of the problems related to the human component when implementing new IS or updating already existing IS. Success or failure of an information system depends to a great extent on the user satisfaction with the system.

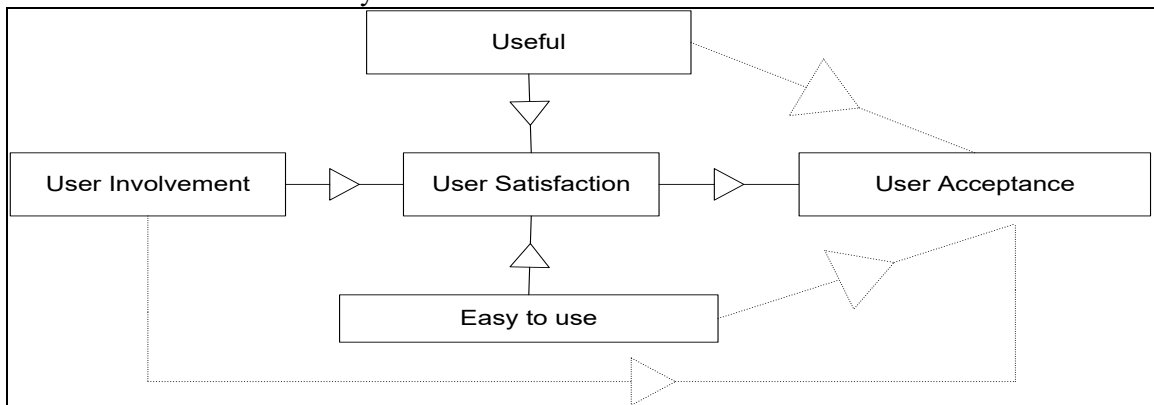


Figure 1 Factors leading to user satisfaction and user acceptance

1.4 Research questions

These are the questions addressed in this thesis:

- Why people resist IT induced changed
- To what level user involvement, ease of use, and usefulness leads to user satisfaction?
- Is there a relation between user acceptance and user satisfaction?
- How user satisfaction and user acceptance eliminates resistance to change?

The first question is formulated to introduce the concept of resistance to change to the reader. The second and third questions have in their back stage the concept that to reach the stage from user resistance to user acceptance, two levels are required: One is to introduce the three factors which will lead to user satisfaction, second is to clarify user satisfaction and its relationship to user acceptance. The last question will provide insight to the problem, and suggest several ways that keep and maintain a successful IS.

1.5 Methodical research approach

The following (figure 2) shows the methodical approach of the author's research. The figure represents the trapezoid (Davidson, Fossey, Harvey, McDermott, 2001) methodology the author used to conduct her thesis.

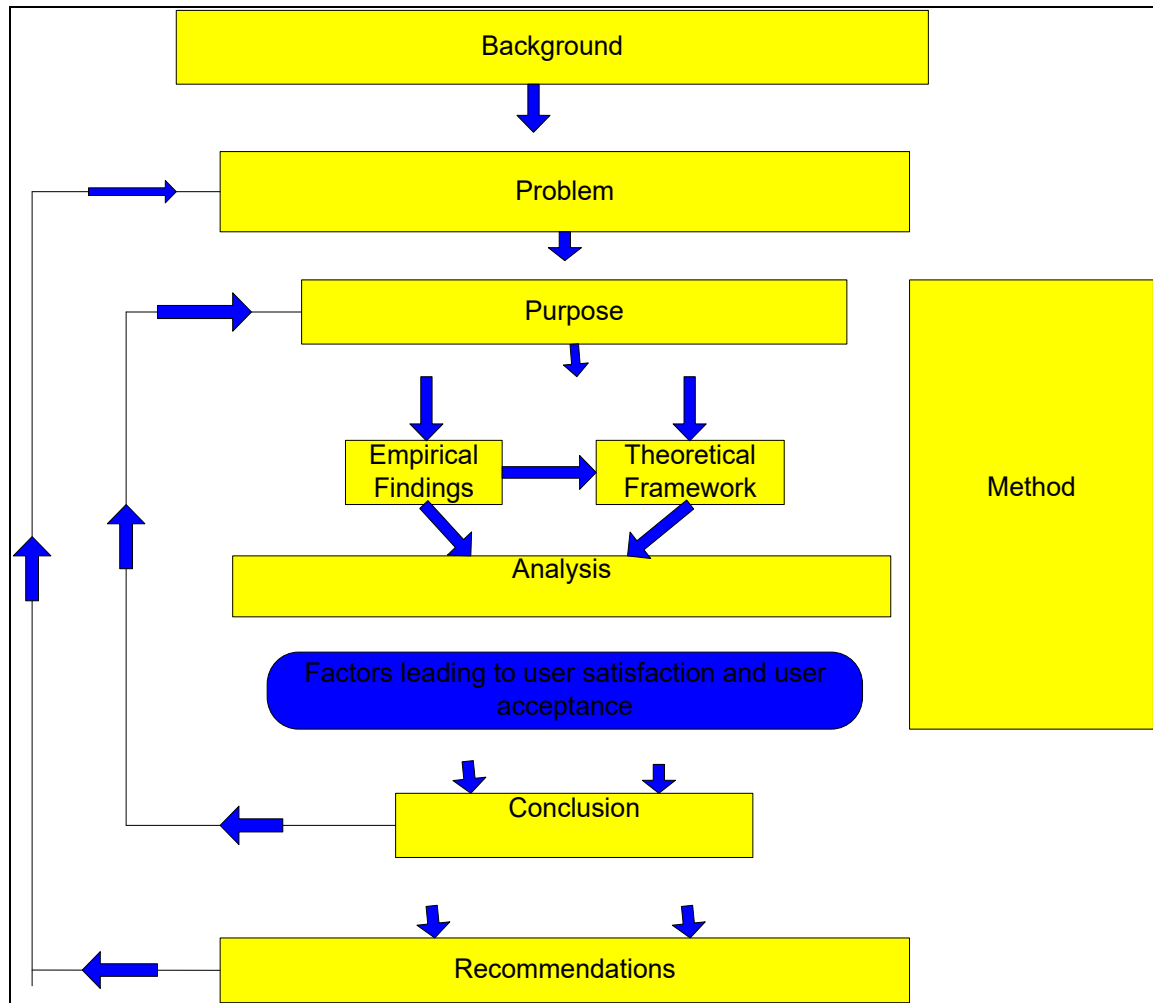


Figure 2 Trapezoid (Davidson, Fossey, Harvey, McDermott, 2001) [Modified]

The trapezoid begins with the background as a basis for the thesis. The author presents to the reader of the thesis an insight in support of why the author came up with the topic “How do ease of use, usefulness, and user involvement lead to user satisfaction which in turn lead to user acceptance”. After the background, the trapezoid continues with the problem where she draw up boundaries which lead to user un-acceptance. By defining the problem, the author stated the purpose of the thesis. The purpose of her research is to investigate how perceived ease of use, perceived usefulness and user involvement lead to user satisfaction and hence user acceptance. The conducted theories are then supported by empirical findings which are based on the real live business world. After these two matters, the trapezoid goes on with an analysis of the relation between the theories and empirical findings. “Factors leading to user satisfaction and user acceptance” is added to the model as per the thesis’ need for such modification. The trapezoid ends with conclusion and recommendations providing suggestions how to establish such factors in organization implementing new/update information system to sustain user satisfaction and avoid user resistance to change and hence to answer the original questions.

1.6 Delimitation

The study focuses on factors leading to user acceptance and user satisfaction such as user involvement, but it did not theoretically focus on the different ways that user involvement could take to solve the problem.

Secondly, the focus was on users of the system, basically employees, and not on upper management. This is because if the upper management was included, the study will take different angle and will be a separate study on its own.

Thirdly, the focus was not on skills of people, whether skillful in computer or not, whether they are aged people or young people. This is also because necessitates a different study on its own.

Fourthly, this study deals with one strategy to manage user resistance, further studies should be conducted regarding other strategies such as managerial authority to effect change.

1.6 Interested Parties

This thesis was designed for companies planning to implement new and successful information system practices. Moreover, this can be used by consulting companies as a tool to consider factors when implementing new IS or updating IS such as socio-technical techniques.

In addition, this can be used by students interested in this subject. This opens the eyes of the students on human factor in informatics and its indirect effect on IS failure/success rather than just technical factor.

2 SECOND CHAPTER-RELATED WORK

This chapter will introduce the reader to theories dealing with different aspects of information system failure and success. Firstly, resistance to change is introduced since it is a basic human component leading to user rejection of change. Then, user satisfaction is introduced as a measure of IS success showing that the more the user is satisfied the more he will accept change. This will be followed by a TAM model which is used to explain the PEOU and PU concepts in user satisfaction. Lastly there will be a section introducing the user involvement as also a factor leading to user satisfaction.

2.1 Resistance to Change

Change is constant. As per researchers, basic part of evolution is change. IT world is advancing dramatically. For this reason, companies have to update their profile and to change the way they functioned before and to stay competitive in the market, the companies have to adopt these changes.

Yet, not all organizations are aware of the way the change should be implemented to improve the situation and make it successful rather than having employees frustrating and resisting to any change.

Hardware component is necessary, software component is necessary, but human component is basic. For this reason, when implementing new information system, an attention should be

given to users who complain about the new system and its effect on their work life such as the systems do not function as expected, the process is difficult, and so on.

Status quo bias theory explains why people resist changes and instead they prefer to maintain their current situation. When dealing with organization's change, human element should be critically treated. For instance, treatment should deal with resistance to change in the work environment. Even after implementing it, some resisting users can make decisions and take actions based on old system or old way. Consequently, they fail to utilize the new system and hence fail to profit from the new system's advantages. But "What is really resistance to change?"

Profitt (1996) points out that resistance to change takes the form of "active efforts to oppose, fight, and refuse to cooperate with or submit to...abusive behaviour andcontrol" (Profitt, 1996). These efforts can be illustrated in different ways, but the result is the same, refuse of what is current. It has been frequently observed that when new IS is introduced to any organization, the outcome of people's behaviour was to avoid and ignore new system. This explains the nature of people that they usually resist change because they are not confident of their ability to cope with new procedure.

Greenberger (1968) explains "Explanation of human inertia would cite man's tendency to resist the new and espouse the old, his need for security, and his fondness for familiar objects even while exploring the unfamiliar" (Greenberger, 1968). Any change will affect the way the user used to do the job and the way he executes his work procedures.

Markus (1983) explains that resistance may be a response to factor inherent in the system being implemented. IS may be technically resisted by people because of poor "user-friendly" system (Markus, 1983). On the other hand, the system can be felt as unfriendly, though it is not, because of lack of user involvement/participation.

Employees are the recipients as per Kanter, Stein, and Jick. Kanter, Stein, and Jick (1992) divide the players in the change process into strategists, implementers, and recipients. Strategists are the ones who identify the change (same as change spurs) (Kanter, Stein, Jick, 1992). Implementers manage day-to-day process and communicate the management decisions and requirements to the departments and divisions. Recipients must adopt to the change. Recipient are the absorbents of the change and their response and act is a key success to the organization.

2.2 User Satisfaction

Doll and Torkzadeh (1994) defines user satisfaction as "An affective attitude towards a specific computer application by someone who interacts with the application directly" (Doll & Torkzadeh, 1994).

Empirical researchers have considered user satisfaction as a main measure for the success of an information system (Doll & Torkzadeh, 1994; Keen, 1981).

User satisfaction is defined as the degree to which users have a positive affective orientation toward an information system (Kappelman & McLean, 1990).

Any change made to business is for the good of the business. "The good of the business" means for better performance and better profitability. But how to reach better performance? Performance is based on users' effectiveness (Kappelman & McLean, 1990). Kappelman and McLean (1990) highlights the importance of user satisfaction via explaining the relationship

between user satisfaction and user performance in several studies conducted at some universities and colleges (Kappelman & McLean, 1990).

The more the satisfaction, the more the user is welcoming the change and the more the user is performing. Hence the better the productivity and profitability. However, the reverse order is valid where the more the user is dissatisfied, the more the user is resistant to change and the less the user is producing. Vroom (1964) shows that some of dissatisfaction evidence is illustrated by high turnover and high rate of absent users (Vroom, 1964).

DeLone and McLean (1992) explained three reasons why user satisfaction is a dimension for IS success (DeLone & McLean, 1992):

1. High degree of face validity
2. Development of reliable tools for measure
3. Conceptual weakness and unavailability of other measures

The first area explains that if the user likes the system, then it is hard to deny the success of the system. Users' feedback can determine to a certain level the success/failure of the system. The second area explains that it is possible to measure user satisfaction and hence to conclude whether system is failed or succeeded. The third area deals with user satisfaction as a possible empirical measure of information system success unlike other measures which are empirically difficult to measure such as organizational impact.

Different measurements for use satisfaction have been developed; However Vroom ensured that interpreting user satisfaction measurements should be interpreted accurately; otherwise this will mislead the results (Vroom, 1964).

Based on the literature they reviewed, Bailey and Pearson (1983) develop list factors used for measuring user satisfaction, table 1 reflects these factors (Bailey & Pearson, 1983). But, for completeness and accuracy purposes, tests were conducted and reviewed. Upon this, two additional factors were added. Some of the factors are reflected in table below.

Factor
1. Flexibility
2. Accuracy
3. Timeliness
4. Reliability
5. Completeness
6. Confidence in System
7. Relevancy
8. Currency
9. Priorities determination
10. Error recovery
11. Response / turnaround time
12. Convenience of access
13. Perceived utility
14. Documentation
15. Feeling of involvement/participation
16. Communication with IT Department
17. Understanding of system
18. Degree of training
19. Job effects
20. Feeling of control
21. Expectations

Table 1 Factors for measuring user satisfaction (Bailey and Pearson, 1983)

2.3 Determinants of User satisfaction

User satisfaction has been a major focus for many researchers as it is an important measure of system success (Ives, Olson, & Baroudi, 2004). User satisfaction is the output of some actions. It is categorized as a consequence and not as cause.

Bailey and Pearson explain user satisfaction as the sum of one's feeling's or attitudes toward a variety of factors affecting that situation in a given situation (Bailey & Pearson, 1983). These attitudes are illustrated by user Involvement, Perceived usefulness and Perceived ease of use.

2.3.1 User Involvement/Participation

Human factor is a major factor affecting any IS success or failure. One of the human factor topics' is user involvement/participation. Barki and Hartwick (1994) differentiate between user involvement and user participation where the former refers to "the subjective psychological state reflecting the importance and personal relevance that a user attaches to a given system" (Barki & Hartwick, 1994). The latter refers to "the assignment, activities, and behaviours that users perform during development process".

However, other researchers do not differentiate between the two concepts. Both definitions end up with same place "user engagement". (The two words are not subject to discuss in this thesis so the author assumes that the two are the same).

Research has been performed to investigate the affect that user involvement has on the success of information system projects (Barki & Hartwick, 1994).

User involvement includes user participation in IS development, being part of the change process. It has a great impact on system success where if the users expose their requirements and opinions, they feel their opinions are accepted and welcomed and hence increasing the level of satisfaction Mark and Roland present in his study, synthesizing from the studies of researchers and practitioners, on the different types of participation (Mark & Roland, 2008):

1. To develop a feeling of ownership, involve employees in the requirements phase and development phase
2. Communicating system changes on a continuous basis to employees to preserve ownership
3. Open lines of communication between employees and management
4. Enhance or create (if it does not exist) an enjoyable working community triggered by happy hours, parties... Kotter and Shlesinger (1979) explained that people focus on their own interests rather than on those of the organization as a whole is a reason to resistance to change (Kotter & Shlesinger, 1979). Hence, that community should limits resistance to change.

Barki and Hartwick (1994) define user participation as a set of behaviours, activities, and assignments that engage users throughout the system's development process (Barki & Hartwick, 1994). This participation illustrates the relation between the user and the system. The more the relation is lucid, the more the user is involved and the more his attitude and his approach to the system are enhanced and hence the more the user is able to accept the change.

Patron (2000) goes on and says the implementers should recognize the importance of user involvement on the IS success: “A user is involved when he or she considers a system to be both important and personally relevant” (Patron, 2000).

Baroudi, Olson, and Ives (2004) conducted a survey of 20 managers showing how user involvement/participation leads to user satisfaction (Baroudi, Ives, & Olson (2004)). It is a psychological play, if the user is involved, he is satisfied with what is offered to him; otherwise complications will take place. Ives, Baroudi, and Olson (2004) state that “Participation by those who will be affected by the system is essential” (Baroudi, Ives, & Olson, 2004). They explained how participation/involvement may lead to user satisfaction:

1. Providing a more accurate and complete assessment of user information requirements (McFarland, 1981).
2. Avoiding development of unacceptable or unimportant features (McFarland, 1981).
3. Improving user understanding of the system (Lucas, 1973).
4. Developing realistic expectations about the system (McFarland, 1981).
5. Leading to system ownership by users (McFarland, 1981).
6. Decreasing user resistance to change (Lucas, 1973).
7. Committing users to the system (Lucas, 1973).

2.3.1.1 Training

Training is one way to make user involved in the system. According to the research that was made by Bradley & Lee (2007), training is essential for any organization wishing to update or implement a new IS. However, attention is not enough given to training. Bradley and Lee confirm: “Frequently, we see that companies training practices and even their training budgets are frequently lower than what they should be” (Bradley & Lee, 2007).

Indeed, training is important when implementing new IS or updating existing one because this change changes the process as a whole and details should be trained to execute a certain operation completely and in a correct way. By that way, people are involved somehow in the system before going live directly and use it.

A failure to correctly train them to use the new system is a critical mistake which will lead to IS failure. The training is easy for some people and difficult for others. It is difficult to aged people lacking skills in computer and technology as a whole. Hence careful training should be provided to assure that the system is to be used as intended, and to decrease the level of dissatisfaction.

It is not only about giving training. But to make people satisfied with given training. Bradley and Lee (2007) explained that a good training is essential for any organization facing a new change and the more the employees are satisfied with training, the more they perceive system as useful and as easy and hence the better the performance of the employees Bradley & Lee, 2007).

2.3.2 Perceived ease of Use (PEOU) and Perceived Usefulness (PU)

User involvement, as mentioned above, is one of the variables resulting in increased user satisfaction. Among other variables are these perceived usefulness and ease of use. Lack of these variables results in user dissatisfaction, and hence in information system rejection.

2.3.2.1 Technology Acceptance Model (TAM)

User acceptance, according to Ginzberg, Lucas and Schultz, measures (1990): “the potential user’s predisposition to personally use a specific system. It is a measure of behavioral intention that, other things being equal, will be reflected in actual use” (Ginzberg, Lucas, & Schultz, 1990). This reflects user acceptance as dependent variable in IS success. Davis validated two scales for two specific variables: Perceived usefulness and perceived ease of use to be critical determinants of user acceptance and user satisfaction.

Technology Acceptance Model (TAM) is a model based on psychology of the users. Davis (1989) explains why users accept or reject technology using TAM (Davis, 1989), (figure 3). TAM is a useful model because it opens the eyes of the researchers on the causes of technology resistance and let them focus on users’ behaviors.

The TAM explains user behavior towards new technology or new information system. TAM suggests users formulate a positive attitude toward the technology when they perceive the technology to be useful and easy to use (Davis, 1989). Studies show that user attitude is a basic factor affecting the success of the system.

TAM model assumes the behavioral intention determines the use of an information system. However, the behavioral intention, in its turn, is determined by the person’s perception of the system: its usefulness and its ease of use. TAM reflects also the link between perceived usefulness and perceived ease of use. According to Dillon and Morris (1996), having two systems with the same features, “a user will find more useful the one that he finds easier to use” (Dillon & Morris, 1996).

According to the TAM, if a user perceives a specific change as useful and easy, she/he will more able to use and accept the system in efficient and performing way. To generalize, the higher the level of information system PU and PEOU, the higher the user positive attitude towards system.

TAM has originally evolved from the theory of reasoned action TRA proposed by Ajzen and FishBein in 1975. Davis (1989) suggests that in case of new technology or new change, certain factors will affect the way the user will benefit from new change and the way he/she will adopt it (Davis, 1989). Perceived ease of use and perceived usefulness variables are his main measurements leading to technology satisfaction and acceptance where:

Perceived usefulness: People tend to use or not use an application to the extent they believe it will help them perform their job better (Davis, 1989). It is believed that a useful system is more likely to increase user satisfaction.

Perceived ease of use: The degree to which the individual believes that using the system would require little or no mental physical effort (Davis, 1989). People believe that the systems is too hard to use and that the performance benefits of usage are outweighed by the effort of using the application (Davis, 1989).

Sun and Zhan (2006) conducted several studies and found out that 71 studies show the effects of perceived usefulness and perceived ease of use on attitude towards acceptance of new information system or new change in information system (Sun & Zhan, 2006). Some studies show that the simpler the innovation/change is to understand; the more quickly is adopted and accepted. It is claimed that an easy to use system is more likely to be accepted by users.

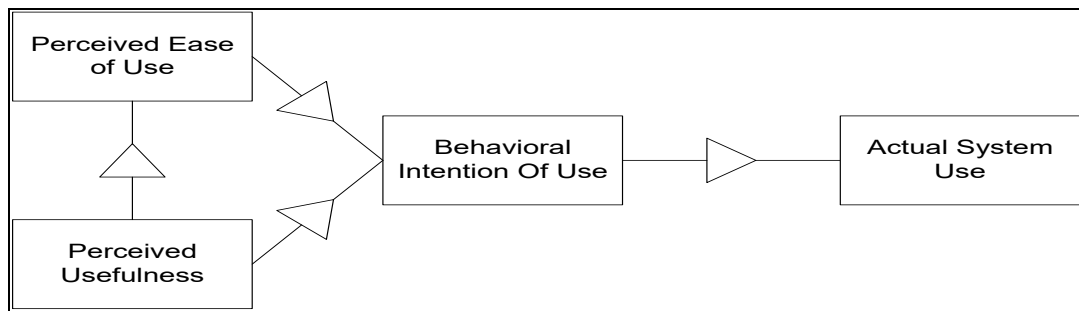


Figure 3 TAM (Davis, 1989)

Based on certain stated definitions of usefulness and ease of use, initial scale items were generated by Davis in 1989. The initial scale items are presented in table 2 and 3.

1. Job Difficult without system
2. Control over work
3. Job Performance
4. Addresses my needs
5. Saves me time
6. Work more quickly
7. Critical to my job
8. Accomplish more work
9. Cut unproductive time
10. Effectiveness
11. Quality of work
12. Increases productivity
13. Makes job easier
14. Useful

Table 2 Scale items for Perceived Usefulness (Davis, 1989)

1. Confusing
2. Error prone
3. Frustrating
4. Dependence on manual
5. Mental Effort
6. Error recovery
7. Rigid and inflexible
8. Controllable
9. Unexpected behavior
10. Cumbersome
11. Understandable
12. Ease of remembering
13. Provides Guidance
14. Easy to use

Table 3 Scale Items for Ease of Use (Davis, 1989)

To improve content validity, these were pretested by Davis in a small pilot study, and several items were dropped (Davis, 1989). The remaining, 10 for each of the two constructs, were tested for validity and reliability. Results are show in table 4.

Scale Items
Usefulness
1. Quality of work
2. Control over work
3. Work more quickly
4. Critical to my job
5. Increase Productivity
6. Job Performance
7. Accomplish more work
8. Effectiveness
9. Makes job easier
10. Useful

Table 4 David (1989)

Scale Items
Ease of Use
1. Cumbersome
2. Ease of learning
3. Frustrating
4. Controllable
5. Rigid and inflexible
6. Ease of remembering
7. Mental Effort
8. understandable
9. Effort to be skillful
10. Easy to use

Table 5 Davis (1989)

It is worth mentioning that TAM model intersects with the innovation diffusion theory at a certain level where innovation diffusion theory explains how the technology innovation moves from the stage of invention to the acceptance stage. Dillon and Morris (1996) list different characteristics of innovation theory that affect their diffusion, among these (Dillon & Morris, 1996):

1. Relative advantage – the extent to which new technology offers improvements
2. Compatibility- ease of user
3. Observability- extent to which new technology’s outputs and its gains are clear to see

Each of these characteristics intersect in the TAM model perceived ease of use and usefulness characteristics table described previously.

3 THIRD CHAPTER -METHODOLOGY

“Research Methodology is defined a highly intellectual human activity used in the investigation of nature and matter and deals specifically with the manner in which data is collected, analyzed and interpreted” (Patron, 2000).

In this chapter the author describes the approach to her research and where the author wanted to focus on, outlined her views on qualitative and quantitative measures (refer to section 4.1.1) and in what way the empirical findings were collected and managed.

3.1 Conducted Research

To support her answer to the question, “How do ease of use, usefulness, user involvement lead to user satisfaction which in turn leads to user acceptance”, the author tried to include in this report the main matters that are affecting system success/failure within an organization. With this approach, the author made an effort to create qualitative and quantitative research.

3.1.1 Choice of Method

Qualitative method, according to Miles and Huberman (1994), proved to be more open to unexpected results (Miles & Huberman, 1994). It is also used when a person wants to grasp more and new ideas. Such method opens the eyes of the interviewer to new issues confessed by the interviewees. This allows the author to more understand how it is important to introduce different factors to the user to make him welcome an information system change.

Quantitative method will be used to measure the user satisfaction. Surveys will be conducted to get necessary data in order to formulate an appropriate result to the research. Such method relies on testing and verification (Ghauri & Gronhug, 2005). During the author’s interviews, she discovered that training involves the user and hence it has ability to affect user satisfaction hence she added to her theoretical background.

Interviews and Questionnaires were used to collect data from the employees that are daily exposed to information system in the banking sector.

3.1.2 Interview

The author’s approach to conduct the chapter “empirical findings,” is based on interviews with different people in a bank with different titles. This is for clarification of the author’s theories in the real life business world. Interviews were conducted at every interviewee’s office using a tape recorder. The study included six interviewees from two different banks. Some of the interviewees do not know about old baking system. Others have experience with old system and new system and hence were present during new change.

To conduct a proper interview, there are three stages to consider: First the task of data collection, second the distribution of the questionnaire and lastly conducting interviews (Yin, 1994). Kvale (1996) acknowledged that qualitative interviews attempt to include both factual and meaningful issues (Kvale, 1996). A qualitative interview should relate the theme of the research with real world (Kvale, 1996).

Interviews are useful to get the story behind participants and to let the interviewer go in-depth and get life world information in relation to the topic (McNamara,1999).

Valenzuela and Shrivastava (2002) represent the following facts of qualitative interviews:

- In general, interviews are easier for a respondent, in means of opinions and impressions. In addition, the interviewer has the chance to ask follow up questions (Valenzuela & Shrivastava, 2002).

The author selected the unstructured type of interview to let the interviewees freely act and respond. Since a survey was used, the author finds it more accurate to use unstructured because by that way questionnaire prepared are answered and what the respondent did not

find in questions can talk about it during the interview. In the author's questionnaire, she focused on the handling of change process including resistance to change, user acceptance of change, and user satisfaction practices.

One of the author's objectives was to gain information in relation to her theoretical framework from different perspectives. In addition, some of the empirical findings open the eyes to new theories so the author edited back the theoretical framework to keep the study accurate and complete.

In total, the author approached 4 banks. As the author conducted the interviews, one of the banks was inconsistent with the author's topic. The topic is clearly related to new change such as new information system or an update of an information system. As soon as the author conducted the interviews, she concluded that the bank which was excluded deviated from her topic where the bank is not implementing any new system nor planning to do so. The author tended to approach one additional bank implementing a new information system; however the bank refused to participate because of work overload.

So the author interviewed employees at the remaining two banks, four employees with different titles (Business analyst, head of Operations, teller, and finance employee) and backgrounds from the first bank and two employees with different titles (business analyst and teller) from the other bank. It was not possible to interview more than these two persons from the second bank because of their work overload.

Lack of time, trouble finding people at other banks having time accurate with the author's time, and resource constraints prevented the author to conduct additional interviews.

3.1.3 Surveys

A questionnaire was used to collect data from staffs that are daily exposed to banking information system. These were developed to measure factors illustrating resistance to change and factors leading to user satisfaction and to user acceptance. Questionnaires were distributed to fifteen persons from every bank after having obtained the authorization of every employee's manager.

The surveys were based on previous surveys developed by Davis (1989) and modified to a small extent. The survey questions were clearly generated with easy English to make it easy for respondents to answer them. Questions used are based on 1 to 5 scale where 1 is the "Strongly Disagree" and 5 is "Strongly Agree". These surveys included four sections. They contained twelve questions on User satisfaction, eleven questions on perceived usefulness of system, eleven questions of perceived ease of use, six questions on overall acceptance test.

3.2 Collection of Empirical Information

3.2.1 Business included in author's findings

Banking sector deploying complex information systems and being exposed to new and upgraded information system is the author's selected target focus. The banks selected based on the following criteria:

- Operating in Lebanon for at least 15 years
- Being exposed to full banking information system platform for more than 15 years and recently being exposed to new ICT systems

These conditions ensure that banks have been sufficiently exposed to information system. The first bank is subsidiary from a worldwide bank where headquarter is located in Egypt. The second bank was a Lebanese bank. The bank is also adopting a new information system.

The author's findings are limited by the fact that she didn't question upper management. The two banks adopted a new information system since one year ago. The system of the first bank was implemented in accordance to Egyptian bank. The second bank adopted a new system according to bank's requirements. The information gathered in both banks was based on interview with business analysts, tellers, retail ad operations' staff.

After the author conducted this interview, she discovered that training also seems to be a sub factor of user involvement which is a factor affecting user satisfaction. The training was an answer to unstructured questing during interview exposed by both bank's interviewees. Based on that, the user added a new section to her theoretical framework which deals with user training and its relationship to user satisfaction.

3.2.2 Interviewees

The author selected four chose four persons from first bank including business analyst, operations' staff, retail's staff, and tellers and two persons from the other bank (teller and ad retail officer). The reason behind this selection was to dig more into information system failure and success. How different people react to new changes and how different people are satisfied or dissatisfied with new change and how different people are involved in the implementation process. If this is true, then the difference between interviewees explain the gap between them and what is missing for some of them and what exists and satisfying the others.

The author wanted to interview person in same bank but with contradicting views to grasp more ideas and dig into the real problem and hence to validate the assumptions she made in her thesis. In addition, the author already established a good relation with employees at one of the bank which makes the interviewees more comfortable and more able to answer freely and expose ideas as much as they can.

3.3 Critical treatment of gathered data

To provide the reader with reliability and credibility, the author related her theories which explain the three dimensional relation to the real live business world. In addition, her research has gone through significance inspection and scrutiny. Shenton (2004) agrees that scrutiny improves the credibility of research (Shenton, 2004).

Additionally, the fact that the author's thesis is based on multiple perspectives contributed to the trustworthiness. For instance, she examined firms operating in different industries, and strived to question staff member in different position. Furthermore, she intended to question people in different position the same questions. By that way, drawing conclusions is more reliable.

4 FOURTH CHAPTER-RESULTS

In this chapter, the author presented her empirical material collected based on a survey from two banks and interviews with different people. She gathered information from different perspectives. She interviewed banks implementing different banking information systems with different implementation age, i.e. a banking system implementing a 16 years old

information system before implementing the new one, one bank implementing 14 years old banking information system before implementing the new one. The questionnaire was focused on user's satisfaction with information system and one user's acceptance/resistance to new IS.

4.1 Bank's background

4.1.1 BML (BANQUE MISR LIBAN)

BML was established in 1929, BML is one of the oldest banks in Lebanon, predating the country's independence by nearly 17 years and listed as bank number 3 on the historical register of banks. For many decades, BML was one of the leading banks in Lebanon in terms of the size of its balance sheet, the scope of its banking activities, the spread of its branch network, and its substantial customer base that encompassed a broad segment of depositors and the top commercial and corporate clients in Lebanon and the region.

Under its new management, BML has gone through a period of rapid change over the past three years, encompassing a complete internal restructuring, an ongoing renovation and modernization of all its facilities and an expansion of the branch network, the development and modernization of its services and products to re-enforce its presence on the Lebanese market, and an increase in its paid-up capital to LBP 100 billion.

As a result, BML today is poised to continue its long tradition within the Lebanese banking sector, offering a full range of corporate, commercial and retail banking services through its network of 14 branches strategically located in the major cities and regions of Lebanon, and supported by a network of ATM machines. BML's services and products embody the latest in banking techniques, and are geared to meet the evolving requirements and expectations of its growing customer base.

BML's vision is to be the preferred bank for its customers and a leading regional bank. It is working hard to achieve this vision through a dedication to personalized services to its customers, a corporate culture of excellence in service, team spirit, integrity and professionalism, and by building on synergies with [Banque Misr \(Egypt\)](#), and its international network (<http://bml.com.lb>).

4.1.2 BANKMED

Bankmed is Headquartered in Beirut, ranked as one top five banks in Lebanon. BankMed, through its 51 branches spread all over Lebanon, and one in Cyprus, offers a wide range of novel products and quality services to both individuals and corporations. BankMed's private bank in Switzerland, BankMed Suisse, is engaged in asset-management and advisory banking services, through its offices in Geneva.

By the end of 2009, BankMed's total assets stood at around US\$10.6 billion, it had customer deposits of approximately US\$8.2 billion and total loans of just over US\$3.1 billion. BankMed has a client-portfolio currently exceeding 130,000 customers.

BankMed went through a major restructuring and reorganization campaign between 2006 and 2008. The three banks in the group were consolidated into one entity, where retail banking is being developed into a core line of business in addition to the well-established corporate banking business. Brokerage services, available 24 hours a day, are complementing private banking services, as well as new investments and foreign exchange products are being introduced constantly to meet growing client demand (bankmed.com.lb).

4.2 Interviews

4.2.1 BML

4.2.1.1 Head of Operations

The author had an interview with X who worked at BML bank for more than 10 years. The interview was held on Thursday, November 18, 2010, and took around 45 minutes to be completed. Summary of interview can be found in the appendix E.

X pointed out that the new system implementation changes the way the users used to practice and work. The user's resistance to the new system came from the staff having no experience with new system. They were not provided with enough training and they were not involved in the whole process of new system implementation. Understanding the benefits of the new system overcomes the resistance but not easily.

On the question of whether BML users welcomed this new system, X explained: *"From my point of view, I understand the rejection of users to welcome new system from two angles: One is the human factor which in nature human does not welcome change. The other is the bank staff factor which does not welcome any change because this part of people has to make a lot of effort and they have to update themselves"*.

In addition, people reject the system because of the way the system was introduced. It was introduced in one step not gradually nor running it in parallel with old system not having a testing corner in parallel with running system. It was introduced into live in a very fast way. On the question of to what level users were satisfied with system X pointed out that: *"As the head of branches described: We faced problems with users, they resist change. Change was not introduced gradually. However, we motivated them towards change by explaining the benefits of the new system, the facilities it provides, and the necessity for it to serve customers better"*.

In addition, X explained that he and the management is aware that users were not provided with intensive training. After all, this was not just an update of an information system, but rather a full banking platform unlike the existing one, hence new functions are available and a whole process is not available which needs a deep understanding and hence training.

On the question of *"Were users involved in information system implementation phase? If yes, to what extent?"* X pointed out that new system implemented was not based on our requirements. *"We were not involved in its development because it is not home-tailored, it is outsourced"*. X ensured he and the others were provided with this system and with training. So they were involved in the after-implementation. X went on and explained that trainers provide them with training, explaining transactions posted on system for an average of two months: *"We were involved in the practical training program on test platform. After that, the management decided to go Live with the system"*.

4.2.1.2 Business Analyst

The author had an interview with Y who worked at BML bank for more than 7 years. The interview was held on Monday, November 15, 2010, and took around 45 minutes to be completed. Summary of interview can be found in the in the appendix E.

Y pointed that he and some others were involved somehow in the data conversion from old data to new data. However, the conversion was not accurate. Based on the question of how users were involved in the new information system, Y confirmed that part of users was not involved. But the others were not involved not because of management because of their own decision. In other words, part of people does not want to be involved. The others did not understand the importance of the change or “they did not want to make efforts to learn new issues, not even reporting issues which is very important and basic”.

Concerning training issue, Y mentioned that trainers were not enough skillful especially in the data conversion and training should be given much more time to eliminate these errors because assessment of data should take longer time.

On the question of how user were involved, Y pointed out that training sessions were based on “*Trainers asked management about screens they need and access regulations and explain steps from A to Z. For instance, how to open a loan...*”

Concerning resistance to change, some people tried to avoid system as long as they can. Others, such as RES branch (Riad Elsolh branch), they decided to cooperate, and sit till 3 am for the data conversion. The problem is that old people are exposed to new system and because of lack of training and miss-implementation, mistakes took place: “*The biggest problem is that old people are helping new users. But these old did not do good so the wrong process is transferred from group to group*”.

Concerning user satisfaction field, Y ensured that there was no time for feedback of the users, to check whether they were satisfied or not: “*System was implemented live in a more than very short period, work has to go, and customers have to be served in any way*”.
Can we say they are satisfied?

Y answered that users might not be satisfied, but understand the process from A to Z. But with time, they will be satisfied: “*But my expectations is that as Assistant Executive General Manager says: If the system was developed on our requirements, and was implemented in different way, we would not have any problem or maybe we have but not big problems*”.

4.2.1.3 Teller

The author had an interview with Z who worked at BML bank for more than 7 years. The interview was held on Monday, November 6, 2010, and took around 20 minutes to be completed. Summary of interview can be found in the appendix E.

Concerning new change, Z explained that using old system allowed her to execute a certain operation in one screen, now she has to navigate many screens till she gets final output : “*It is complicated*”. She explained that one of the causes was her and the others’ lack of involvement in the process though they were provided with training: “*Training was not enough, like 2 months. Some screens might be helpful but trainers did not inform us about them*”. In addition, she added that there is a gap somewhere, every branch is working differently though procedures exist and they are written forms but every branch is behaving differently.

Concerning user frustration, Z pointed out that she is one of the people who resist change because people selected to prepare and work with trainers were not that skillful and were not good. All of us should be involved or maybe another team than the one Z just mentioned should be involved :*”Symbol of people who tried to reject the system or symbol of system failure is that in the 2 years ago, we issued warning for more than 90%. This is considered a high rate”*.

Concerning user satisfaction, Z confirmed that none of tellers are satisfied with system comparing to old one but case is becoming easier now after 1 year of implementation but *“still level of satisfaction is very low because we still have problems with how to use system. In addition, I asked for some enhancements, it took time”*.

4.2.2 BankMed

4.2.2.1 Business Analyst

The author had an interview with A who worked at BankMed bank for more than 9 years. The interview was held on Friday, October 22, 2010, and took around 30 minutes to be completed. Summary of interview can be found in the appendix F.

Concerning user involvement, A pointed out that not all of us are involved, one person from every branch is selected to attend sessions given prior to system implementation. When system is implemented, every user is given number of clients transactions to preformed in parallel with the old system: *“We were given all transactions from A to Z. One is sitting and explaining how it works using data on testing environment”*.

In addition, A pointed out that they were also involved in business requirements. They asked the new team/system owner for what they have problems in old system and what new needs they are looking for: *“Once requirements are collected, team went to India to study the issues. Again, we conducted meetings with these trainers when they come back. They showed us the changes and the process was 2 way process till we and management make sure system is ready for implementation”*.

On the question of whether BankMed users welcomed this new system, A explained: *“For me and my colleagues, I understand the importance of the new system, we want the change because it improves our work and it fulfills what was missing before”*. A ensured that the change is welcomed; however, he also pointed that old people might not welcome the change because they are not skillful enough in technology in general.

On the question of to what level users were satisfied with system X pointed out that: *“We, as branches, are satisfied. What was missing is fulfilled now. Transactions are done correctly. However, management is not satisfied with system because of reports. Some reports are missing, they need more reports. Reports not found in system ”*.

4.2.2.2 Teller

The author had an interview with B who worked at BankMed bank for more than 10 years. The interview was held on Wednesday, October 6, 2010, and took around 25 minutes to be completed. Summary of interview can be found in the appendix F.

Concerning resistance to change, old people resist changes not the new ones. Old people originally have problem with old system. This new change will require more time and more

effort to check how the transaction is executed following new system. B pointed out that branch managers, though satisfied, but have pressure because they have responsibilities. Any mistake resulted from new system, will be considered person's mistake: *"We, all in the bank, have problem with reports because we have to re study the reports location and organization"*.

Concerning new information system acceptance, B pointed that the old system was not flexible: *"It was not possible to organize General ledgers based on product"*. In addition to good reports generated from system. It is true that some reports might take time but this is because of overload not because of bad reporting system: *"We did not reject changes, because after all, management will not take decision to complicate things but to facilitate issues and contribute to better performance. Though system went live quickly, but trainers stayed with us for 7 months. Any problem we faced, they helped us"*.

B pointed out when questioned about user involvement that they worked on data merging 2 months before they went live. After implementing, they check with trainers for problems. Even before they went live, they were provided with training though short. B explained: *"If you mean involved in requirements, no we were not. But we were involved in data conversion. We retrieved data from old system put it in excel sheet and save the hard copy in archived. We checked the balances if they were correct. But we were not involved in product set up"*.

On the question of resistance to change, multiple assignments to different goals before and after the implementation of the new system forced him to adapt to continuous changes in system.

Concerning question *"To what level you are you satisfied with system"*. C explained that the system meets the business needs to a big extend (compared to the old system) to 90 or 95%. Left % is for new products that are unknown for Egypt and needs testing before implementation to BML needs and *"I am satisfied with the system, but I am complaining from the unclear end to end processes related to trade customer"*.

4.3 Surveys

There were 30 employees from two different companies who participated in this research to measure perceived ease of use and perceived usefulness. Quantitative measurements were selected.

In addition, overall satisfaction and acceptance tests were conducted. The tables reflect different scores.

Each participant is expected to answer the questions which are based on 1 to 5 scale where 1 is the "Strongly Disagree" and 5 is "Strongly Agree". These surveys included four sections. They contained twelve questions on User satisfaction, eleven questions on perceived usefulness of system, eleven questions of perceived ease of use, six questions on overall acceptance test.

The study interviewed 15 staff member from BML and 15 from BANKMED.

To illustrate more, a detailed example will highlight the process on how the study reached its results.

The results in question number 1 of section user usefulness "My job would be difficult to perform without system", showed the following:

- 4 users from BML had neither agree that the system is useful
- while another 3 interviewed sample shows that they agree that the system is useful
- While the remaining 8 strongly agree about its usefulness.

On the other hand the interviewed sample from BANKMED showed that:

- 5 users seem to neither agree that the system is useful
- 1 of them agrees to be useful
- The remaining 9 seems to strongly agree about its usefulness.

The study follows the same methodology in defining the answers of the surveyed sample throughout the survey where in each section we calculate the number of surveyed user who answered 1 (strongly disagree) and same thing to 2 until we finally calculate the number of users who answered 5 (strongly agree).

The same goes to both samples BML users and BANKMED user where we finally reach to a point when we can generate the mean and standard deviation based on the calculation to enable drawing the data analysis.

Once data were collected, the mean and the standard deviation were calculated.

Based on these calculations, data analysis was drawn.

Table 6 and 7 present the data that the author collected concerning perceived ease of use. Figure 4 is a visual result representation.

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	1	3	2.000	1.211	3.211	0.789	1.467	7	4	2	0	0
2	1	4	2.133	1.087	3.221	1.046	1.182	4	8	1	1	
3	1	4	2.400	0.879	3.279	1.521	0.773	1	10	1		
4	1	3	2.200	0.653	2.853	1.547	0.427	2	8	5		
5	1	4	2.600	0.879	3.479	1.721	0.773	2	4	7	2	0
6	2	5	3.067	0.772	3.838	2.295	0.596	0	3	9	2	1
7	1	3	2.267	0.680	2.947	1.587	0.462	1	10	3	1	0
8	3	4	3.933	0.249	4.183	3.684	0.062	0	0	1	14	0
9	3	4	3.733	0.442	4.176	3.291	0.196	0	0	4	11	0
10	3	5	3.933	0.680	4.613	3.253	0.462	0	0	4	8	3
11	3	4	3.267	0.442	3.709	2.824	0.196	0	0	11	4	0

Table 6 Bankmed Perceived ease of use

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	2	4	3.1333	0.886	4.019	2.248	0.784	0	5	3	7	0
2	2	4	3	0.966	3.966	2.034	0.933	0	7	1	7	0
3	2	4	3.1333	0.958	4.091	2.175	0.918	0	6	1	8	0
4	2	4	3.06667	0.770	3.837	2.296	0.594	0	4	6	5	0
5	1	4	3.2	1.025	4.158	2.108	1.051	1	4	2	8	0
6	2	5	3.6	0.800	4.400	2.800	0.640	0	2	3	9	1
7	2	4	2.93333	0.833	3.633	1.967	0.693	0	7	4	4	0
8	2	4	3.4	0.800	4.200	2.600	0.640	0	3	3	9	0
9	2	4	3.13333	0.833	4.033	2.367	0.693	0	4	4	7	0
10	2	4	3.71429	0.800	4.400	2.800	0.640	0	3	0	12	0
11	2	4	3.1333	1.039	4.173	2.094	1.080	0	5	3	7	0

Table 7 BML Perceived ease of use

Question 1 for BANKMED has a mean of 2.0 with a variance of 1.467 this shows that 64% of employees strongly disagree (this relies between strongly disagree and neither agree 13 employees out of 15). Interpolating the results, 64% of population tends to disagree on the fact that 64% of the answers tend to be between 0.789 & 3.211.

Applying the same concept “Mean Minus/Plus Standard Deviation (SD)” 45% of BML employees tend to agree that using the system make them confused.

Question 2 results in 64% of employees of BANKMED strongly disagree to the fact that they make errors when using system while 45% of employees of BML agree. The 64% of BANKMED population tend to be between 1.046 & 3.221, which means that they tend to neither agree.

Question 3 shows that 65% of BANKMED populations agree on finding the new system useful while 45% of BML employees tend to agree to the fact that the new system is frustrating.

Question 4 shows that 57% of BANKMED employees tend to disagree to the fact that they refer to manual while using system, while 45% of BML population neither agree/disagree.

Question 5 result in 69% of BANKMED employees tend to neither agree/disagree to the fact that system requires a lot of mental effort while 49% of BML populations agree with this fact.

Question 6 show that 59% of BANKMED populations find it inflexible to recover errors, while 63% of BML employees agree to the fact that they easily recover errors while using system.

Question 7 shows that 83% of BANKMED agrees that the system is rigid & inflexible to interact with and 54% of BML employees tend to disagree.

Question 8 shows that 83% of BANKMED & 62% of BML tend to agree to the fact that they can make the system do what they want.

Question 9 show that 65% of BANKMED & 58% of BML agree that they can interact with system easily.

Question 10 result in 65% of BANKMED and 63% of BML tend to agree that they remember how to perform tasks on this system.

Question 11 shows that 74% of BANKMED population neither agree nor disagree and 50% of BML tend to agree that the system provides guidance in performing tasks.

Perceived Ease of Use

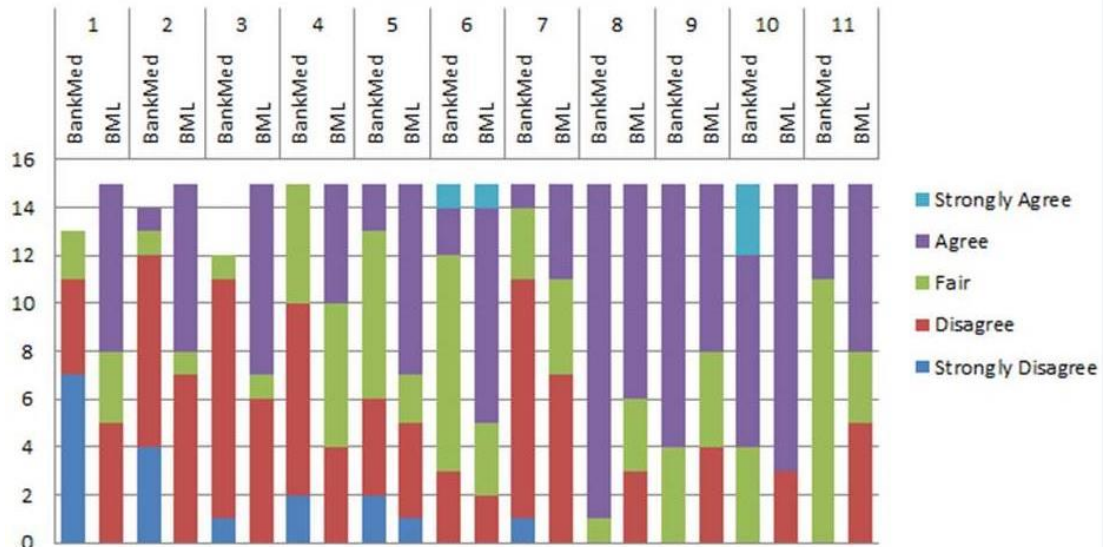


Figure 4 Perceived Ease of Use

Table 8 and 9 present the data that the author collected concerning perceived usefulness. Figure 5 is a visual result representation.

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	3	5	4.267	0.929	5.195	3.338	0.862	0	0	5	1	9
2	3	5	4.133	0.499	4.632	3.634	0.249	0	0	1	11	3
3	3	5	4.000	0.816	4.816	3.184	0.667	0	0	5	5	5
4	3	4	3.533	0.499	4.032	3.034	0.249	0	0	7	8	0
5	3	5	4.200	0.748	4.948	3.452	0.560	0	0	3	6	6
6	4	5	4.667	0.471	5.138	4.195	0.222	0	0	0	5	10
7	3	5	4.067	0.854	4.920	3.213	0.729	0	0	5	4	6
8	3	5	4.267	0.573	4.840	3.693	0.329	0	0	1	9	5
9	3	5	3.800	0.653	4.453	3.147	0.427	0	0	5	8	2
10	2	5	3.200	0.833	4.033	2.367	0.693	0	3	7	4	1

Table 8 BankMed Perceived Usefulness

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	3	5	4.267	0.854	5.120	3.413	0.729	0	0	4	3	8
2	2	5	4.000	1.155	5.155	2.845	1.333	0	3	1	4	7
3	2	5	3.933	1.123	5.057	2.810	1.262	0	3	1	5	6
4	3	5	4.133	0.618	4.752	3.515	0.382	0	0	2	9	4
5	2	5	3.200	1.166	4.366	2.034	1.360	0	6	3	3	3
6	2	5	3.200	1.166	4.366	2.034	1.360	0	6	3	3	3
7	2	5	2.933	0.998	3.931	1.936	0.996	0	6	6	1	2
8	2	5	3.267	1.181	4.448	2.085	1.396	0	6	2	4	3
9	2	5	3.800	1.046	4.846	2.754	1.093	0	2	4	4	5
10	3	5	4.067	0.854	4.920	3.213	0.729	0	0	5	4	6

Table 9 BML Perceived Usefulness

Question 1 for BANKMED has a mean of 4.267 with variance of 0.862 and hence this shows that 64% (4.267 ± 0.729) of employees strongly agree; this result relies between strongly agree and neither agree. Hence 64% of BANKMED employees found that the job is difficult without the new system. The same for BML employees with 66% tend to strongly agree.

Question 2 shows 78% of BANKMED and 55% of BML employees tend to agree that using system gives them greater control over their work.

Question 3 shows that 66% of both BANKMED and 55% BML employees tend to agree that using system improves performance.

Question 4 shows that 75%% of both BANKMED and 74% BML employees tend to agree that using system addresses their work needs.

Question 5 shows that 70% of BANKMED employees tend to agree that using system saves time while 53% of BML are not sure whether the system saves time or not.

Question 6 shows that 81% of BANKMED employees tend to strongly agree that using system enables them to accomplish work quickly while 53% of BML are not sure whether this is true or not.

Question 7 shows that 65% of BANKMED employees tend to agree that using system enables them to accomplish more work while 50% of BML disagrees.

Question 8 shows that 76% of BANKMED employees tend to agree that using system reduces time spent on unproductive activities while 53% of BML tends to disagree.

Question 9 shows that 70% of BANKMED and 56% BML employees tend to agree that using system enhances effectiveness.

Question 10 shows that 59% of BANKMED employees are not sure whether system improves quality of work or not while 65% of BML agree upon that.

Thus, according to tables 6-7 (Perceived ease of use) & tables 8-9 (Perceived Usefulness) we conclude that most of the employees of both BML & BANKMED find the new system easy to use in order to perform their tasks, easy to interact, execute what they want. The new system makes it easier to employees to accomplish their tasks, improve their performance & productivity, addresses their needs, and saves time.

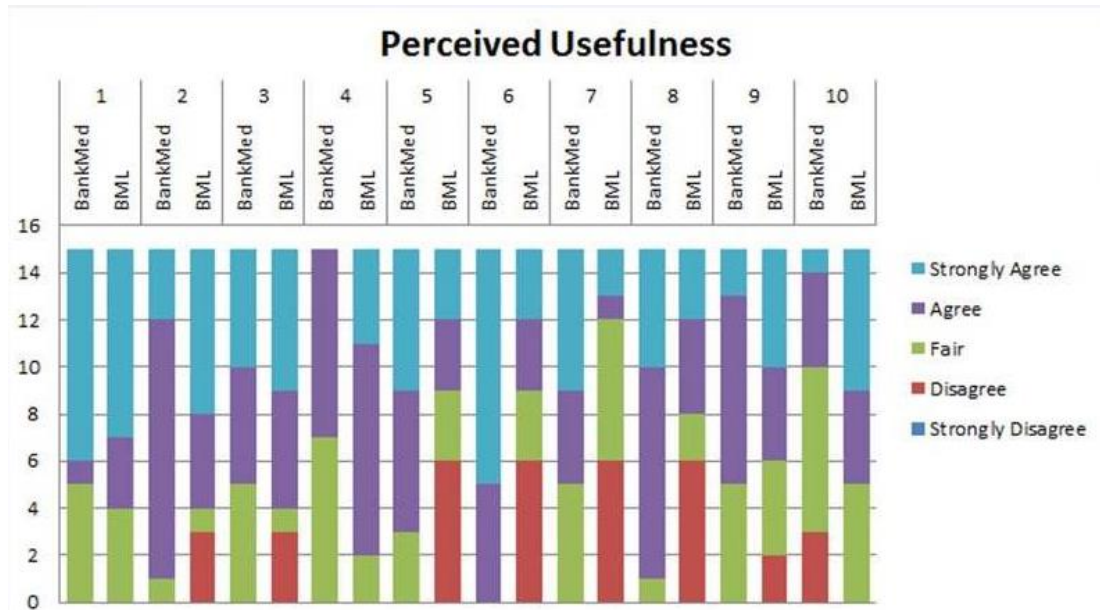


Figure 5 Perceived Usefulness

Table 10 and 11 present the data that the author collected concerning overall satisfaction. Figure 6 is a visual result representation.

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	2	5	3.000	0.730	3.730	2.270	0.533	0	3	10	1	1
2	3	5	4.400	0.712	5.112	3.688	0.507	0	0	2	5	8
3	3	5	4.133	0.499	4.632	3.634	0.249	0	0	1	11	3
4	3	5	4.000	0.730	4.730	3.270	0.533	0	0	4	7	4
5	2	5	3.667	0.943	4.609	2.724	0.889	0	3	1	9	2
6	3	5	4.467	0.718	5.185	3.749	0.516	0	0	2	4	9
7	2	5	3.067	1.181	4.248	1.885	1.396	0	7	3	2	3
8	3	5	4.000	0.816	4.816	3.184	0.667	0	0	5	5	5
9	3	5	4.067	0.772	4.838	3.295	0.596	0	0	4	6	5
10	2	5	3.733	0.772	4.505	2.962	0.596	0	1	4	8	2
11	4	5	4.667	0.471	5.138	4.195	0.222	0	0	0	5	10
12	1	3	2.600	0.611	3.211	1.989	0.373	1	4	10	0	0

Table 10 BankMed Satisfaction

Q#	Minimum	Maximum	Mean	Standard Deviation	Mean+SD	Mean-SD	Variance	# of 1s	#of 2s	#of 3s	#of 4s	#of 5s
1	2	4	2.800	0.909	3.709	1.891	0.827	0	8	2	5	0
2	2	4	3.133	0.806	3.939	2.328	0.649	0	4	5	6	0
3	1	4	3.133	1.024	4.157	2.109	1.049	1	4	2	8	0
4	2	5	3.333	1.011	4.344	2.322	1.022	0	4	4	5	2
5	1	5	3.600	1.200	4.800	2.400	1.440	1	3	0	8	3
6	2	4	2.867	0.718	3.585	2.149	0.516	0	5	7	3	0
7	2	4	3.133	0.618	3.752	2.515	0.382	0	2	9	4	0
8	2	4	3.667	0.596	4.263	3.070	0.356	0	1	3	11	0
9	2	5	3.333	0.869	4.203	2.464	0.756	0	3	5	6	1
10	2	5	2.933	1.236	4.170	1.697	1.529	0	4	6	2	2
11	1	5	3.000	1.095	4.095	1.905	1.200	1	4	6	2	2
12	1	4	2.800	1.275	4.075	1.525	1.627	4	2	2	7	0

Table 11 BML Satisfaction

Questions 1 for BANKMED has a mean of 3 with a standard deviation of 0.730 and hence this shows that 60% ($3 + 0.909$) of employees disagree, this result relies between neither agree/disagree. Hence, 60% of both BML and BANKMED employees are not sure if system solves complex tasks.

Question 2 shows that 72% of BANKMED employees tend to agree that system is easy to use while 60% of BML are not sure whether this is true or not.

Question 3 shows that 78% of BANKMED and 51% of BML employees tend to agree that new system is useful.

Question 4 shows that 69% of BANKMED employees tend to agree that system increases productivity while 53% of BML are not sure whether this is true or not.

Question 5 shows that 59% of BANKMED and 50% BML employees tend to agree that any report they need they can find it

Question 6 shows that 72% of BANKMED strongly agree and 60% of BML employees tend to neither agree/disagree that the system was difficult to learn.

Question 7 shows that 56% of BANKMED while 67% of BML employees are not sure that they are rarely confused when using system.

Question 8 shows that 66% of BANKMED and 72% of BML employees tend to agree that they were offered training to use system.

Question 9 shows that 68% of BANKMED & 41% of BML employees tend to agree that system is beneficial.

Question 10 shows that 65% of BANKMED employees tend to agree that system increases productivity while 60% of BML are not sure whether this is true or not.

Question 11 shows that 81% of BANKMED employees tend to strongly agree that system saves time while 53% of BML are not sure whether this is true or not.

Question 12 shows that 61% of BANKMED employees are not sure if they use manual when using system while 62% of BML disagree about this fact.

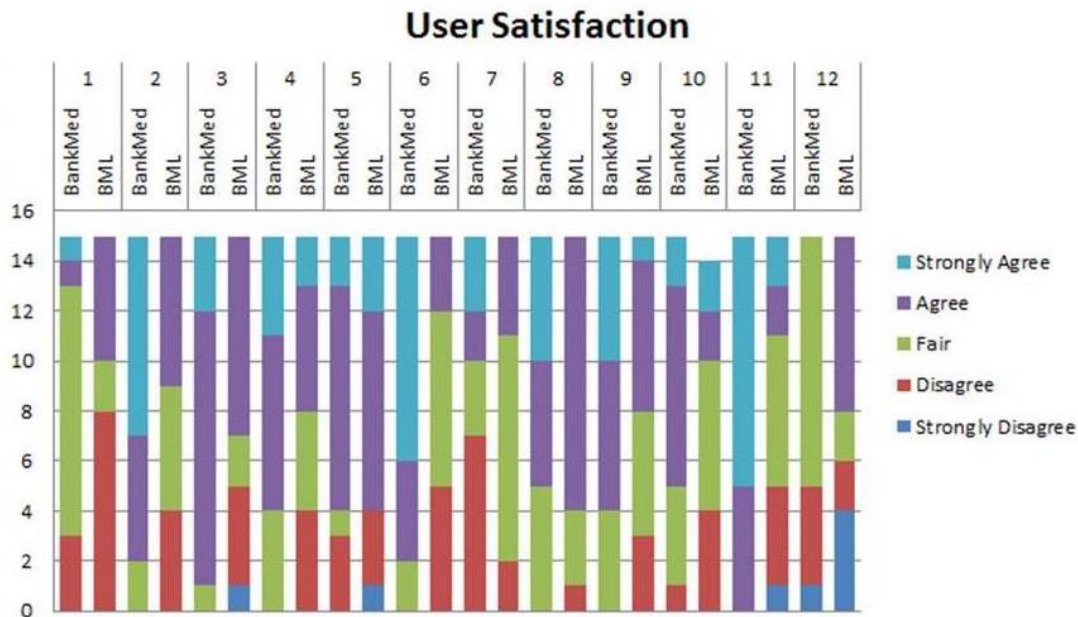


Figure 6 User Satisfaction

Table 12 and 13 present the data that the author collected concerning overall acceptance. Figure 7 is a visual result representation.

Q#	Mean	Standard Deviation	Variance	Mean+SD	Mean-SD	#of 1s	#of 2s	#of 3s	#of 4s	#of 5s	Minimum	Maximum
1	3.333	0.471	0.222	3.805	2.862	0	0	10	5	0	3	5
2	3.600	0.490	0.240	4.090	3.110	0	0	6	9	0	3	5
3	3.267	1.062	1.129	4.329	2.204	0	4	6	2	3	2	5
4	3.267	0.929	0.862	4.195	2.338	0	5	1	9	0	2	4
5	4.467	0.499	0.249	4.966	3.968	0	0	0	8	7	4	5
6	3.400	1.254	1.573	4.654	2.146	2	0	7	2	4	1	5

Table 12 BankMed Acceptance Test

Q#	Mean	Standard Deviation	Variance	Mean+SD	Mean-SD	#of 1s	#of 2s	#of 3s	#of 4s	#of 5s	Minimum	Maximum
1	3.067	0.772	0.596	3.838	2.295	0	4	6	5	0	2	4
2	3.067	0.772	0.596	3.838	2.295	0	4	6	5	0	2	4
3	2.867	1.147	1.316	4.014	1.720	1	6	4	2	2	1	5
4	2.933	0.772	0.596	3.705	2.162	0	4	9	1	1	2	5
5	3.467	0.618	0.382	4.085	2.848	0	1	6	8	0	2	4
6	3.800	0.748	0.560	4.548	3.052	0	0	6	6	3	3	5

Table 13 BML Acceptance Test

Question 1 for BANKMED has a mean of 3.33 with a standard deviation of 0.471 and hence this shows that 75% ($3.33 + 0.471$) of employees are not sure if they adopt well to change. And 60% of BML employees also are not sure if they adopt well to change.

Question 2 shows that 76% of BANKMED & 40% of BML employees tend to agree that they are comfortable with new system.

Question 3 shows that 50% of BANKMED & 57% of BML employees are not sure why old system has been replaced.

Question 4 shows that 56% of BANKMED agrees and 58% of BML employees are not sure if system will provide new skills.

Question 5 shows that 80% of BANKMED and 69% of BML employees are concerned about less job satisfaction with new system.

Question 6 shows that 53% of BANKMED neither agree/disagree while 67% of BML welcomes new change as opportunity to learn new skills.

Hence, according to tables 10-11 (overall satisfaction) & tables 12-13 (acceptance test) we conclude that most of the employees of both BML & BANKMED find that the new system has fulfilled their requirements and showed its beneficence in solving complex tasks, locating reports easily, saving time. They also adapted easily with the new system & accepted the change to gain new skills.

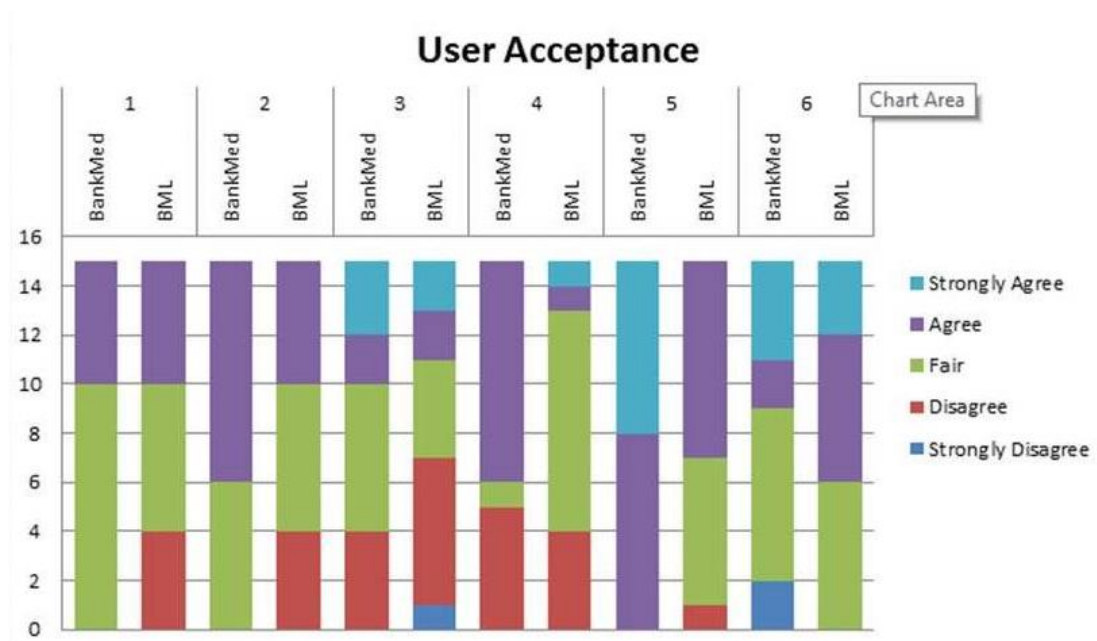


Figure 7 Overall Acceptance

5 FIFTH CHAPTER-ANALYSIS AND DISCUSSION

The following section will provide an analysis drawn from the Empirical Findings with respect to, and in comparison to the Theoretical Framework. The analysis is based upon the research topic about relation between user experience, user satisfaction, and user acceptance.

The purpose of this study was to identify the factors that are most likely to be associated with system success. Three measures were discussed: perceived ease of use, perceived usefulness, and user involvement. These measures determine user satisfaction and user acceptance. Based on previous research, measurement scales for ease of use, usefulness, user satisfaction, and overall acceptance were adopted.

Based on theoretical background and on empirical findings, human behavior is a basic factor affecting success or failure of an information system. In addition, usually human behavior tends to resist change because it threatens the way he used to work and threatens his status quo. Hence, when introducing any change to organization, human factor should be first taken into consideration. Employees should be given special care and management should know how to introduce employees to new change and to explain the benefits of the new change on their work.

Not forcing employees to adopt new change, but rather to involve them is a much better strategy to succeed. From this point, user involvement becomes a major factor in mitigating resistance to change. Either involve employee in pre-implementation or during implementation such as train them to get used to new system. By training, the user is involved and is exposed to new change in advance before implementing the change live. Being involved satisfies the user somehow. Interviews in both banks explain how training was considered important for employees to accept the new information system and how a tough training will be preferable for employees rather than a brief training.

In addition to this factor, other two factors come into play leading to user satisfaction. The former is "Perceived ease of use" where the first Bank, BankMed, seems to agree upon most of the points, 8 out of 11, measuring this factor. This reflects to what level the user of the new system finds it easy to use and not complicated. He does not have a problem using this system. This result agrees with the overall satisfaction result of BankMed concerning the two questions related to "ease to use" and "easy to learn" where both questions rated as 4 as per the standard deviation. However, the other bank BML showed a negative attitude towards ease of use of the system, 4 out of 11 questions. This is less than the average. One of the interviewee, teller, also shows this attitude. This matches the overall satisfaction result where the answers to the two questions "ease to use" and "easy to learn" are rated as 3.

The latter is "Perceived usefulness" where the first Bank seems to agree upon most of the points, 9 out of 10, measuring this factor. This reflects to what level the user of the new system finds it useful and accurate. This result agrees with the overall satisfaction result of BankMed concerning the questions related to "system is useful" and "system is beneficial" where both questions are rated as 4 as per the standard deviation. The other bank BML showed 6 questions out of 10 showing positively usefulness. This result agrees somehow with overall satisfaction where answers to both questions mentioned before show a "not sure" answer.

From this, we can conclude that the two factors are related to user satisfaction whether the more the user finds the system easy to use and useful the more he is satisfied.

Concerning acceptance test, BankMed shows an average (3 out of 6 questions as 'agree') to welcome the new change and the overall satisfaction shows a high rate (11 out of 12 questions as 'agree'). BML also shows the same average.

Accordingly, these results explain the indirect relationship between the 3 actors: The 3 factors, the user satisfaction, and the user acceptance. The three factors, as interviews and surveys showed, lead to user satisfaction. In its turn, user satisfaction leads to user acceptance. The more the user finds it easy to use and useful and the more he is involved, the more he is satisfied and hence the more he accepts the change and helps in new information system success.

Information systems are the backbone of modern business; banking sector is expected to lead by innovation to ensure competitive advantage. Managers, analysts and board of directors are expected to make decisions based on the information collection and processed by highly sophisticated systems. It is a fact that competitive edge cannot be reached without information systems, therefore the presence of computer systems is unavoidable and user should be very well trained on how to operate these systems.

On the other hand, despite the level of sophistication and the level of productivity that these systems are guaranteed to provide; the human factor is the main requirement to operate these systems. Therefore these systems should satisfy the needs of the end user to fulfill "User Satisfaction" and should be seen as useful and easy to use to ensure that level of satisfaction. Meeting user satisfaction leads to "User Acceptance". These key elements are required for any acquired information system to enable organization competitive tools to achieve high cost reduction, improve product quality, increase productivity, efficiency and effectiveness in work output.

Based on studies conducted by different academics, success or failure of an information system depends on many factors; resistance to change, user acceptance, and user satisfaction illustrate these factors.

Resistance to change and user acceptance can be described as separating-twins because they cannot take place at the same time. Lack of one of them is the presence of the other. So though theories only focus on factors leading to user acceptance such as perceived ease of use and perceived usefulness, these same factors are affecting resistance to change. In other words, absence of these factors will lead to resistance to change and not lead to user acceptance.

Again, and as per the status quo bias theory, people tend to maintain situation. Hence when introducing a new change in the organization, change management is key factor in system success. Strategies should exist to manage changes. One of these strategies is participation where employees should expose their requirements and opinions. By that way, they feel their opinions are accepted and welcomed and hence increasing the level of satisfaction.

The satisfaction scale items represented by Bailey and Pearson (1983) are the resulting scale items of Davis perceived usefulness and perceived ease of use (Bailey & Pearson, 1983). For instance, accomplish my work, addresses my needs items represented in table 2 are the results of accuracy and precision items represented in table 1. "Address my needs" means whatever the user needs from the information system is applicable; hence the system is considered accurate "Accuracy". Precision of the system allows user to fulfill his task and hence to accomplish his work. This concept illustrates the relationship between these factors and user satisfaction where the former lead to the latter and the latter is output of the former.

Having defined the direct relationship between TAM's constructs and user satisfaction, user acceptance becomes the output of user satisfaction or resistance to change becomes output of

lack of user satisfaction. Hence, the relationship between user acceptance and perceived ease of use & perceived usefulness is not direct. The formula established from these 2 different relationships is as follow:

*“Perceived ease of use + Perceived Usefulness + User involvement => User satisfaction
User Satisfaction => User Acceptance”*. This, indirectly, leads to:

“Perceived ease of use + Perceived Usefulness + User involvement=> User Acceptance”
where user acceptance is indirectly dependent on the factors above and user satisfaction is directly dependent on these factors (figure 8).

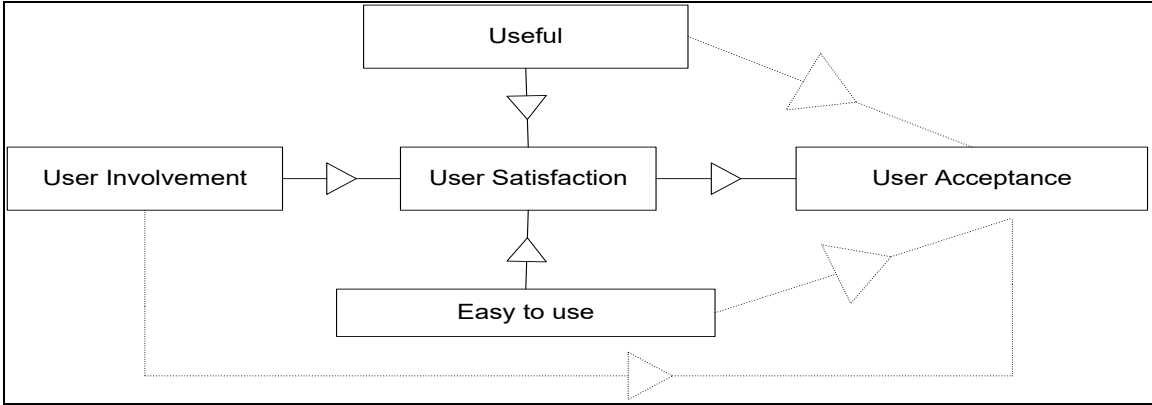


Figure 8 Direct/indirect Relationship between the 3 factors and User satisfaction, User acceptance

6 SIXTH CHAPTER-CONCLUSION AND FUTURE WORK

Technology continually changes the world, causing major changes in enterprise such as new enterprise information systems. Employees must adapt and accept such a change. The author, successfully tested the model of the three dimensional relation between user experience, user satisfaction, and user acceptance. The model was designed to understand how the user involvement and the user perception of the systems impact the user satisfaction and lower the resistance to change.

From this research study and in response to the research questions, the following conclusions were derived:

“Understanding the root cause of resistance, will allow better planned strategies to introduce the change and make it a success story”.

Humans fear change by nature as it threatens their stability, comfort, personal status. This discomfort should be expected and well treated. If ignored, an enterprise failure could result. The research highlighted that the more and the earlier the understanding of the resistance to change, the better the change and management strategies would be. The findings emphasized the user involvement and participation and training, as key management strategies, are considered as success factors.

In terms of strategies, *“an increase in user involvement and training, perceived usefulness, perceived ease of use will result in a statistically significant user satisfaction”.*

End user’s involvement empowers him and increases his positive attitude, sense of control, perceived usefulness, perceived ease of use, and self-efficacy. The research provided further evidence for effectiveness of user participation to deal with end-user resistance. The research findings highlighted that end-user’s involvement especially in the complete assessment of user information requirements greatly impact end user’s satisfaction. End user training is also shown to be effective for dealing with user satisfaction. User training reduces user’s panic of interaction with a new system, increases user’s perception of how easy a system is to use and how useful it is, and therefore reducing computer anxiety (Doronina, 1995).

“An increase in user satisfaction will result in a statistically significant improved user performance, productivity, and profitability.”

An increase in user performance, productivity, and profitability reflects a significant user acceptance. The research and the findings highlighted that the user having confidence in system, the user understating the system, the user being trained, the user feeling of control, the user feeling of involvement, the user being trained, the user communicating with IT team, and other factors, is satisfied and perform well and produce more.

Further research is needed which studies other variables that could manage user resistance such as different management styles such as consultative style or directive style.

In addition, research is needed on how usefulness and ease of use can be influenced by external factors such as interface characteristics of system, design and development methodologies (agile, spiral models), and others.

Culture also affects the overall acceptance of a new change. Culture can determine behavioral attitude. Design preferences vary from user to user of different culture. These preferences could be studied in future to study its influence on perceived usefulness and ease of use.

Moreover, the focus was not on skills of people, whether skillful in computer or not, whether they are aged people or young people. This is also because necessitates a different study on its own.

7 SEVENTH CHAPTER-REFERENCES

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8 APPENDICES

Appendix A- Overall Satisfaction Questions

	Strongly Disagree	Disagree	Neither Agree	Agree	Strongly Agree	Not Applicable
I use the system to solve complex tasks	1	2	3	4	5	N/A
System is easy to use	1	2	3	4	5	N/A
I found new system useful	1	2	3	4	5	N/A
System increases my productivity	1	2	3	4	5	N/A
Whatever I need from reports, I found on system	1	2	3	4	5	N/A
Learning System was not difficult	1	2	3	4	5	N/A
I am rarely confused when I use System	1	2	3	4	5	N/A
I was offered training to use System	1	2	3	4	5	N/A
Using system is beneficial	1	2	3	4	5	N/A
New system increases my productivity rather than old System	1	2	3	4	5	N/A
System saves a lot of time	1	2	3	4	5	N/A
I miss user manual when using system	1	2	3	4	5	N/A

Appendix B- Overall perceived usefulness of system

	Strongly Disagree	Disagree	Neither Agree	Agree	Strongly Agree	Not Applicable
My job would be difficult to perform without system	1	2	3	4	5	N/A
Using system, gives me greater control over my work	1	2	3	4	5	N/A
Using system improves my performance	1	2	3	4	5	N/A
The system addresses my job-related needs	1	2	3	4	5	N/A
Using system saves me time	1	2	3	4	5	N/A
System enables me to accomplish tasks more quickly	1	2	3	4	5	N/A
Using System allows me to accomplish more than would otherwise be possible	1	2	3	4	5	N/A
Using System reduces the time I spend on unproductive activities	1	2	3	4	5	N/A

Using System enhances my effectiveness on the job	1	2	3	4	5	N/A
Using System improves the quality of the work I do	1	2	3	4	5	N/A
Using System increases my productivity	1	2	3	4	5	N/A

Appendix C- Overall perceived ease of use of system

	Strongly Disagree	Disagree	Neither Agree	Agree	Strongly Agree	Not Applicable
I often become confused when I use the system	1	2	3	4	5	N/A
I make errors frequently when using system	1	2	3	4	5	N/A
Interacting with the system is often frustrating	1	2	3	4	5	N/A
I need to consult the user manual often when using system	1	2	3	4	5	N/A
Interacting with the system requires a lot of my mental effort	1	2	3	4	5	N/A
I find I easy to recover from encountered while using system	1	2	3	4	5	N/A
The system is rigid and inflexible to interact with	1	2	3	4	5	N/A
I find it easy to get to the system to do what I want it to do	1	2	3	4	5	N/A
My interaction with the system is easy for me to understand	1	2	3	4	5	N/A
It is easy for me to remember how to perform tasks using a system	1	2	3	4	5	N/A
The system provides helpful guidance in performing tasks	1	2	3	4	5	N/A

Appendix D- Overall Acceptance Test

	Strongly Disagree	Disagree	Neither Agree	Agree	Strongly Agree	Not Applicable
I adapt well to change	1	2	3	4	5	N/A
I am comfortable with new information systems	1	2	3	4	5	N/A

I understand why we are replacing the old system with a new business system	1	2	3	4	5	N/A
I believe new system will provide me with the support and training that I need to learn new skills required to perform my job	1	2	3	4	5	N/A
I am concerned that I will have less job satisfaction and security if major changes are made to our information systems	1	2	3	4	5	N/A
I welcome this change as a positive opportunity to learn new skills	1	2	3	4	5	N/A

Appendix E – BML Interviews

Person 1: Head Of Operations

Suzanne: “How you evaluate the situation?”

Head Of operations: “The existing system had been eliminated and a new system was implemented. It was not an upgrade but a full new system, a full new change which creates new opportunities to serve better the customers of the bank”.

Suzanne: “To what extent the users/employees accept the new system?”

Head Of operations: “The system implementation change the way the users used to practice and work. The user’s resistance to the new system came from the staff having no experience with new system. They were not provided with enough training and they were not involved in the whole process of new system implementation. Understanding the benefits of the new system overcomes the resistance but not easily”.

Suzanne: “How do you interpret users resistance to such change?”

Head Of operations: “From my point of view, I understand the refuse of users to welcome new system from two angles: One is the human factor which in nature human does not welcome change. The other is the bank staff factor which does not welcome any change because this part of people has to make a lot of effort and they have to update themselves. In addition, the resistance to change increases because of the way the system were introduced. It was introduced in one step not gradually nor running it in parallel with old system not having a testing corner in parallel with running system. It was introduced into live in a very fast way”.

Suzanne: “How did you convince people about importance of new system?”

Head Of operations: “As the head of branches once described: We faced problems with users, they resist change. Change was not introduced gradually. However, we motivated them towards change by explaining the benefits of the new system, the facilities it provides, and the necessity for it to serve customers better, this is from my side, I do not know how other business departments deal with users’ motivation, from our side we follow same concept”.

Suzanne : “What could be done to make users accept more and more the new system?”

Head Of operations: “We understand that users were not provided with intensive training. After all, this was not just an update of an information system, but rather a full banking platform unlike the existing one, hence new functions are available and a whole process is not available which needs a deep understanding and hence training”.

Suzanne: *“Were users involved in information system implementation phase? or in some other way?”*

Head Of operations: *“The new system implemented was not based on our requirements. It was the management decision based on what correspondent bank has. The old system was not good enough; it is not a competitive advantage for us. The new system was good, it is updated and provides a full banking platform. We were not involved in its development because it is not home-tailored, it is outsourced. It is difficult to check requirements for every business module. We were provided with this system and with training.”*

Suzanne: *“So training lets you involved in the system before going live?”*

Head Of operations: *“So we were involved in the after-implementation process if we can say that. Trainers provide us with training, explaining transactions posted on FlexCube for an average of two months. We were involved in the practical training program on test platform. After that, the management decided to go Live with the system”.*

Suzanne: *“How users were involved in the new information system?”*

Head Of operations: *“Part of users was not involved. But they were not involved not because of management because of their own decision. In other words, part of people does not want to be involved. As average, one person out of 8 in a group was involved. The new system discovery relied on the hands of that person. The others did not understand the importance of the change or they did not want to make efforts to learn new issues, not even reporting issues which is very important and basic. However, when problems start to arise and the controller (external auditor) to harshly criticize the bank, these 7 persons start to work hard and understand the implications of not being able to dig into new system”.*

Person 2: Business Analyst

Suzanne: *“Were users involved in information system implementation phase? or in some other way?”*

BA: *“We were involved somehow in the data conversion from old data to new data, but conversion was not accurate”.*

Suzanne : *“As I understood from Head of operations, not all users accept the new system, is it true? if yes, then why?”*

BA: *“Trainers were not enough skillful especially in the data conversion. Training should be given much more time. Assessment of data should take longer time. When running the new system, it should run in parallel with other system”.*
How users were involved?

Suzanne: *“What other types of involvement you had?”*

BA: *“Training session: Trainers asked management about screens they need and access regulations. They Explain steps from A to Z. For instance, how to open a loan...”*
Suzanne: *“Can we say that all users were involved during conversion?”*

BA: *“Yes, but even though, most of users are new, so they do not know about data format before new system”.*

Suzanne: *“How users react to new information system?”*

BA: *“Some people tried to avoid system as long as they can. Others, such as RES branch, they decided to cooperate, and sit till 3 am for the data conversion. The problem is that old people are exposed to new system and because of lack of training and mis-implementation, mistakes took place. The bigger problem is that old people are helping new users. But these old did not do good so the wrong process is transferred from group to group”.*

Suzanne : *“Does management ask staff for feedback?”*

BA: *“No time for feedback. System was implemented live in a more than very short period, work has to go, and customers have to be served in any way. Old people, now, after 2 and a half year, can understand the system behaviour”.*

Suzanne: *“Can we say they are satisfied?”*

BA: *“Maybe not satisfied, but understand the process from A to Z. But with time, they will be satisfied. I am doing good. I cannot compare to other system and tell if I am satisfied with another because I have never been exposed to another banking system. But my expectations is that as Assistant Executive General Manager says: If the system was developed on our requirements, and was implemented in different way, we would not have any problem or maybe we have but not big problems”.*

Person 2: Teller

Suzanne: *“How you evaluate the situation?”*

Teller: *“Though system is centralized, most of operations are located at head office, But this is not good, it was much easier to do it locally”.*

Suzanne: *“How you find this system?”*

Teller: *“Old system, we could execute a certain operation in one screen, now we have to navigate many screens till we get final output. It is complicated”.*

Suzanne: *“You were provided with training, so you were involved somehow?”*

Teller: *“Training was not enough, like 2 months. Some screens might be helpful but trainers did not inform us about them. In addition, there is a gap somewhere, every branch is working differently though procedures exist and they are written forms but every branch is behaving differently”.*

Suzanne: *“All of you were involved in training?”*

Teller: *“Branches were involved when the system was done and prior to implementation in 2 months. We were provided training and we were involved in seminar to specify screens we need at branches, but this was given after we close the branch around 1. So we go to head office at 3 till 7 pm, we were tired and by nature human cannot be productive after a long day of working”.*

Suzanne: *“To what level you accept this system?”*

Teller: *“I am against such change and I think most of users are against”.*

Appendix E – BankMed Interviews

Person 1: Teller

Suzanne: *“Were you involved in some way in the implementation of information system?”*

Teller: *“Concerning user involvement, not all of us are involved, one person from every branch is selected to attend sessions given prior to system implementation. When system is implemented, every user is given number of clients transactions to preformed in parallel with the old system. We were given all transactions from A to Z. One is sitting and explaining how it works using data on testing environment”.*

Suzanne: *“Is new system satisfies your needs?”*

Teller: *“We were also involved in business requirements. We asked the new team/system owner for what we have problems in old system and what new needs we are looking for: Once requirements are collected, team went to India to study the issues. Again, we conducted meetings with these trainers when they come back. They showed us the changes and the process was 2 way process till we and management make sure system is ready for implementation”.*

Suzanne: *“To what level you and other accepts the new change?”*

Teller: *“For me and my colleagues, I understand the importance of the new system, we want the change because it improves our work and it fulfills what was missing before. But old people might not welcome the change because they are not skillful enough I technology in general”.*

Suzanne: *“Are you satisfied with system?”*

Teller: *“We, as branches, are satisfied. What was missing is fulfilled now. Transactions are done correctly. However, management is not satisfied with system because of reports. Some reports are missing, they need more reports. Reports not found in system”.*

Person 2: Business Analyst

Suzanne: *“To what level users accept the new change?”*

BA: *“Concerning resistance to change, old people resist changes not the new ones. Old people originally have problem with old system. This new change will require more time and more effort to check how the transaction is executed following new system. Branch managers, though satisfied, but have pressure because they have responsibilities. Any mistake resulted from new system, will be considered person’s mistake. We, all in the bank, have problem with reports because we have to re study the reports location and organization”.*

Suzanne: *“Do you find benefits in new system?”*

BA: *“Concerning new information system acceptance, the old system was not flexible. It was not possible to organize General ledgers based on product. In addition to good reports generated from system. It is true that some reports might take time but this is because of overload not because of bad reporting system. We did not reject changes, because after all, management will not take decision to complicate things but to facilitate issues and contribute to better performance. Though system went live quickly, but trainers stayed with us for 7 months. Any problem we faced, they helped us”.*

Suzanne: *“Were you involved in some way before or after implementation or during implementation?”*

BA: *“They worked on data merging 2 months before they went live. After implementing, we check with trainers for problems. Even before we went live, we were provided with training though short. If you mean involved in requirements, no we were not. But we were involved in data conversion. We retrieved data from old system put it in excel sheet and save the hard copy in archived. We checked the balances if they were correct. But we were not involved in product set up”.*

Suzanne: *“To what level you are satisfied with system?”*

BA: *“The system meets the business needs to a big extend (compared to the old system) to 90 or 95%. Left % is for new products that are unknown and needs testing before implementation. All in all, I am satisfied with the system, but I am complaining from the unclear end to end processes related to trade customer”.*