

Factors Influencing User's Satisfaction with Information Systems

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Abstract: User satisfaction is considered to be one of the most important main dependent variables used to measure the success of the information system, this vision initiated Cyert and March in 1963 since they propose that if an information system meets the needs of the user, the satisfaction of that user will be enhanced while if not, the user will be dissatisfied and look for another source or another system. This is also confirmed by several authors indicating that user satisfaction is directly linked to the use of the system. Also the most frequent measures of success in the literature are user satisfaction, use of the information system and their influence on performance. In this article we have first presented the main models of user satisfaction as well as some definitions. Secondly the methodology adopted. And finally we will present the results of the empirical study using the partial least square structural equation modeling (SEM).

1 INTRODUCTION

User satisfaction is one of the mechanisms to be taken into account in setting up an information system. User satisfaction is defined as the extent to which users believe that the information system available to them meets their information needs. For its part, Bailey and Pearson (1983) defined it as the set of feelings and attitudes of users of a technology in relation to the characteristics of information and user involvement.

For Raymond (1995) user satisfactions is “a multidimensional attitude towards various aspects of IS management, such as the quality of results, the man-machine interface, personnel and IT services, and various related constructs to the user, such as feelings of participation and understanding”. Yet for Spreng and MacKoy (1996), it is “an affective state reflecting an emotional reaction to a product or service”. In addition, user satisfaction is an overall emotional and cognitive assessment of the user of the level of achievement related to their experience with the IS.

In this sense, user satisfaction is one of the key factors for the success of information systems. Note that a good system perceived by its users as being poor is a poor system (Thong and Yap, 1996). This concept was also present in the work of Shao, Z. and al, (2020) who suggest that an information system that perfectly meets the needs of the user will strengthen their satisfaction with this system, and if it

does not provide the necessary the user will become dissatisfied. These authors were the first to propose the concept of user satisfaction as a proxy measure for IS success, so several other studies have shown this direct link between satisfaction and usage behavior.

We can therefore understand that user satisfaction is a subjective measure; it measures how users perceive the information system they are using, either through a feeling of pleasure and satisfaction or a feeling of dissatisfaction. Usually, the systems that best meet user information requirements are used the most. The main models for measuring employee satisfaction users, namely the Bailey and Pearson (1983) model which was reassessed by Ives et al, (1983) and the Doll and Torkzadeh (1988) model and the Delone and Mclean information system access model (2003). These models are considered the most important and form the basis of any study aimed at measuring user satisfaction.

2 LITERATURE REVIEW

2.1 User Satisfaction Measurement Models

2.1.1 Bailey and Pearson Model (1983)

Bailey and Pearson (1983) consider user satisfaction as a basic criterion for measuring the success or

failure of information systems. The researchers put in a tool to measure user satisfaction with 39 items. This analysis included many factors such as the quality of information, the performance of systems, personal relationships and management involvement. However this study presents a set of limitations namely the sample which was small, 29 responses which were retrieved with difficulty in applying and testing the questionnaire in different contexts.

Ives et al, (1983) re-evaluated the model of Bailey and Pearson and proposed a more developed version focusing on the satisfaction of information users (UIS), it is therefore a question of measuring the general satisfaction of users vis- with respect to the information provided. The goal of the researchers was to strengthen the validity and reliability of the Bailey and Pearson instrument through a larger sample of about 200 users.

2.1.2 Ives and al, Model (1983)

Ives, and al, (1983) confirmed the validity of the user satisfaction measurement tool developed by Bailey and Pearson (1983). Indeed, the services offered and the relationship with the personnel are reflected in the relationships with the personnel of the IT department; the quality of the information produced is reflected, for example, by the reliability and precision of the information; and the knowledge and the implication are also translated for example by the training carried out to the users on the use of the SI ... let us know that the results of the work of Ives, and al, (1983) inspired Doll and Torkzadeh (1988) in the implementation of another model to measure the satisfaction of users of information systems.

2.1.3 Doll and Torkzadeh Model (1988)

Doll and Torkzadeh (1988) proposed another model which takes into account the environment of the use of the information system, and propose to integrate variables linked to the conditions of interaction between users and information systems. . A model considered as complete since they went through a review of previous work on user satisfaction, moreover they presented in the bibliography of their study an exhaustive list of articles dealing with this link.

Indeed, a new instrument has been put in place by these authors to measure user satisfaction with specific applications, and was carried out using a survey of 340 end users on their satisfaction / dissatisfaction with regard to web portals.

2.1.4 Mahmoud and al, Model (2000)

The researchers produced a synthesis of the literature on the main variables that affect user satisfaction. The work of Mahmoud and al, (2000) is based on the results of empirical research between the year 1986 and 1998, their model is composed of three main factors (perceived benefits, user training and organizational support), and each factor is linked to three variables.

2.1.5 DeLone and Mclean Model (2003)

Management Information Systems researchers DeLone and McLean have developed a model for evaluating information systems and its effect on performance. Their model is generally referred to as the Information Systems Success Model. The researchers identified five main dimensions of the success of an information system namely: the quality of the information, the quality of the system, the quality of the service, the use, the satisfaction of the users and the net benefits.

2.2 User Satisfaction

User satisfaction is determined by positive attitudes towards the information system and by the response of the user to the use of the output, thus constituting the level of satisfaction of the user when he uses an IS (Y.K. Dwivedi et al, 2012). Also it reflects the user's feeling about the overall system experience, i.e. the system itself, the end result, then to the services provided by the system (Petter, Set al, 2008).

Indeed, several researchers have suggested models to measure user satisfaction mainly we cite (Bailey and Pearson, Ives et al, Doll and Torkzadeh and DeLone and Mclean their models are considered the most important to measure user satisfaction. Two other authors Seddon and Kiewont worked on a satisfaction model rather than an evaluation of the success of the IS covering a technological dimension rather than an organizational one, the authors proposed to use the user satisfaction variable as a measure of perception of the success of the system.

User satisfaction is supposed to be a substitute for the contribution of information systems to performance, better performance will automatically follow if the system meets users' information needs Petter and al (2013). We keep this principle with the definition of satisfaction as the degree of correspondence between the characteristics of the task and the functionality of the information system. In addition, the quality of the information system, in

terms of response time and availability of information is the variable that most affects user satisfaction.

3 HYPOTHESIS OF STUDY

H1: The quality of training is positively associated with user satisfaction;

H2: The quality of service is positively associated with user satisfaction;

H3: The quality of the information system is positively associated with user satisfaction;

H4: The quality of information is positively associated with user satisfaction;

4 METHODOLOGY

Our method of investigation is based on a questionnaire made up of closed logical questions, and with a Likert attitude scale evaluating the different aspects questioned. The idea is to help the interviewee to answer as well as possible the different questions answered.

We have adopted convenience sampling for practical reasons of accessibility, the population we want to study is all IS users with different profiles. We were able to distribute our questionnaire online and face-to-face to 480 people with the questionnaire link (www.) And with a message inviting respondents to give it some time. Only volunteers responded with 256 responses.

To test and confirm the causal relationships, we used Partial least square structural equation modeling (SEM), using the SmartPLS3 software, this procedure consists of two main parts which are the measurement and the structure model.

5 RESULTS

5.1 Measurement Model

This model is made up of all the relationships between the indicators (Id) and the latent variables or constructs that they help to measure (V).

Table 1: Results of Evaluation the Measurement Model

Latent variable	indicators	Factor Loading	Composite Reliability	AVE	Cronbach's alpha
User Satisfaction	US1	0.868	0.895	0.775	0.903
	US2	0.840			
	US3	0.886			
	US4	0.926			
Training Quality	TQ1	0.838	0.869	0.688	0.771
	TQ2	0.812			
	TQ3	0.838			
Service Quality	SQ1	0.782	0.881	0.650	0.821
	SQ2	0.772			
	SQ3	0.874			
	SQ4	0.794			
Information System Quality	ISQ1	0.840	0.920	0.698	0.891
	ISQ2	0.875			
	ISQ3	0.716			
	ISQ4	0.879			
	ISQ5	0.857			
Information Quality	INQ1	0.864	0.887	0.612	0.840
	INQ2	0.808			
	INQ3	0.788			
	INQ4	0.719			
	INQ5	0.722			

This table lists the survey scales and their internal consistency reliability, for the responses provided all of the composite reliability measures were well above the recommended level of 0.70. The C.Rs found vary between (0.8 and 0.9) values greater than the suggested threshold, indicating good internal consistency (Nunnally, J.C, 1978).

In addition, convergent validity is adequate when constructs have an extracted mean variance (AVE) of at least 0.5 (Fornell, C. et al, 1981), and as shown in the table all AVE values are greater than at the limit value of 0.5 varies between (0.5 and 0.7). Finally for the scales, the loading of the items is greater than or equal to (0.7).

5.2 Structural Model

This system of structural relations refers to the determination of the causal relations between the latent variables (V), which makes it possible to trace the direction of the hypotheses to be tested by taking into account the measurement errors of the estimate.

5.2.1 R-squard

The validity of the structural model is assessed using the coefficient of determination (R^2).

Table 2: Result of the R^2 test

Variable	R^2
User Satisfaction	0.658

We obtained a coefficient $R^2 = 0.658 > 0.30$, this value of 66% corresponds to a good coefficient of determination, that is to say a good prediction.

5.2.2 F-squard

Effect size f^2 allows analyzing the contribution of each independent variable on the dependent variable.

Table 3: Result of the f^2 test

	User Satisfaction
Training Quality	0.212
Service Quality	0.051
Information System Quality	0.210
Information Quality	0.552

For the size effect f^2 of the quality of information on the dependent variable "user satisfaction", the value obtained from our calculations shows a very high size effect f^2 . This effect can be interpreted by the role that information plays in the success of any organization, and its importance in this changing field. Other than the quality of the information, the training and the quality of the information system have an effect considered to be moderate, playing a role as well in the satisfaction of the actors. Finally service quality with low effect.

5.2.3 Hypothesis Testing

The result of hypothesizes testing showed significant support for all of hypothesis in this study.

Table 4: Summary of Hypothesis Testing

	β	t-value	p-value	Support
H1: Training Quality \rightarrow User satisfaction	0,377	6,780	0,000	Yes
H2: Service Quality \rightarrow user satisfaction	0,174	3,060	0,002	Yes
H3: Information System Quality \rightarrow user satisfaction	0,237	4,273	0,000	Yes
H4: Information Quality \rightarrow user satisfaction	0,377	6,780	0,000	Yes

6 DISCUSSION

It emerges from these causal coefficients that:

The quality of information has a positive and significant effect on user satisfaction. For the safety of organizations, information becomes a strategic stake, it is considered in several works as the raw material of the economic world allowing being efficient. Any organization will be better than its competitors especially if it has precise and correct information, making it easier to control unexpected variations. In other words, it makes it possible to control the present and to foresee the future, by meeting the requirements which all rely on information.

The quality of information seems to be the quality most expected of users, determining their satisfaction. ((In terms of information that meets their needs, allowing them to make better decisions)).

The quality of the information system has a significant effect on user satisfaction; it is a variable that represents the user's perception of the interaction with the functionalities of the information system used. Indeed, this is where the dimension "speed of the information system used" takes place given the constraints of the economic environment which is characterized by volatile demand. Users consider that the better the quality of the IS, the higher their satisfaction.

The quality of training has a positive and significant effect on the quality of service, user satisfaction, quality of logistics and user information system, which shows that training or precisely its perceived quality plays an important role in the acceptance of new technologies leading to a certain satisfaction with the service and the IS used. Training therefore provides the tools necessary to apply practical solutions to problems encountered in the workplace. IS users consider that the better the quality of the training they receive, the higher their satisfaction, by offering them functional ease.

Finally, the quality of service has also a positive and significant effect on the quality of the logistics information system and on user satisfaction. This result reflects the effort that IT staff must provide to meet user expectations and listen to them. . So that this significance was confirmed through the assurance, empathy, reliability and responsiveness of the service to respond to the problems encountered.

These results are similar to those obtained by J. Floropoulos et al, (2010); Nunes (2012); Demian Abrego-Almazán (2017); Solano et al, (2014); Seddon P, et al, (1996). Although the context of the studies is different, there is support for our result.

7 CONCLUSION

The results of our study show that the quality of information is the main determinant of user satisfaction. The presence of quality qualified information is an important prerequisite for management decision making, especially when the decisions taken can have serious consequences leading to the loss of customers. Through Therefore, scrutinizing the information obtained and requiring that it meet certain characteristics is essential.

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