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SATISFACTION WITH INTERNET-BASED SERVICES: A LONGITUDINAL STUDY

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Abstract

Satisfaction has been studied extensively in information systems. Most studies, however, focused on specific system characteristics, providing very little understanding of the process of satisfaction formation. Furthermore, very little is known about the evolution of satisfaction over time, as most previous studies were cross-sectional, implicitly assuming satisfaction to be static. In this research, we address these problems. We develop, operationalize, and empirically test a model that provides a better understanding of customer satisfaction formation in the context of Internet-based services. We also predict/explain the evolution of satisfaction over time from the stage of adoption of Internet-based services to the post-usage stage.

Keywords: Internet-based services, satisfaction, expectations, desires, disconfirmation.

INTRODUCTION

Internet-based services have been proliferating rapidly for the last few years. In addition to Internet companies, traditional organizations are also developing capabilities for providing Internet-based services for their customers, either for competitive advantage or out of competitive necessity. The underlying assumption is that Internet-based services will enhance customer satisfaction and will hence improve customer retention. As it is cheaper to retain an existing customer than to acquire a new one, companies are putting more emphasis on customer relationship management to increase customer satisfaction. Internet-based services are believed to be superior to those delivered through the regular channels because of their convenience, interactivity, relatively low cost, and high degree of customization/personalization among other advantages. There is very little understanding, however, of the factors that affect customer satisfaction with Internet-based services.

Although satisfaction has been studied extensively in information systems (IS), most studies focused on specific system characteristics that lead to end-user satisfaction, providing very little understanding of the process of satisfaction formation. In the marketing literature, on the other hand, the process of satisfaction formation was examined using behavioral theories based on expectation disconfirmation, initially, and on desire disconfirmation in more recent studies. The marketing studies, however, focused on customer satisfaction with physical products and services delivered through the regular channels. It is not clear whether the findings of these studies apply to Internet-based services. The latter are information intensive and are enabled by information technology. In addition to factors related to the quality of the service, factors related to the information system used, e.g., information quality and system quality, are also important for explaining/predicting satisfaction with Internet-based services. This issue should, therefore, be examined in light of both the marketing and information systems literature. In addition, the evolutionary nature of satisfaction calls for longitudinal studies. Very little is known about the evolution of satisfaction over time, as most previous studies were cross-sectional, implicitly assuming satisfaction to be static.

In this research, we develop, operationalize, and empirically test a satisfaction model that integrates previous results from the marketing and information systems literature. We use sound theories of human behavior to develop further the current models of customer/end-user satisfaction. We empirically validate the model through a longitudinal study and examine the evolution of satisfaction over time.

RESEARCH OBJECTIVES

The main objectives of this research are (1) to develop a conceptual model that provides a better understanding of customer satisfaction formation in the context of Internet-based services and (2) to examine the evolution of such satisfaction over time. More specifically, we examine the role and relative importance of expectations, desires, and perceived performance in the process of satisfaction formation. We also study the evolution of expectations and desires by contrasting pre-adoption expectations/desires to post-adoption expectations/desires. Finally, we examine the effects of the evolution of expectations, desires, and perceptions of performance on overall satisfaction. In addition to making important theoretical contributions, this research also aims at identifying specific factors driving the satisfaction of customers with Internet-based services, which should be of great interest to practitioners.

CUSTOMER SATISFACTION LITERATURE

Customer satisfaction was explained by the expectation disconfirmation theory in the late 1980s. This theory suggests that satisfaction is determined by the intensity and direction of the gap between expectation and perceived performance. An individual is more likely to be satisfied if the performance of service meets (confirmation) or exceeds (positive disconfirmation) his/her expectations (Oliver and DeSarbo 1988). On the other hand, he/she is more likely to be dissatisfied if the service performance falls below his/her expectations (negative disconfirmation). By proposing expectation disconfirmation as the sole determinant of satisfaction, this theory does not account for the fact that the confirmation of high expectations is more likely to lead to satisfaction than the confirmation of low expectations. To resolve this drawback, Tse and Wilton (1988) included actual service performance as an additional determinant of satisfaction. The rationale for doing so was that if actual perceived performance is expected and turns out to be low, it may still negatively affect satisfaction and override the impact of confirmation or positive disconfirmation to result in dissatisfaction. The authors found actual performance to be the dominant determinant of satisfaction.

More recent research (e.g., Spreng et al. 1996; Suh et al. 1994) proposed the usage of desires rather than expectations as the comparison standard in the disconfirmation process. The formation of desires is not based on realistic prediction of actual performance, but rather on inner emotional needs or wants that are not necessarily constrained by rational cognitive understanding of the situation (such as practical feasibility). An individual may desire/want a certain service to be good but nevertheless expect it to be poor from his/her past experience and understanding of the actual environment. Under the desire disconfirmation theory, low performance, although it may meet the individual's expectations, can fall below the desired performance (negative disconfirmation) and is hence more likely to lead to dissatisfaction.

THEORETICAL DEVELOPMENT AND THE RESEARCH MODEL

Our research model is based on the notion of disconfirmation, implying that satisfaction is viewed as being formed by the amount of gap between *post hoc* perceptions of Internet-based services and a prior standard. Previous studies argued for the superiority of desires over expectations as a comparison standard, but did not operationalize or empirically validate the proposed desire disconfirmation models. Furthermore, these studies suggested that desires should be used *instead of* expectations rather than *in addition to* expectations. However, expectations and desires are different concepts that can both play important roles in explaining satisfaction (Chin and Lee 2000). The main argument used by the desire disconfirmation proponents is that services that exceed the expected levels, but not the desired levels, may still lead to feelings of dissatisfaction. One can also conversely argue that a customer's desire for a particular service may be lower than his/her expectation (i.e., the service is not really wanted by the customer). In such a case, meeting the customer's desired level of service while failing to meet his/her expected level (e.g., based on what the merchant promised to deliver) may also lead to dissatisfaction. The customer may still feel dissatisfied if his/her expectations are not fulfilled, independently of his/her desires. We therefore agree with Chin and Lee on the need to include both desires and expectations as comparison standards for disconfirmation.

Based on the discussion above, our research model (see Figure 1) proposes the two constructs "expectation disconfirmation" and "desire disconfirmation" as the main determinants of overall satisfaction. Our model also hypothesizes that "perceived performance" has a direct effect on satisfaction, based on the results of several studies (e.g., Patterson et al. 1997; Spreng et al. 1996) that have shown that the effect of perceived performance on satisfaction is not fully mediated by expectation/desire disconfirmation. The role of perceived performance becomes more dominant in explaining/predicting satisfaction when desires/expectations are low. Since we are also interested in the evolution of expectations, desires, and satisfaction over time, our model differentiates between satisfaction at adoption of Internet-based services and satisfaction after the usage of these

services for a certain period of time. The rationale of this differentiation is that while satisfaction at adoption is mainly affected by the disconfirmation of *pre-adoption* expectations/desires, satisfaction after usage is affected by the disconfirmation of *post-adoption* expectations/desires. Pre-adoption expectations/desires are likely to be formed out of norms that take into account a customer’s past experience with similar products/services (Norum 1995). At the post-adoption stage, expectations/desires are mainly determined by the actual experience gained with a particular product/service (Oliver 1981). The after-usage satisfaction is also affected by the initial satisfaction formed at adoption. This is consistent with the results of Chen-Yu et al. (1999) and of Norum (1995), who showed that customer satisfaction in the pre-consumption stage is likely to be positively associated with subsequent satisfaction. The direct relationship between initial and subsequent satisfaction is also consistent with the cognitive dissonance theory, which suggests that one seeks to minimize the disparities between satisfaction in different stages to eliminate psychological inconsistencies and discomfort (Festinger 1957). It is not clear, however, whether initial overall satisfaction can play as important a role as post-adoption expectations/desires in the formation of the subsequent satisfaction. Our empirical study should shed some light on this issue.

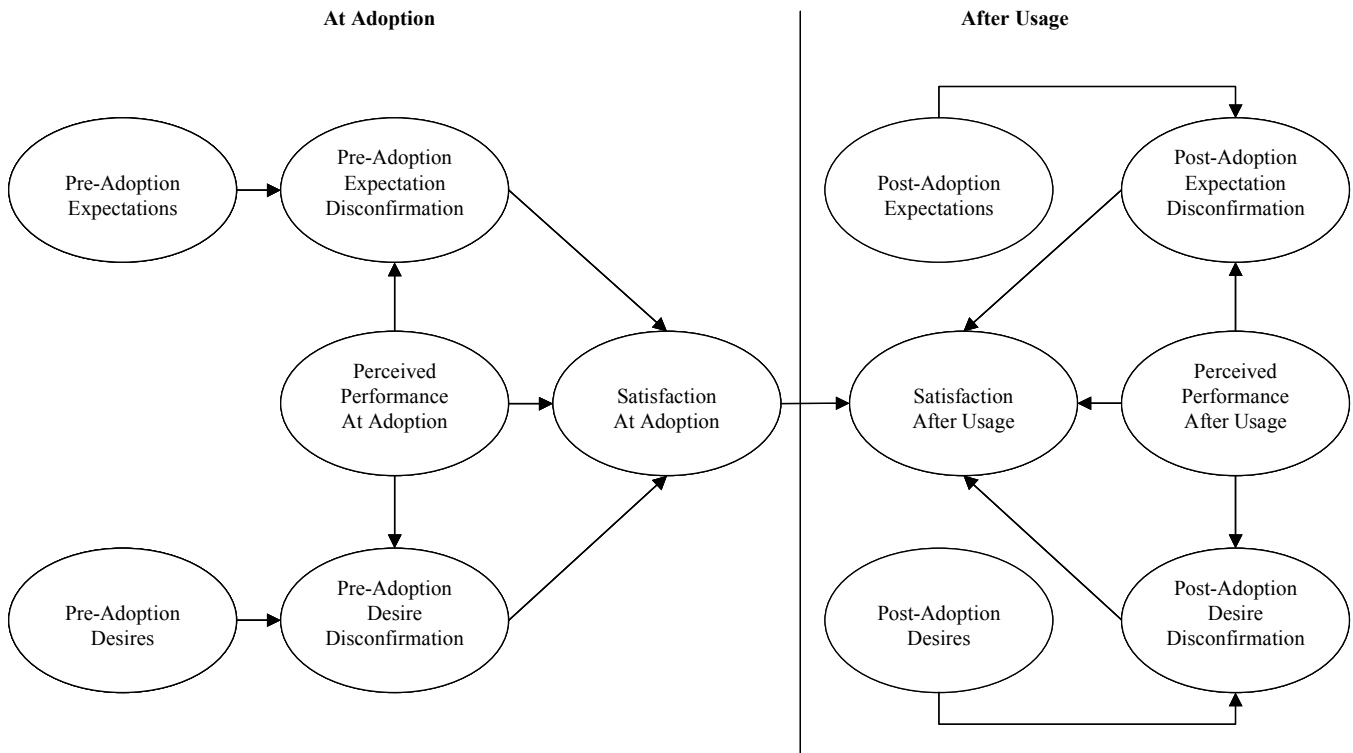


Figure 1. Research Model

RESEARCH METHODOLOGY

The proposed model will be validated through a longitudinal survey-based study. A virtual community known as Club eBiz (<http://www.club-ebiz.com>) is selected to be the research context. The Club offers the means for scholars and business professionals to interact effectively and conveniently. It is a virtual community where business professionals/executives who share common interests in electronic business can network with each other and with academics online or in person through multiple events organized by the Club. It provides functions and features that enable researchers to stay up-to-date with the latest business trend, to remain aware of the main concerns of business professionals, to generate and discuss ideas for practical research, and to receive feedback from practitioners.

The website of Club eBiz provides a collection of online research resources. Examples of these resources include case studies from local and overseas organizations, reports synthesizing the literature on various e-business topics, online videos of seminars delivered by invited speakers from both the academic and e-business communities, and links to research centers all over the world.

The website also features tools for collaboration such as document exchange and discussion forums. These tools are currently being used by the members of the Club to discuss important e-business topics, to exchange research reports, and to solicit feedback from the community.

Three online surveys will be administered to the new members of the virtual community. The first survey will be administered upon membership registration (before adoption) to elicit the pre-adoption expectations/desires of the new members. Shortly after the registration (a few days later), a second survey will be administered to the respondents of the first survey to assess (1) the disconfirmation of their pre-adoption expectations/desires assessed in the previous stage, (2) perceived performance (at adoption), and (3) overall satisfaction (at adoption). After giving the respondents ample time to use the services of the virtual community, a final survey will be administered to assess (1) their new (post-adoption) expectations and desires, (2) the disconfirmation of these expectations/desires, (3) their new perception of performance (after usage), and (4) their new overall satisfaction (after usage).

Measurement Development

Reflective items have already been developed to measure overall satisfaction, perceived performance, and expectation/desire disconfirmation, based on the procedure proposed by Moore and Benbasat (1991). Formative items have also been generated to measure specific desires and expectations. These items were developed based on a literature review and the elicitation of the beliefs of current members of the virtual community, using semi-structured interviews. The measurement of disconfirmation of desires/expectations involves a comparison of the actual and the originally desired/expected performances by the respondent, using a scale ranging from much poorer than what I wanted to much better than what I wanted validated by Spreng et al. (1996).

The data will be analyzed using structural equation modeling techniques (partial least squares), which enable the simultaneous analysis of (1) how well the measures relate to each construct and (2) whether the hypothesized relationships at the theoretical level are empirically true. PLS-Graph (Chin 1994) will be used to perform the analysis. Tests of significance for all path coefficients will be conducted using the bootstrap resampling procedure (Cotterman and Senn 1992).

EXPECTED CONTRIBUTIONS, CURRENT STATUS, AND PROPOSED PRESENTATION

Our research presents important theoretical and practical contributions. On the theoretical side, we develop, operationalize, and empirically test a satisfaction model that is based on both desire disconfirmation and expectation disconfirmation to provide a better conceptualization of the formation of satisfaction and to explain the relative importance of distinct desires and expectations in explaining/predicting satisfaction. We also validate the model with a longitudinal study to account for the evolution of expectations, desires, and satisfaction over time. Such evolution is especially characteristic of information-based products. On the practical side, this research provides a better understanding of specific factors that affect the satisfaction toward Internet-based services.

We have completed the development of the measurement model and a pilot test has already been conducted. The first round of data collection (pre-adoption) has commenced and we are currently in the process of progressing to the second stage (at adoption). We expect the entire process of data collection and analysis to be completed within four months and all results will be therefore presented at ICIS.

References

- Chen-Yu, H. J., Williams, G., and Kincade, D. H. "Determinants of Consumer Satisfaction/Dissatisfaction with the Performance of Apparel Products," *Family and Consumer Sciences Research Journal* (28), December 1999, pp. 167-192.
- Chin, W. W. *PLS Graph Manual*, Unpublished Manuscript, 1994.
- Chin, W. W., and Lee, M. K. O. "Proposed Model and Measurement Instrument for the Formation of IS Satisfaction: The Case of End-User Computing Satisfaction," *Proceedings of the Twenty-First International Conference on Information Systems*, W. J. Orlikowski, S. Ang, P. Weill, H. Krcmar, and J. I. DeGross (eds.), Brisbane, Australia, 2000, pp. 553-563.
- Cotterman, W., and Senn, J. *Challenges and Strategies for Research in Information Systems Development*, John Wiley & Sons, Chichester, England, 1992.
- Festinger, L. A. *A Theory of Cognitive Dissonance*, Stanford University Press, Stanford, CA, 1957.

- Moore, G. C., and Benbasat, I. "Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation," *Information Systems Research* (2:3), 1991, pp. 192-222.
- Norum, P. S. "Consumer Satisfaction with Shopping Experiences and Clothing Products in the Children's Wear Market," *Journal of Consumer Studies and Home Economics* (19:4), 1995, pp. 331-347.
- Oliver, R. L. "Measurement and Evaluation of Satisfaction Processes in Retail Settings," *Journal of Retailing* (57), 1981, pp. 25-48.
- Oliver, R. L., and DeSarbo, W. S. "Response Determinants in Satisfaction Judgements," *Journal of Consumer Research* (14), March 1988, pp. 495-507.
- Patterson, P. G., Johnson, L. W., and Spreng, R. A. "Modeling the Determinants of Customer Satisfaction for Business-to-Business Professional Services," *Journal of the Academy of Marketing Science* (25:1), 1997, pp. 4-17.
- Spreng, R. A., MacKenzie, S. B., and Olshavsky R. W. "Reexamination of the Determinants of Consumer Satisfaction," *Journal of Marketing*, 1996.
- Suh, K., Kim, S., and Lee, J. "End User's Disconfirmed Expectations and the Success of Information Systems," *Information Resources Management Journal*, Fall 1994.
- Tse, D. K., and Wilton, P. C. "Models of Consumer Satisfaction Formation: An Extension," *Journal of Marketing Research* (25), May 1988, pp. 202-212.

