

Antecedents and consequents of service consumption experience in electronic mediated environment: empirical evidence from electronic service industry in China

Hua Dai¹, Al F. Salam²

¹Department of Information Systems, University of Wisconsin-La Crosse, 1725 State Street, La Crosse, WI 54601, USA

²ISOM Department, University of North Carolina at Greensboro, 1000 Spring Garden Street, Greensboro, NC 27402, USA

dai.hua@uwlax.edu, amsalam@uncg.edu

Abstract: This study examines how service consumption experience affects long-term relational exchange in the EME. An analytical framework is developed and tested to validate a comprehensive research model of service consumption experience and its antecedents and consequents, in the EME, leading to long-term exchange relationship between the consumers and service providers. Analyses of data from 415 Chinese consumers, with at least six months or more experience in consuming services in the EME, reveal that five service consumption experience dimensions significantly influence consumers' overall consumption experience in the EME. Service consumption experience is also found to serve as an important mediating variable between its antecedents and consequents. This study, as one of the first, contributes to the Information Systems literature through the development of the service consumption experience construct in the EME. Suggestions for future research and implications are discussed.

Keywords: Service Consumption Experience, Relational Exchange, Electronic Mediated Environment

1. Introduction

The economies of the world are shifting from agriculture and manufacture centric to service centric economies (Plummer et al., 2008). During the past decade, an increasing number of vendors have established service websites to complement, substitute for, or extend their existing offerings to their consumers

(Gartner, 2008). An electronic service (e-service) providing website is a site that provides users with online information and information-related services, such as search functions, community building features, commerce offerings, personal productivity applications, and a channel of communication with the service providers and other consumers (Moraga et al., 2006).

Services are essentially “value jointly created through the interaction of providers and clients” (IBM, 2008). Consumers are considered as co-producers in the service consumption process and intimately involved in defining, shaping, and integrating the service; therefore, such interactions, between consumers and service providers, are conceptualized to be built around episodic experiences (Chesbrough & Spohrer, 2006). However, the transition from selling the service to selling the experience is not easy. The experiences have to meet consumers’ needs and eventually have to work and be deliverable (Pine & Gilmore, 1998). Therefore, understanding the unique characteristics of the service consumption experience in the Electronic Mediated Environment (EME) should help companies design, stage and provide better online service consumption experience to the consumers; ultimately help both services providers and customers achieve the desired benefits and build long terms exchange relationship in the EME.

According to Nationalmaster.com, China is ranked first in terms of service growth in the last 25 years. Even though China has had a rapid economic growth in the last decade, compared to other developed countries, the e-services development in China is very immature and still in a budding stage (Lu & Zhou, 2007). The Internet penetration rate in China is still only 31.8% as compared to penetration rate of 77.3% in the USA. Consequently, business managers in China sought to learn from the experiences of dot-coms and e-services development in the USA and other developed countries (Martinsons, 2002), but very few initiatives have been successful to date. There are several voices that point out that the US e-services model may not be applicable to Chinese social context (Dai and King, 2008). This study is an attempt to answer this research call and help fill this gap in our knowledge.

Moreover, there is relatively little or no research in the extant information systems (IS) literature providing an analytical framework that addresses the comprehensive view of service consumption experience and its dimensions, antecedents and consequents in the electronic mediated environment. Development of a long term exchange relationship by providing service consumption experience through the electronic mediated environment is vital for any business to compete in this largely service-based experiential economy

(Pine & Galimore, 1998; Brown, 2000; Shaw, 1999). Given the importance of providing services consumption experience through electronic mediated environment (Lovelock & Gummesson, 2004; Brown, 2000) and the gap in existing knowledge, we investigate the following two questions in this research:

(1) What are the dimensions of service consumption experience in the electronic mediated environment?

(2) What are the Antecedents and Consequents of service consumption experience in the electronic mediated environment?

(3) What is the role of service consumption experience in the development of long-term exchange relationship in the electronic mediated environment?

2. Antecedents of Service Consumption Experience in the EME

2.1 Information Technology Use

Two constructs have received extensive interest in the extant IS literature in relation to IT use: Perceived Ease of Use and Perceived Usefulness (Meuter et al., 2003; Davis, 1989; Venkatesh et al., 2003; Tan et al., 2007).

2.1.1 Perceived Ease Of Use

Perceived ease of use refers to "the degree to which the prospective user expects the target system to be free of effort" (Davis et al., 1989). This internal belief is tied to an individual's assessment of the mental effort involved in using a system (Davis, 1989). Williams (1994) pointed out that U.S. consumers suffer from some degree of technophobia. In summary, the ease of use perception of information technology will affect the consumer's experience and willingness to use the technology-based service in the EME.

Hypothesis 1: Perceived ease of use is positively associated with service consumption experience in the EME.

2.1.2 Perceived Usefulness

Perceived usefulness refers to a "prospective user's subjective probability that using a specific application will increase his or her ... performance" (Davis et al., 1989). Online technology improves the service consumption process with more uniformity and less difficulty than the equivalent manual activity (Yale & Venkatesh, 1986). Therefore, perceived usefulness of service in the EME would impact consumer's consumption experience.

Hypothesis 2: Perceived usefulness is positively associated with service consumption experience in the EME.

2.2 Service Quality

The service quality in the EME is defined as the extent to which the electronic device facilitates efficient and effective consumer activities at service encounters (Parasuraman et al., 2005; Zeithaml et al., 2000). On the basis of prior service quality theories and electronic commerce studies, Tan et al. 2007 claimed that conceptualization of service should include considerations of both service content and delivery.

2.2.1 Service Content Quality

Applying content and delivery concepts in our study, we define service content quality as the extent to which complete, accurate, and timely content is provided to online consumers during the interaction process with user interface in the EME. Mathwick et al. (2001) have indicated that in online environment, the use of color, graphic layout and photographic quality combine to influence a desirable consumption experience. We propose the following hypothesis in relation to service content quality:

***Hypothesis 3:** Service content quality is positively associated with service consumption experience in the EME.*

2.2.2 Service Delivery Quality

Service delivery quality is defined as the manner in which IT mediated service functionalities are made accessible to consumers via the service providers' websites as a delivery channel. "Service delivery seems to imply service encounters that entail more intense and deliberate use of emotions" (Luong, 2005). Service providers in the EME have realized that consumers are concerned with the process of how the service is delivered along with the outcome of the service (Katz, 2001). Thus, the service delivery quality will have important influence on consumers' consumption experience in the EME and therefore, we propose following hypothesis:

***Hypothesis 4:** Service delivery quality is positively associated with service consumption experience in the EME.*

2.3 Interface Attractiveness

In the EME, the spatial layout and functionality are especially important since the availability of employee assistance is minimal (Zeithaml & Bitner, 2000; Berry et al., 2002). Prior literature confirmed that interface attractiveness plays a significant role in consumption of a service in the EME (Cyr et al., 2006; Mathwick et al., 2001). Interface attractiveness is defined as the degree of visual appearance and audible features present in a site (Collier & Bienstock, 2006). Consumers' perception of visual appeal is driven by the design, physical attractiveness, and beauty inherent in the interface of the service context in the EME (Holbrook, 1994). Accordingly, interface attractiveness can influence

consumers' experience in the EME, and ultimately his or her long term relationship with a service provider. We have the following hypothesis:

Hypothesis 5: *Interface attractiveness is positively associated with service consumption experience in the EME.*

3. Consequents of Service Consumption Experience in the EME

3.1 Perceived Value

Consumer perceived value consists of subjective hierarchical preferences based on an individual's situation-specific comparisons of one object with another. As one major component of service evaluation, we believe that there is positive relationship between consumers' perceived value and service consumption experience. "Such interactive relativistic preferences shape the essence of the consumption value in the sense that products perform services that provide the relevant value-creating experiences" (Holbrook, 2006). Therefore, following hypothesis has been proposed.

Hypothesis 6: *Service consumption experience will positively influence consumers' perceived value of service in the EME*

3.2 Satisfaction

Oliver (1992) defines service satisfaction as consumer's post-purchase evaluation and effective response to overall consumption experience. Researchers have identified that consumers' satisfaction is highly correlated with the overall consumption experience which would exert a positive influence on consumers' future purchase behavior (Oliver, 1980). By applying expectancy-disconfirmation theory, Philips and Baumgartner 2002 clarified the role of consumption emotion in the satisfaction response and discovered that both positive and negative emotions influence satisfaction. Thus, we present the following hypothesis:

Hypothesis 7: *Service consumption experience positively influences consumers' service satisfaction in the EME.*

Hallowell (1996) indicated that consumer satisfaction is the result of consumers' perception of received value. Adapted from Bagozzi (1992) research on appraisal and emotion response, Lin and Wang (2006) suggest that more cognitively-oriented value appraisal precedes affectively oriented satisfaction. Therefore, we propose the following hypothesis:

Hypothesis 8: *Consumer perceived value is positively associated with consumer service satisfaction of service in the EME.*

3.3 Loyalty

Perceived value and satisfaction involved in service evaluations are believed to summarize consumer knowledge and judgment with particular service providers and guide subsequent actions and loyalty of the consumer (Garbarino & Johnson, 2006). Prior literature has confirmed that perceived value and satisfaction are important determinants of consumer loyalty in the online environment (Lin & Wang, 2006; Gefen, 2002). Accordingly, in order to develop long-term mutual relationships, managers must make great efforts to improve service consumption experience of their services in the electronic environment from the first encounter, from purchasing, to delivery and beyond, as this can influence the service retention (customer loyalty) and service growth (word-of-mouth communication) (Bolton et al., 2000). Thus, the following two hypotheses are proposed:

***Hypothesis 9:** Consumers' perceived value positively influences their loyalty in the EME.*

***Hypothesis 10:** Consumers' satisfaction positively influences their loyalty in the EME.*

3.4 Word-Of-Mouth Communication

Word-of-mouth communication has been recognized as an essential ingredient for successful long-term relationships and growth, and points to the value of existing customers who spread good words about the company and its products and services. (Anderson, 1998; Richins, 1983). Word-of-mouth communication has been found to be an important outcome of the exchange relationship between service providers and consumers (Richins, 1983; Srinivasan et al., 2002; Walker, 2001). In this study, we have included word-of-mouth communication as an outcome of the relational exchange between the consumers and service providers.

***Hypothesis 11:** Consumers' perceived value positively influences their word-of-mouth communication in the EME.*

***Hypothesis 12:** Consumers' satisfaction positively influences their word-of-mouth communication in the EME*

4. Research Methodology

4.1 Measurement Development

This study applied a survey methodology in testing and assessing the proposed comprehensive research model. The development of the survey instrument followed Moore and Benbasat (1991) and Straub (1989). Most measurement items for the principal constructs were adapted from existing literature and

modified to fit the context of this research. All items were measured with a seven-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree).

4.2 Survey Administration

The survey instrument was first tested on two business school Professors (experts in IS research related to ecommerce and eservices) and three IS Ph.D. students. Later, a larger scale pilot study was conducted using 90 business school students to test and further refine the instrument. After that, the questionnaire was translated into Mandarin Chinese. This Chinese version of questionnaire was also pilot tested with a group of 90 Chinese native speakers. Based on their feedback, the revised survey, in Chinese, was distributed in five universities and five organizations in a large city in China, where information technology and e-services are largely diffused and promoted by vendors.

Table 1: Descriptive Statistics of Respondents Characteristics

Measure	Value	Frequency	Percentage
Gender	Male	180	47.2%
	Female	203	52.80%
	Undisclosed	5	
Age	18-25	293	75.70%
	26-35	50	12.30%
	36-55	41	11.10%
	>55	4	1.00%
Education	High School	188	49.2%
	Some college	107	28.90%
	Bachelors	70	17.60%
	Masters	14	3.90%
	Doctorate	2	0.50%
Income Level	< 12,000 rmb	201	51.60%
	12,000-36,000 rmb	132	21.40%
	36,000-60,000 rmb	20	3.50%
	60,000-96,000 rmb	3	3.70%
	> 96,000 rmb	6	5.10%

Total 600 questionnaires were distributed, out of which 510 responses were collected. This generated an 85% response rate. About 95 incomplete questionnaires were dropped later in data analysis due to the inadequate information provided yielding 415 usable responses in our final data analysis. Detailed descriptive statistics relating to the respondents' demographics are shown in Table 1.

5. Data Analysis and Assessment of Proposed Research Model

5.1 Data Analysis Method

The structural equation modeling (SEM) approach is used to analyze the data for both the measurement model and structural model in this study since SEM based procedure provide powerful ways to address key IS research questions (Chin and Todd, 1995). The software used is Smart PLS 2.0 (Ringle et al., 2005). Partial Least Squares (PLS) is chosen because PLS uses a component based approach to estimation and places minimal restrictions on measurement scales, sample size, and residual distributions (Chin et al., 2003).

5.2 Measurement Model

The descriptive statistics is reported in Table 2. Reported statistics include composite reliability, Average Variance Extracted (AVE), and Inter-construct correlation matrix.

As shown in Table 2, the square roots of all AVEs are above 0.7 which are much larger than all the cross-correlations. In addition, all items loaded well on their respective factors compared to the cross-loadings on other construct. Above tests demonstrated that all measures in this study have adequate convergent and discriminant validity.

Table 2: Inter-Construct Correlation Matrix and Average Variance Extracted for Principal Construct

	CREL	1	2	3	4	5	6	7	8	9	10
1.Perceived Ease of Use	0.85	0.70									
2.Perceived Usefulness	0.86	0.55	0.70								
3. Service Content Quality	0.78	0.42	0.42	0.73							
4. Service Delivery Quality	0.79	0.30	0.33	0.45	0.74						
5.Interface Attractiveness	0.79	0.37	0.43	0.39	0.34	0.70					
6. Service Consumption Experience	0.86	0.57	0.63	0.58	0.53	0.53	0.74				
7.Perceived Value	0.83	0.46	0.56	0.40	0.35	0.41	0.63	0.70			
8.Satisfaction	0.81	0.42	0.39	0.35	0.31	0.32	0.55	0.50	0.72		
9.Loyalty	0.84	0.44	0.48	0.44	0.36	0.27	0.52	0.37	0.36	0.80	
10.Word-of-Mouth	0.87	0.42	0.56	0.28	0.26	0.40	0.44	0.46	0.26	0.36	0.87

CREL: Composite Reliability; Diagonal Elements (shaded) are the square root of the variance shared between the constructs and their measurement (AVE). Off diagonal elements are the correlations among constructs. Diagonal elements should be larger than off-diagonal elements in order to demonstrate discriminant validity.

5.3 Structural Model

5.3.1 Antecedents Of Service Consumption Experience

The results of PLS structural model test reflect that there is significant positive association between Perceived Ease of Use and Service Consumption Experience in the EME (b=0.19, p<0.01); Perceived Ease of Use also

significantly influences on Service Consumption Experience in the EME (b=0.29, p<0.01).

The results also indicate significant relationships between Service Content Quality and Service Consumption Experience in the EME (b=0.21, p<0.01) and between Service Delivery Quality and Service Consumption Experience (b=0.23, p<0.01). The results demonstrated that Interface Attractiveness has strong influence on Service Consumption Experience in the EME (b=0.17, p<0.01). These results provide the supports for H1, H2, H3, H4, and H5 respectively. These antecedents together explained 62.8% variance of Service Consumption Experience in the EME.

5.3.2 Consequents Of Service Consumption Experience

In the consequent part of the research model (Figure 1), Service Consumption Experience shows strong impacts on consumer Perceived Value (b=.63, p<0.01). Service Consumption Experience directly (b=0.55 p<0.01) associated with consumer's Satisfaction in the EME. There is strong association between Perceived Value and consumer's Satisfaction (b=0.26, P<0.01). This second order formative construct of Service Consumption Experience is able to explain 39.9% variance of consumer Perceived Value of service in the EME and 34.0% variance of Satisfaction of service in the EME. Therefore, the hypothesis 6, hypothesis 7, and hypothesis 8 are supported.

The Perceived Value has significant impacts on Loyalty (b=.26, p<0.01) and Word-of-Mouth Communication (b=.44, p<0.01). Satisfaction has weak impact on Loyalty (b=.23, p<0.1) and no impact on Word-Of-Mouth Communication (b=.04, p>0.1). The research model is able to explain 18.0% of Loyalty and 21.1% variance of Word-of-Mouth Communication respectively. These results support hypothesis: H9, H10, H11, but not H12.

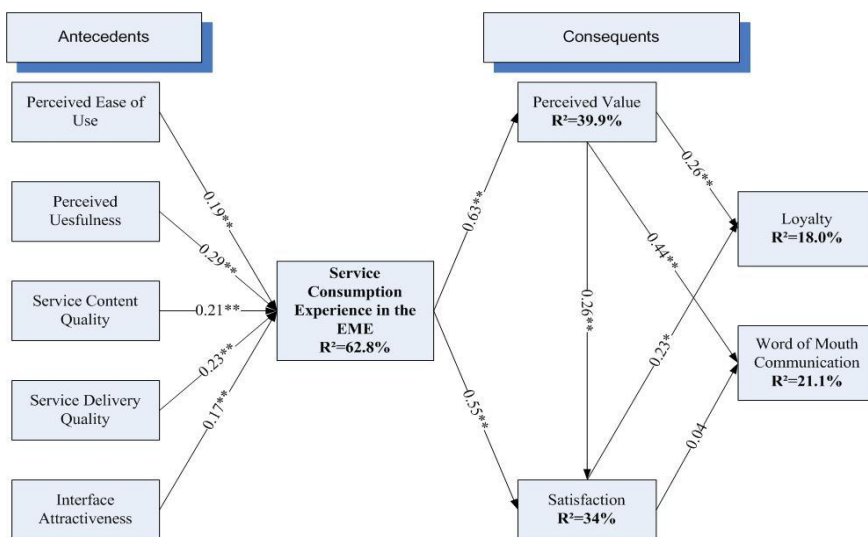


Fig. 1: PLS results for structural model.

6. Conclusion

This study brings attention to services in EMEs, which have important implications in today's global economy where firms are providing more and more services in EMEs. The theoretical model developed, provides a more comprehensive understanding of the role information technology use, service quality, and interface attractiveness play in developing service consumption experience and relational exchange between consumer and service providers.

It has been indicated by Shaw and Ivens 2005 that great customer experiences guided by satisfaction and trust are a source of long term competitive advantages. In China, the e-service development is still in the early stage in comparing with developed country. The recent advancement of mobile technology infrastructure and diffusion of mobile technology in China will bring Chinese consumers more flexibility and empowerment in using e-services at anytime and anywhere. The advanced multimedia technology facilitates the sensation engagement process and the virtual communities provide effective platforms for both consumers and service providers to create a more sensible and enjoyable experience. This requires the business vendors to create more functional features over the powerful technical service system to help customers establish satisfactory experience and ultimately enhance consumer loyalty to the provider of e-services. This study also informs managers' decisions on delivering reliable and enjoyable service systems and promoting the e-service as a more convenient channel for the Chinese consumer.

References

- Brown, S. W. (2000). *Pt.4, in: Services Marketing Self-Portraits: Introspections, Reflections, and Glimpses from the Experts*(Fisk, R.P., Grove, S. J., & John, J. eds.), American Marketing Association, Chicago,53-69.
- Dwyer, F. R., Paul, H. S. & Sejo, O.(1987). Developing Buyer-Seller Relationships. *Journal of Marketing*, 51, 11-27.
- Fassnacht, M. & Koese, I.(2006).Quality of electronic services: conceptualizing and testing hierarchical model. *Journal of service research*,9, 19-37.
- Garbarino, E. & Johnson, M. S. (1999).The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, 63, 70-87.
- Gefen, D. (2002).Customer loyalty in e-commerce. *Journal of the Association for Information Systems*, 3, 27-51.
- Hirschman, E. C. & Holbrook, M. B. (1982).Hedonic consumption: emerging concepts, methods and propositions. *Journal of Marketing*, 46, 92-101.
- IBM.(2008).*Service Sciences, Management and Engineering*.Cited from URL: <http://www.research.ibm.com/ssme/chinasymposium.shtml>, available at 03/03/2008.
- Lovelock, C. & Gummesson, E. (2004). Whither services marketing? in search of a new paradigm and fresh perspective. *Journal of Service Research*, 7, 20-41.
- Pine, J. & Gilmore, J. (1998).Welcome to the experience economy. *Harvard Business Review*, 76, 97-105.