Influencing Factors on Price Tolerance of Internet Customers

Shu Fen Chen, Ph.D. candidate of Graduate Institute of Resource Engineering,
National Cheng-Kung University, Taiwan, R.O.C.
Chia-Yon Chen, Professor of Graduate Institute of Resource Engineering,
National Cheng-Kung University, Taiwan, R.O.C.

ABSTRACT

Price is a major motive that engages consumers in shopping websites, and although price tolerance has gained increasing attention for its importance on pricing strategy, related literature on e-commerce lacks a conceptual model probing into factors that influence customers’ price tolerance. This paper proposes an integrated conceptual model, and empirically tests the model using data collected from online customers. The findings show that perceived value is the most influential factor on price tolerance, and the remaining factors that influence price tolerance are in the sequence of customer satisfaction, commitment, and trust. By dividing customers into two groups according to their monthly shopping frequency, this study finds that the perceived value of the high-frequency shopping group does not have a significantly positive influence on commitment, and the customer satisfaction of the low-frequency shopping group does not have significantly positive influence on price tolerance. The findings of this research provide related shopping websites with meaningful suggestions and references on pricing strategies.

Keywords: commitment, customer satisfaction, E-service quality, perceived value, price tolerance

INTRODUCTION

The rapid development of the Internet gradually changes the consumption habits of consumers, and further promotes the considerable growth of the E-commerce market. Price is the main motivation influencing consumers engaging in online shopping. In relevant pricing strategies, the concept of price tolerance has received the increasing attention of researchers and managers. Empirical studies suggest that, enterprises should strive to maintain low price sensitivity in order to lower consumer behaviors to seek price preferential treatments, and thus, enhance their profitability (Shankar and Krishnamurthi, 1996). Factors leading to increasing price tolerance include increased customer satisfaction (Anderson, 1996; Herrmann, Huber, Sivakumar and Wricke, 2004) and the high commitment of customers (Delgado-Ballester and Munuera-Alemán, 2001).

Literature related to service marketing, service, perceived value, and satisfaction are regarded as the antecedent variables of commitment. However, in the environment of E-commerce, customers cannot directly contact service personnel, causing trust to play a more important role than in actual shops. Meanwhile, satisfaction and trust are prerequisites of customer purchase behavior, and major factors to develop long term customer relationships (Pavlou, 2003). Hence, how to enhance customer price tolerance by improving customer satisfaction, trust, and commitment to an enterprise is a topic worth discussing. Although price tolerance has received attention in marketing, the influencing factors of price tolerance were discussed by developing a more extensive conceptual model (Herrmann et al., 2004). As
the Internet is a virtual environment, trust and commitment are integrated into the quality-value-satisfaction chain for integrated study. Therefore, the research purposes are as follows: (1) to establish the integrated conceptual structure of factors affecting price tolerance of online shopping; (2) to verify the relevance of the conceptual structure proposed in this study; and (3) to provide suggestions and references for pricing strategies of relevant enterprises on the basis of the research findings.

LITERATURE REVIEW

Internet Service

The concept of E-service is developed from literature regarding online marketing and traditional services. As it is costless to compare product features online, it is easier than the traditional channels. Hence, service is the key factor of successful E-commerce (Santos, 2003). However, scholars used different terms for the services of E-commerce, such as web-based service quality (Li, Tan and Xie, 2002), e-service quality (Zeithaml, Parasuraman and Malhotra, 2002; Santos, 2003; Parasuraman, Zeithaml and Malhotra, 2005) and online service quality (Yang and Fang, 2004), which all have roughly the same meaning. The concept of Internet service can be defined into the levels of shopping, purchasing, and transportation of products and services (Zeithaml et al., 2002).

As the conversion costs of customers in the Internet environment are relatively low, it is more expensive for enterprises to win customers. Hence, online service is regarded as a determining factor of the success of E-commerce (Long and McMellon, 2004; Santos, 2003).

Perceived Value

The early definition of value by Zeithaml (1988), from the economic perspective as the overall assessment of product effectiveness by the consumer, and on the basis of the perception of gain and payment, is the generally accepted definition of perceived value. In marketing literature, many scholars studied perceived value in one dimension (Yang and Peterson, 2004; Lin, Sher and Shih, 2005), and the essence was the measurement of customer perceived value from the holistic point of view.

Successful sellers must emphasize the provision of value, namely, to enhance the buyer perception of product quality and relative sales price by emphasizing the “value basic strategy” of the product or service obtained by the customer. To ability to enhance the purchase perceived value (Grewal, Monroe and Krishnan, 1998) has become a tool of differentiation and a winning strategy to maintaining competitive advantages (Ravald and Grönnroos, 1996). At present, in a customer-concentrated age, the customer perceived value is regarded as a strategic weapon to attract and retain customers. The above literature emphasizes the importance of customer perceived value in the research of consumer behavior.

Customer Satisfaction

Customer satisfaction is defined as overall perception based on the online shopping experience of the customer (Anderson and Srinivasan, 2003). Ha and Perks (2005) extended the definition by Anderson and Srinivasan (2003) to regard satisfaction as a type of accumulative concept, believing customers rely on overall experiment for assessment when forming purchase intentions or repurchase decisions. Hence, accumulated satisfaction should be an appropriate method for predicting customer intention and behavior (Olsen and Johnson, 2003). Therefore, some scholars regard customer satisfaction as an integrated concept, and use single dimensions to understand the integrated attitudes of customers regarding the received product or service (Ha and Perks, 2005; Nadler and Simerly, 2006).
Customer satisfaction is an important factor for the establishment of long term customer relationships (Patterson, Johnson and Spreng, 1997), and plays an important role in the profit-making of an enterprise. Hence, McKinney, Yoon, and Zahedi (2002) believed that it was vitally important to understand the influencing factors of Internet customer satisfaction regarding E-commerce.

**Trust**

Trust is a core factor of successful transactions and the development of long term relationships, as well as the precedent of E-commerce online purchase intentions of customers (Jarvenpaa, Tractinsky, and Vitale, 2000). Regardless of actual or online trust, many scholars have proposed views regarding trust. The definition of trust by Morgan and Hunt (1994) was defined as, confidence in a trading partner’s reliability and honesty is generally accepted. Regarding online trust, website interaction is a necessary factor of successful transactions, in particular, the B2C website (Winch and Joyce, 2006).

Some scholars studied trust in multiple dimensions, such as the studies by McKnight, Cummings, and Chervany (1998), Gefen, Karahanna, and Straub (2003), and Nadler and Simerly (2006). Whether in a physical or virtual environment, the nature of trust remains the same. Trust makes customer behaviors more predictable, which generates higher customer value by reducing customer turnover rate (Reinartz and Kumar, 2000).

**Commitment**

Commitment is a core concept in the development and maintenance of marketing relationships, as it plays the important role of linking customers with the enterprise psychological influencing power. Commitment can be applied in the service relationships of B2B or B2C (Bansal, Irving and Taylor, 2004). Customer satisfaction, trust, and commitment are regarded as the core factors affecting relationship quality, however, the three are mutually influential rather than individually independent (Thorsten, Gwinner and Gremler, 2002).

Regarding the measurement of commitment, it can be found that many scholars discussed commitment in a single dimension (Park and Kim, 2006; Nadler and Simerly, 2006), mainly by discussions from the integrated viewpoint of whether customers are willing to maintain a long term relationship with an enterprise. In summary, this study uses the definition of commitment by Morgan and Hunt (1994), namely, the customer is willing to try to maintain a relationship with a trading partner.

**Price Tolerance**

Although there is little literature on price tolerance, it has gradually received the attention of researchers and managers (Herrmann et al., 2004). Herrmann et al. (2004) defined price tolerance as a consumer refusal to change purchasing behaviors prior to the price of a product is increased to the maximum. According to past marketing views, price tolerance is generally listed as one of the dimensions of customer loyalty (Zeithaml, Berry and Parasuraman, 1996). In other words, price tolerance represents a type of customer loyalty behavior. If the customer produces a loyal attitude towards a specific enterprise, price tolerance will increase accordingly. Hence, this study defines price tolerance as the range of price changes acceptable to individual consumers.
RESEARCH METHOD

Research Structure

E-service is regarded as a decisive factor of the success of E-commerce (Long and McMellon, 2004), and price is an important factor affecting the online purchasing behaviors of customers. Luarn and Lin (2003) believed that management should improve customer perceived value through product and online service, as well as reasonable pricing. Day (2002) proposed that consumer decision making is centered on value. Brady and Cronin Jr. (2001) discussed the impact of service on customer satisfaction and value, as well as behavioral results from the customer-oriented viewpoint, to construct value as an antecedent variable. If the customer does not perceive best value, even satisfied customer will never return to the online store (Anderson and Srinivasan, 2003). As a result, this study constructs online E-service as an antecedent variable of perceived value in order to discuss its impact on perceived value in the seven dimensions of customer perceived E-service, according to the practices of Lee and Lin (2005), and Ribbink, Van Riel, Liljander, and Streukens (2004). Its aim is to clearly identify the dimensions that have important impact on perceived value. At present, the influencing factors of price tolerance in an E-commerce environment remain unclear, due to the differences in research variables of causal relationship models. Hence, this study involves concepts including quality, value, and satisfaction, with integrated trust and commitment for discussion.

Research Hypothesis

1. The impact of E-service on perceived value

   With six industries as research subjects, Cronin Jr., Brady, and Hult (2000) discussed the correlations between service, customer perceived value, customer satisfaction, and behavioral intentions, and indicated that service significantly and positively affected perceived value. With the customers of online bookstores and tourism websites as research subjects, Harris and Goode (2004) empirically found that E-service significantly and positively affected perceived value. Other research results also pointed out that perceived quality would positively affect perceived value (Teas and Agarwal, 2000). Therefore, this study establishes the following hypothesis.

H1: E-service (efficiency, system availability, performance, privacy, response, compensation, and contact) has a significant positive effect on perceived value.

2. The impact of perceived value on customer satisfaction, trust, and commitment

   Brady and Cronin Jr. (2001), from the customer-oriented viewpoint, discussed the impact of service on value, satisfaction, and behavioral results. They argued that value is one of the antecedent variables of satisfaction. Cronin Jr. et al. (2000) empirically pointed out that customer value has a significant positive effect on customer satisfaction. The empirical study of Yang and Peterson (2004) on online bank customers, and Lin et al. (2005), in an Internet customer empirical study, demonstrated that customer perceived value has a significant positive effect on customer satisfaction. Harris and Goode (2004), by online bookstores and tourism websites empirical study, found that perceived value has a significant positive effect on trust. Mukherjee and Nath (2003) discussed sharing of value, communication, speculative behaviors, and the correlation between trust and commitment with Indian online banking customers as research subjects. Results showed that the sharing of value has a significant positive effect on trust. Luarn and Lin (2003) studied online tourism services and VOD customers to discuss trust, customer satisfaction, perceived value, commitment, and customer loyalty correlation. The empirical study demonstrated that perceived value has a significant positive effect on commitment. Musa, Pallister,
and Robson (2005) investigated customer purchases of beauty and health products from direct sales personnel, and found that perceived value has a significant positive effect on commitment. Ulaga and Eggert (2006) surveyed purchase managers in chemical, mechanical, and electronic industries, and discussed the correlation between perceived value, satisfaction, trust, commitment, relationship development, and termination of employment. Results showed that perceived value has a significant positive effect on satisfaction, trust, and commitment. Therefore, Hypotheses 2, 3, and 4 are established, as follows.

H2: Perceived value has a significant positive effect on customer satisfaction.
H3: Perceived value has a significant positive effect on trust.
H4: Perceived value has a significant positive effect on commitment.

3. The impact of customer satisfaction on trust, commitment, and price tolerance

Ribbink et al. (2004) discussed the correlation between E-service, online trust, Internet customer satisfaction, and Internet customer loyalty. Empirical results indicated online satisfaction as antecedent variable of online trust. Ha and Perks (2005), with website consumers as study subjects, explored website experiences, website familiarity, website customer satisfaction, and website brand trust. They found that website customer satisfaction has a significant positive effect on website brand trust. Flavián, Guinalíu, and Gurrea (2006) treated online consumers of financial services, bookstores, music retailers, and tourism services as research subjects, and pointed out that higher website customer satisfaction has a significant positive effect on website customer trust. The studies by Delgado-Ballester and Munuera-Alemán (2001) and Chu and Fang (2006) have the same findings.

Luarn and Lin (2003) studied consumers of online tourism services and VOD consumers, and found that customer satisfaction has a significant positive effect on commitment. Hennig-Thurau, Gwinner, and Gremler (2002), and Nadler and Simerly (2006) investigated college and university students as research subjects, and found that customer satisfaction has a significant positive effect on commitment. Anderson (1996) analyzed the data of Swedish customer satisfaction indicators, and found that customer satisfaction has a gradual significant positive effect on price tolerance year by year. Herrmann et al. (2004) conducted an empirical study of the European aviation industry, and found that customer satisfaction has a significant positive effect on price tolerance. Hence, this study establishes Hypotheses 5, 6, and 7, as follows.

H5: Customer satisfaction has a significant positive effect on trust.
H6: Customer satisfaction has a significant positive effect on commitment.
H7: Customer satisfaction has a significant positive effect on price tolerance.

4. The impact of trust on commitment and the impact of commitment on price tolerance

The positive impact of trust on commitment has been confirmed by many studies (Morgan and Hunt, 1994; Delgado-Ballester and Munuera-Alemán, 2001). In the respect of commitment and price tolerance, Delgado-Ballester and Munuera-Alemán (2001) treated the mothers of babies aged 0-4 as research subjects, and found that they have relatively high commitment with relatively high trust of diaper brands, and would be more willing to pay higher prices. Hence, this paper proposes Hypotheses 8 and 9, as follows

H8: Trust has a significant positive effect on commitment.
H9: Commitment has a significant positive effect on price tolerance.
Research Variables and Operational Definitions

The variables of operational definitions and measurement referred to relevant literature of empirical studies. In addition to the consideration of excellent validity and reliability of the original scale, online shopping industrial characteristics and question item semantics were also considered in order to obtain definitions. The definition and measurements of “E-service” referred to the E-S-QUAL scale, as developed by Parasuraman et al. (2005), includes seven dimensions of efficiency, system availability, performance, privacy, response, compensation, and contact. “Perceived value” referred to the definition of Yang and Peterson (2004), and selected three items of one dimension for measurement. The definition and measurement items of “customer satisfaction” referred to the study of Ha and Perks (2005), with three items of one dimension for measurement. The definition and measurement items of “trust” referred to the study Gefen et al. (2003) to select 9 items in calculation, knowledge, and system dimensions. The definition of “commitment” referred to that of Morgan and Hunt (1994), and was measured by the three items of one dimension proposed by Park and Kim (2006). The measurement of “price tolerance” referred to the definition and measurement proposed by Zeithaml et al. (1996) to measure three items in one dimension. All the question items were measured by Likert 7-point scale, with 1 representing “strongly disagree” and 7 representing “strongly agree”.

Data Collection

The sample matrix of this study was defined as B2C online store consumers with more than one year online shopping experience. Respondents with no real online shopping experience were removed in sampling, and thus, this study can more accurately examine the influencing factors of price tolerance. According to a survey of the Information Promotion Committee, Taiwan’s E-shop consumers are mainly aged 15 to 44 years old, and stratified sampling was based on the survey accordingly. A total of 1300 questionnaires were distributed, with 681 copies recovered, for a return rate of 52.38%; among which, 562 were effective samples, for a valid return rate of 43.23%.

DATA ANALYSIS AND RESULTS

Sample Composition Description

Regarding the demographic statistics, 57.1% of the respondents are female; 34.7% are aged 15~24, 35.6% are aged 25~34, and 20.1% are aged 35~44; 56.4% have college/university education, 29.4% have high school education; 26.3% have an average monthly income of 25,000 NTD, 33.6% have an income of 25,001~40,000 per month; 32.2% spend 4-6 hours online, 18.8% spend 2 hours or less online, 26% spend 2~4 hours online; 67.6% have more than 3 years of experience in online shopping, 32.4% have 3 years of experience or less; 53.0% make 1-3 purchases online per month, 33.6% make 4-6 purchases, and 13.3% make over 7 purchases.

Confirmatory Factor Analysis

According to the biphasic method proposed by Anderson and Gerbing (1988), this study first conducted Cronbach’s α and confirmatory factor analysis (CFA) of the various research dimensions and questionnaire items in order to understand reliability, distinctive validity, and convergence validity; at the second phase, this study conducted relational analysis of the causal model to verify various hypotheses.
1. Reliability analysis, distinctive validity, and convergence validity

The Cronbach’s α reliability coefficients of the scales of various concepts were in the range of 0.860~0.927, which are higher than the 0.7 suggested value by Nunnally (1978). Hence, the scales had good reliability.

According to the proposal of Gaski (1986), if the correlation coefficients of a pair of concepts are lower than the validity of various other concepts, the concepts have good validity. If the factor loads of concepts are greater than 0.5, reaching the significant level of (p<0.001), the composite validity of various concepts is above 0.8, and the average extraction variance is above the threshold value of 0.6, then the measurement model has convergence validity.

2. Analysis results

The overall measurement model’s fitness indicator analysis results were $\chi^2=743.05$, GFI=0.879, NFI=0.931, CFI=0.948, AGFI=0.847, PNFI=0.806, PGFI=0.695, RMSR=0.031, and RMSEA=0.070. Except for GFI and AGFI being slightly lower than 0.9, and RMSEA being slightly higher than the 0.05 threshold, the remaining were consistent with the suggested level of Bagozzi and Yi (1988), indicating the linear structure model constructed by this study had good fitness degree.

Second, regarding the verification of various hypotheses, the overall model’s causal model route analysis results are as illustrated in Figure 1, indicating all the hypotheses of the total samples were verified as true. Figure 1 illustrates that the dimensions of the online service concepts, including efficiency, system availability, and performance, did not significantly and positively affect perceived value, hence, Hypothesis 1 (E-service has significant positive effect on perceived value) is partially true.

Note:  : hypothesis is true;  : hypothesis is not true
route coefficient is a standardized value. *p<0.05,**p<0.01,***p<0.001

Figure 1: overall model’s causal model route analysis
CONCLUSIONS AND SUGGESTIONS

Research Results

As shown in Figure 1, regarding the analysis of the impact of various concepts of price tolerance can be categorized into three aspects of direct, indirect, and total effect, as summarized in Table 1. By total effect, factors affecting price tolerance are in the descending order of perceived value (0.822), customer satisfaction (0.693), commitment (0.635), and trust (0.158).

Regarding online shopping customers, perceived value is the most important influencing factor of price tolerance. Hence, shopping website should focus on improving the overall perceived value by the customer, which relies on service improvement. The recovery dimension (response, compensation, and contact), and privacy in the core dimension are issues of the most concern for respondents. In addition, this study speculated that, the reason for no significant impact on efficiency, system availability, and performance dimensions of the overall perceived value of online shop customers may be the stability of online shopping websites. Online consumers may regard the three dimensions as the basic conditions of online shopping websites. The three conditions are the lowest threshold for the success of an online shopping website.

Customer satisfaction is a secondary factor affecting price tolerance. It is found that online shopping websites should first be sufficiently attractive to ensure customers enjoy browsing its website. Then, after the customer achieves real consumption satisfaction, the customer may develop pleasant experiences from shopping on the website, and be willing to recommend the website to friends and family for browsing.

Finally, another important influencing factor of customer price tolerance is commitment, which has the greatest direct effect. If customer commitment is increased to make the customer willing to maintain a long term relationship with the website, the customer will visit the site first when shopping in the future, in particular, purchasing by credit card. Hence, enhancement of commitment with customers is an important link of online shopping website’s future business strategies.

Table 1: analysis of the effect of various concepts on price tolerance

<table>
<thead>
<tr>
<th>Concept</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>Total effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Customer satisfaction</td>
<td>Commitment</td>
<td>Customer satisfaction and commitment</td>
</tr>
<tr>
<td>Perceived value</td>
<td>0.271</td>
<td>0.159</td>
<td>0.257</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>0.319</td>
<td>0.303</td>
<td>0.071</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>0.635</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Managerial Implications

This study found that trust is not the most important influencing factor of Internet customer price tolerance, which is not consistent with the findings of Geffen (2003) and Ribbink et al. (2004), who suggested that a virtual E-commerce environment is full of highly uncertain factors, and thus, poses higher perceived risks. As a result, trust is a common factor for exploration when studying virtual environment shopping. The difference may lie in the accumulation of online shopping experience. The subjects of this study are consumers with more than one year experience in online shopping, providing
respondents with increasing trust in virtual environments through their increased shopping experiences. Therefore, the indirect effect of trust on the price tolerance of online consumers is not significant.

In the competitive environments of the Internet, competition lies at the fingertips of customers, and enhancing the potential price tolerance of customer can lower obstacles to customer loyalty. Hence, improving customer perceived value of E-services, commitment of customer satisfaction to enhance price tolerance, and developing customer loyalty should be the direction for the efforts of online shopping sites. When a customer is satisfied upon consumption, they will prefer to revisit the shopping website for the next purchase. Such preferences will result in high purchase frequency and improve customer price tolerance. The results of this study and literature suggestions confirm that, customer satisfaction and commitment enhancement (Anderson, 1996; Delgado-Ballester and Munuera-Alemán, 2001; Herrmann et al., 2004) lead to increasing price tolerance. Hence, when online shopping websites distinguish the consumption records of customers, and heed the price tolerance development processes of different consumer groups, it can formulate pricing strategies better than the remaining industry, through consumer customization services.

Research Limitations and Suggestions to Future Studies

This study used sectional data to analyze the causal relationship between observation variables, which can explain the current situation, but cannot explain long term changes. Therefore, it may be inappropriate to infer the research findings to other industries, as this model only targeted consumers of Taiwanese B2C online shopping sites. For future studies, negative perceived risks, such as time cost and perceived price fairness may be explored.

REFERENCES


