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論文題目

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The Importance of e-Convenience in **Modern Day e-Commerce**

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Abstract

As competition among on-line retailers escalates, more services are added to increase shopping convenience, such as free delivery, 24-hour arrival, payment-pickup service in the assigned convenience stores, etc. Many e-commerce researches have included convenience as a critical factor on on-line shopping attitudes and behavior. Although the importance of convenience in on-line shopping (this is abbreviated as e-Convenience) is recognized, very few studies have discussed it in detail. After a review of convenience literature, including physical convenience and e-Convenience, this study proposes a theoretical model to systematically evaluate e-Convenience. We first define e-Convenience with its three constructs relating to the shopping and purchasing process. These are shopping convenience, delivery convenience and post-purchase convenience. The antecedent factors are on-line shopping characteristics, such as one-stop shopping, personalized touch, exhaustive information, website design and shopping service characteristics. In addition, the dependent factors include satisfaction, loyalty and re-purchase intentions. The discussions in this paper clarify the meaning of e-Convenience and provide further commentary on the role that it plays nowadays on e-shopping.

Keywords: e-Convenience, e-Shopping, Satisfaction, Loyalty, Repurchase Intention.

1. Introduction

1.1 Why is Convenience an Important Factor in e-commerce nowadays?

Competition among e-retailers has escalated, especially in pricing. As a result of lower prices, wider choices, easier comparisons and quicker searches, many customers purchase products in the Internet. On-line shopping has become more popular.

Except for on-line shopping features, the modern lifestyles of people always influence their purchasing habits. With the passing of the years, the amount of time that people spend at their jobs has become longer. Thus, they would like to make better use of their time in all their other activities. For example, many women are now no longer just housewives but have become professionals and have to deal with very tight schedules. Because shopping in physical stores means spending a lot of time to get the task done, on-line shopping has become another handy option.

In addition, the home delivery service lets customers receive products without being bothered with having to go out. The “24-hr arrival” service (*e.g.* PChome.com and Yahoo!Kimo in Taiwan) has reduced the waiting period from the time the order is placed up to the time the ordered merchandise is received. The websites would have features that provide product recommendations and offer various payment methods to enhance the shopping convenience of customers. While the customers cannot actually see, touch, smell or feel the merchandise on the websites, e-Convenience is a powerful

weapon with which e-retailers can compete with brick-and-mortar businesses.

1.2 The Evolution of e-commerce in the Last Two Decades

Electronic commerce, commonly known as e-commerce or e-shopping, consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks (<http://en.wikipedia.org/wiki/E-commerce>). On-line shopping is the process whereby customers directly buy goods or services from a seller interactively over the Internet. Tim Berners-Lee started the World Wide Web in 1990. Then Amazon initiated commerce on the Internet in 1995. In 1996, eBay appeared (http://en.wikipedia.org/wiki/Online_shopping). Although the Internet went through the dot-com bubble phase, it approved cash flow and logistics. In recent years, on-line shopping has become more popular. Many brick-and-mortar businesses have expanded into the Internet, such as Gap, Wal-Mart, and JCPenney's. On-line shops developed new arenas for growth by appealing to young people who have the economic ability and purchasing power. Hence, multi-channel has become the new retailing trend.

According to a Nielsen Survey, one third of on-line shoppers use search engines to find the products that they wanted. However, only one fourth gets on websites by word of mouth. When customers have a good experience the first time they visit a website, they will return to that website to buy more sixty per cent of the time. This is a good indicator of the importance of re-purchase behavior. The retention factor is important for e-retailers to sustain and grow their business.

1.3 The Research Purpose and Contents of this Paper

In on-line shopping, the convenience angle is acknowledged to be increasingly important to customers. Many researchers have underscored the importance of convenience, yet no known research has made an in-depth study of online shopping convenience (henceforth abbreviated as e-Convenience) or clarified its measurements. We define e-Convenience as having three dimensions referring to the framework of Berry *et al* (2002). The three dimensions are shopping convenience, delivery convenience, and post-purchase convenience. In spite of the lack of prior studies, we have two research objectives as follows:

- (1) This study develops the constructs of e-Convenience and makes a distinction between traditional (physical) convenience and e-Convenience.
- (2) How e-Convenience impacts customers' satisfaction, loyalty and re-purchase intention is discussed through the literature reviews.

This article is structured as follows. Section 1 discusses the e-commerce environment and its evolution, and then briefly summarizes the differences between traditional convenience and e-Convenience. Section 2 contains the discussion of convenience from the traditional versus the on-line contexts. Section 3 discusses the theoretical model of e-Convenience and on-line shopping characteristics. In the process

explains the satisfaction, loyalty and re-purchase intentions. Then, we propose hypotheses. Section 4 describes our research method. Section 5 displays empirical results. Section 6 discusses results implication. Section 7 concludes limitations and future research.

2. Convenience

2.1 Definition

The concept of convenience is derived from the products division in marketing researches which discuss convenience in connection with the classification of goods and services. Kotler (1997) defines convenience goods as

"...goods that the customer usually purchases frequently, immediately, and with the minimum of effort in comparison and buying.... " (p. 433)

Keaveney (1995) indicated that convenience is not a sufficient condition in order to maintain customer loyalty, but it is a necessary condition to keep customer relationships. When customers purchase goods, they consider not only the monetary costs but also the convenience that is classified as non-monetary costs. Brown and McEnally(1993) conducted the previous research, and proposed this definition of convenience: Convenience is a reduction in the amount of customer time and/or energy required to acquire, use and dispose of a product or service relative to the time and energy required by other offerings in the same product/service class.

2.2 The Dimensions of Convenience

Yale and Venkatesh (1985) proposed six dimensions of convenience: time utilization, accessibility, portability, appropriateness, handiness and avoidance of unpleasantness. But these dimensions carry with them some problems, such as being ambiguous, difficult to measure and a lack of theoretical support. Brown (1989) proposed five dimensions of convenience: time, place, acquisition, use and execution. The first four dimensions are derived from the economic utility theory, *i.e.*, time, place, possession and form utilities. Brown and McEnally (1991) used focus groups to explore the constructs of convenience and to examine Brown's dimensions. The results suggested time, place and ease of acquisition. The dimension of execution does not indicate convenience but represents the customer's decision to "contract out" some or all of the time and energy requirements normally associated with an offering. Thus, Brown and McEnally (1993) reduced the dimensions to time and energy. Customers feel that they have saved time because they have used it efficiently. The energy dimension includes physical and mental energy used by the customers.

Brown and McEnally (1993) proposed that the customer seeks convenience in three phases: acquisition, consumption and disposal. Gehrt and Yale (1993) proposed

time, space and effort when referring to the nature of the convenience. Berry et al. (2002)

3. e-Convenience and the Theoretical Model

3.1 e-Convenience

According to past researches, many studies have identified convenience as an important factor in on-line shopping (see Table 1 for a review). Kim *et al.* (2009) referred to convenience in relation to time and place as often being the primary reasons for engaging in on-line shopping. Customers who shop on-line usually have very limited time on their hands and thus may want to save time and take advantage of the convenience of buying on-line. (King *et al.* 2004) Convenience refers to the ability to use self-service technology (the service of a website without having any contacts with a firm's employee) to make the procurement and delivery of goods and services that fit the customer's needs in terms of timing and location (Yen and Gwinner, 2003). This construct is similar to the "when I want" and "where I want" sub-dimensions being linked to satisfying the exchanges of self-service technology (Szymanski and Hise, 2000). Convenience refers to the services and practices of on-line shopping websites that reduce customer time and effort in the transaction process. Services, such as a shorter product search period and wider payment options can further reduce the efforts that customers expend and increase on-line purchase intentions (Chen *et al.* 2009). Srinivasan *et al.* (2002) defined convenience in e-commerce as the extent to which a customer feels that a web site is simple, intuitive and user friendly. Accessibility of information and simplicity of the transaction processes are important antecedents to the successful completion of transactions.

Much of the studies about traditional convenience have complete dimensions to construct it, but this is lacking for "e-Convenience." In the sections that follow, we address the construct dimensions of e-Convenience based on the framework of Berry *et al.* (2002). There are five dimensions of convenience: decision convenience, access convenience, transaction convenience, benefit convenience and post-purchase convenience. They reflect the stages of the customers' activities through purchase or service usage. In the traditional shopping process, customers decide on the shop, feel beneficial in the shop, access the products, pay for the products and contact the store again for product return or maintenance, as needed.

However, on-line shopping has a different process. Customers decide on the website without any time constraints or the need for transportation to the location, feel the benefit on the website, select the products, pay for the products, wait to access the products, and contact the website again for product return or maintenance, as needed. The five dimensions of traditional convenience are reduced to only three dimensions.

They are decision convenience, benefit and transaction convenience, and post-purchase convenience.

(1) Shopping Convenience

Shopping convenience refers to the customers feeling of the time and effort saved when they purchase on the website. The purchase process includes the decision of which website to use, the search for the products and the mode of transaction payment. The decisions made by customers include “where I buy,” “what I buy” and “when I buy.” Schaffer (2000) indicates that 30% of the customers leave a website without making a purchase because they cannot find their way through the website. He suggests that a convenient website should provide easy information search, quick response, fast transaction that minimize customers’ efforts. Moreover, a convenient website should also provide a variety of payment methods, such as credit card payment, wire transfer or on-line money transfer (Chen *et al.* 2009).

Table 1 Summary of prior studies about e-Convenience

| Cite | Focus | Convenience | Dependent Variable | Significant |
|---------------------------------|--|---|----------------------------|---------------|
| Kim <i>et al.</i> (2009) | e-service | Easy searches | e-satisfaction | *(P<0.05) |
| Yen and Gwinner(2003) | Self-service technology (SST) | Use SST to feel time and place convenience | loyalty | ** (P<0.01) |
| Chen <i>et al.</i> (2009) | Purchase intentions | Reduce time and effort in the transaction process | On-line purchase intention | |
| Srinivasan <i>et al.</i> (2002) | Customer loyalty | The extent by which a customer feels the web site is simple, intuitive and is user friendly | e-loyalty | no sig. |
| Devaraj <i>et al.</i> (2002) | EC channel satisfaction (purchase) | Transaction cost (time and effort to find products, lower costs, and shipping and handling costs) | satisfaction | *** (P<0.001) |
| Choudhury and Karahanna(2008) | The relative advantages of electronic channels | Transaction costs | relative advantages | ** (P<0.01) |

(2) Delivery Convenience

Delivery convenience involves the customers’ perceived time and effort expended to receive the products. The time involved from completing payment to receiving the products is considered as part of the delivery. The shorter the delivery time, the more convenience the customers feel. For example, some e-retailers provide a 24-hr arrival

service. If e-retailers provide this service, it will minimize the relative gap given the immediate pick-up of the physical purchase. Schaupp and Belanger (2005) pointed out that on-line shopping websites should not only minimize delivery time but also provide parcel tracking mechanisms to reduce customer anxiety.

(3) Post-Purchase Convenience

Post-purchase convenience involves the customer's perceived time and effort spent while re-initiating contact with the e-retailer after receiving the products. Tax, Brown and Chandrashekar (1998) indicate that the perceived convenience of how complaints are handled increases customer satisfaction. Because of the rapid and wide-ranging customers' comments on the Internet, e-retailers have to deal with customers' responses more efficiently and sincerely.

3.2 Online Shopping Characteristics and e-Convenience

Prior studies usually discussed online shopping characteristics for their impact on satisfaction and loyalty. Kim *et al.* (2009) identified five buying environment characteristics: convenience, customization, information, communication, and website aesthetics. Then, they examined how these characteristics related to satisfaction. In this study, we propose five on-line shopping characteristics: one-stop shopping, website design, shopping service, personalization, and range of information offered.

(1) One-Stop Shopping

A brick-and-mortar retailer that provides all kinds of living goods can save customers' time and effort when making their purchases with efficiency and without any troubles (Kaufman, 1996). It is for this same reason that an e-retailer provides as wide a range of merchandise as possible. Customers collect all the wanted products in one purchase that passes the free-shipping price-thresholds. Offering the same kind of goods but under different brands can satisfy the different segments of customers so that e-retailers take advantage of this aspect for their own market expansion. If customers can find anything on a given website, they would not switch to another e-retailer. An offering of various products by an e-retailer reduces a customer's search costs. When they perceive the convenience, they will come back often and stay on the website longer to buy the products that they wanted.

Although making the switch can be as easy as one finger pointing on the mouse, to purchase products from different websites will add time to the search and complicate the account management and further raise the cost of delivery. It may result in an increase of the time and effort cost, search opportunity cost and higher delivery fees. Conversely, customers buy all the needed goods in one website to save on the cost of time and effort so that they feel the convenience (Srinivason *et al.*, 2002). One-stop shopping can decrease delivery and returns complexity compared with many-stop shopping. Thus, we expect one-stop shopping to be positively related to each of the

three e-convenience dimension.

Hypothesis 1: *One-stop shopping has a direct positive effect on (a) shopping, (b) delivery, and (c) post-purchase convenience.*

(2) Website Design

Cyr (2008) proposes three facets of web design: information design, navigation design, and visual design. Information design refers to the customization of product information or service information. Navigation design refers to the scheme used that can help or hinder users as they access the different sections of a website. Visual design deals with balance, emotional appeal, aesthetics and graphic unity of the web site as an overall graphical appearance. This includes colors, photographs, shapes or fonts.

There is a relationship between navigational design and convenience. Schaffer (2000) indicates that 30% of customers leave a website without purchasing anything. This may be because they cannot find their way through the site. He further suggests that a logical website navigational design will minimize the likelihood of customer mistakes so that they feel certain and satisfied with the transaction. A well-structured website decreases the probability of the customer making an erroneous search and reduces the search time. Therefore, we expect website design to be positively related to each of the three e-convenience dimension.

Hypothesis 2: *Website design has a direct positive effect on (a) shopping, (b) delivery, and (c) post-purchase convenience.*

(3) Shopping Service

Shopping service refers to the service that e-retailers provide as part of the shopping process which includes payment method and delivery. In making payments, many researchers indicated that having a variety of payment methods can increase perceived convenience by customers (Zeithaml *et al.*, 2002; Liang and Lai, 2002). For delivery services, Schaupp and Belanger (2005) pointed out that an on-line shopping website should not only minimize delivery time but also provide parcel tracking mechanisms to reduce customer anxiety. Hence, we propose shopping service to be positively related to each of the three e-convenience dimension.

Hypothesis 3: *Shopping service has a direct positive effect on (a) shopping, (b) delivery, and (c) post-purchase convenience.*

(4) Personalization

Kim (2002) defined personalization as transferring information highly related to a person. E-retailers can provide information needed by customers. Websites can record customer surfing paths or purchase history. Then, the website can provide customization suggestions. An example is the recommendation system of Amazon.com. Personalization also creates the perception of increased choice by enabling a quick focus on what the customer really wants. If the e-retailer is able to accurately trail or

narrow choices for each individual customer, it can minimize the time that customers spend on browsing through an entire product assortment to locate a particular product (Srinivasan *et al.*, 2002). We do not expect personalization to be significantly related to delivery, or post-purchase convenience, because they relate to logistics of the products. Personalization focuses on the purchase information provided. Hence, we propose personalization as an antecedent factor of shopping convenience.

Hypothesis 4: *Personalization has a direct positive effect on shopping convenience.*

(5) Information Richness

Hurme (2005) defined information richness as the information that customers have to obtain to help them make the decision for their on-line shopping. This is a great help when customers shop in the Internet, especially when faced with unfamiliar or high-value products. Cook and Coupey (1998) argued that the increased information on the web has the potential to result in more knowledgeable customers, who are then able to make better decisions and who will then experience greater satisfaction with their purchases. Liu (2006) examined how the effects of recommendation information (*e.g.*, word-of-mouth) exceed advertising and help customers make decisions. When products or service information are more detailed and richer, customers will understand the products better. If information given efficiently, it can save customers' search time. We do not expect information richness to relate significantly to delivery, or post-purchase convenience, because information richness focuses on the purchase information provided and decrease search time, so there is not relationship in delivery, or post-purchase convenience. Thus, we view information richness as a key factor influencing shopping convenience.

Hypothesis 5: *Information richness has a direct positive effect on shopping convenience.*

3.3 Effects of e-Convenience

Srinivasan *et al.* (2002) proposed that a website that is logical and convenient to use will minimize the likelihood that customers will make mistakes and will make their shopping experience more satisfying. Kim *et al.* (2009) identified that convenience positively influences e-satisfaction. Devaraj *et al.* (2002) examined that time and ease of transaction strongly affects EC channel satisfaction from the transaction cost perspective. These outcomes will likely enhance customer e-loyalty. Szymanski and Hise (2000) proposed that convenience will impact directly on satisfaction. Not only will convenience influence satisfaction, but that it will also increase loyalty (Srinivasan *et al.*, 2002). Yen and Gwinner (2003) also showed that convenience has a direct effect on loyalty. Therefore, we propose that convenience does have a direct positive effect on satisfaction (H6) and loyalty (H7).

Hypothesis 6: (a) Shopping, (b) delivery, and (c) post-purchase convenience have direct positive effects on satisfaction.

Hypothesis 7: (a) Shopping, (b) delivery, and (c) post-purchase convenience have direct positive effects on loyalty.

Butcher *et al.* (2002) indicated that there is positive relationship between convenience and re-purchase intention in their research studies that were related to the social influence of re-purchase intentions. Thus, we also propose that convenience has a direct positive effect on re-purchase intentions.

Hypothesis 8: (a) Shopping, (b) delivery, and (c) post-purchase convenience have direct positive effects on repurchase intentions.

In conclusion, e-Convenience is an antecedent factor for satisfaction, loyalty, and repurchase intentions.

Satisfaction, Loyalty and Re-purchase Intentions

Kolter (1997) defined satisfaction as the extent of the difference between a customer's perception and his expectations. In other words, customers can compare the difference between the practical and the expected benefits. When the practical benefits exceed the expected benefits, the customers feel satisfied. Hellier *et al.* (2002) noted that satisfaction is the extent that a customer's feels pleased, when products or services meet their needs and expectations.

Srinivasan *et al.* (2002) defined customer loyalty as a customer's favorable attitude toward the e-retailer that results in repeated buying behavior. Lipstein (1959) and Kuehn (1962) measured loyalty by the probability of product re-purchase. Jacoby (1971) suggested that loyalty is a biased behavioral purchase process that results from a psychological process. Srinivasan *et al.* (2002) also proposed that the e-loyalty of customers not only reflect word-of-mouth behavior but also the willingness to pay more.

In a highly competitive market, Berry (1983) believed that a firm's success is heavily dependent on its ability to retain customers. Both practitioners and researchers realize that attracting new customers is far more expensive than retaining existing ones (Wong and Sohal, 2002). Hellier *et al.* (2002) showed that satisfaction positively impacts on loyalty. Kim *et al.* (2009) also indicated that satisfaction has a positive influence on loyalty. Hence, we propose that satisfaction has a direct positive effect on loyalty.

Hypothesis 9: Satisfaction has a direct positive effect on loyalty.

Hellier *et al.* (2002) defined re-purchase intention as the individual's judgment about whether to buy a designated service from the same company again, taking into account his or her current situation and likely circumstances. Desatnick (2006) indicated that appealing to a new customer costs five times more than it does to maintain existing

customers. Therefore, re-purchase intention is viewed as an important topic for on-line shopping. A direct positive relationship between customer satisfaction and re-purchase intention is supported by a wide variety of product and service studies (Oliver, 1980; Bolton, 1998). We likewise propose that satisfaction has a direct positive effect on re-purchase intentions.

Hypothesis 10: *Satisfaction has a direct positive effect on repurchase intentions.*

4. Research Methodology

4.1 Data Collection

The research model was empirically tested using data from an online survey conducted via My3Q.com. My3Q.com is a widely-used questionnaire website. We used My3Q.com to design questionnaire and release it. The sample was randomly drawn from online shopping forum (i.e. Yahoo!Kimo Auction Forum, Ruten Forum), community forum(i.e. PTT), and e-mail. We posted the survey article to ask for respondents. In the article, a direct link to the electronic questionnaire was embedded and informing users that valid respondents would be automatically entered in a drawing for a prize of \$100. The sample was particularly appropriate because it included respondents who need have online shopping experience.

The survey approximately lasted for 1.5 month from 2010/2/13 to 2010/3/30. Of the 528 responses, 351 valid responses were obtained. Demographic information is shown in Table 2.

Table 2 Demographic information

| Demographics | | Number (N=351) | % | Demographics | | Number (N=351) | % |
|------------------|-----------------|-------------------|-----|--|-------------------|-------------------|-----|
| Gender | Male | 132 | 38% | Annual disposable income in NTD | 0~500 K | 284 | 81% |
| | Female | 219 | 62% | | 500K~2,000K | 64 | 18% |
| Age | < 20 | 43 | 12% | | 2,000K ~5,000K | 3 | 1% |
| | 21-30 | 230 | 66% | Online Shopping experience | < 1 year | 20 | 6% |
| | > 30 | 78 | 22% | | 1 year ~3 years | 75 | 21% |
| Education | < High school | 22 | 6% | | 5 years ~ 7 years | 84 | 24% |
| | University | 226 | 64% | | > 7 years | 63 | 18% |
| | > Post graduate | 103 | 29% | | | | |

4.2 Instrument Development

All research constructs were measured using multi-item scales. All scale items used five-point Likert scales that ranged from 1 (strongly disagree) to 5 (strongly agree).

The survey instrument sources are shown on Table 3. The instruments used in this study were extracted from previous studies and reworded to suit our condition.

Table 3 Instrument Reference

| Constructs | Reference | Constructs | Reference |
|----------------------|---|---------------------------|---|
| One-Stop Shopping | (Srinivasan et al., 2002) | Shopping convenience | (Kim et al., 2009; Berry et al., 2002; Seider et al., 2007) |
| Personalization | (Srinivasan et al., 2002) | Delivery convenience | |
| Information Richness | (Srinivasan et al., 2002) | Post-purchase convenience | |
| Website Design | (Srinivasan et al., 2002) | Satisfaction | (Hellier et al. , 2002) |
| Shopping service | (Huang & Oppewal, 2006; Schaupp and Belanger, 2005) | Loyalty | (Zeithaml et al., 2002) |

4.3 Analysis Tools

The major tools are SPSS 13.0 and SmartPLS 2.0. PLS deals with reflective model and formative model. Other statistic software just handle reflective model, such as LISREL. Therefore, we adopt SmartPLS 2.0 to examine measurement model and structural model.

5. Empirical Results

The model analysis is divided to two phase: measurement model and structural model. At measurement model, we execute factor analysis and reliability analysis and examine construct validity and internal consistency. Then, we use composite reliability, convergent validity, and discriminant validity to examine the reliability of the measurement tool.

5.1 Measurement Model

First, we use exploratory factor analysis to determine dimensions. According to Bartlett's Test and KMO, we find Chi-Square of online shopping characteristic, e-convenience, and dependent variables achieve significance. The values show as follow: Online shopping characteristic (Bartlett's Test: Approx. Chi-Square=2646.584, sig=0.000; KMO=0.853), e-Convenience (Bartlett's Test: Approx. Chi-Square=2400.537, sig=0.000; KMO=0.849), and Dependent variables (Bartlett's Test: Approx. Chi-Square=1983.954, sig=0.000; KMO=0.879). It represent they exist covariance. When KMO>0.5, it indicates measurement also exist community (Kaiser, 1974). These conditions show an exploratory factor analysis is needed.

Our research adopts principal component analysis to extract factors. Also, we use varimax to run orthogonal rotation. All indicators load more highly on their own constructs, except a5 (This website makes purchase recommendations that match my needs.). The factor loading of a5 is smaller than 0.5. Thus, we delete a5. Furthermore, we find the indicators of all e-convenience and dependent variable load more highly on their own construct than other constructs.

Fornell and Larcker(1981) suggested composite reliability should greater than 0.7, and the higher value represents scale items can be measured to the corresponding constructs more correctly. Item loading larger than 0.5 is considered acceptable. Our composite reliability scores (0.784 to 0.919) indicates largely meet guidelines. All item loadings are greater than 0.5 (See Table 4). If AVE is larger than 0.5, it represents this model has good convergent validity (Fornell and Larcker, 1981). As shown in Table 4, all AVE (0.514 to 0.789) are greater than 0.5.

To access discriminant validity, the square root of the average variance extracted (AVE) should be larger than the inter-construct correlations. As shown in Table 4, all constructs share more variance with their indicators than with other constructs. Thus, this result points to the discriminant validity of our scales.

5.2 Structural Model

To test theoretical model we used PLS. We adopt smartPLS 2.0 software, and use bootstrapping resample to examine path model significance. Because our hypotheses are unidirectional relationship, we use one-tail test. Figure 1 present the results of our analysis. Except for H1b, H5, H7c, H8b, H8c are not significant and not supported, others are supported.

According to the results, the relationships between one-stop shopping and shopping convenience (H1a, $\beta=0.210$, $p\text{-value}<0.001$), post-purchase convenience (H1c, $\beta=-0.234$, $p\text{-value}<0.001$) are significant. The relationship between one-stop shopping and delivery convenience (H1b) is not significant. Thus, the result supports H1a and H1c, not supports H1b.

All the relationships between website design and shopping convenience (H2a, $\beta=0.257$, $p\text{-value}<0.001$), delivery convenience (H2b, $\beta=0.371$, $p\text{-value}<0.001$), post-purchase convenience (H1c, $\beta=0.421$, $p\text{-value}<0.001$) are significant. Thus, the result supports H2a, H2b, and H2c.

All the relationships between shopping service and shopping convenience (H3a, $\beta=0.115$, $p\text{-value}<0.001$), delivery convenience (H3b, $\beta=0.436$, $p\text{-value}<0.001$), post-purchase convenience (H3c, $\beta=0.265$, $p\text{-value}<0.001$) are significant. Thus, the result supports H3a, H3b, and H3c.

The relationship between personalization and shopping convenience (H4, $\beta=0.032$, $p\text{-value}<0.01$) is significant. The relationship between information richness and shopping convenience (H5) is not significant. Thus, the result supports H4, and not supports H5.

All the relationships between shopping convenience and satisfaction (H6a, $\beta=0.618$, $p\text{-value}<0.001$), delivery convenience and satisfaction (H6b, $\beta=0.166$, $p\text{-value}<0.001$), post-purchase convenience and satisfaction (H6c, $\beta=0.077$, $p\text{-value}<0.01$) are significant. Thus, the result supports H6a, H6b, and H6c.

The relationships between shopping convenience and loyalty (H7a, $\beta=0.383$, $p\text{-value}<0.001$), delivery convenience and loyalty (H7b, $\beta=0.073$, $p\text{-value}<0.05$) are significant. The relationship between post-purchase convenience and loyalty (H7c) is not significant. Thus, the result supports H7a and H7b, not supports H7c.

The relationship between shopping convenience and repurchase intentions (H8a, $\beta=2.824$, $p\text{-value}<0.001$) is significant. The relationship between delivery convenience and repurchase intentions (H8b), post-purchase convenience and repurchase intentions (H8c) are not significant. Thus, the result supports H8a, not supports H8b and H8c.

The relationships between satisfaction and loyalty (H9, $\beta=0.511$, $p\text{-value}<0.001$), satisfaction and repurchase intentions (H10, $\beta=1.915$, $p\text{-value}<0.01$) are significant. Thus, the result supports H9 and H10.

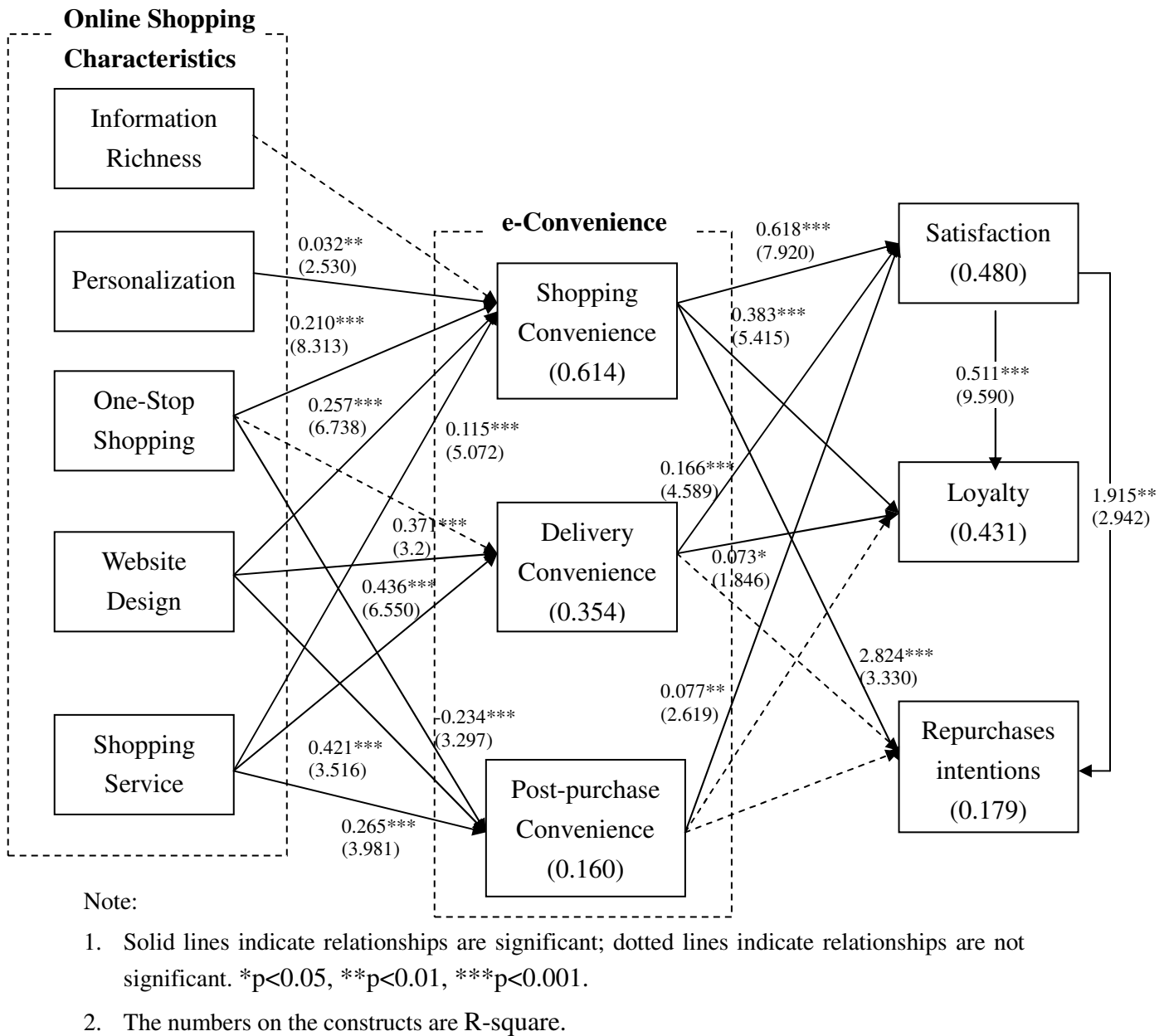


Figure 1 The results of Structural model

Table 4 Correlation Matrix of research constructs

| | One-Stop Shopping | Website Design | Shopping service | Personalization | Information Richness | Shopping convenience | Delivery convenience | Post-purchase convenience | Satisfaction | Loyalty |
|----------------------------------|-------------------|----------------|------------------|-----------------|----------------------|----------------------|----------------------|---------------------------|--------------|--------------|
| Composite Reliability | 0.855 | 0.898 | 0.831 | 0.784 | 0.806 | 0.896 | 0.903 | 0.918 | 0.904 | 0.919 |
| AVE | 0.596 | 0.64 | 0.552 | 0.55 | 0.514 | 0.553 | 0.756 | 0.789 | 0.702 | 0.696 |
| One-Stop Shopping | 0.772 | | | | | | | | | |
| Website Design | 0.489 | 0.800 | | | | | | | | |
| Shopping service | 0.323 | 0.502 | 0.743 | | | | | | | |
| Personalization | 0.262 | 0.264 | 0.167 | 0.741 | | | | | | |
| Information Richness | 0.265 | 0.364 | 0.256 | 0.401 | 0.717 | | | | | |
| Shopping convenience | 0.630 | 0.664 | 0.539 | 0.311 | 0.339 | 0.743 | | | | |
| Delivery convenience | 0.325 | 0.470 | 0.544 | 0.181 | 0.272 | 0.557 | 0.869 | | | |
| Post-purchase convenience | 0.020 | 0.301 | 0.327 | 0.165 | 0.296 | 0.207 | 0.450 | 0.888 | | |
| Satisfaction | 0.495 | 0.516 | 0.493 | 0.304 | 0.330 | 0.631 | 0.573 | 0.332 | 0.838 | |
| Loyalty | 0.447 | 0.413 | 0.345 | 0.408 | 0.338 | 0.538 | 0.334 | 0.172 | 0.623 | 0.834 |

Note: The bold numbers on the leading diagonal are the square root of AVE. Off diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements.

6. Discussion

In the current study, we develop and empirically tested an e-Convenience model. E-Convenience has been deemed to be an important issue for online shopping. Thus, it is essential to distinguish e-Convenience from traditional convenience (physical convenience). This is because the on-line shopping context and buyer behavior are different. A website can be convenient in some ways, but inconvenient in other ways. However, the inconvenience aspect may be overcome. Understanding e-Convenience better will help e-retailers improve the value of the products and services that they offer.

The current study suggests a number of implications for research. First, previous convenience studies have focused on the physical environment. Few studies systematically discussed convenience in internet environment. We develop and empirically test an e-Convenience model. Every stage of e-convenience is positively related to satisfaction. The perception by customers of e-Convenience directly influences their satisfaction over a specific shopping experience. Understanding the core issue about the dimensions of e-Convenience is critical to improving a website's convenience. The shopping convenience features attract customers and retain them. Customers make the decision on which e-shop they will go to and select which goods to purchase. Once the customers encounter any inconvenience in this process, there is a big possibility that they will leave. E-retailers can improve on shopping convenience by (1) offering products of various categories and brands (one-stop shopping), (2) having clear and easy website design, and (3) recommending targeted information to the individual shoppers. It is worth notice that information richness to shopping convenience is not significant. Information can help customers to do decision, but too much information maybe become customers' burden and can't save customers' time. We can infer information richness is not a key of e-Convenience.

Delivery convenience is also important because the waiting time before a product's arrival is a time full of anxiety and uncertainty for customers. E-retailers can reduce the uncertainty by (1) providing transparent delivery information, and (2) offering secure pick-up services (*e.g.*, pay-at-pickup service at a convenient location).

Post-purchase convenience is also important because customers must allocate additional time, effort and resources to re-initiate contact with a firm after shopping (Berry *et al.*, 2002). In the case of a shopping failure, customers not only spend additional but also unpredictable time and effort for product return or exchange. A well-designed return or exchange process enhances customer satisfaction and can further strengthen customer loyalty and re-purchase intentions.

7. Limitations and Future Research

In our study, we emphasize the importance of e-Convenience and explain it from

process view. For theoretical implication, we refer Berry et al. (2002) proposed service convenience framework and use different view to explain the importance of e-Convenience. We discuss online shopping characteristics impact e-Convenience. For management implication, this study systematically proves the importance of e-Convenience and analyzes online shopping characteristics impact e-Convenience, so that helps e-retailers operate their websites. However, this study still has some limitations. First, the sampling scope is Taiwan. Taiwan is a small land and full of crowded people. The competition between the sellers in Taiwan is fiercer. Hence, convenience is a critical key of online shopping. However, it hasn't been examined whether e-Convenience importance is equal between Taiwan and different property nations. The finding may not be representative of the entire world in online shopping. Second, this study investigated at social website, and most samples come from PTT. The users in PTT are almost young people (20~30 years old), and students. Hence, our sampling distribution is in this area. Thus, our finding only can represent online shoppers of the students or young people. Therefore, future research needs to examine e-Convenience model whether suit other nations differ from Taiwan, and pay attention to sampling if always fit population. In summary, we encourage the e-Convenience promote the evolving finding and understanding the key of online shopping.

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