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執行單位：交通大學交通運輸研究所

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一、中英文摘要

(一) 中文摘要

網際網路的興起，電子商務成為重新整合供應者與消費者關係的新商業模式。隨著網路購物普及化，資策會統計指出臺灣網路拍賣規模達516億，相較於去年成長約五到六成之間。由此可見，線上拍賣的規模與成長不容小覷。然而，如何與物流配送體系的配合，將網路交易商品交付到消費者手中是線上拍賣賣家所需克服的問題之一。台灣由於超商高度聚集的特質，藉由多次配送及高度資訊化的優勢而發展出以超商為基礎之「線上購物、超商取貨」物流模式，快速成為台灣電子商務中最令人矚目的物流暨金流運作方式。過去的文獻指出決定消費者選擇取貨點的主要因素，是超商的地點。就店配物流服務提供者而言，想在取貨點數量固定以及物流績效相同的情況下擴大其市場占有率，就有必要進一步深入了解消費者的選擇行為。因此，本研究想進一步深入了解消費者的選擇行為，探知除時間與成本外，不同體系的超商所提供之物流服務品質對消費者選擇行為之影響。根據隨機抽樣的調查數據，我們使用logit model與結構方程模式來進行分析。研究結果發現，資訊品質與便利性是消費者選擇取貨點最重要的影響因素。最後，針對分析結果，研擬對應策略以作為物流服務提供者增加市佔率之行銷策略參考。

關鍵字：電子商務、線上拍賣、消費者行為、Logit 模式、結構方程模式

(二) 英文摘要

The internet represents a growing and huge market. The development of e-commerce is an efficient business model which enables new relationship between consumers and suppliers. In particular, the auction (C2C) market is reaching NT \$51.6 billion with an increase between 50% and 60%. The online auction is obviously becoming a noticeable market. However, how to deliver goods to customers becomes one of the challenges for the sellers. In Taiwan, convenience stores have integrated the e-commerce with the logistics system of convenience stores to a new retail delivery model: "Online shopping in an electronic store and pick-up goods in a convenience store".

Previous researches proposed that the location of the convenience store and logistics service quality are major factors to influence consumers' choice behavior. Thus we combine SEM with binary logit model to incorporate latent variables into the choice model to understand the choice behavior of the online auction consumers and what constructs will affect to choose the retailer delivery provider.

The empirical results demonstrated that two variables- information quality and convenience are the key factors to impact on consumers to choose the RD provider. In accordance with these variables, we propose some marketing strategies to the managers of retailing delivery system to increase the market share.

Keywords: E-commerce, Online auction, Consumer behavior, Logit model, SEM

二、報告內容

INTRODUCTION

Digital technology has provided a new paradigm of our society and changed our lives interaction with the Internet. In the Internet, consumers can place orders at any time any where through the Internet, and the delivery service response is expected to be fast. Convenience stores in Taiwan have integrated the e-commerce with the logistics system of convenience stores to support the quick-response order deliveries to be a new retail delivery model: “Online shopping in an electronic store and pick-up goods in a convenience store”.

The main retailing delivery providers in Taiwan are 7-11.com¹ and CVS.com². Feng and Haung (2005) proposed that the location of the convenience store is a major factor for a consumer to decide the pick-up point. Since customers are the main resources of gaining profits, how to develop the differentiate strategies to maintain the existing customers create customer satisfaction and obtain more new customers becomes an important issue for convenience stores.

Based on the above-mentioned research background and literature review, the objectives of this study are (1) to explore the structure of the retailing delivery service of online auction market and work within the framework of confirmatory factor analysis. (2) to examine the relationships between logistics service quality, perceived value, customer satisfaction, switching costs and customer behavioral intention. (3) to integrate choice and latent variable model to incorporate psychological factors and their influences on choices. Simply stated, to understand the crucial factors of logistics service quality which are important to affect consumers to choose a RD provider and provides information to help managers of RD do some marketing strategies to increase their market share.

Research Objectives

Base on the research background mentioned above, there are five objectives of this study:

1. To explore the retailing delivery (RD) logistics service process which shopping in the online auction with pick-up goods at the convenience store.
2. To investigate the relationship between logistics service quality, perceived value, perceived sacrifice, switching cost, customer satisfaction and customer behavioral intention.
3. Using structure equation model (SEM) to explore the relationship between the logistics service quality and customer behavioral intention, and the relationship between the logistics service quality, perceived value, and perceived sacrifice, customer satisfaction, switching cost and customer behavioral intention.
4. Using logit model to understand the consumers' choice behavior who shop in online auction market and pick-up goods at the convenience store.

¹ <http://www.shopping7.com.tw>

² <http://www.cvs.com.tw>

5. To provide suggestions on developing marketing strategies to the managers of retailing delivery system to increase market share.

Research Scope

This study will focus on consumer-to-consumer (C2C) business model which concentrates on the individual consumers to individual consumers' view of e-commerce, and find out the crucial factors which will influence customers' behavioral intention.

The major research objects are the main retailing delivery providers in Taiwan, 7-11.com and CVS.com. The subject of the study is consumers in online auction market and the purpose is to find the crucial factors of logistics service quality which are affected consumers to choose a pick-up point of the convenience stores. To understand the opinion of consumers, an online survey will be administered to consumers of online auction market.

LITERATURE REVIEW

Retailing Delivery

In Taiwan, most of the e-commerce-related delivery is operated by third-party logistics provider (3PL). Because of the need for timely delivery system, perfect information system, low logistics operations cost due to of economic scale and there are many convenience stores in Taiwan, 3PL providers have had to improve the flow of information both internally and externally and integrate their logistics services into the retail delivery provided by convenience stores. A new RD model produced: "Online shopping with pick-ups at convenience stores." The RD services have made many remarkable successes in portal sites such as Yahoo.com and Pchome.com.

The new RD providers in Taiwan are 7-11.com and CVS.com. CVS.com is a joint venture by four families of convenience stores including Family.com, Hi-Life.com, Okcvs.com and Nikomart.com³ that began service in the beginning of 2000, while 7-11.com joined the market at the end of 2000. Because the safe payment method and the quick delivery, RD services by convenience stores have played an important role of the e-commerce logistics in Taiwan. There are includes three functions: (1) e-map, (2) delivery system and (3) pick-up point. The RD system has two characteristics: consumers can shop online even without a credit card and it provides consumers with a self pick-up approach through convenience stores.

Logistic Service Quality

Logistics excellence has clearly been recognized as an area in which firms can create competitive advantage, in part because of its visible service impact on customers (Bienstock, Mentzer, and Bird 1997).

Mentzer *et al.* (1999) conceptualized and tested LSQ as a second-order construct, with two categories of nine dimensions:(1)Order placement-personnel contact quality (PQ), order release

³ Nikomart.com was merged with Family.com in 2007.

quantities (OR), information quality (IQ), ordering procedures (OP), and (2) Order receipt-order accuracy (OA), order condition (OC), order quality (OQ), order discrepancy handling (OD), timeliness (TI). Mentzer *et al.* (2001) proposed and tested a “process of LSQ”. It revealed that LSQ is a complex concept demanding a great deal of attention from supplying firms. When viewed as a process, suppliers can identify the drivers of various LSQ perceptions. But how to measure LSQ in electronic channels provided by RD provider? Zeithaml, Parasuraman, and Malhotra (2000, 2002) defined the e-service quality is the service quality on the Internet which is the extent to a website facilitates efficient and effective shopping, purchasing, and delivery of products and services and developed e-SERVQUAL for measuring the service quality delivered by Web sites: (1) E-S-QUAL- the core dimensions: efficiency, system availability, fulfillment, and privacy; (2) E-RecS-QUAL- responsiveness, compensation, and contact, focused on the recovery part. Collier and Bienstock (2006) measured service quality in E-Retailing and they developed a conceptual framework of e-service quality. The purpose of this study not only focused on website interactivity or process quality but also outcome quality and recovery quality.

According to the above researches, this study adopted in light of Mentzer’s (2001) “process of LSQ”. As such, we combined Mentzer *et al.* (1999) 9 dimensions of logistic service quality and Zeithaml *et al.* (2000, 2002) e-SERVQUAL scale to develop the definition and measurement of LSQ based on the research focused on shopping in the online auction market and pick-ups at convenience stores.

Perceived Value and Perceived Sacrifice

Perceived value is the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given (Zeithaml. 1988). The sacrifice is described as consumers sacrifice both money and other resources (e.g., time, energy, effort) to acquire a service/product. So we regard perceived value as a uni-dimensional construct to measure customers’ overall feelings and use a multidimensional scale to measure the sacrifice including monetary prices and nonmonetary prices (e.g., time, energy, effort) in this study.

Many researchers define perceived value is a function of service quality, sacrifice, and customer characteristics (Bolton and Drew, 1991; Monroe, 1990). Because the monetary and nonmonetary cost, customer preference and past experiences, the evaluation of perceived value from customers is different to each other. Sweeney, Soutar, and Johnson (1996) showed that the functional quality would through perceptions of product quality and perceptions of value to affect the willingness to buy.

Based on the above researches, we examine the following hypotheses regarding service quality, perceived value, and perceived sacrifices:

- H1: perceived sacrifices have a direct, positive effect on perceived value.
- H2: service quality has a direct, positive effect on perceived value.
- H3: perceived value has a direct, positive effect on customer behavioral intention.

Switching Cost

Switching costs refer to the buyer’s perceived costs of switching from the existing to a new supplier (Heide and Weiss 1995). The domain of switching costs encompasses both monetary

expenses and nonmonetary costs (e.g., time spent and psychological effort) (Dick and Basu, 1994; Burnham, Frels, and Mahajan, 2003). Furthermore, the domain could include the loss of loyalty benefits as a result of ending the current relationship. (Lam, Shankar, and Murthy 2004). Thus, when it is under conditions of high switching barriers, the influences of core-satisfaction on repurchase intentions decreases, as switching costs increase, the intention of customer loyalty increases (Jones, Mothersbaugh, and Beatty, 2000).

Therefore, based on the above researches, we examine the following hypothesis regarding switching cost, and customer behavioral intention:

H4: the cost of switching RD provider has a direct, positive effect on customer behavioral intention.

Customer Satisfaction

Customer satisfaction is the customer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption (Tse and Witon, 1988). It is always existed two viewpoints of evaluating customer satisfaction: transaction-specific (multiple items scale) (Oliver, 1980) and cumulative (overall satisfaction) (Oliver, 1996; Rust and Oliver 1994). In this study, we define customer satisfaction as an overall satisfaction of the RD service and regard customer satisfaction as a uni-dimensional construct to measure customers' overall feelings.

Woodruff (1997) proposed that perceived value would direct or indirect impact on the customers' overall satisfaction. Further, perceived service quality is proposed to be an antecedent to satisfaction (Wilkie, 1986; Cronin, 1992). Brady, Knight, Cronin, Hult, and Keillor (2005) comparative tested the conceptual effects of quality, satisfaction, and value on consumers' behavioral intentions across multinational and multi-setting. They found service value perceptions strongly affect customer satisfaction. Thus, we examine the following hypothesis regarding service quality, service value and customer satisfaction:

H5: service quality has a direct, positive effect on customer satisfaction.

H6: perceived value has a direct, positive effect on customer satisfaction.

Customer Behavioral Intention

American Marketing Association (AMA) defined consumer behavior as a dynamic relationship between interaction of emotion, cognition and behavior. Zeithaml, Berry, and Parasuraman (1996) split behavioral intentions broadly into favorable and unfavorable behavioral intentions to measure the service quality and behavioral intentions. Therefore this study applies a multi-dimensional scale to measure customers' potential behaviors. Many researches explored the relationship between service quality, service value, satisfaction and behavioral intention and suggest that service quality on particular behaviors that signal whether customers will remain with or defect from a company (Zeithaml *et al.*, 1996; Cronin, Brady, and Hult ,2000; Brady *et al.*, 2005).

Therefore, this study examines the following hypotheses regarding service quality, customer satisfaction and behavioral intention:

H7: service quality has a direct, positive effect on customer behavioral intention.

H8: customer satisfaction has a direct, positive effect on customer behavioral intention.

Discrete Choice Model with Latent Variables

Choice behavior can be characterized by a decision process, which is informed by perceptions and beliefs based on available information, and influenced by affect, attitudes, motives, and preferences. Preferences are comparative judgments between entities. Under certain technical conditions, including completeness and transitivity, preferences can be represented by a numerical scale, or utility.

Often in behavioral sciences, there are concepts of interest that are not well defined and cannot be directly measured. These concepts are referred to as latent constructs, e.g. knowledge, ambition, or personality. While there exists no operational models to directly measure these constructs, latent variable modeling techniques are often applied to infer information about latent variables. These techniques are based on the hypothesis that although the construct itself cannot be observed, its effects on measurable variables (called *indicators*) are observable and such relationships provide information on the underlying latent variable.

Ben-Akiva *et al.* (1999, 2002) presented a rigorous and general methodology which integrated choice and latent variable model to model the theoretical framework, explicitly incorporating psychological factors and their influences on choices.

METHODOLOGY

Sampling and Data Collection

The target sample in this study is the online-shoppers who have ever purchased online, and pick-up goods at the convenience store. The data used in this study were collected via a Web survey. In order to reduce the possibility of multiple submissions by one person, cookie technology was used to ensure that each respondent answered the questionnaire only once. The address link of online questionnaire was sent to friends and classmates by e-mails and meanwhile, posted on the pchome⁴ Web site, ezship⁵ Website and various forums to show more e-consumers. To encourage participation, respondents who filled out the surveys were received one coupon prizes which costs one thousand dollars.

The survey was administered over a period of six weeks (November 20-December 31, 2008). Effective data from a total of 1357 questionnaires were collected. In this thesis, we conducted further analyses with the remaining items to develop a logistics service quality scale (LSQ).

Structural Equation Modeling (SEM)

Structural equation modeling is usually categorized as advanced statistics. It belongs to a

⁴ www.pchome.com.tw.

⁵ www.ezship.com.tw.

part of multivariate statistics and integrates factor analysis and path analysis. SEM concludes the relationships between manifest variables, latent variables, error variables and further obtains direct effects, indirect effects and total effects caused from independence variables to dependence variables. SEM encourages confirmatory rather than exploratory modeling. Therefore, it is critical to all construct of SEM modeling that must be directed by theory for model development and modification.

SEM is characterized by two basic components: (1) the measurement model, allowing the researcher to use several variables for a single independent or dependent variable; (2) the structural model, relating independent to dependent variables (i.e., the path model). The superiority of structural equation model over other statistical techniques owes to its ability to estimate multiple and interrelated dependence relationships, and also to represent unobserved concepts, or latent variables, in those relationships and account for measurement error in the estimation process. The conceptual model is used.

Goodness-of-fit measures the correspondence of the actual or observed input (covariance or correlation) matrix with that predicted from the proposed model. In other words, goodness-of-fit tests are used to determine whether the model should or should not be rejected. Jöreskog & Sörbom (1993) pointed out that concept of measurement model concludes measurement, reliability and validity. So, the complete analysis of structural model consist of (1) calculation of factor loading of each variable, (2) testing the fitness between data and measurement model of each factor, (3) calculation of the relationship between each latent variable, and (4) testing the fitness between whole model and data.

Logit Model

The cognitive process for decision-making is the mental mechanism that defines the cognitive task and the role of perceptions, affect, attitudes, motives and preferences in performing this task to produce a choice. Random utility (or discrete choice) models have been extensively used to analyze consumers' choice behavior. These models used only observed attributes and individual characteristics. In behavioral sciences, there are some concepts cannot be directly measured. Ben-Akiva *et al.* (1999) presented a theoretical framework which integrated choice and latent variable model to incorporate psychological factors and their influences on choices.

In this thesis, we will specify the joint choice and latent variable model; the structural and measurement equations for both the latent variable component and the choice component are needed. Linear in the parameters forms are assumed in the study and the equations are as follows:

Latent variable structural equations:

$$U_{in} = X_{in}\beta + X_{in}^*\beta_{X^*} + \varepsilon_{in} \quad \varepsilon_{in} \sim \text{Gumbel}(0, \mu) \quad (11)$$

$$X_{in}^* = X_{in}\lambda + \omega_{in}, \quad \omega_{in} \sim N(0, 1). \quad (12)$$

Latent variable measurement equations:

$$I_{in} = X_{in}^*\alpha_i + v_{in}, \quad v_{in} \sim N(0, \theta_{vz}). \quad (13)$$

$$y_{in} = \begin{cases} 1, & \text{if } U_{in} = \max_j \{U_{jn}\} \\ 0, & \text{otherwise} \end{cases} \quad (14)$$

The likelihood function for the joint model is:

$$P(y_{in}, L_{in} | X_{in}, X_{in}^*, \beta, \beta_X^*, \alpha, \lambda, \theta_z, \theta_w, \theta_v) = \int P(y_{in} | X_{in}, X_{in}^*, \beta, \beta_X^*, \theta_z) \varphi(X_{in}^*) f_i(L_{in} | X_{in}^*, \alpha, L_v) dX_{in}^* d\alpha d\lambda d\theta_z d\theta_w d\theta_v. \quad (15)$$

which describes the decision-maker (n) and the alternative (i), the latent variable (X_{in}^*), the observable explanatory variables (X_{in}), unknown parameters (λ, β, α), and covariances of random disturbance terms ($\omega_{in}, \varepsilon_{in}, \nu_{in}$).

Model fit measured in terms of the fit between the estimated choice probabilities and the observed choices, and in terms of the ability of the model to forecast observed response. In this study, we used ρ^2 to measure the model fit, which is similar to R^2 in regression analysis. It is defined as follow:

$$\rho^2 = 1 - \frac{LL(\hat{\beta})}{LL(0)}$$

$$\bar{\rho}^2 = 1 - \frac{(LL(\hat{\beta}) - K)}{LL(0)}$$

where $\bar{\rho}^2$ is adjusted likelihood ratio, $LL(\hat{\beta})$ and $LL(0)$ are the log-likelihood function values at convergence and at zero, K is the number of parameters estimated in the model. According to the literatures, the preferred procedure for evaluating a model is to use the log-likelihood value or transforms of it, such as ρ^2 and $\bar{\rho}^2$.

The steps of the calibration in this study, we will use AMOS 6.0 to obtain the parameters of the latent constructs and calculate the factor score. And then put them in Eq. (11) to Eq. (13) to analysis which items will influence the respondents' choice behavior to choose a RD provider.

DATA ANALYSIS AND RESULTS

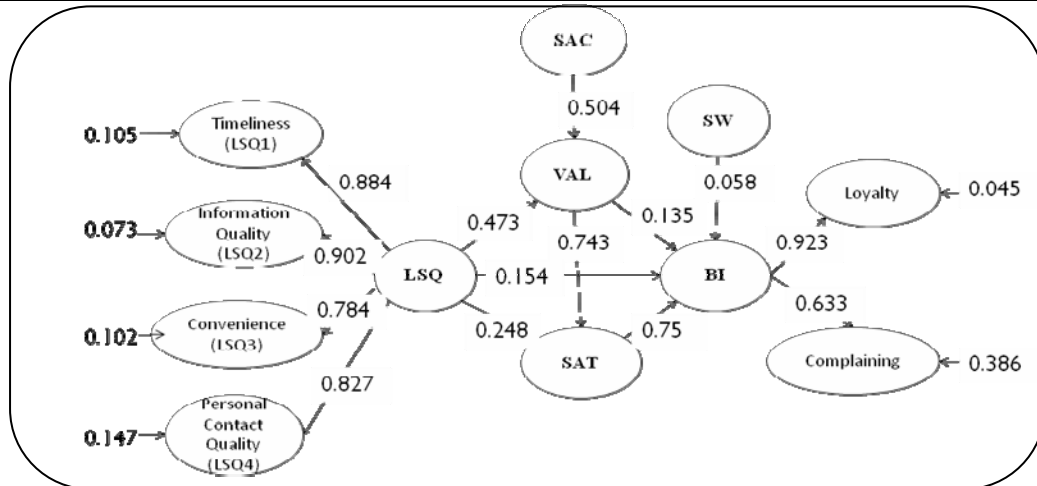
Structural Equation Modeling

Before we use AMOS to validate out hypotheses, we have to validate the reliability of samples firstly. Cronbach's α , standardized loading and t-value were estimated to display reliability and convergent validity of the constructs. All of measurements' standardized factor loadings, composite reliability values, each average variance extracted value and Cronbach's α for each corresponding factor reached beyond the cutoff level. As a consequence, we conclude those items are consistent to describe construct and construes have good convergent validity.

Table 1 presents that $\frac{\chi^2}{df}$ is 4.554 which falls below the more liberal upper limit of 5.0 (Hair et al., 1998). Another three fit measures of CFI, NNFI and RMSEA are all fit the threshold values of 0.9 and 0.08 respectively. The GFI, AGFI, NFI and RFI indexes fall within the acceptable range. The most indexes of the goodness-of-fit measures suggest a well-fitting model, therefore, we can claim this structural model have great goodness-of-fit.

Table 1 Model Fit of Research Model

Absolute Indexes of Fit							Incremental Indexes of Fit			
Fit Measures	Chi-square	Chi-square/df	RMR	GFI	AGFI	RMSEA	NFI	NNFI	RFI	CFI
Results	2053.634	4.554	0.115	0.854	0.83	0.069	0.894	0.907	0.883	0.915



Note: LSQ=logistics service quality; VAL=perceived value; SAC=perceived sacrifice; SAT=customer satisfaction; SW=switching cost; BI=customer behavioral intention.

Figure 1 Structural Model

Figure 2 shows that all the eight proposed hypotheses are confirmed. The customer behavioral intention will affect by logistics service quality, perceived value, customer satisfaction and switching cost. And the total effect of customer satisfaction (SAT) is higher than other constructs on consumer behavioral intention (BI). It means SAT has more power to influence the consumer behavioral intention than perceived value (VAL) or logistics service quality (LSQ).

Logit Model

Discrete choice analysis is assumed that decision-makers select the alternative with the highest utility. Thus, the utility of an alternative includes a deterministic portion which is a function of the attributes of the alternative and characteristics of the decision-maker and a random component which represents unobservable components of the utility function. The characteristics variables of participants are socioeconomic variables, like gender, age...etc. The latent (unobservable) variables are the constructs of logistics service quality, including timeliness, information quality, convenience and personnel contact quality. The attributes of alternative are as delivery time and delivery charge. For estimating the choosing behavior a data subset of 697 observations out of the original 755 was selected, for which there is full information on the choice variable. The choice model is estimated using the NLOGIT 3.0 software and the

Maximum Likelihood method. All estimates have plausible signs (except the dummy for marital status, education, area and occupation in the model for respondents). The costs were combined with income variables in various ways. The estimated coefficients for the binary logit model are shown as Table 2.

Table 1 The Estimation Results of Binary Logit Model

Variable	Binary Logit Model		
	Coefficient	t-value	P-value
Constant(7-11)	0.18387	1.16761	0.24297
<u>Attributes of respondents</u>			
Delivery charge/INCOME	-60.80720	-1.82019**	0.06873*
Dummy for Area-of-Southern Taiwan	0.57759	2.79906**	0.00513*
Dummy for Occupation-of-Employee of company	-0.36246	-1.80812**	0.07059*
<u>Latent variables for LSQ</u>			
Information Quality	0.72766	2.08570**	0.03701*
Convenience	1.74381	5.26166**	0.00000*
Observations	699		
Log-likelihood	-397.90040		
“Rho ² ” w.r.t. 0	0.17640		

Notes: delivery charge per once divided by income per month; ** t-value >1.645;

* p<0.1.

The likelihood ratio for the best results of binary logit model is 0.17640. The calibration results description that: the variables for gender, age, marital status, education were removed, because their estimates are clearly insignificant now. The variables for area has a positive impact on RD provider choice behavior: people live in the south Taiwan are prefer to choose 7-11 to be the RD provider, possibly because the brand preference of 7-11 in south Taiwan is high. Employees of company have a higher probability to choose non-7-11 RD provider implies they consider not only the brand preference but also the distance from the living circle. If delivery charge (of the income per month for the respondents) is high, the probability of replacement RD provider is higher. The constructs of LSQ, such as information quality and convenience have a positive impact on RD provider choice behavior: the franchise stores that RD provider offer the more near is, the more consumers preferred; the RD provider supply the more full information is and the interface of the information system the more friendly is, the more consumers preferred.

We also report the results of policy simulations runs in which one variable is changed and everything else is assumed to remain constant. All simulation results reported here are obtained using the binary logit model (final column in Table 2). The results are expressed as percentage differences relative to the base run. These results therefore give predictions of the impact of the respective policy measures only.

Table 3 showed that the choice behavior model itself is sensitive to changes in information quality (SQ2) and convenience (SQ3). For the 7-11 and CVS, each to step up one service level of the information quality construct will increase the market share 17.201% and 17.620%. Separately to improve one service grade of the convenience construct will increase market share

34.246% and 35.946%. It will have seriously different on the market share.

Table 3 Simulation results for model system with a policy-sensitive

	7-11	CVS
base	61.547%	38.543%
7-11		
Delivery charge+10%	59.553%(-1.994%)	40.447 %(+1.994%)
Delivery charge+30%	55.500%(-6.047%)	44.500 %(+6.047%)
Delivery charge-10%	63.495 %(+1.948%)	36.505%(-1.948%)
Delivery charge-30%	67.195 %(+5.648%)	32.805%(-5.648%)
SQ2+1 grade	78.749 %(+17.201%)	21.341%(-17.201%)
SQ3+1 grade	95.793 %(+34.246%)	4.297%(-34.246%)
CVS		
Delivery charge+10%	63.578 %(+2.031%)	36.422%(-2.031%)
Delivery charge+30%	67.340 %(+5.793%)	32.660 %(-5.793%)
Delivery charge-10%	59.435%(-2.112%)	40.565 %(+2.112%)
Delivery charge-30%	55.054%(-6.493%)	44.946 %(+6.493%)
SQ2+1 grade	43.927%(-17.620%)	56.163 %(+17.620%)
SQ3+1 grade	25.601%(-35.946%)	74.489 %(+35.946%)

CONCLUSION AND SUGGESTION

Conclusion and Implications

The goal of this research was to understand the crucial factors of logistics service quality which are important to affect consumers to choose a RD provider. To do so, eight respective hypotheses are postulated, and examined through the AMOS analytical approach, where a hypothetical model is established to analyze these constructs and their correlations in the proposed conceptual framework. And then through the Binary Logit Model to analysis what items will influence customers to choose the RD provider to pick-up the goods at those convenience stores.

Based on the survey data collected randomly in Taiwan, the numerical results of hypotheses have presented that the logistics service quality, service value, perceived sacrifice, customer satisfaction and switching cost all have positive effects on customer behavioral intention. Furthermore, logistics service quality and perceived value are determinants of customer satisfaction although perceived value shows a greater influence. Besides, SEM analysis provided support that switching cost dimension is directly affected on behavioral intention. Moreover, there are two mentioned dimensions of logistics service quality, such as information quality and convenience, have significant effect to influence consumers to choose the RD provider in the binary logit model, From the simulation results, we know information quality and convenience have more sensitivity to changes in the market share.

The findings have both managerial and research implications. For managers of the RD providers, how to offer the consumer satisfied quality becomes the essential running methods of the service industry businessmen. Maintaining a great quality relationship with the customers will usually lower the customers' uncertainty and increase their sense of security. Moreover, how to maintain a great relationship with customers also becomes an important issue for the service industry businessmen. Additionally, SEM analysis and binary logit model indicate that an RD provider should maintain the attributes of LSQ: timeliness, information quality, convenience and personnel contact quality, and focus to improve the advantages: the more accessibility of convenience stores and the more full information of delivery goods given, the more consumers preferred.

Limitations and Suggestions

This research has through the SEM to interpret the relationships among service quality, perceived value, perceived sacrifice, customer satisfaction, switching cost and customer behavioral intentions; and through the binary logit model to estimate what items would influence customers to choose the RD provider in the C2C e-commerce context. Although the empirical findings are useful and may contribute to the extant literature for further validation, there are some limitations to this study that future researchers can address

1. According to previous researches, timeliness and information are important factors for goods delivery; convenience is a concerned item for consumers to decide the pick-up point. And price comparison also is considered as a determinant of consumer behavior. But in our study, it seems to be useless. We think the reason is it should be isolated from consumer perceived value. The future research can consider brand preference and price comparison as a single construct respectively and analyze the effects caused by brand preference and price comparison more clearly.
2. Our data are all focused and gathered in Taiwan, so the conceptual framework proposed by us is suitable for Taiwan people. But consumers with different culture may not be explained by this conceptual framework. Future research can collect samples from other country and compare the difference.

REFERENCE

1. Bienstock, Carol C., John T. Mentzer, and Monroe Murphy Bird, "Measuring Physical Distribution Service Quality", *Journal of the Academy of Marketing Science*, vol. 25, 1997, 31-44.
2. Ben-Akiva, Moshe, Mcfadden, Daniel, Gärling, Tommy, Gopinath, Dinesh, Walker, Joan, Bolduc, Denis, Börsch-Supan, Axel, Larichev, Oleg, Morikawa, Taka, Polydoropoulou, Amalia and Rao, Vithala, "Extend Framework for Modeling Choice Behavior", *Marketing Letters*, vol. 10(3), 1999, 187-203.
3. Ben-Akiva, Moshe and Walker, Joan, "Generalized Random Utility Model", *Mathematical Social Sciences*, vol. 43, 2002, 303-343.

4. Cronin, J. J., Jr., and Taylor, S. A., "Measuring service quality: A reexamination and extension", *Journal of Marketing*, vol. 56(3), 1992, 55-68.
5. Engel, J. F., Blackwell, R. D. and Miniard, P. W., *Consumer Behavior* (8 ed.): Fort Worth: Dryden Press, 1995.
6. Gupta, Alok, Bo-chiuan Su, and Zhiping Walter, "An Empirical Study of Consumer Switching from Traditional to Electronic Channels: A Purchase-Decision Process Perspective", *International Journal of Electronic Commerce*, vol. 8(3), 2004, 131-161.
7. Heide. Jan B. and Allen M. Weiss, "Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets", *Journal of Marketing*, vol.59, 1995, 30-43.
8. Hsu Ching-Wen, "The Relationships among Service Quality, Perceived Value, Customer Satisfaction, and Behavioral Intentions: An Empirical Study of Online Shopping", National Cheng Kung University Master's Thesis, 2007.
9. Lambert, Douglas M., James R. Stock, and Jay U. Sterling, "A Gap Analysis of Buyer and Seller Perceptions of the Importance of Marketing Mix Attributes", *Enhancing Knowledge Development in Marketing*, Chicago: American Marketing Association, 208, 1990.
10. Lambert, Douglas M., Garcia-Dastugue, Sebastian J, Croxton, Keely L, "An Evaluation of Process-Oriented Supply Chain Management Frameworks", *Journal of Business Logistics*, vol. 26(1), 2005, 25-51.
11. Mentzer, John T., Roger Gomes, and Robert E. Krapfel Jr., "Physical Distribution Service: A Fundamental Marketing Concept", *Journal of the Academy of Marketing Science*, vol.17, 1989, 53-62.
12. Mentzer, John T., Daniel J. Flint, and G. Tomas M. Hult, "Logistics Service Quality as a Segment-Customized Process", *Journal of Marketing*, vol. 65(4), 2001, 82-104.
13. Oliver, R. L., "A cognitive model of the antecedents and consequences of satisfaction decisions", *Journal of Marketing Research*, vol. 17(4), 1980, 460-469.
14. Parasuraman, A., "Reflections on gaining competitive advantage through customer value", *Journal of the Academy of Marketing Science*, vol. 25(2), 1997, 154-161.
15. Parasuraman, A., Zeithaml, V. A. and Malhotra, "A. E-S-QUAL: A multipleitem scale for assessing electronic service quality", *Journal of Service Research*, vol. 7(3), 2005, 213-233.
16. Sweeney, J. C., Soutar, G. N., and Johnson, L. W., "Retail Service Quality and Perceive Value", *Journal of Retailing and Costomer Services*, vol.4(1), 1997, 39-48.
17. Wen Chieh-Hua, Lawrence, W. L, and Cheng Hsiu-Ling, "Structural Equation Modeling to Determine Passenger Loyalty Toward Intercity Bus Services", *Journal of the Transportation Research Board*, No. 1927, 2005, 249-255.
18. Zeithaml, V. A., "Consumer perceptions of price, quality, and value: A meansend model and synthesis of evidence", *Journal of Marketing*, vol. 52(3), 1988, 2-22.
19. Zeithaml, V. A., Berry, L. L., and Parasuraman, A., "The Behavioral Consequences of Service Quality", *Journal of Marketing*, vol.60(2), 1996, 31-46.
20. Zeithaml V. A., A. Parasuraman, and Arvind Malhotra,"Service Quality Delivery Through Web Sites: A Critical Review of Extant Knowledge", *Journal of the Academy of Marketing Science*, vol.30 (4), 2002, 362-375.