

藥品通路零售商買方行為之研究

The Study of Pharmaceutical Retailers' Buying Behavior

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摘要：本研究將以藥品零售業者觀點切入，並以西藥代理商採購或寄賣的過程中所建立之品牌權益、藥品零售業者對於商品所知覺到的價值、買賣雙方彼此的關係品質及所承擔之風險等四項作為研究之前因變項，來討論影響藥品零售業者忠誠度之因素。藉此用以瞭解與發展西藥代理商之行銷策略。本研究以路徑分析及差異性分析等方法加以深入討論。並得到以下之結論：（1）在本研究中關係品質與知覺風險之間無顯著關係、（2）知覺風險與顧客忠誠度之間有顯著關係及（3）不同的零售業者統計變數對於品牌權益、知覺價值、關係品質、知覺風險及顧客忠誠度之間具有顯著差異。

關鍵詞：品牌權益、知覺價值、關係品質、知覺風險、顧客忠誠度、藥品零售商

Abstract: In this study, we use a point of view from pharmaceutical retailers in the process of purchasing or consigning for sale from pharmaceutical distributor and try to explore how the brand equity, retailer's perceived value for products, the relationship quality between seller and buyer and the perceived risk which are the antecedent factors will be used to test the influence to the loyalty of drug retailers and to realize their marketing strategy. We also used the path analysis and differential analysis to make the results are as following: (1) the relationship quality has non-significant influence to the perceived risk, (2) the perceived value has non-significant influence to the customer loyalty and (3) the statistical variables



of different retailers to the brand equity, perceived value, relationship quality, perceived risk and customer loyalty have significant difference.

Keyword: Brand equity, Perceived value, Relationship quality, Perceived risk, Customer loyalty, Pharmaceutical retailers

1. Introduction

In recent years, Taiwan national health insurance, separation of dispensing from medical practice, participation in WTO, increasing awareness of health, aging of population and related national policies have been the factors contributing to the future decrease of average selling prices of drugs. Enterprises used to focus on market development and striving for new customers in marketing in the past. Now, they turn their future target on how to maintain loyalty of existing customers.

The research problem of this study, it aims at establishing the model of brand equity, perceived value, relationship quality, perceived risk and loyalty in selling business industry according to literature review. The proposition of this paper is to study the purchase behavior in patent medicine in selling business industry.

The literature published by scholars is collected and organized. Brand equity is divided into financial, marketing and complex viewpoints. Bonner and Nelson (1985) suggested that brand equity refers to good will derived from a brand. Morgan and Hunt (1994) thought that brand equity refers to selling business industry's perception of the values brought by a brand to an individual. Smith (1991) pointed out that brand equity refers to measurable financial values built up through transactions. Such transactions are facilitated by successful activities in relating to a product with that brand. It focuses on exchange activities and measurable values.

Kotler (1999) explained that a positive difference between the overall perceived value and overall perceived cost by the selling business industry shows that customers perceive values. Sirdeshmukh, Singh and Sabol (2002) explained that perceived value refers to the difference between received benefit and paid cost when selling business perceive that they are able to maintain the relationships with pharmaceutical agents. Henning-Thurau and Klee (1997) thought that any business relationships are based on the transactions of services or products. Relationship quality refers to the same concept applied to product quality. Relationship quality can be regarded as appropriateness in fulfilling the requirements for maintaining customer relationships.

Keating, Rugimbana and Quazi (2003) suggested that relationship quality is distinct from service quality. Relationship quality is regarded as representations of trust, communication, cooperation and values. "Perceived risk" arises when salesmen are facing uncertain conditions for purchasing products or services since they cannot predict the results (Bauer, 1960). Perceived risk refers to the evaluation on certain product or purchase condition made by salesmen, including the degree of risk they can tolerate (Dowling, 1986). Peppers, Rogers and Dorf (1999) used the concept of customer share to explain



customer loyalty. Customer share refers to more products or services sold by a pharmaceutical retailer for pharmaceutical agent. Jones and Farquhar (2003) thought that customer loyalty is determined by the relationship strength between attitude and behavior.

2. Research Methods

In this study, we based on the product's brand equity by pharmaceutical dealers, product's perceived value by pharmaceutical retailers, relationship quality by the seller and buyer and perceived risk to bear as the antecedent factors of this research to investigate the influence factors to the pharmaceutical retailers loyalty, and setting and discussing the involving level as the interfacing of variable (see Figure 1).

2.1 Construct Relationship

(1) The Relationship between Brand Equity and Perceived Value

For empirical studies, Yoo *et al.*, (2000) found out that the brand equity has positive influence to the customer and companies perceived values based on the Aaker's brand equity model. Baldauf *et al.*, (2003) also showed the same research results and in which the perceived quality, brand perceived value and brand loyalty are three basic factors for company performance, customer value and Protégé factor of purchase intention.

(2) The Relationship between the Brand Equity and Relationship Quality

Kumar *et al.*, (2003) revealed that the customer perceived value of a company, brand equity and channel equity influenced the relationship intention. Fournier (1998) evidenced that a good interaction between brand and customer was helpful to enhance the relationship quality between the buyer and seller.

(3) The Relationship between the Brand Equity and Perceived Risk

Mitchell (1988) proposed a well-established brand can effectively reduce the customer perceived risk. Tan (1999) further evidenced both of well-established and brand image could reduce the perceived risk.

(4) The Relationship between the Perceived Value and Relationship Quality

Breuer (2006) pointed out the value usually present as two ways, the one is the value which felt after a customer used the product, and the other is the profit brought by the customer. Anderson and Sullivan (1993) showed that perceived value positively affected the customer satisfaction. Wang *et al.*, (2004) considered that customer perceived value had influenced on the performance of customer relationship management, which means higher perceived value cause better relationship quality.

(5) The Relationship between the Perceived Value and Customer Loyalty

Arora and Singer (2006) found out that the customer attitude; satisfaction, perceived value and intention were the key factors of success. In which, the customer satisfaction and value will influence the consumption attitude and further affect the repurchasing intention. Patterson and Spreng (1997) and Oh (1999) proposed the perceived value had positive influence on the customer satisfaction and purchasing intention. Through discussed the relationship among service quality, customer satisfaction



and service value, Cronin *et al.*, (2000) found out that the customer perceived service quality has positive influence on the behavior intention.

(6) The Relationship between the Relationship Quality and Perceived Value

Pires *et al.*, (2004) found out that a satisfied pre-purchase experience was helpful to decline the customer perceived risk in repurchasing. Several studies on discussing the relationship between trust and the perceived risk proposed that lower perceived risk origins higher trust (Ganesan, 1994; Mayer *et al.*, 1995). Therefore, it can be learned that better relationship quality can decline the customer perceived risk.

(7) The Relationship between the Relationship Quality and Customer Loyalty

Bettencourt (1997) found out that customer pro-social behavior could be an important indicator of relationship quality between customers and companies. That is, a customer is willing to provide more opinions to enterprises when they rely on the enterprises. Garbarino and Johnson (1999) revealed the customers had higher relationship with companies; their trust to companies could enhance the relationship promise between sellers and buyers.

(8) The Relationship between the Perceived Risk and Customer Loyalty

Some studies proposed that customer will perceive different risk degrees before or after their purchasing. If the perceived risk reach a level, the customer purchasing intention will decrease (Garretson and Clow, 1999). On the other hands, the perceived risk has negative influence on the customer purchasing intention or loyalty (Vijayasarathy and Jones, 2000; Pavlou and Gefen, 2004).

(9) The Influence of Different Involvement Degree

Blackwell *et al.*, (2001) considered that different involvement degree causes the different decision in the purchasing process for a customer. Several studies also support this point (Andrews *et al.*, 1990; Spreng and Mackoy, 1996).

2.2 Research Framework and Hypothesis

Based on the statement of Section 2.1, the hypotheses of this study can be organized as follows. The research structure is shown in Figure 1.

- H₁ : Brand equity is positively associated with perceived value.
- H₂ : Brand equity is positively associated with relationship quality
- H₃ : Brand equity is negatively associated with perceived risk.
- H₄ : Perceived value is positively associated with relationship quality.
- H₅ : Perceived value is positively associated with customer loyalty.
- H₆ : Relationship quality is negatively associated with perceived risk.
- H₇ : Relationship quality is positively associated with customer loyalty.
- H₈ : Perceived value is positively associated with customer loyalty.



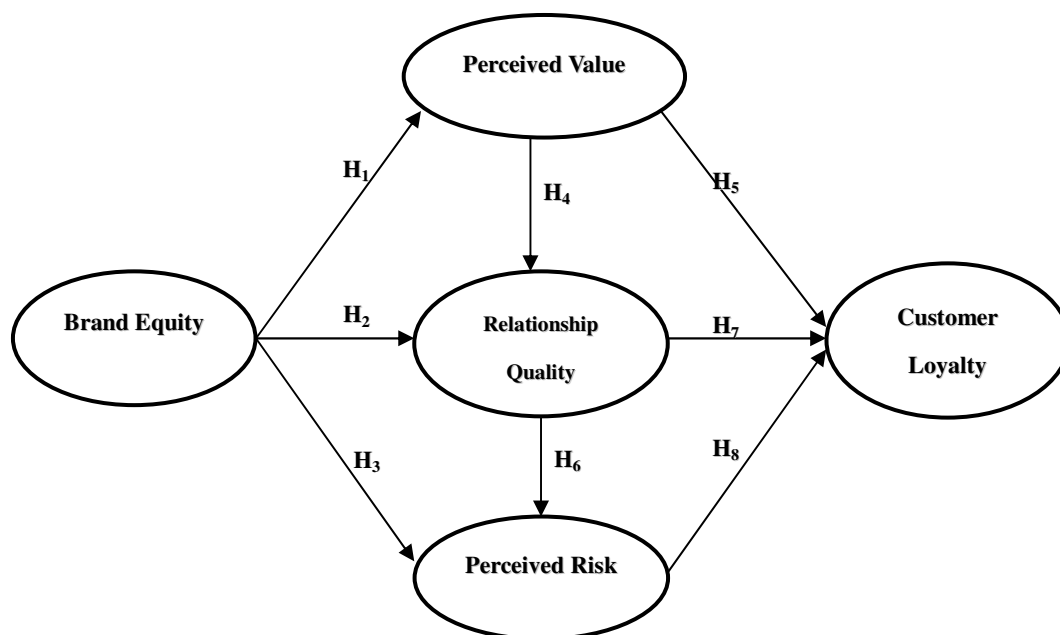


Figure1 The Research Structure

2.3 Sampling and Approach of Data Analysis

The questions are based on those proposed by scholars and 7-point Likert Scale is used to score. The otherwise, SPSS14.0 is applied in the study to analyze the descriptive statistics, reliability, validity, correlation analysis, regression analysis and path analysis.

Pharmaceutical retailers are divided into the area of north, middle and south os Taiwan for sampling. 390 questionnaires were distributed to the retailers for import pharmaceutical agents from October 5, 2008 to November 1, 2008 and from April 3 to April 25, 2009. 260 valid questionnaires were collected with a return rate of 66.67%.

3. Approach of Data Analysis

First of all, this paper used the descriptive statistic to illustrate the sample structure and made single variable test to realize varieties of ideas of respondents. Secondly, the reliability and validity analysis is applied to test the internal consistency of each aspect in the questionnaire. Then, this study calculated the coefficient on each aspect in order to realize their relationship and cause-effect relations included: “brand equity,” “perceived value,” “relationship quality,” “perceived risk” and “customer loyalty.”

Furthermore, the regression and path analysis isolated and predicted the value of independent variables. The “brand equity” makes simple linear regression analysis with the aspects of “perceive value,” “relationship quality” and “perceived risk.” Both of the aspects of “perceived value” and “perceived risk” make the hierarchical regression analysis with the “customer loyalty.” The “perceived value,” “relationship quality” and “perceived risk” had multiple-regression analysis with the “customer



loyalty.” Through above process, it can calculate and select the appropriate value to build the path model which shows the relationship and influence on each variance. Finally, the differential analysis is applied for seeking the major influences and to explore whether or not there are significant difference between the statistic variables and research variables.

3.1 Factor Analysis

This study process the factor analysis based on the KMO value over than 0.7 and Bartlett Sphericity test represents positive. The KMO value of each aspects are: brand equity (0.815), perceived value (0.836), relationship quality (0.870), perceived risk (0.869), customer loyalty (0.803), involvement degree (0.791). And all the p value of Bartlett Sphericity test represents positively. For “brand equity” scale, since the cumulative variance is 58.612%, characteristic value is 3.517 and the factor loading from 0.720 to 0.844 which is higher than the standard value of 0.5. Therefore, it can be learned that this aspect has construct validity.

For “perceived value” scale, there are two factors extracted from this aspect. The cumulative variance is 65.276%, the characteristic value of Factor 1 is 4.345 and Factor 2 is 2.836. About the factor loadings is from 0.710 to 0.922 which is higher than the standard value of 0.5. Therefore, it represents the questions in the scale of perceived value has construct validity; thus, this study named the Factor 1 as “price function and image” and Factor 2 named “emotion and quality function.”

For “relationship quality” scale, there was one factor extracted after making the factor analysis. The accumulative variance is 65.057%, characteristic value is 3.903 and the factor loadings between 0.749 to 0.844 which is higher than standard value of 0.5. Therefore, it represents the questions in this aspect has construct validity. The only one extracted factor still named the “relationship quality.”

For “perceive value” scale, there are two factors extracted from this aspect, the one named “financial risk” and the other named “performance and physiological risk.” The accumulative variance of this aspect is 72.108%, the characteristic values are 1.495 and 4.995, and the factor loadings is from 0.810 to 0.870 which is higher than the standard value of 0.5; thus, it represents the questions in this aspect has construct validity.

For “Customer Loyalty” scale, since the factor loading of the question “You will continue buying the pharmaceuticals from that pharmacy or store even consider their medicine does not have effectiveness” which is 0.332 lower than the standard value 0.5 at first factor analysis; therefore, we make second analysis after deleted this question.

For second analysis of “customer loyalty,” there are one factor extracted from this aspect and still named “customer loyalty.” The accumulative variance is 58.066%, the characteristic value is 2.903, and the factor loading is from 0.614 to 0.836 which is higher than the standard value of 0.5. Therefore, it represents this aspect has construct validity after deleted the question mentioned above.

For “involvement degree” scale, since the factor loading of question “You are satisfy with the pharmaceuticals in that pharmacy or store” is 0.270 lower than the standard value of 0.5; thus, we make



the second analysis after deleted this question.

For the second analysis of “involvement degree,” there are two factors extracted from this aspect and separately named “consideration of selling product” and “consideration of purchasing product.” The accumulative variance is 70.804%, the characteristics are 2.003 and 3.661, and the factor loading between 0.676 and 0.895 which is higher than standard value of 0.5; thus, it represents this aspect has construct validity.

3.2 Reliability Analysis

This study used the Cronbach's α to make reliability analysis. The total reliability is 0.830, the internal consistency of each factor between 0.785 and 0.932 which meet the standard value. The Cronbach's α of each aspect are: “brand equity” is 0.856, “perceived value” is 0.831, “relationship quality” is 0.892, “perceived risk” is 0.881, “customer loyalty” is 0.816 and “involvement degree” is 0.817.

3.3 Descriptive Statistics

For sampling structure, the community/traditional pharmacy has 67.95% in the respondents of pharmaceutical retailers; the opening period for 6-10 years and 11-15 years are 36.68% and 22.78%; the location centralized in north of Taiwan has 49.42%; business type are mostly mixed residential and commercial district 44.68% and residential district 28.09%; the business volume of the pharmacy which sell the retailer's product has 26.85% under the NT\$10,000, 31.13% is from NT\$10,001 ~ 25,000; the frequency of inventory replenishment has 45.35% under one time within a month and 30.7% is one time every month.

From mentioned above, it is known that the sample distribution as: the main respondents of pharmaceutical retailers are community/traditional pharmacy which distributes in the north of Taiwan region of mixed residential and commercial district, their opening period centralized in 6-10 years and the business volume is nearly from NT\$ 10,001~25,000 every month.

The method to carry out his study was using the Likert's seven point scale which average is 4. According to Table 1, it represents the “quality relationship” has the highest average 5.225 which shows there are satisfaction of interaction and trust between the retailers and pharmacies. The lowest one is “perceived risk” 3.268 which shows the retailers have lower “customer loyalty” to the pharmacy.

3.4 Regression and Path Analysis

3.4.1 Hierarchical Regression Analysis

The scale of perceived value and perceived risk has positive influence to the customer loyalty and both of them have effective aspects. The two aspects of perceived value have 51.1% explained variance to the customer loyalty and the two aspects of perceived risk have 14.0%. The regression analysis of customer loyalty is shown in Table 2. In Table 2, the four factors in two aspects are significant and



“emotion and quality function” has good explanation in customer loyalty.

Table1 Descriptive Statistic

Scale/Aspect	Average	Total Average	Order
Brand equity	4.602	4.602	4
Perceived value		4.646	3
Price function and image	5.088		
Emotion and quality function	4.203		
Relationship quality	5.225	5.225	1
Perceived risk		3.268	5
Performance and physiological risk	4.071		
Financial risk	2.464		
Customer Loyalty	4.794	4.794	2

3.4.2 Simple Linear Regression Analysis

There are 5 simple linear regression models (see Table 3) in this study included: (1) brand equity to perceived value (after ratified: $R^2 = 0.580$), (2) brand equity to relationship quality (after ratified: $R^2 = 0.034$), (3) brand equity to perceived risk (after ratified: $R^2 = 0.236$), (4) perceived value to relationship (after ratified: $R^2 = 0.126$) and (5) relationship to perceived risk (after ratified: $R^2 = 0.005$).

Table2 Regression Analysis of Customer Loyalty

Aspect/Factors		Unstandardized β Value	Standardized β Value	t value	Significance
Perceived value	(Constant)	1.436		5.596	***
	Price function and image	0.356	0.325	7.296	***
	Emotion and quality function	0.368	0.582	13.055	***
Perceived risk	(Constant)	6.025		31.077	***
	Performance and physiological risk	-0.16	-0.212	-3.63	***
	Financial risk	-0.206	-0.312	-5.347	***

Note : * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$



Table3 Simple Linear Regression Analysis

Model		Unstandardized β Value	Standardized β Value	t value	Significance
(1)Perceived value	(Constant)	1.806		11.614	***
	Brand equity	0.617	0.763	18.719	***
(2)Relationship quality	(Normal)	4.552		19.593	***
	Brand equity	0.155	0.195	3.154	**
(3)Perceived risk	(Constant)	5.126		23.643	***
	Brand equity	-0.406	-0.488	-8.850	***
(4)Relationship quality	(Constant)	3.609		13.110	***
	Perceived value	0.356	0.360	6.101	***
(5)Perceived risk	(Constant)	3.788		10.742	***
	Relationship quality	-0.101	-0.097	-1.531	0.127

Note : * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

3.4.3 Multi-Regression Analysis

In this study, although all of the perceived value, relationship quality and perceived risk have 55.9% explained variance to the customer loyalty, but there are negative influence from perceived risk to the customer loyalty in the multi-regression analysis (see Table 4). This result represents that the perceived risk cannot be explain and predict the customer loyalty well.

Table4 Muti-Regression Analysis

Model		Unstandardized β Value	Standardized β Value	t value	Significance
Customer Loyalty	(Constant)	1.061		2.944	**
	Perceived value	0.614	0.607	11.825	***
	Relationship quality	0.216	0.209	4.564	***
	Perceived risk	-0.080	-0.081	-1.680	0.094

Note : * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

3.4.4 Path Analysis

For path analysis, the three paths of “brand equity to perceived risk,” “relationship quality to



perceived risk” and “perceived risk to customer loyalty” represents negative relations in the analysis (see Table 5). In which, except for the “relationship quality to perceived risk” and “perceived risk to customer loyalty,” the other six paths have positive relationship (see Table 5).

Table5 Path Analysis

Path Relationship	Standardized β Value	t value	Sign.	Test Result
H ₁ : Brand equity → Perceived value	0.763	18.719	***	Support
H ₂ : Brand equity →Relationship quality	0.195	3.154	**	Support
H ₃ : Brand equity →Perceived risk	-0.488	-8.85	***	Support
H ₄ : Perceived value →Relationship quality	0.360	6.101	***	Support
H ₅ : Perceived value →Customer Loyalty	0.607	11.825	***	Support
H ₆ : Relationship quality →Perceived risk	-0.097	-1.531	0.127	Do Not Support
H ₇ : Relationship quality →Customer Loyalty	0.209	4.564	***	Support
H ₈ : Perceived risk →Customer Loyalty	-0.081	-1.68	0.094	Do Not Support

Note : * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

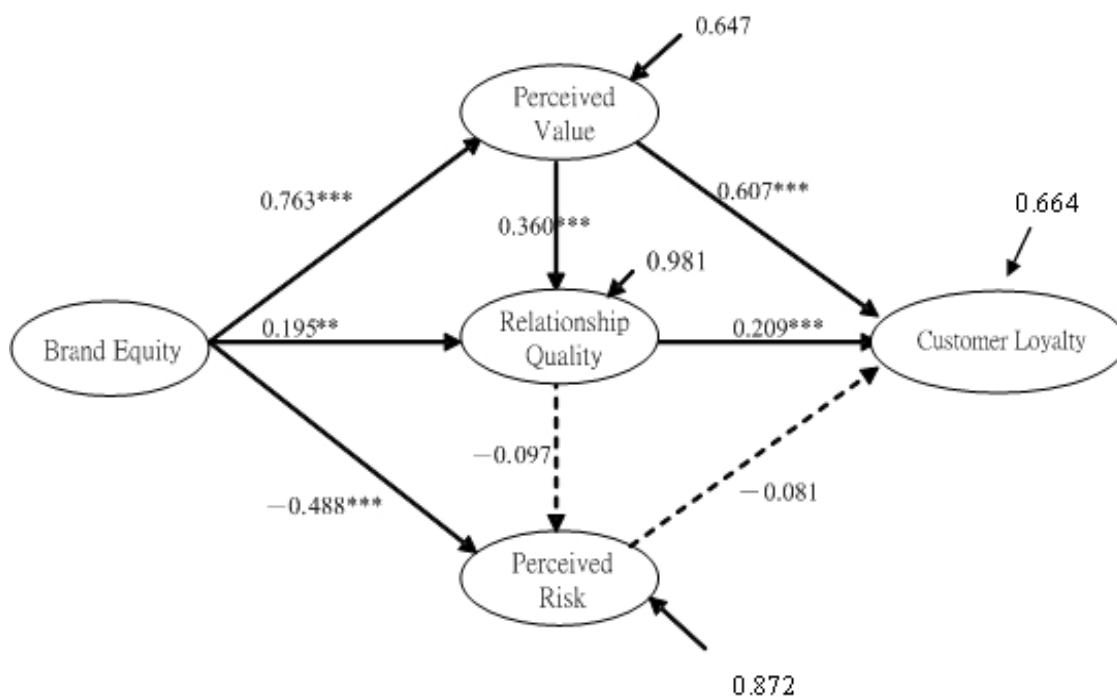


Figure2 Path Analysis



The path analysis (see Table 6) represents there are three factors will positive influence the customer loyalty and all of them are indirect that is “brand equity-perceived value-customer loyalty” has positive direct effect 0.463, “brand equity-perceived value-relationship quality-customer loyalty” has positive direct effect 0.057 and “brand equity-relationship quality-customer loyalty” has positive direct effect 0.041. The total amount of effectiveness is 0.561.

Table6 Influence Path of Customer Loyalty

Influence Path	Indirect Effect
1. Brand equity →Perceived value →Customer Loyalty (0.763*0.607)	0.463
2. Brand equity →Perceived value →Relationship quality →Customer Loyalty (0.763*0.360*0.209)	0.057
3 .Brand equity →Relationship quality →Customer Loyalty (0.195*0.209)	0.041
Total Effect	0.561

3.5 Differential Analysis

This study proceed the *t*-test directs to the business type and applied ANOVA to analyze the sample distribution included opening years, location, business community, business volume per month, and the frequency of inventory replenishment. The details can be seen as the Table 7.

Table7 Differential Analysis of Each Scale

Aspect/Factor	Business Type	Opening Years	Business Community	Business Volume/ Month	Frequency of Inventory Replenishment/ Month
Brand equity		**	***		*
Perceived value					
Price Function and Image			**	**	
Emotion and Quality Function		**	**	***	
Relationship quality			***	***	
Perceived risk					
Performance and Physiological Risk	*	**			
Financial Risk	**		***		
Customer Loyalty		*	***	**	

Note: **p* < 0.05, ***p* < 0.01, ****p* < 0.001



3.6 Analysis of Involvement Degree

Zaichkowsky (1985) pointed out that almost of people belongs to middle involvement, the higher and lower one is about 25%. Thus, this study applied Quartiles to group based on Zaichkowsky's viewpoint. The lowest through 25% represents lower involvement, average is 3 ~ 4.13 and has 80 stores; the range of 25 ~ 75% represents middle involvement, average is 4.25 ~4 .88 and has 126 stores; 75% through highest, average is 5 ~ 6.25 and has 51 stores. There are 3 stores belong to missing, the group characteristic analysis can be seen as the Table 8.

The result shows different involvement degree has positive influence to five variables are: the brand equity, the aspect of "pricing function and image" in perceived value, relationship quality, the aspects of "performance and physiological risk" and "financial risk" in perceived risk, and the customer loyalty.

4. Results and Recommendations

4.1 Management Meanings and Recommendations

Through the path analysis, it is known that the "brand equity" is a driven factor in three paths. This represents the brand equity has the highest influence to the customer loyalty; thus, the pharmaceutical retailers need to consider how to enhance the customer loyalty by their brand awareness and image. In addition, the result of path analysis also shows the enhancement of brand equity can reduce the perceived risk.

Table8 Group Analysis of Involvement Degree

Item	Lower Involvement	Middle Involvement	Higher Involvement
	Community /Traditional	Community / Traditional	Community / Traditional
Business Type	Pharmacy (19.92%)	Pharmacy (37.5%)	Pharmacy (10.55%) Contract Pharmacy (10.55%)
Opening Years	6-10 (11.33%)	6-10 (14.45%)	6-10 (10.55%)
Location	North District of Taiwan (14.06%)	North District of Taiwan (28.52%)	Middle District of Taiwan (9.77%)
Business Community	Mixed Residential and Commercial District (14.22%)	Mixed Residential and Commercial District (21.55%)	Mixed Residential and Commercial District (9.05%)
Business Volume /Month	Lowest than10,000 (9.45%)	10,001-25,000 (14.96%)	10,001-25,000 (9.45%)
Frequency of Inventory Replenishment/mont h (Month)	Lowest one time every month (15.69%)	Lowest one time every month (19.61%)	Lowest one time every month (9.8%)

Note : $n = 260$



Furthermore, all the respondents of pharmaceutical retailers had been divided into three groups as higher, middle and lower involvement; this shows the pharmaceutical agent can make different marketing and establish variety of marketing strategies based on this classification. More details can be seen in the Table 9.

Table9 Management Meanings and Recommendations

Aspect/Factor	Statistic Variable of Retailer	Management Meanings and Recommendations
Brand equity		
Brand equity	(1) Opening above 15 Years	Strengthening brand awareness and evaluation
	(2) North District of Taiwan	
	(3) Education and Culture District	
Perceived value		
Price Function and Image	(1) North District of Taiwan	Enhancing cost effect and social image by purchasing product from that pharmaceutical agents
	(2) Opening above 15 Years	
Emotion and Quality Function	(3) North District of Taiwan	Enhancing positive emotion and product's quality while transaction
	(4) Education and Culture District	
Relationship quality		
Relationship Quality	(1) North District of Taiwan	Strengthening interaction and trust with each other
Perceived risk		
Performance and Physiological Risk	(1) Community / Tradition Pharmacy	Proposing guarantee of pharmaceutical effect and security
	(2) Middle District of Taiwan	
Financial Risk	(1) Community / Tradition Pharmacy	Proceeding promotional project to reduce financial risk
	(2) Opening under 1 year	
	(3) Business District	
Customer Loyalty		
Customer Loyalty	(1) North District of Taiwan	Making improvement based on the recommendation mentioned above
	(2) Education and Culture District	
	(3) Business volume of retailer is nearly from NT\$ 10,001 ~ 25,000 every month.	



4.2 Research Limitation and Recommendation for Future Research

There are some limitations in this research. Responding to this problem, we also proposed the recommendation for the future research. The total amount of valid samples 260 was less than it should actually acquire samples 379 and within 5% sampling error based on the statistic. For future research, it can do the longitudinal studies in order to make complete analysis of relationship between the pharmaceutical agent and retailer.

Since two hypotheses of “relationship quality to perceived risk” and “perceived risk to customer loyalty” did not support in this paper; thus, the future research can make more discussion about these two hypotheses.

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