The effect of store image and service quality on brand image and purchase intention for private label brands

Paul C.S. Wu a,*, Gary Yeong-Yuh Yeh a, Chieh-Ru Hsiao b

a Department of Business Administration, Aletheia University, Taiwan
b Graduate School of Management Sciences, Aletheia University, Taiwan

Abstract

This study aims to investigate the direct effects of store image and service quality on brand image and purchase intention for a private label brand (PLB). This study also investigates the indirect effects mediated by perceived risk and price consciousness on these relationships.

The sample in this study consisted of three hundred and sixty (360) customers of the Watsons and Cosmed chain of drugstores. The pre-test results identified “Watsons” and “My Beauty Diary” as the research brands of the PLB for the two stores, respectively. This study uses LISREL to examine the hypothesized relationships.

This study reveals that (1) store image has a direct and positive effect on the purchase intention of the PLB; (2) service quality has a direct and positive effect on the PLB image; (3) the perceived risk of PLB products has a mediating effect on the relationship between the brand image and the consumers purchase intention of the PLB.

1. Introduction

Private label brands, also known as store brands, are brands owned by the distributor and sold in an exclusive store (Kotler and Armstrong, 1996). As the scale of modern distributors grows, their ability to bargain with manufacturers becomes stronger. In addition, as the economic downturn causes a reduction in consumer income, distributors aggressively build a PLB to increase profits and differentiation (Quelch and Harding, 1996; Richardson et al., 1996). One of the causes for an expanding PLB is that the manufacturers commit to promoting the brand image and transfer the costs to the customers. This raises prices and allows the distributors to participate in the market with lower prices. The annual sales revenue of the PLB worldwide approaches 1 trillion US dollars, and this amount is still increasing (Kumar and Steenkamp, 2007). For retail stores, apart from establishing the differentiation, a PLB can also retain customers and increase yield rate (Hoch, 1996; Private Label Manufacturers’ Association (PLMA), 1999; Richardson et al., 1996). Therefore, developing a PLB becomes an important strategy for distributors.

Previous studies about the PLB can be divided into two categories. The first category addresses the proneness between the PLB versus national brand promotion (c.f. Hoch, 1996; Narasimhan and Wilcox, 1998; Quelch and Harding, 1996). Ailawadi et al. (2001) and Garretson et al. (2002) further identified some similarities and differences between the two groups. The second category discusses the factors that influence customer attitude towards, or consumption of the PLB (c.f. Baltas, 2003; Batra and Sinha, 2000; Burton et al., 1998; Richardson et al., 1996). Research factors appearing in studies in the second category mostly focus on product-level factors and consumer-level factors. Studies on the product-level factors examine product category (DelVecchio, 2001) and perceived risk (Semeijn et al., 2004), whereas studies on the consumer-level factors examine price consciousness (Burger and Schott, 1972; Jin and Sub, 2005; Sinha and Batra, 1999) and reliance on extrinsic cues (DelVecchio, 2001; Batra and Sinha, 2000).

Although previous studies rarely discuss store-level factors, they are becoming increasingly important (Semeijn et al., 2004). Collins-Dodd and Lindley (2003) and Vahie and Paswan (2006) found that when consumers are unfamiliar with the PLB, they use the store image as the cues for purchasing a PLB. Drawing from attribution theory (Sawyer and Dickson, 1984), the combination of continuously low prices and infrequent professionally developed advertising campaigns might contribute to the traditional belief that the quality of private brands is worse than national brands. Therefore, a store and brand image is a means for reducing these quality associations and extending the PLB’s appeal beyond price sensitive segments. For example, 7-Eleven uses the “Open-Chan” (a promotional figure toy) as a symbol to communicate a friendly
store image and enhance the image of its PLB and to attract younger consumers (Qiu, 2006). The service quality of the store is also an important factor influencing the purchasing behavior of customers (Carrillat et al., 2009). Ailawadi and Keller (2004) asserted that retailers could create their brand image by attaching unique association to the quality of their service. Cosmed, a popular chain of drugstores in Taiwan, ensures good quality service by providing consumers with a pleasant physical service environment and a nice shopping experience, successfully enhancing its PLB image (Gao, 2010). However, few previous studies investigate these two factors in the PLB context. This study attempts to fill this gap, at least partially, by examining the effect of the two extraneous variables (store image and service quality) on the brand image and purchase intention of the PLB.

Consumers choose the brand with a better image to reduce the perceived risk. This affects the level of price consciousness and on the purchase intention (Dowling and Staelin, 1994; Rothe and Lament, 1973; Sinha and Batra, 1999). Therefore, perceived risk and price consciousness may be the mediator for the PLB image and the purchase intention. However, previous related empirical studies are rare and they primarily focus only on the mediating effect of price consciousness (Tseng and Hwang, 2003). Another contribution of this study is to integrate and examine the direct and indirect effects mediated by both the perceived risk (a product-level factor) and price consciousness (a consumer-level factor) of the PLB image on purchase intention.

In summary, this study investigates the direct effects of store image and service quality on brand image and purchase intention for the private label brand. This paper also then examines the indirect effects mediated by perceived risk and price consciousness on these relationships. Fig. 1 displays the conceptual framework of this study.

2. Theory and hypotheses

2.1. Research variables

2.1.1. Store image

Martineau (1958) introduced the concept of store image and defined it as the way in which the shopper’s mind pictures the store, partly by its functional qualities and partly by its atmosphere of psychological attributes. James et al. (1976), on the other hand, defined store image as “a set of attitudes based upon evaluation of those store attributes deemed important by consumers.” Grewal et al. (1998) mentioned that a store’s consuming environment, service level, and product quality are so-called store image. In summary, store image is the perception of consumers based on the multi-attributes of a store. This study defines store image as the overall attributes deemed important by consumers.'Grewal defined store image as “a set of attitudes based upon evaluation of those store attributes deemed important by consumers.”

2.1.2. Service quality

Chakraborty et al. (2007) defined service quality as the conformance to customer requirements in the delivery of a service. The service gap model (the PZB model) established by Parasuraman et al. (1985) defines service quality as the overall evaluation attitude. This is the degree and direction of discrepancy between customers’ perceptions and their expectation of what is actually delivered. This study adopts the concept of Cronin and Taylor (1992) and uses the actual customers perceived quality as the service quality index. The concept is simple, easy to measure (Brady et al., 2002; Brown et al., 1993; van Dyke et al., 1997), and the effect is the same. For the dimensions of service quality, this study adopts Brady and Cronin (2001), and Rust and Oliver’s (1994) assertion that used the overall perception of service quality on the customer’s evaluation of three dimensions of the service encounter as the basis for measuring service quality. The dimensions are: (1) interaction quality – the interaction between customers and staffs; (2) service environment quality – the overall atmosphere of the store and the service environment; and (3) outcome quality – the actual service customers receive.

2.1.3. Private label brand image

Aaker (1991) defined brand image as a series of brand associations stored in a consumer’s memory. Keller (1993) defined brand image as the sum the total of brand associations held in the memory of the consumers that led to perceptions about the brand. Keller also classified the associations of brand image into quality dimension and affective dimension. Based on the above research, the PLB image in this study is the association consumers add to PLB products, which leads to perceptions of the PLB.

2.1.4. Perceived risk

The term “perceived risk” originated in the field of psychology. Bauer (1960) believed consumer behavior involves risk in the sense that any action of a consumer will produce consequences that he or she cannot anticipate with anything approximating certainty, and some of which are likely to be unpleasant. This concept is based on the concept of the expected loss produced subjectively due to uncertainty towards the product or service (Stone and Gronhaug, 1993; Sweeney et al., 1999). Cox (1967) further measured perceived risk as a function of the uncertainty of the...
purchase outcomes (in terms of subjective probability) and the consequences associated with unfavourable purchase outcomes. Based on the above literatures, this study defines perceived risk as consumers facing products or services they are not certain of because of some kind of expected loss in mind. This causes unhappiness or unbalance.

2.1.5. Price consciousness

When consumers make a purchase decision focused exclusively on paying low prices, it is price consciousness (Lichtenstein et al., 1993). This occurs when the consumer is unwilling to pay for a higher price for the distinguishing features of a product (Lichtenstein et al., 1993; Monroe and Petrosius, 1981; Sinha and Batra, 1999). They tend to adopt low cost strategies and use price as the judgment standard for purchasing. Low price is often one of the characteristics of the PLB and often becomes the predictor of the PLB purchase (Burger and Schott, 1972; Lichtenstein et al., 1993; Moore and Carpenter, 2006). In summary, this paper defines price consciousness as the level consumers value for price when choosing a certain product.

2.1.6. Purchase intention

Purchase intention represents the possibility that consumers will plan or be willing to purchase a certain product or service in the future. An increase in purchase intention means an increase in the possibility of purchasing (Dodds et al., 1991; Schiffman and Kanuk, 2007). Researchers can also use purchase intention as an important indicator for estimating consumer behavior. When consumers have a positive purchase intention, this forms a positive brand commitment which propels consumers to take an actual purchase action (Fishbein and Ajzen, 1975; Schiffman and Kanuk, 2007).

2.2. Hypotheses development

2.2.1. The effect of store image on the PLB image and purchase intention

When a certain PLB is not popular, consumers speculate the PLB image from the image of the retail store (Vahie and Paswan, 2006). This is because many people can view the PLB as an extension of the brand name of the store itself. Consumers would then use the store image as one of the extrinsic cues to judge the PLB (Ailawadi and Keller, 2004; Collins-Dodd and Lindley, 2003). When consumers have a high perception of a store image, it creates a positive effect on the brands carried by the store (Dhar and Hock, 1997; Pettijohn et al., 1992). Agrawal et al. (1996) and Dhar and Hock (1997) mentioned that a store image influences the judgment of its PLB image. Vahie and Paswan’s (2006) research results confirm that the quality dimension of the store image affects the quality and affection dimensions of the PLB.

In summary, the cue utilization theory suggests that a store image can be a determinant of product quality (Dawar and Parker, 1994). Furthermore, the brand extension literature supports the notion that store associations can generalize to the store’s brands (Collins-Dodd and Lindley, 2003). Moreover, when consumers are unfamiliar with the brand, the store image is often one of the biggest cues for quickly judging the PLB. Therefore, store image has a direct and positive relationship with consumers’ purchase intention for PLB. The more positive a store image, the higher the consumers’ purchase intention would be (Dodds et al., 1991; Greml et al., 1998). Based on the preceding discussion, the following hypotheses are advanced.

H1: Store image has a positive effect on the PLB image
H2: Store image has a positive effect on the purchase intention of the PLB.

2.2.2. The effect of service quality on the PLB image and purchase intention

For an unfamiliar PLB, consumers also speculate about their image from the service quality of the store (Agrawal et al., 1996; Dhar and Hock, 1997). Good service quality would increase consumers’ satisfaction with the store (Anderson et al., 1994; Carrillat et al., 2009; Parasuraman et al., 1985). Therefore, when consumers have a good image of the store from their quality of service, they simultaneously form a positive PLB image.

Service quality is one of the important factors affecting consumer decisions. Therefore, there is a connection between service quality and behavioral intention (Brady et al., 2002). Better service leads to a positive behavioral intention and increases the purchase intention of the consumers and the frequency of going to the store (Carrillat et al., 2009; Cronin and Taylor, 1992; Fornell, 1992; Szymanski and Henard, 2001; Zeithaml et al., 1996). This indicates that when a store provides good service quality, consumer satisfaction with the store increases, and the purchase intention of the PLB products in the store also increases. Based on the preceding discussion, the following hypotheses are advanced.

H3: Service quality has a positive effect on the PLB image.
H4: Service quality has a positive effect on the purchase intention of the PLB.

2.2.3. The effect of the PLB image on perceived risk and purchase intention

Since there are limits to the vending locations and advertising for the PLB, the information related to the PLB products consumers possess is not as complete as the national brand products. Therefore, consumers use extrinsic cues, such as brand image and prices, as the references for evaluating the store’s PLB to reduce the perceived risk of the PLB products (Shimp and Bearden, 1982; Perry and Perry, 1976). When consumers perceive that the brand image is getting better, they have a lower perceived risk (Cox, 1962; Kotler and Keller, 2008; Roselius, 1971). Private label brands can also improve their image to reduce the perceived risk (Dowling and Staelin, 1994). A good image of the PLB can be used as the tool to differentiate themselves from other stores, enhance customer loyalty, and increase profits (Hoch, 1996; Levy and Weitz, 2004; Marcel, 2000; Richardson et al., 1996). For brands with a good image, consumers have a more positive attitude towards the brand and a higher purchase intention (Kamins and Marks, 1991; Laroche et al., 1996; Romanik and Sharp, 2003). An increase in the PLB image enhances the purchase intention of the consumer. Based on this discussion, the following hypotheses are advanced.

H5: The better the PLB image, the lower the perceived risk of the consumers towards the PLB products.
H6: The better the PLB image, the higher the purchase intention of the consumers.

2.2.4. The effect of perceived risk on price consciousness and purchase intention of PLB

Price can become a tool for reducing risk (Erevelles et al., 1999). When the perceived risk of a product is high, the consumers become concerned with the risks of purchasing the product. This produces a high “price-quality” association and consumers perceive high price to mean high quality, which means a reduction in the price consciousness. They choose the product with higher prices to avoid risks. On the contrary, when the perceived risk of a product is low, it produces a low “price-quality” association and increase consumer price consciousness. They are now motivated to find low priced products (Kukar-Kinney et al., 2007; Lichtenstein et al., 1988; Sinha and Batra, 1999).

Consumers tend to avoid risks (Bauer, 1960), meaning that when they perceive risks that seriously affect the purchase decision, they often experience decreased purchase intention.
Perceived risk then is a crucial factor in PLB purchase (Bettman, 1974). Therefore, if consumers perceive high risk for an unfamiliar brand (e.g. PLB), it lowers their price consciousness and reduces their purchase intention (Tseng and Hwang, 2003). They are now not motivated to search for products with lower prices and tend to purchase products from a national brand. However, when the perceived risk is low, the price consciousness increases and the purchase intention for the PLB products are higher (Bettman, 1974; Jacoby and Kaplan, 1972; Narasimhan and Wilcox, 1998; Richardson et al., 1996; Shimp and Bearden, 1982; Taylor, 1974). Based on the preceding discussion, the following hypotheses are advanced.

H7: The perceived risk consumers have towards PLB products has a negative effect on price consciousness of the consumers.
H8: The perceived risk consumers have towards PLB products has a negative effect on the purchase intention of PLB.

2.2.5. The effect of price consciousness on purchase intention of PLB
Price consciousness is a predictor of a PLB purchase (Burger and Schott, 1972). A high price consciousness means consumers tend to adopt low price purchasing tactics (Moore and Carpenter, 2006). Low price is one of the important factors that attract consumers to purchase PLB products. This leads to an increase in the probability of consumers to purchase PLB products (Batra and Sinha, 2000; Burton et al., 1998; Lee, 2008; Tseng and Hwang, 2003; Huang, 2007). Based on this discussion, the following hypothesis is advanced.

H9: As the price consciousness of a consumer increases, the purchase intention for the PLB will also increase.

3. Method

3.1. Measures and measurement

The following section summarizes the measurement scales, which are considered valid and reliable, and have been adapted from previous studies (see Appendix).

3.1.1. Store image

This study treats the store image as a five-dimensional construct consisting of product variety, product quality, price, value for money, and store atmosphere (Collins-Dodd and Lindley, 2003), which is similar to Alawadi and Keller’s (2004) five-dimensional classification. Product variety refers to a consumer evaluation of the variety of product types in the store. Product quality refers to consumers’ subjective evaluation regarding the quality of the products. Price refers to consumers’ judgment of the cheapness of the products. Value for money refers to consumers’ judgment about the relation between the price and value of the products. The store atmosphere refers to consumers’ feeling about the atmosphere of the interior decoration of the store. The scale developed by Collins-Dodd and Lindley also includes the overall attitude of the store image.

3.1.2. Service quality

Service quality is a high-order construct consisting of three sub-dimensions, interaction quality, service environment quality, and outcome quality (Brady and Cronin, 2001). Interaction quality refers to consumers’ evaluation of the quality when interacting with the staffs, service environment quality refers to consumers’ judgment about the overall environment of the store, whereas outcome quality refers to consumers’ evaluation of the purchase experience in the store. This study measures service quality using a 6-item scale on the three dimensions.

3.1.3. PLB image

This study treats the PLB image as a two-dimensional construct that encompass quality and affection (Keller, 1993). Quality refers to the cognition of the quality of the PLB products, whereas affection refers to preference or satisfaction regarding the PLB. Researchers measure the PLB image using the 5-item scale developed by Vahie and Paswan (2006), which measures the PLB image on the dimensions of quality and affection.

3.1.4. Perceived risk

This study uses the three main risk dimensions (financial risk, functional risk, and physiological risk) and the scale developed by Stone and Gronhaug (1993) for measurement. Financial risk is the perceived possibility that the price of the product purchased is higher than its value, which causes money loss. Functional/performance risk refers to the possibility of the product being unable to provide consumers the expected benefit. Physiological/body risk refers to the possibility of the product being harmful to consumers’ body when they purchase a faulty product or when the product will be over-used. Nine items encompassing these three dimensions were adapted to measure perceived risk of PLB products.

3.1.5. Price consciousness

This study measures price consciousness using the 4-item scale developed by Sinha and Batra (1999).

3.1.6. Purchase intention

This study adapts the 2-item scale established by Knight and Kim (2007) to measure the purchase intention of the PLB.

All items used for measuring constructs of sub-dimensions were measured on a 7-point Likert scale anchored by “1 = Strongly Disagree” and “7 = Strongly Agree” (see Appendix).

3.2. Research design

People have a tendency to pay attention to their own health (Schiffman and Kanuk, 2007). Drugstores, which are in vigorous development, are retail stores that satisfy the pursuit of this type of lifestyle. According to a survey taken by AC Nielsen (2007), 74% of Taiwanese consumers buy health and beauty products in drugstores. Previous studies focused on PLB mainly looked at hypermarkets. Therefore, this study chooses drugstores as the research industry to enhance the external validity of PLB research. This study selects the two most popular chains of drugstores in Taiwan as the research stores. This includes surveys conducted with the use of questionnaires. Initially, researchers conduct a pre-test with the purpose of understanding consumers’ purchase status for the PLB products in these two drugstores and their impression regarding the PLB. There were 40 questionnaires collected from these two drugstores. This study selects the PLB from these two drugstores that found most impressive, as the research brands for the main study- Watson’s “Watson’s” (impressed ratio 85%) and Cosmed’s“My Beauty Diary” (impressed ratio 60%) are chosen as the research PLB from the results of the pre-test.

The respondents for the main study consist of consumers from Watsons and Cosmed in Taipei area. This study selects four retail stores of each of these two drugstores by random sampling and distributes 50 questionnaires in each store. The final sample was selected using a systematic design. Every fifth consumer was asked to participate in the study, after a random starting point. There were 400 questionnaires distributed, of which, 360 effective questionnaires were returned (175 from Watsons, 185 from Cosmed). The sample contained a higher proportion of females (79.7%) than males (20.3%). A large percentage of younger consumers, aged 21–30 years, was also included in the sample (71.7%). Although the sample was skewed towards women and younger consumers,
this is not uncommon in Taiwan’s drugstore sample, as evidenced from a large-scale online survey (Pollster Online Survey, 2009).

4. Results

4.1. Structural equation model

This study adopts structural equation modeling (SEM) for data analysis, using the software LISREL (Joreskog and Sorbom, 1986). There were sub-dimensions for three constructs, service quality, PLB image, and perceived risk, in this study. All of the Cronbach’s α of each of the sub-dimensions were greater than 0.7 (0.795–0.950), which indicates high reliability (Nunnally, 1987). Therefore, this study uses the composite variable approach to reduce the number of parameters and simplify the data analysis. The average of the variables under each sub-dimension is the observation variable for that sub-dimension. Fig. 2 shows the SEM model of this study. Complete SEM consists of a measurement model and structural model. The measurement model verifies the reliability and validity measured by latent variables. The structural model verifies the causal relationships between the hypotheses. Therefore, researchers carry out the data analysis of this study in two stages (Anderson and Gerbing, 1988).

4.1.1. Measurement model

Table 1 shows that the factor loadings (λ) for each of the observation variables exceed the cut-off value of 0.5 (0.54–0.95) and the t values are all larger than 2.567 (p < 0.01). Therefore, this provides evidence of convergent validity. Apart from the average variance extracted (AVE) of the store image being slightly smaller than 0.5, the AVE of the remaining five latent variables exceeds 0.5. In addition, Table 2 indicates that apart from the square-root of AVE of store image (0.68) being slightly smaller than the correlation coefficient between store image and service quality (0.76), the square-roots of AVE of other latent variables were larger than the absolute values of the correlation coefficients among the latent variables. This provide evidence of discriminant validity (Fornell and Larcker, 1981). The composite reliability (CR) (See Table 1) of each latent variable exceeds the suggested cut-off value of 0.7, indicating that the reliability of all constructs was good (Bagozzi and Yi, 1988; Hair et al., 1998). Table 3 displays the descriptive statistics for the variables.

4.1.2. Structural model

Model A in Table 4 presents the model-fit results of LISREL analysis. Though these results are adequate, there remains some room for model modification. The modification index (MI) between PLB image and price consciousness (7.47) was larger than 5, which indicates there may be a causal relationship between them. When including this parameter, the model-fit slightly improved (Model B). However, this resulted in a positive effect of perceived risk on price consciousness, which contradicts the theory. Therefore, this study abandons Model B.

The results of Model A reveal that the PLB image influence the consumers price consciousness through perceived risk, but price consciousness does not affect the purchase intention of the PLB. Therefore, this study deletes price consciousness from the model to compare the difference between the relationship of perceived risk and purchase intention, without (Model C) or with (Model A) the mediator, price consciousness. The results show that the model-fit of Model C was worse than Model A. Therefore, this paper refers to Model A as the final result, and Fig. 3 shows the structural model. These results support H2, H3, H5, H7, and H8, but not H1, H4, H6, and H9.

Fig. 3 shows that marketers can directly improve the PLB image by enhancing the service quality of the store. In addition, improving PLB image helps to reduce the perceived risk of the PLB, which directly increases the purchase intention of the consumers towards

---

**Fig. 2.** Linear structural equation model of research variables.
### Table 1
Reliability and validity analysis.

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Observation variables</th>
<th>( \lambda )</th>
<th>( T ) value</th>
<th>Error term</th>
<th>SMC*</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store image</td>
<td>X1</td>
<td>0.58</td>
<td>11.28</td>
<td>0.67</td>
<td>0.33</td>
<td>0.83</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>X2</td>
<td>0.68</td>
<td>13.81</td>
<td>0.54</td>
<td>0.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X3</td>
<td>0.54</td>
<td>10.47</td>
<td>0.71</td>
<td>0.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X4</td>
<td>0.64</td>
<td>12.85</td>
<td>0.59</td>
<td>0.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X5</td>
<td>0.71</td>
<td>14.75</td>
<td>0.49</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X6</td>
<td>0.85</td>
<td>19.14</td>
<td>0.27</td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality</td>
<td>X7</td>
<td>0.72</td>
<td>14.82</td>
<td>0.49</td>
<td>0.51</td>
<td>0.82</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>X8</td>
<td>0.84</td>
<td>18.46</td>
<td>0.30</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X9</td>
<td>0.84</td>
<td>18.37</td>
<td>0.30</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLB image</td>
<td>Y1</td>
<td>0.79</td>
<td>17.33</td>
<td>0.37</td>
<td>0.63</td>
<td>0.83</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Y2</td>
<td>0.85</td>
<td>20.43</td>
<td>0.20</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived risk</td>
<td>Y3</td>
<td>0.72</td>
<td>15.07</td>
<td>0.48</td>
<td>0.52</td>
<td>0.83</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Y4</td>
<td>0.92</td>
<td>20.82</td>
<td>0.16</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y5</td>
<td>0.70</td>
<td>14.42</td>
<td>0.51</td>
<td>0.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price consciousness</td>
<td>Y6</td>
<td>0.74</td>
<td>16.18</td>
<td>0.45</td>
<td>0.55</td>
<td>0.91</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>Y7</td>
<td>0.77</td>
<td>17.07</td>
<td>0.40</td>
<td>0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y8</td>
<td>0.95</td>
<td>23.50</td>
<td>0.10</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y9</td>
<td>0.89</td>
<td>21.19</td>
<td>0.21</td>
<td>0.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase intention</td>
<td>Y10</td>
<td>0.93</td>
<td>22.59</td>
<td>0.13</td>
<td>0.87</td>
<td>0.94</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Y11</td>
<td>0.95</td>
<td>23.29</td>
<td>0.10</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* SMC = squared multiple correlations.

### Table 2
Correlation coefficient of latent variables.

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>1 Store image</th>
<th>2 Service quality</th>
<th>3 PLB image</th>
<th>4 Perceived risk</th>
<th>5 Price consciousness</th>
<th>6 Purchase intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Diagonal value indicated the square root of AVE of individual latent variable.

### Table 3
Descriptive statistics of variables and sub-dimensions.

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Sub-dimensions</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store image</td>
<td>4.863</td>
<td>1.145</td>
<td>Interaction quality</td>
<td>4.583</td>
<td>1.255</td>
</tr>
<tr>
<td>Service quality</td>
<td>4.640</td>
<td>1.195</td>
<td>Service environment quality</td>
<td>4.608</td>
<td>1.213</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Outcome quality</td>
<td>4.731</td>
<td>1.117</td>
</tr>
<tr>
<td>PLB image</td>
<td>4.613</td>
<td>1.226</td>
<td>Quality</td>
<td>4.688</td>
<td>1.240</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Affective</td>
<td>4.502</td>
<td>1.207</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>3.754</td>
<td>1.343</td>
<td>Financial risk</td>
<td>3.208</td>
<td>1.235</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Performance risk</td>
<td>3.938</td>
<td>1.380</td>
</tr>
<tr>
<td>Price consciousness</td>
<td>4.690</td>
<td>1.519</td>
<td>Physical risk</td>
<td>4.118</td>
<td>1.415</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>4.015</td>
<td>1.373</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 4
Comparison of model fit.

<table>
<thead>
<tr>
<th>Index</th>
<th>Suggested value</th>
<th>References</th>
<th>Model A</th>
<th>Model B</th>
<th>Model C</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \chi^2/\text{df.} )</td>
<td>( \leq 3.0 )</td>
<td>Hayduck (1987)</td>
<td>3.76</td>
<td>3.72</td>
<td>5.10</td>
</tr>
<tr>
<td>AGFI</td>
<td>( \geq 0.9 )</td>
<td>Scott (1994)</td>
<td>0.81</td>
<td>0.81</td>
<td>0.79</td>
</tr>
<tr>
<td>CFI</td>
<td>( \geq 0.9 )</td>
<td>Baggozzi and Yi (1988)</td>
<td>0.94</td>
<td>0.94</td>
<td>0.93</td>
</tr>
<tr>
<td>NNFI</td>
<td>( \geq 0.9 )</td>
<td>Bentler and Bonett (1980)</td>
<td>0.92</td>
<td>0.92</td>
<td>0.91</td>
</tr>
<tr>
<td>NFI</td>
<td>( \geq 0.9 )</td>
<td>Bentler and Bonett (1980)</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
</tr>
<tr>
<td>IFI</td>
<td>( \geq 0.9 )</td>
<td>Bentler and Bonett (1980)</td>
<td>0.94</td>
<td>0.94</td>
<td>0.93</td>
</tr>
<tr>
<td>RMSEA</td>
<td>( \leq 0.08 )</td>
<td>Jarvenpaa et al. (2000)</td>
<td>0.088</td>
<td>0.087</td>
<td>0.107</td>
</tr>
</tbody>
</table>
the PLB. Marketers can also directly increase the purchase intention of the consumers for the PLB by improving the store image. The PLB image affects the price consciousness and purchase intention of the consumers towards the PLB through the mediating of perceived risk of PLB products. The direct relationship between the PLB image and the purchase intention of the PLB is not significant.

Table 5 summarizes the effects of the ultimate path (Model A). The total effect is the sum of the direct and indirect effect. The total effect reveals that among the variables that affect the purchase intention of the PLB, the effects of the PLB image and the perceived risk (negative) of the PLB products are the largest. Among the store-level factors, the effect of service quality on the purchase intention of the PLB is larger than the store image.

5. Conclusion and discussions

5.1. Research results

The existing literature suggests that the image and service quality of the store will respectively affect the image and purchase intention of the PLB. The results of this research shows that when simultaneously examining these relationships, the store image directly affects the purchase intention of PLB (H2), but not PLB image (H1); on the contrary, service quality directly affects the PLB image (H3), but not the purchase intention of PLB (H4). These results also show that compared with store image, service quality is better able to positively influence the purchase intention of PLB (See Table 5).

However, it is necessary to mediate this effect by enhancing the PLB image (H3) and reducing the perceived risk of the PLB products (H5). Contrarily, the store image can directly affect the purchase intention of the PLB products. Therefore, it is clear that the store image directly affects the sales volume of the products (including PLB products) in the store. However, service quality can only affect the purchase intention of the PLB products indirectly through the PLB image. Furthermore, since both the store image and the PLB image have a positive influence on the purchase intention of the PLB, it implies that when consumers are making decision about the purchase of a PLB, the images of the store and of PLB play very important roles.

Previous studies suggest that PLB image directly or indirectly affects the purchase intention of PLB. This study shows that when simultaneously examining these two effects, the indirect effect through the mediation of perceived risk (H5 and H8) outperforms the direct effect (H6). The study also verifies the negative effect of perceived risk on consumers’ price consciousness (H7) and purchase intention of the PLB (H8) in existing literature. Finally, this research finds that the effect of perceived risk (H8) on the purchase intention of the PLB outperforms the price consciousness effect (H9), which previous studies neglect.

5.2. Marketing implications

Marketing managers can effectively use the results of this study since the PLB is a critical strategy for a chain of stores. This study indicates that the service quality of a store has a positive effect
on the PLB image. Therefore, managers can enhance consumers' perception of the PLB image by improving the service quality that relates to the PLB.

For examples, a staff can enhance the interaction quality between the staff and the consumers by aggressively introducing the PLB in the store; improve the service environment quality by carefully arranging in-store atmosphere, music, and layout, and installing terminals to allow consumers to access the most updated and detailed PLB product information; and provide excellent outcome quality by reducing customer wait time and offering low cost, good quality PLB products.

This study provides guidelines for enhancing the purchase intentions of the consumers for the PLB. Based on the findings of this study, marketing managers can improve the store image by increasing product variety, enhancing product quality, offering the products in the price worthy of value, and pleasantly decorating the store. These improvements directly increase the purchase intention of the PLB. Managers can also improve the PLB image. For example, by reducing the defect probability of PLB products and setting up exclusive shelves for PLB products, this will indirectly increase the purchase intention of the PLB products.

The study results also show that consumers' perceived risk of PLB products mediated the relationship between the PLB image and purchase intention. Therefore, marketing managers can price the PLB product appropriately to reduce perceived financial risk, and provide PLB products with good quality and reliable performance safe for use to reduce perceived performance risk and physical risk, which in turn will increase consumers' purchase intention for PLB products.

5.3. Limitations and Future Research Directions

The main limitations of this study relate to the generalisability of the findings. A possible limitation is the use of a consumer sample of a chain of drugstores for the pre-test and main study. Therefore, the results of this study may only apply to consumers within this particular type of channel. Another possible limitation is that the results can only be confidently applied to the PLB tested in this study. Because this study uses a systematic random sample from four drugstores in a northern Taiwanese city, its findings may not be applicable to other Taiwanese or international consumers. Another limitation of this research involves the scale adopted to operationalise the atmosphere of the store, one dimension of the store image. This study operationalised it in terms of the atmosphere of interior decoration, while other studies instead operationalise it in terms of sounds, smells, colors etc. (For example: James et al., 1976; Pettijohn et al., 1992; Semeijn et al., 2004). This may make it difficult when compare this study's results with others.

This study highlights several directions for future research. First, researchers can apply the hypothesized relationships by focusing on different areas or distribution channels other than drugstores. This will likely increase the generalisability of the results. Second, future research can include other factors, such as product-level factors or consumer-level factors (other than price consciousness), and investigate their combined effect on the image or purchase intention of the PLB. Lastly, this study shows that price consciousness does not affect the purchase intention of the PLB, which differs from the results of past research (Batra and Sinha, 2000; Burton et al., 1998). Future studies should examine this effect and compare the results. For example, the price of the PLB or the interference of product categories may affect price consciousness (Lichtenstein et al., 1988), which in turn might affect purchase intention for PLB products.

Appendix A

Measures used in the main empirical study

Construct (Source)

A.1. Store image (Collins-Dodd and Lindley, 2003)

1. This store provides variety of products.
2. The entire product in this store has good quality.
3. The entire product in this store has low price.
4. The products of this store are good value for money.
5. The interior decoration of this store makes me feel pleasant atmosphere.
6. Overall, I have positive attitude in this store.

A.2. Service quality (Brady and Cronin, 2001)

A.2.1. Interaction quality

1. Overall, I'd say the quality of my interaction with this store's employee is excellent.
2. I would say that the quality of my interaction with this store's employee is high.

A.2.2. Service environment quality

1. I would say that store’s physical environment is one of the best in its industry.
2. I would rate this store's physical environment highly.

A.2.3. Outcome quality

1. I always have an excellent experience when I visit this store.
2. I feel good about what this store provide to its customers.

A.3. PLB image (Vahie and Paswan, 2006)

A.3.1. Quality

1. Too many of the private label brand I buy at this store are defective in some way.
2. Most private label brand I buy at this store wear out too quickly.
3. This store does not care enough about the quality of its private label brand.

A.3.2. Affective

1. I like the private label brand of this store very much.
2. I am satisfied with most of the private label brand I buy at this store.

A.4. Perceived risk (Stone and Gronhaug, 1993)

A.4.1. Financial risk

1. My purchasing private label brand for use would be a bad way to spend my money.
2. If I bought private label brand for myself for use, I would be concerned that the financial investment I would make would not be wise.
3. If I bought private label brand for myself for use, I would be concerned that I really would not get my money’s worth from this product.
A.4.2. Performance risk

1. The thought of purchasing private label brand for use cause me to be concerned for how really dependable and reliable that product will be.
2. If I were to purchase private label brand for use, I become concerned that product will not provide the level of benefits that I would be expecting.
3. As I consider the purchase of private label brand for use, I worry about whether the product will really perform as well as it is supposed to.

A.4.3. Physical risk

1. One concern I have about purchasing private label brand for use at home is that body probably will be harm, due to overuse of product.
2. My purchase of private label brand for use at home leads to concerns about whether the product could lead to some uncomfortable physical side-effects.
3. Because some private label brands products may not be completely safe, when I contemplate purchasing this kind of product for use at home, I become concerned about potential physical risks associated with this product.

A.5. Price consciousness (Sinha and Batra, 1999)

1. I tend to buy the lowest-priced brand that will fit my needs.
2. When buying a brand, I look for the cheapest brand available.
3. When it comes to buying, I rely heavily on price.
4. Price is the most important factor when I am choosing a brand.

A.6. Purchase intention (Knight and Kim, 2007)

1. I intend to buy private label brand of this store frequently.
2. I plan to buy private label brand of this store more often.

References


