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Moderating effect of perceived risk on the relationship between product safety and intention

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C H R O N I C L E

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A B S T R A C T

Herbal Products industry has experienced significant growth in product demand. Therefore, this study aims to identify the factors effecting the actual buying of Herbal Product. This study also examines the moderation effect of perceived risk on the relationship between product safety and intention. Mall intercept survey was used to collect data from six various states in Malaysia. The data is analyzed using Partial Least Squares (PLS) path modeling. The path coefficient results supported the direct influence of intention on actual buying. Similarly, the findings reveal that perceived risk moderate the relationship between product safety and buying intention.

1. Introduction

The global demand on herbal products have increased due to the worldwide awareness and preferred trend for natural alternatives to synthetic products (Abdullah & Salleh, 2010; Jamal, 2006; Karim et al., 2011). Herbal products have also been associated with health care solutions in treating and preventing various diseases. For instance, it has been reported that herbal products are used to relieve symptoms related with HIV/AIDS. (WHO, 2011). There are several factors that contribute to these phenomena's (Raghavendra, 2009; Saokaew, 2011) namely;

1) Inefficient conventional medicine that result of side effects and other problems,
2) Accessibility of conventional medicine,
3) Perception of the herbal product i.e. harmless,
4) Desire for self-medication, and,
5) Cheaper costs.

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However, there is a disagreement in a study, which was carried out by Astin and Pal (1998). The authors found that herbal products could be used as an alternative; not because they are against the conventional medicine, but it is has been part of cultural values, attitudes, motivation and belief (Hassali et al., 2009). Ironically, though the use of herbal products is increasing, the safety issues and the global adverse effect also found to be increasing (Boullata & Nace, 2000). The safety of herbal products is very important because most of the products in use are for self-medication (Zaffani et al., 2006). Commonly, the use of herbal products appears to be safe but not necessarily without adverse effect, it also can cause serious adverse effects (Bent, 2008; Bouldin et al., 1999; Sahoo, Manchikanti, & Dey, 2010). Adverse effect occurs due to the existence of poison found in herbal plants, pollution, and poor manufacturing practice (Balammal et al., 2012; Saad et al., 2006).

These issues will affect the actual purchase of herbal products, by understanding that the buying pattern will help entrepreneurs in determining an effective marketing strategy (Kim & Chung, 2011) and also to ensure the continuity of business sustainability (Carneiro et al., 2005; Ibrahim & Najjar, 2008; Paul & Rana, 2012).

2. Literature Review

2.1 Product Safety

The issue related to the safety of herbal product is increasing, this is because the herbs may cause toxicity and serious adverse. In order to protect the safety of customers, the quality of herbal products need to be determine (Fu et al., 2009). According to Grunert (2005), product safety is customers' believe on how safe is the product. It is also associated with customers' concerns over the safety of the product in the manufacturing process (Michaelidou & Hassan, 2008). Previous studies have discussed issues related to toxicity and safety of herbal product, resulting from the reaction of toxicity effect of the used herbal product (Ang et al., 2003, 2005). However the evidence on issues of safety, efficiency, and concerns toward the herbal product is still low (Barnes, 2003; Fu et al., 2009). Product safety plays an important role in defining whether a product is safe to be purchased or used (Chaudhuri & Holbrook, 2001; Lodorfos et al., 2006). The safety of the product is considered as an important aspect in assessing quality (Magkos et al., 2006). A study by Shaharudin et al. (2010) on product safety found that it had affected the intention to buy. Meanwhile, attitude toward product safety was found to influence consumers in making the assumption about the importance of product safety (De Silva & Sandika, 2011). The finding of Michaelidou dan Hassan (2008) indicated that product safety is an important factor that shape consumer's attitude.

2.2 Perceived Risk

Perceived risk is the uncertainty when customer cannot predict the impact of purchase decisions and it can explain the behavior where users often make mistakes and maximize their usage (Mitchell, 1999). In general, perceived risk is the feeling/expectations on unpleasant consequences associated with the variety of risks such as financial, physical, psychological, social, and time (Stephen & Godwin, 2009). There are certain studies on efficacy and risks found that herbal product is less effective and risky compared to conventional medicine (Barnes, 2003; Brienza et al., 2002; Dergal et al., 2002). Customers believe that herbal products are natural, safe, and can be used without special attention (Ching, Zakaria, Paimin, & Jalalian, 2013; Coutino, 2009; Cuzzolin et al., 2006; Facchinetti et al., 2012; Rotblatt, 1999; Stenton et al., 2001). However customers need to get more detailed information on the risks and benefits of the herbal product if they want to use them safely and effectively (Lynch & Berry, 2007).

2.3 Intention

Fishbein and Ajzen (1975) in the theory of planned behavior described intention as a determinant of behavior, where intention is influence by three construct: attitude toward the behavior, subjective norms, and behavioral control. Intention refer to the expression during decision making process that

depends on the attitudes and beliefs of the product (Ajzen & Fishbein, 1980; Ajzen, 1991; Fishbein & Ajzen, 1975). Clear intention plays an important role to human actions, however, some studies have revealed that there were difficulties in translating intentions and actual behavior (Ajzen, 2001). Therefore, purchase intention is seen as an important concept and widely used to predict the behavior of the actual purchase (Armstrong et al., 2000; Chen et al., 2012; Qing et al., 2012; Tsiotsou, 2006).

2.4 Actual Purchase

Actual purchase has long been of interest to researchers. Knowledge regarding actual purchase will help researchers understand the needs and wants of customers. Thus, the data obtained from the actual purchase can help to identify the marketing strategy (Kim & Chung, 2011), customer satisfaction, and to ensure the continuity of the business (Carneiro et al., 2005; Ibrahim & Najjar, 2008; Paul & Rana, 2012). Certain studies found that actual purchase is complex and vary by segment (Chiang et al., 2010; Shafiq et al., 2011).

3. Sample and procedures

The data in this study was collected through mall intercept survey at six various states in Malaysia. The survey included measures of actual buying, buying intention, product safety, and perceived risk. A total of 576 questionnaires were distributed, but only 473 were returned representing a total of 82% response rate. Out of 473 respondents, 64.3% is dominated by female, while male accounted for 35.7% of total response. The distribution of respondents was dominated by Malays (55.8%), followed by Chinese (28.8%), Indian (15.9%), and others had .2%.

4. Measures

To measure the constructs of product safety, this study used four items adapted from three sources (de Jonge et al., 2007; Michaelidou & Hassan, 2008; Rimal, 2005). Perception of risk is measured using five items adapted from three sources (Forsythe et al., 2006; Huy Tuu et al., 2010; Liu et al., 2013; Lynch & Berry, 2007). In assessing the intention of buying, this study used four items adapted from three sources (Chaudhuri & Holbrook, 2001; Conner et al., 2001; Jaafar et al., 2012). The actual purchase is measured using four items adapted from two sources (Chaudhuri & Holbrook, 2001; Hassan, 2011). This study used seven point Likert scale ranging 1=strongly disagree to 7=strongly agree. Furthermore, the use the above source scale is justified as it has been found to be reliable and reached acceptable alpha coefficients of more than 0.70 (Nunnally, 1978)

5. Result

Before proceeding to the regression analysis, several assumptions need to be met: i) missing values ii) assumption of outliers, iii) normality assumption, and iv) Multicollinearity assumption (Hair et al., 2010; Tabachnick & Fidell, 2007). In particular, all data were screened for missing values using SPSS. No missing data was found. Next, multivariate outliers were checked and thirty two items were detected as having outliers. All items in the dataset were screened to ensure that normality assumption was not violated.

5.1 Measurement Model

In order to ensure the construct validity, we followed a two-step modeling approach as suggested by Hair et al. (2014). At first, convergent validity and reliability were assessed, followed by the discriminant validity, then internal consistency reliability as shown in Table 1 and Table 2 respectively. As a rule of thumb, construct validity is ascertained if the loadings are greater than 0.7, composite reliability is greater than 0.7, average variance extracted is greater than 0.5, and Cronbach's alpha is greater than 0.7

Table 1
Results of measurement model

Latent Variable	Items	Loading	Average variance extracted	Composite Reliability	Cronbach's Alpha
Actual Buying	BS56	0.836	0.712	0.908	0.865
	BS57	0.879			
	BS58	0.818			
	BS59	0.841			
Intention	N54	0.815	0.554	0.830	0.725
	N55	0.852			
	N9	0.691			
	N6	0.590			
Perceived Risk	PR31	0.945	0.762	0.941	0.928
	PR32	0.935			
	PR33	0.806			
	PR34	0.876			
	PR35	0.791			
Product Safety	KP50	0.834	0.835	0.953	0.935
	KP51	0.924			
	KP52	0.952			
	KP53	0.940			

We also conducted the discriminant validity following Fornell and Larcker (1981) recommendations. On the basis of their recommendations, the average variance shared between each construct and its measures should exceed the variance shared between the construct and other constructs (Fornell & Larcker, 1981).

Table 2
Discriminant validity of constructs

Latent variable	Actual Buying	Intention	Perceived Risk	Product Safety
Actual Buying	**0.844**			
Intention	0.693	**0.744**		
Perceived Risk	-0.150	-0.158	**0.873**	
Product Safety	-0.189	-0.160	0.846	**0.914**

Note: Diagonals (bold face) represent the square root of the average variance extracted while the other entries represent the correlations.

As shown in Table 2, the correlations for each construct is less than the square root of the average variance extracted suggesting adequate discriminant validity of the constructs (Hair et al., 2010).

5.2 Structural Model

Following the measurement model next was the structural model. The results are presented in Table 3 and Fig. 2. The R^2 values of 0.48 which suggest that the modeled variables can explain 48% of variance in actual buying.

Table 3
Path coefficients and hypothesis testing

Hypothesis	Relation	Beta	Standard error	T-statistics	Findings
H1	I →AB	0.692	0.031	22.487***	Supported
H2	PR* PS→ I	0.065	0.031	2.123**	Moderated
H3	PR→I	-0.072	0.095	0.759	Not Supported
H4	PS →I	-0.036	0.114	0.317	Not Supported

Actual Buying (R^2) = 48%
Note: ***p <0.01, **p <0.05

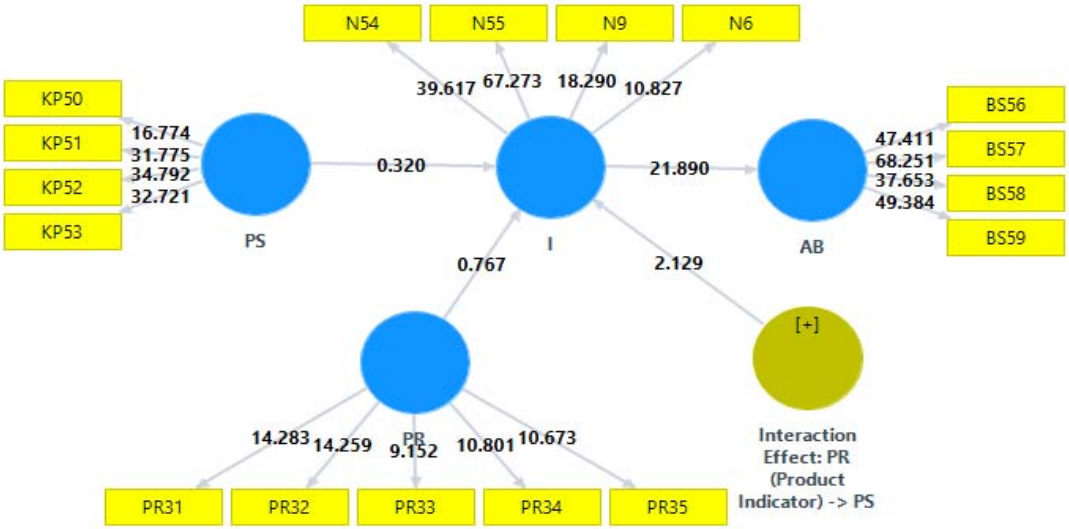

Fig. 2. Structural Model Analysis output

6. Discussion

This study investigated the influence of perceived risk on the relation between product safety and buying intention of herbal product in Malaysia. The result showed that buying intention was positively related to actual buying. This finding is consistent with the result of previous research (e.g. Mohammed Esmail Al-Ekam et al., 2012). The other finding of this study indicated that perceived risk moderate the relationship between product safety and buying intention. The result demonstrates that customers who have low perceived risk will generate higher intention to buy the product. The finding of this study also revealed that perceived risk was not a significant predictor of buying intention and product safety, and this finding is found to be similar with previous study (Michaelidou & Hassan, 2008). The path relationship of perceived risk to buying intention was found insignificant and is in line with previous research (Shivraj & Vikas, 2004).

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