

# **The Determinants of Green Purchasing: The Perspectives of Brand Knowledge, Perceived Quality and Country of Origin**

Phil Yihsing Yang<sup>a</sup>, Min Tseng<sup>b\*</sup>

<sup>a</sup>Graduate Institute of Business Administration, National Taichung University of Education, Taiwan 404

<sup>b</sup>Center for Institutional Affairs, National Taichung University of Education, Taiwan 404

---

## **Abstract**

Driven by social responsibility, firms have realized the importance to reconcile the interests of the environments, community, and business. The soaring of environmental conscious leads consumers to consider purchasing green products. However, the prior studies on purchase willingness of green products have mixed research results. In order to verify the determinants of green purchasing, this paper investigated the dimensions of brand knowledge, quality perception, and country of origin image in green products. This paper was conducted by a survey of 568 valid respondents for three green skincare brands including L'OCCITANE, DHC, and ORIGINS. Specifically, these brands stand for different country of origin image including the U.S., France, and Japan. Through a LISREL analysis, the findings indicated that the augmented consumers' brand knowledge can enhance purchase willingness. Specifically, consumers' perceived quality was able to bridge brand knowledge and purchase willingness. Moreover, country image of green brand moderates the relationship between brand knowledge and perceived quality. This paper contributed to enhance the understanding of consumers' purchase willingness and provides the insights of firms' effective marketing in green skincare products.

**Keywords:** Brand Knowledge; Perceived Quality; Country Of Origin Image; Green Product

**JEL Classification:** M31 M14

---

## **1. Introduction**

Due to the impacts of global warming and pollution deterioration, consumers are increasingly conscious to environmental protection and sustainability. The unbalanced pattern

---

\* Corresponding author.

*E-mail address:* [irvingtseng@hotmail.com](mailto:irvingtseng@hotmail.com)

*Address:* 140 Mingshen Road, Taichung, Taiwan 404.

of production and consumption is the major cause of the continuous deterioration in global environment. The production not only involves the exploitation of natural resources, but also affects the human beings directly and indirectly in the environmental surroundings (Mazar and Zhong, 2010). These environmental issues lead consumers to be cautious of the relationship between their consumption and ethical genitive externalities (e.g., Kim, 2017). Companies have to increasingly adjust production planning and incorporate sustainability concept to their business operations and responsibility (Guo *et al.*, 2015).

Under this circumstance, consumers are attentive to the products that achieve the anticipated utility and align with their sense of social responsibility. The understanding of consumers' environmental friendly consumption (i.e. green or organic products) is getting crucial (Strizhakova and Coulter, 2013). Contemporary consumers have higher acceptance of green consumption in the marketplaces, however, they have limited knowledge and capability to identify the functions of green products. Prior research suggested that branding strategies enable manufacturers to notify consumers the expected product quality (Wheeler *et al.*, 2013). Thus, this manuscript argued that brand knowledge should be considered to verify consumers' cognitive attitude on green products.

Previous research has limited investigation for the influential factors of green purchasing. First of all, previous studies investigated the influential factors of purchase willingness mostly focus on a product's intrinsic information such as product functions and package (Mulyono, 2016). However, the extrinsic information such as brand and country information in which the product related to were rarely discussed. Specifically, there is rare empirical attention to investigate the various dimensions of brand knowledge and consumers' purchase behavior (Mattera *et al.*, 2012). The empirical research suggested that consumers' environmental conscious and actual green consumption are unbalanced (Paul *et al.*, 2016). There is a need to fully explore the impacts of brand knowledge on consumers' green purchasing.

Second, prior research has explored the influencing factors of consumers' purchase behaviors. However, the investigation of the antecedents and consequence of consumers' perceived quality was not yet provided (Tseng *et al.*, 2013). Moreover, prior studies verified that huge distances between consumers' expectation in green products (Tseng and Hung, 2016). Constantin *et al.* (2014) suggested that green product purchasers are relevant to innovators and early adopters in technology adoption life cycle. Rather than to build up the prestige of green brand, firms need to enhance consumers' perceived quality of green products by offering more extrinsic information such as eco label or equivalent certificate (Hsu *et al.*, 2017; Khurram *et al.*, 2018).

Third, prior research has mixed results regarding the effect of country of origin image on product purchasing. Most of the research indicated that country of origin image affects consumers' perceived value and their purchase willingness (Awada and Yiannaka, 2012). However, some studies verified that the country of origin image having less significance on consumers' product evaluations (Wheeler *et al.*, 2013). To bridge the research gaps, this paper investigated the influential dimensions of green consumption under the theoretical basis of brand knowledge, perceived quality, and country of origin image.

## **2. Literature review**

### **2.1. The Rise of Green Products**

The term "green" is used interchangeably with pro-environmental and often refers to the products and services that simultaneously allowing for economic development while conserving for future generations (Pinzone *et al.*, 2019). The development of green products is suggested to reduce global energy consumption and embody a firm's social responsibility to alleviate environmental impacts on air, water, and soil (Constantin *et al.*, 2014).

To attain green profitability, firms keep on developing efficient solutions for energy consumption, and production process, and green products themselves. Several implementing methods are frequently mentioned as follows: improving product designs, material usage and manufacturing processes; decreasing material waste during producing process and using recycle materials (Oliver and Abhishek, 2013); and developing clean energy (Despeisse *et al.*, 2012). Specifically, these mechanisms are meant to strengthen efficient management of manufacturing facilities, and ensuring appropriate governance of the community benefits and environmental protection (Tseng *et al.*, 2013).

### **2.2. Brand knowledge**

Brand knowledge is referred to any brand associations such as the thoughts, feelings, experiences, and beliefs that perceived and stored in consumers' mindsets (Farhana, 2012). Specifically, brand image and brand awareness are common to be mentioned in related to brand knowledge (Esch *et al.*, 2006; Mulyono, 2016). This paper focused on these dimensions to verify their cognitive processes in consumers.

#### **2.2.1. Brand image**

Brand image indicates consumers' perception for a particular brand and frequently being linked to a firm's brand positioning in a market (Chi *et al.*, 2009; Cretu and Brodie, 2007). Moreover, brand image plays a powerful role in marketplace as long as consumers have difficulty to differentiate functional efficiency among the competitive products (Hu *et al.*,

2012). This paper argued that brand image enhances the visibility of a brand in consumers' mindsets. It is a critical intangible asset for firms to effectively execute appropriate marketing strategy of green products.

### **2.2.2. Brand awareness**

Brand awareness acts as a vital role in recognizing consumers' tactic when facing a new purchasing decision (Farhana, 2012). It reflects a consumer's capability to recall and recognize a brand regardless of the product itself. Brand awareness strengthens consumers' memory to recall and identify the differentiation of a brand (Mattera *et al.*, 2012). Building brand awareness is important because consumers have more willingness to purchase. Consumers can speed up purchasing decision for a common and routine product through brand awareness (McDonald and Sharp, 2003). Prior research suggested that brand awareness significantly enhance firm's brand equity and sales (Kim, 2017). Hence, brand awareness of green products determines consumers' consideration set and has impacts on subsequent purchasing decision.

### **2.3. Perceived quality**

Perceived quality is a critical consideration for consumers' purchasing decision (Ranjbarian *et al.*, 2012). Based on consumer's judgments, perceived quality is related to cognitive superiority of a product (Hartmann and Apaolaza-Ibáñez, 2012). Conceptually, consumers perceive product quality comparing with their expectation and ensure all the aspect are within tolerance limit (Chi *et al.*, 2009). Perceived quality doesn't necessary equal to the actual product performance. Therefore, perceived quality is more related to consumers' satisfaction based on their prior experience or comparison with other similar products.

### **2.4. Purchase willingness**

After experienced the process of information search and alternatives evaluation, consumers legitimate their purchase willingness whether the product choice meet a certain threshold (Lin and Lin, 2007). Based on consumer attitude forming, purchase willingness is regarded as a critical attitude indicator to be connected with practical purchasing behavior (Su *et al.*, 2012). Prior studies argued that the possibility of actual purchasing will be increased as long as purchase willingness increases (Alhaddad, 2015). Specifically, consumers' purchase willingness of green products are subjected to their environmental concerns and values (Pinzone *et al.*, 2019; Wheeler *et al.*, 2013).

### **2.5. Hypotheses development**

Prior research argued that consumers who perceive green products with certain environmental-friendly attributes are more likely to pay for higher price (Strizhakova and Coulter, 2013). Specifically, consumers who have higher environmental conscious tend to be

involved in green purchasing, and evaluate the green brands with excellent product quality (Hartmann and Apaolaza-Ibáñez, 2012). Consumers' moral concept is strengthened by the consumption of the products with positive brand image (Mazar and Zhong, 2010). This paper argued that brand image could enhance the perceived quality of green skincare products. Thus:

*Hypothesis 1 : The green skincare products with higher brand image, the higher level of perceived quality will be.*

Consumers usually translate their resulting environmental concerns into purchasing green products (Martin and Simintiras, 1995). As consumers have paid attention to environmental issues increasingly, they also have more purchase willingness for green products (Hartmann and Apaolaza-Ibáñez, 2012; Strizhakova and Coulter, 2013). Brand image is suggested to generate brand equity and enhance premium prices. Because brand image is unique product recognition, it provides a certain level of guarantee and stimulates purchase willingness for consumers (Chi *et al.*, 2009). Not only brand image may positively affect customers' perceived quality, it may also positively affect customers' purchase willingness (Cretu and Brodie, 2007). Empirical studies verified that consumers have shown higher purchase willingness for the products with higher brand image (Lin and Lin, 2007). Based on the arguments, this paper proposed:

*Hypothesis 2 : The green skincare products with higher brand image, the higher level of purchase willingness will be.*

Creating brand awareness is suggested to be important to enhance the effectiveness of marketing (McDonald and Sharp, 2003). A product with strong brand awareness is able to increase consumers' recognition and preference because it symbols a high quality evaluation (Davari and Strutton, 2014). Along with the arousing of green consciousness, green products become more prevalent than ever in the marketplace. Consumers realize that green products not only help to alleviate ecological problems, but also be regards as high in quality (Tseng *et al.*, 2013). Prior research suggested that brand awareness create reliable information to enhance consumers' quality evaluation (Chi *et al.*, 2009). In addition, many governmental institutions issue the eco-labels to raise awareness of green products of a certificated brand (Brécard *et al.*,

2009). These labels or equivalent certificates strengthen consumers' brand awareness for green products. Thus, this paper proposes:

*Hypothesis 3 : The green skincare products with higher brand awareness, the higher level of perceived quality will be.*

Prior studies indicated that creating brand awareness can enhance consumers' preferences, therefore influence the purchasing decision from the alternative choices (Lin and Lin, 2007). Moreover, consumers' attitude toward environmental suitability persuade them to follow the criteria of buying green products with reliable reputation (Strizhakova and Coulter, 2013). As consumers approach the greening of their lifestyles, the green products with sound brand awareness have higher probability to enter the consideration list (McDonald *et al.*, 2012). According to the preceding arguments, this paper argued:

*Hypothesis 4 : The green skincare products with higher brand awareness, the higher level of purchase willingness will be.*

## **2.6. Country of origin image**

Prior research suggested the country of origin image not only affects consumers' evaluation for a brand (Godey *et al.*, 2012), but also the subsequent quality perception (Magnusson *et al.*, 2014). However, prior research verified that country of origin image insignificantly influences product value if consumers are familiar with the brands. The mere analysis of country of origin image can augment or reduce the actual influence on product quality and purchase willingness (Adina *et al.*, 2015).

Consumers evaluate products quality by referring to country information to expect the possible utility and performance (Awada and Yiannaka, 2012). Prior research indicated the demand of green products has shown an inelastic relationship with product price, therefore consumers generally have limited expenditure on green consumption (Brécard *et al.*, 2009). Prior research has mixed findings regarding the impacts of country of origin image on product evaluation (Hsu *et al.*, 2017). Specifically, consumers may lack of ability to recognize the effectiveness of green products. Thus, this paper argued that consumers would consider country of origin image to supplement their limited product knowledge.

*Hypothesis 5 : Country of origin image moderates the relationship between brand*

*image and perceived quality for green skincare products.*

*Hypothesis 6 : Country of origin image moderates the relationship between brand awareness and perceived quality for green skincare products.*

Green products are usually perceived higher quality than non-green products since the formers have less environmental impacts (Brécard *et al.*, 2009; Gatti *et al.*, 2012). Similarly, many consumers prefer choosing organic products because these products are perceived as healthier for human beings (Godey *et al.*, 2012). The merits of green products are the key factors in affecting consumers' purchasing decisions even the costs of green products could be higher (Su *et al.*, 2012). In an empirical research of Ranjbarian *et al.* (2012), they indicated that perceived quality positively influences consumers' purchase willingness. Based on the preceding arguments, this paper proposed:

*Hypothesis 7 : The green skincare products with higher perceived quality, the higher level of purchase willingness will be.*

### **3. Methodology**

#### **3.1. The green skincare products**

Skincare industries have actively engaged in improving producing process and developed various green products. It is estimated by the Organic Monitor Company that the total global sales volume of green and natural organic skin care products reached almost \$7 billion in 2017, and the market scope of the global green industry has reached a trillion. It is obvious that green and natural organic skin care products have an important place in the heart of consumers. Increased consumer interest in chemical free products is the driving force behind the consumer demand for skin care products with natural and organic ingredients. Thus, green skincare products are chosen as the research targets in this study.

The green skincare products are required to be certificated by organic certification organization such as ECOCERT. This kind of certification organization has built an international standard for high quality organics with minimum of 95% of the total ingredients from a natural origin. Specifically, ORIGINS, L'OCCITANE, and DHC are the brands certificated by ECOCERT. These brands represent different country image including the U.S., France and Japan, therefore be chosen in this study.

### 3.2. Investigating variables

Brand image is a subjective cognition to a specific brand within a consumer's mindset (Cretu and Brodie, 2007). This paper adopted the dimensions and the scale established by Ranjbarian *et al.* (2012) to measure brand image. Brand awareness strengthens consumer's memory to the brand and makes consumers have ability to identify various brands (Farhana, 2012). Therefore, this paper conducted the dimensions and the scale of measuring brand awareness (Esch *et al.*, 2006).

Country of origin is an image element, including country associations about a country's characteristics and products also associated with it (Awada and Yiannaka, 2012). This paper adopted the scale in the work of Teas and Agarwal (2000) to measure the acceptance of skincare products from a particular country. Moreover, perceived quality acts as consumers' subjective judgments and feelings on quality evaluation (Alhaddad, 2015). By referred to the measurement developed by Alhaddad (2015), this paper adopted the same dimensions including reliability, workmanship, quality, dependability, and durability.

Purchase willingness indicates the possibility that consumers will have in purchasing a certain product (Adina *et al.*, 2015). This paper defined purchase willingness as the possibility that consumers purchase the relevant brand product. Moreover, this paper measured purchase willingness by using scale developed by Alhaddad (2015). All the investigating items were measured by a 7-point Likert scale.

### 3.3. Questionnaire development

The first part of the questionnaire was meant to realize the respondents including (1) brand choice: ORIGINS, L'OCCITANE, DHC, and none of them; (2) I have paid attention on the environmental and organic issues; and (3) I would like to purchase green skincare products compared to non-green ones. The second part is brand image consisting of the functional, symbolic, and experiential dimensions as proposed in Orth and De Marchi (2007). The third part is brand awareness consisting of brand recall and brand recognition as stated by Khurram *et al.* (2018). The fourth part is country of origin image that referred to the study of Teas and Agarwal (2000). The fifth part is perceived quality consisting of intrinsic, extrinsic, performance, and appearance suggested by Swinker and Hines. (2006). The sixth part is purchase willingness that referred to the study of Wu *et al.* (2011). And the final part is the respondents' demographic, including gender, age, career, and monthly expenditure on skin care products.

Moreover, this paper emphasized respondent anonymity in order to reduce evaluation apprehension. Two negative-worded questions are arranged to reduce the possibility of respondent biases (Podsakoff *et al.*, 2003). By using Harman's one-factor test, the result showed



that the first factor accounted for 29.75% explained variance, which indicating the common method variance was within an acceptable range.

#### 4. Research Results

This paper delivered online questionnaire through Google docs™ and several cosmetic forums, including the official Facebook pages of DHC, L'OCCITANE, ORIGINS, FashionGuide, and UrCosme. In order to clarify brand knowledge and casual relationship, this paper initially introduced the original country of the relevant brands. The respondents are asked to answer the questionnaire in accordance with their chosen brand. Initially, this paper has collected 592 responses from May 2018 to September 2018. However, there are 24 invalid questionnaires because the respondents answered none of the brands they have purchased, thus making total 568 valid questionnaires.

Based on the respondents' demographic data, there were 515 females (91%) and 53 males (9%). There were 256 respondents between 21 and 29 years old (45%); 398 respondents (70%) have already earned undergraduate degree. In term of marriage status, most of the respondents were single (76%). Further, the major segment for monthly income was less than NT\$25,000; monthly cost of skin care products was between NT\$501 and NT\$1,000 dollars with 165 respondents (29%); Moreover, in the part of favorite brand choice, there were 210 respondents (37%) choosing ORIGINS, 199 respondents (35%) filling up L'OCCITANE, and 159 respondents (28%) selecting DHC.

The modified Kolmogorov–Smirnov supported the goodness-of-fit measure of the normality assumption. The diagnostic tests results indicated not a multicollinearity problem ( $VIF < 1.68$ ). The average variance extracted (AVE) and the composite reliability (CR) coefficients were greater than .75 and .94 for perceived quality, purchase willingness, and country of origin image. Moreover, the goodness of fit index (GFI) and adjusted GFI were above 0.96 and 0.91 for all the investigating dimensions, which supporting the reliability of the dimensions have reached the acceptable level. This paper conducted Pearson correlation coefficients for the investigating variables (see Table 1).

Table 1: Pearson Correlation Coefficient

Variables	1	2	3	4	5
1.Brand image	1				
2.Brand awareness	0.15*	1			

3.Perceived quality	0.14*	0.18*	1		
4.Country of origin image	0.12	0.1	0.08	1	
5.Purchase willingness	0.22**	0.18**	0.26**	0.03	1

N=568, \* $p < .05$ , \*\* $p < .01$

This paper further examined the homogeneity of three target brands through ANOVA. The results showed that there was no statistically significance among three brands in brand image, brand awareness, perceived quality, and purchase willingness. This paper conducted LISREL analysis and Method of Maximum Likelihood to verify the path coefficient ( $\beta$ ) and coefficients of determination ( $R^2$ ). Figure 1 presented the results of path analysis. Specifically,  $R^2$  in perceived quality is .716 and purchase willingness is .704, which indicated that this model has 71.6% and 70.4% explained variance. The standardized path coefficients for each relationship between two dimensions were all larger than .05.

The path coefficient ( $\beta$ ) between brand image of green skincare products and perceived quality was .121 ( $t = .286$ ,  $p > .05$ ). The brand image variable has a positive but insignificant coefficient with perceived quality of green skincare products, thus not support H1. This paper examined the path coefficient ( $\beta$ ) between brand image of green skincare products and purchase willingness. The result of path coefficient ( $\beta$ ) was .234 ( $t = 2.853$ ,  $p < .01$ ). Thus, the findings supported H2 in that consumers would have shown higher purchase willingness if the green skincare products with better brand image. Moreover, the path coefficient ( $\beta$ ) between brand awareness of green skincare products and perceived quality was .972 ( $t = 2.156$ ,  $p < .05$ ), showing a support of H3. In addition, the path coefficient ( $\beta$ ) between brand awareness and purchase willingness was .732 ( $t = 3.206$ ,  $p < .01$ ), thus supporting H4.

Moreover, the path coefficient ( $\beta$ ) of country of origin image to brand image and perceived quality was .326. The finding indicated country of origin dimension has a positive but statistically insignificant influence on brand image and perceived quality, thus providing no support for H5. In addition, the path coefficient of country of origin variable to brand awareness and perceived quality was .532 ( $t = 1.875$ ,  $p < .05$ ). The finding indicated country of origin image has positively affected brand awareness and perceived quality, thus supporting H6. Finally, the path coefficient between perceived quality and purchase willingness was .405 ( $t = 4.206$ ,  $p < .001$ ), showing that the better quality green skincare products is, the higher intention consumers would purchase. Thus, the result supported H7.

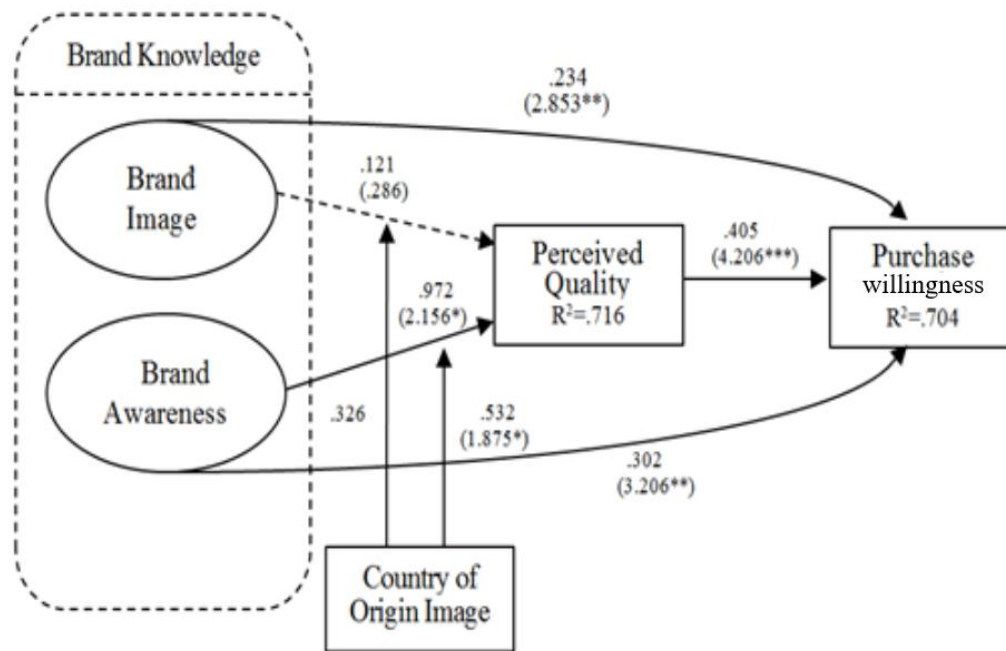


Figure 1: The Path Analysis

Note: Standardized estimates with t-values in brackets

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Furthermore, this paper conducted hierarchical regression to clarify the moderating role of country of origin variable (see Table 2). In Model 1 and Model 2, the brand image variable was positively and statistically insignificant related to a consumer’s perceived quality. The variables brand awareness and the country of origin image were positive and statistically significant related to a consumer’s perceived quality ( $p < .01$ ). In Model 3, both the interaction variables of brand image and country of origin image, brand awareness and country of origin image were positively and statistically significant related to consumers’ perceived quality. Specifically, the inclusion of interaction variables has lowered the influences of brand knowledge on perceived quality.

Table 2: Hierarchical Regression Analysis of Brand Knowledge and Country of Origin Image

Dependent variable \ Independent variables	Perceived quality		
	Model 1	Model 2	Model 3
Brand image	.105	.092	.086

Brand awareness	.253**	.334**	.297**
Country of origin image		.253**	.252**
Brand image * Country image			.162**
Brand aware. * Country image			.238**
R <sup>2</sup>	.719	.725	.726
Adj. R <sup>2</sup>	.716	.712	.721
F value	382.73***	297.39***	169.48***

\*\* $p < .01$ , \*\*\* $p < .001$

In order to verify the mediating role of perceived quality, this paper investigated the effects among the relevant variables (see Table 3). The results provided evidence that the direct effect of brand image of green skincare products on purchase willingness was .224, and indirect effect was .050. The direct effect is more significant than indirect effect, showing that perceived quality not significantly as the mediating role. Moreover, the path coefficient of direct effect was .305 and indirect effect was .404 between brand awareness and purchase willingness, indicating the existence of mediating role in perceived quality. Therefore, the results verified a mixed role of perceived quality between brand knowledge and purchase willingness.

Table 3: Path Analysis of the Investigating Dimensions

Path	Direct effect	Indirect effect	Total effects
Brand image → Perceived quality	.119	-	.119
Brand image → Purchase willingness	.224**	.050	.274**
Brand awareness → Perceived quality	.970*	-	.970*
Brand awareness → Purchase willingness	.305***	.404***	.709***
Perceived quality → Purchase willingness	.417	-	.417***

## 5. Discussion and Conclusion

This paper verified the brand image of green skincare products does not significantly influence consumers' quality perceptions. This result was not aligned with previous studies such as Cretu and Brodie (2007), their arguments suggested brand image positively stimulate consumers' perceived quality. This paper suggested the possible reason is these green skincare brands have not established vivid brand images to compete with non-green skincare brands. Empirically, there were a variety of skincare products labeled 'natural ingredients' so that consumers may encounter difficulty to verify brand image in term of 'greenness' of natural

skincare products. Besides, these green skincare brands tend to have limited promotion budget compared to non-green skincare brands. Thus, the impacts of brand image on perceived quality were found to be insignificant.

Second, this paper clarified that green brand image positively increase consumers' purchase willingness. This finding was echoed with previous studies (e.g., Davari and Strutton, 2014; Lin and Lin, 2007), suggesting that brand image as an extrinsic cue to influence consumers' purchase willingness. Comparing to green skincare products with a low brand image, those with high brand image can enhance purchase willingness and induce consumers' buying willingness. Thus, brand image of the green skincare products may not necessary stimulate perceived quality, it is a valuable catalyst for a firm to stimulate consumers' purchase willingness.

Third, this paper indicated brand awareness of green skincare products has positive influences on perceived product quality and purchase willingness. Similar to the findings of Chi *et al.* (2009) and Macdonald and Sharp (2003), a product with high level of brand awareness has yielded higher quality evaluation and purchase willingness. When facing multiple choices of natural products, consumers tend to perceive green skincare products with high brand awareness as better quality. Brand awareness of green skincare products is a determinant factor for consumers to evaluate purchasing alternatives. Establishing strong brand awareness is an essential strategy for a firm to influence consumers' judgment toward green products' values.

Fourth, this paper verified country of origin has a limited moderating influence between brand knowledge and perceived quality on green skincare products. The finding was similar to the study of Awada and Yiannaka (2012) where consumers regard country image and product quality as the intrinsic brand information. In this study, country of origin image has appeared to impair cosmetic consumers' cognition of brand knowledge and perceived quality. The possible reason is this paper chose ORIGINS, L'OCCITANE, and DHC as the sample of green brands. These brands are all originated from the countries with positive image and their product quality has been certified by ECOCERT. Therefore, consumers may give credit to the countries of branding origin, not merely manufacturing locations, to evaluate their perception of product quality.

Fifth, this paper confirmed high perceived quality increase consumers' purchase willingness. This result was echoed by the prior studies (e.g., Ranjbarian *et al.*, 2012; Su *et al.*, 2012) where product quality has positively affected consumers' purchase willingness. Even though green brands may be conducted with unconventional marketing mix (e.g. special ingredient with higher price), the perceived quality of green skincare products is still the key to stimulate purchase willingness.

Finally, this paper concluded perceived quality have mixed mediating effect between the brand knowledge and purchase willingness for green skincare products. Specifically, brand image does not affect perceived quality but does directly affect consumers' purchase willingness. Moreover, brand awareness positively affects perceived quality and purchase willingness. The interplay of brand awareness and product quality stimulates consumers' purchase willingness. This finding was echoed with Chi *et al.* (2009) and Newman *et al.* (2014), they argued higher brand awareness of green products leads to higher quality evaluation and purchase willingness. Overall, this paper argued that consumers facing difficulty to judge product quality of green skincare products, they need to rely more on branding information to persuade their purchasing decision.

This paper contributed to integrate brand knowledge, product quality, and image of original country to examine the impacts on purchase willingness. This paper concluded the causal relationships between brand knowledge, product quality, and purchase willingness on green skincare products. Specifically, brand awareness has shown larger influences on perceived quality than brand image. Consumers tend to rely on brand awareness to justify quality perception and purchasing decision. The country of origin image has shown to strengthen the impacts of brand knowledge on perceived quality. Firms need to be cautious to the revealed information of manufacturing location may alter consumers' perceived quality of green products.

In the current environment, developing green brand and relevant product is not only to reflect a firm's social responsibility, but also to enhance its market profitability. The findings provide management implication of developing strategic marketing. Firms that focus on manufacturing green skincare products need to cultivate consumers' brand knowledge to develop effective marketing strategies. Brand awareness is critical to influence consumers' beliefs and attitudes of green skincare products. Conducting a global brand strategy would benefit the companies to take the advantages of worldwide green product market and manufacturing facilities. However, the country of origin information on green skincare products may influence consumers' evaluation of product quality and erode a firm's efforts of brand marketing. Firms need to address more extrinsic information such as the attributes of green brands in terms of component difference, eco label or government certificate. Through the approaches of cultivating brand knowledge, consumers' perceived quality and purchase willingness can be stimulated.

This paper provided more understanding of green marketing research, however, there are some limitations should be considered in the future studies. First, the category of green products was limited to natural skincare products in this study. The current results may only apply to purchase willingness within cosmetics industry. Second, the current findings may be biased

because the idiosyncratic features of the on-line respondents through the self-report method. The representativeness of the sample can be limited. Third, consumers who bought the brands in this paper may not be because of environmental consciousness, but because of the brand position, the result cannot be over-generalized to all consumer contexts.

## References

- Adina, C., Gabriela, C., & Roxana-Denisa, S. (2015). Country-of-origin effects on perceived brand positioning. *Procedia Economics and Finance*, **23**, 422-427.
- Alhaddad, A. (2015). Perceived quality, brand image and brand trust as determinants of brand loyalty. *Journal of Research in Business and Management*, **3**, 1-8.
- Awada, L. & Yiannaka, A. (2012). Consumer perceptions and the effects of country of origin labeling on purchasing decisions and welfare. *Food Policy*, **37**, 21-30.
- Brécard, D., Hlaimi, B., Lucas, S., Perraudau, Y., & Salladarré, F. (2009). Determinants of demand for green products: An application to eco-label demand for fish in Europe. *Ecological Economics*, **69**, 115-125.
- Chi, H. K., Yeh, H. R., & Yang, Y. T. (2009). The impact of brand awareness on consumer purchase intention: The mediating effect of perceived quality and brand loyalty. *Journal of International Management Studies*, **4**, 135-144.
- Constantin, B., Daniel, H., & Antony, P. (2014). Green procurement and green supplier development: Antecedents and effects on supplier performance. *International Journal of Production Research*, **52**, 32-49.
- Cretu, A. E. & Brodie, R. J. (2007). The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective. *Industrial Marketing Management*, **36**, 230-240.
- Davari, A. & Strutton, D. (2014). Marketing mix strategies for closing the gap between green consumers' pro-environmental beliefs and behaviors. *Journal of Strategic Marketing*, **22**, 563-586.
- Despeisse, M., Ball, P. D., Evans, S., & Levers, A. (2012). Industrial ecology at factory level: A prototype methodology. *Journal of Engineering Manufacture*, **226**, 1648-1664.
- Esch, F. R., Langner, T., Schmitt, B. H., & Geus, P. (2006). Are brands forever? How brand knowledge and relationships affect current and future purchases. *Journal of Product & Brand Management*, **15**, 98-105.
- Farhana, M. (2012). Brand elements lead to brand equity: Differentiate or die. *Information Management and Business Review*, **4**, 223-233.
- Gatti, L., Caruana, A., & Snehota, I. (2012). The role of corporate social responsibility, perceived quality and corporate reputation on purchase intention: Implications for brand management. *Journal of Brand Management*, **20**, 65-76.
- Godey, B., Pederzoli, D., Aiello, G., Donvito, R., Chan, P., Oh, H., & Weitz, B. (2012). Brand

- and country of origin effect on consumers' decision to purchase luxury products. *Journal of Business Research*, **65**, 1461-1470.
- Guo, W. F., Zhou, J., Yu, C. L., Tsai, S. B., Xue, Y. Z., Chen, Q., Guo, J. J., Hunag, P. Y., & Wu, C. H. (2015). Evaluating the green corporate social responsibility of manufacturing corporations from a green industry law perspective. *International Journal of Production Research*, **53**, 665-674.
- Hartmann, P. and Apaolaza-Ibañez, V. (2012). Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern. *Journal of Business Research*, **65**, 1254-1263.
- Hsu, C.L., Chang, C.Y., & Yansritakul, C. (2017). Exploring purchase intention of green skincare products using the theory of planned behavior: Testing the moderating effects of country of origin and price sensitivity. *Journal of Retailing and Consumer Services*, **34**, 145-152.
- Hu, J., Liu, X., Wang, S., & Yang, Z. (2012). The role of brand image congruity in Chinese consumers' brand preference. *Journal of Product & Brand Management*, **21**, 26-34.
- Khurram, M., Qadeer, F., & Sheeraz, M. (2018). The role of brand recall, brand recognition and price consciousness in understanding actual purchase. *Journal of Research in Social Sciences*, **6**, 219-241.
- Kim, Y. (2017). Consumer responses to the food industry's proactive and passive environmental CSR, factoring in price as CSR tradeoff. *Journal of Business Ethics*, **40**, 307-321.
- Lin, N. H. and Lin, B. S. (2007). The effect of brand image and product knowledge on purchase intention moderated by price discount. *Journal of International Management Studies*, **2**, 121-132.
- Magnusson, P., Krishnan, V., Westjohn, S. A., & Zdravkovic, S. (2014). The spillover effects of prototype brand transgressions on country image and related brands. *Journal of International Marketing*, **22**, 21-38.
- Martin, B. & Simintiras, A. C. (1995). The impact of green product lines on the environment: Does what they know affect how they feel? *Marketing Intelligence & Planning*, **13**, 16-23.
- Mattera, M., Baena, V., & Cerviño, J. (2012). Analyzing social responsibility as a driver of firm's brand awareness. *Procedia - Social and Behavioral Sciences*, **58**, 1121-1130.
- Mazar, N. & Zhong, C. B. (2010). Do green products make us better people? *Psychological Science*, **21**, 494-498.
- McDonald, E. & Sharp, B. (2003). Management perceptions of the importance of brand awareness as an indication of advertising effectiveness. *Marketing Bulletin*, **14**, 1-15.
- McDonald, S., Oates, C. J., Alevizou, P. J., Young, C. W., & Hwang, K. (2012). Individual strategies for sustainable consumption. *Journal of Marketing Management*, **28**, 445-468.
- Mulyono, H. (2016). Brand awareness and brand image of decision making. *Journal of Management and Entrepreneurship*, **18**, 163-173.
- Newman, G. E., Gorlin, M., & Dhar, R. (2014). When going green backfires: How firm



- intentions shape the evaluation of socially beneficial product enhancements. *Journal of Consumer Research*, **41**, 823-839.
- Oliver, H. & Abhishek, T. (2013). Environmental appraisal of green production systems: Challenges faced by small companies using life cycle assessment. *International Journal of Product Research*, **51**, 5884-5896.
- Orth, U. R. & De Marchi, R. (2007). Understanding the relationships between functional, symbolic, and experiential brand beliefs, product experiential attributes, and product schema. *Journal of Marketing Theory and Practice*, **15**, 219-233.
- Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, **29**, 123-134.
- Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019). Effects of 'green' training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector. *Journal of Cleaner Production*, **226**, 221-232.
- Podsakoff, P. M., McKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, **88**, 879-903.
- Ranjbarian, B., Sanayei, A., & Kaboli, M. R. (2012). An analysis of brand image, perceived quality, customer satisfaction and re-purchase intention in Iranian department stores. *International Journal of Business and Management*, **7**, 40-48.
- Swinker, M. E. & Hines, J. D. (2006). Understanding consumers' perception of clothing quality: A multidimensional approach. *International Journal of Consumer Studies*, **30**, 218-223.
- Strizhakova, Y., & Coulter, R. A. (2013). The "green" side of materialism in emerging BRIC and developed markets: The moderating role of global cultural identity. *International Journal of Research in Marketing*, **30**, 69-82.
- Su, J. C. P., Wang, L., & Ho, J. C. (2012). The impacts of technology evolution on market structure for green products. *Mathematical and Computer Modelling*, **55**, 1381-1400.
- Teas, R. K. & Agarwal, S. (2000). The effect of extrinsic product cues on consumers' perceptions of quality, sacrifice, and value. *Journal of the Academy of Marketing Science*, **28**, 278-290.
- Tseng, M. L., Chiu, S. F., Tan, R. R., & Siriban-Manalang, S. M. (2013). Sustainable consumption and production for Asia: Sustainability through green design and practice. *Journal of Cleaner Production*, **40**, 1-5.
- Tseng, S. C. & Hung, S.W. (2016). A framework identifying the gaps between customers' expectation and their perceptions in green products. *Journal of Cleaner Production*, **59**, 174-184.
- Wheeler, M., Sharp, A., & Thiel, M. N. (2013). The effect of 'green' messages on brand purchase and brand rejection. *Australasian Marketing Journal*, **21**, 105-110.
- Wu, P. C. S., Yeh, G. Y. Y., & Hsiao, C. R. (2011). The effect of store image and service quality

on brand image and purchase intention for private label brands. *Australasian Marketing Journal*, **19**, 30-39.