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The Image of Health Food Brands, Experience Recognition and the Purchase Behavior of Middle Aged and Older People

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Abstract: Aging societies are a global social trend that simultaneously promotes the development of biotechnology and health food industries. Thus, middle-aged and older people's health food purchase behavior has been widely analyzed. For this study, we sampled Chiayi County, Taiwan, to investigate the image of health food brands, experience recognition and purchase behavior. Sampling 392 middle-aged and older people, we use the structural equation model to test model hypotheses and analyze the model. We also compared and verified related literature and theoretical inferences. The results indicated that the brand image was the most important factor influencing the purchase behavior. Brand image significantly and positively influences experience recognition and purchase behavior.

Key words: Health food, brand image, experience recognition, purchase behavior, loyalty

INTRODUCTION

Taiwan officially became an aging society in 1993. The proportion of people aged over 65 years has increased continuously, reaching 10.7% (2.5 million people) by the end of 2010. Taiwan is estimated to become an aged society in 2017, when people aged over 65 years will account for more than 14% of the population. In 2025, Taiwan is predicted to become a hyper-aged society, when people over 65 years will comprise 20.3% of the population (Council for Economic Planning and Development, 2012). As we progress toward an aging society, people average life expectancy and quality of life has increased because of the rapid and comprehensive development of medical technologies, social policies, welfare measures and living environments. In addition, the rapid development of biotechnology applications in recent years has provided local people with more opportunities to adopt health preservation regimens, organic environments and green environments. This establishes the foundation of biotechnological industries and health food development. In 2012, to actively develop the health food market and national economy, administrative agencies of the Ministry of Economic Affairs proposed health food industry development promotional projects and regulations (Industrial Development Bureau, Ministry of Economic Affairs, 2012) to establish health food industry supply chain networks and provide the industry with wholesome growth environments. Therefore, since Taiwan has become an aging society and health food industries

have developed, analyzing the health food purchase behavior of middle-aged and older people is currently one of the most important social issues of academic research. Thus, in this study, we primarily explore this behavior.

Costa and Jongen (2010) stated that older people have been increasingly more aware of the benefits of eating healthy food to maintain physical health and reduce aging. Related food industries have begun to develop new health products according to peoples nutritional requirements when aging and consumer perceptions to encourage middle-aged and older people to purchase and consume health products. The amount of health food products available on the market for middle-aged and older people to consume to improve their physical health has increased (Wilson, 2011). Thus, related product designs, packaging and marketing have also become essential issues for business operators (Costa and Jongen, 2010; Sharkey et al., 2011). Fernández-Sabiote and Román (2012) indicated that brand image recognition can enable consumers to have superior responses and perceptions of products and services, thereby increasing their experience awareness and satisfaction. Increasing consumer experience can also cultivate the relationship between consumers and brands and increase consumers' opinions and satisfaction of the brand which further influences consumers' consumption behavior (Park and John, 2012). Wang and Tzeng (2012) indicated that consumers first consider brands when purchasing

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products, because brands influence the quality of the product and services consumers recognize. Therefore, establishing brand value and experience value is crucial. Sharkey *et al.* (2010) contended that favorable value message transmissions and experience are required to increase middle-aged and older people's health food purchase behavior. Favorable value message transmissions and experience have a greater influence on the consumption behavior and consumption motivations of middle-aged and older people. Thus, health food brand image is a vital theory basis. This relationship also influences middle-aged and older people's consumption motivation and behavior.

Experience reflects individual mental perceptions and perceived experience (Dirsehan and Çelik, 2011). Products and services are consumers' consumption experience elements. The perception, satisfaction and emotion of an experience influences consumers' views and values regarding the products and services (Schmit, 2012) and affects their consumption behavior and continued consumption (Sukoco and Wu, 2011). Rebollar *et al.* (2012) indicated that consumers emphasize the visual, acoustic and haptic elements of product and service experience situations. Consumers also value emotional bonds, social relationships and the overall values provided by products and services to form contacts, links, usability, continuity and habitual product and service use (Backstrom, 2011). Sternthal and Bonezzi (2009) have indicated that experience value influences consumer satisfaction and loyalty. Teng (2011) stated that consumer experience accumulation influences and enhances the relationship between consumers and brands. Adequate marketing methods can cultivate consumers' brand attachment. Consumers with brand attachment become promoters who are actively involved in recommending the brand to society, creating brand consumers. Therefore, brand awareness increases consumer loyalty. The product and service purchase intentions of consumers with significant loyalty continuously increase and naturally form unique consumption culture and habits (Puccinelli *et al.*, 2009). In summary, the brand image of products and services influences consumersn experience recognition (Rebollar *et al.*, 2012). Brand image also influences consumers' intentions to purchase or reuse products or services. When the brand image of products and services is established, increased consumer experience value is required to maintain consumer groups and consumer loyalty, followed by increased consumer support for the products and services (Joye *et al.*, 2010). Therefore, for this study, we developed the research structure based on the concepts of brand image, experience recognition and purchase intentions. To understand the relationship among these three factors, we explored the image of health food brands, experience recognition and purchase intentions of

middle-aged and older people in Taiwan, establishing a relatively complete consumption model structure. The results were then meticulously analyzed to provide a reference for enterprises and related units to achieve the specifics of sustainable management and development.

MATERIALS AND METHODS

Research participants: This study was conducted from July 2011 to September 2011, for a total of 3 months. We recruited middle-aged and older people in Chiayi County as the research targets. The proportion of older people in the total population of Chiayi County was 15% which is the highest in Taiwan. We distributed questionnaires in the leisure and activity areas that middle-aged and older people typically congregate in the 18 administrative divisions of Chiayi County. After randomly selecting one activity area in each administrative division, we conducted a questionnaire survey in these areas (considering the literacy issues of older people, the researchers conducted interviews with illiterate respondents). The study population was middle-aged and older people in Chiayi County. Under restricted accuracy and reliability conditions, we adopted conservative methods. Using α = .05 and CP = .05 as conditions and p = .5 as the equation (Rea and Parker, 1997), we determined the required sample size:

$$n = \left[\frac{Z\alpha \sqrt{p(1-p)}}{Cp} \right]^2$$

n   :   Sample size
Cp :   Maximum permissible error
p   :   Population proportion
Z   :   Standard normal value at the reliability α

After calculation, we determined that the required sample size was 385. Roberts *et al.* (2003) stated that a suitable sample size for statistical analysis using a Structural Equation Model (SEM) must exceed 400. Considering the vision and literacy issues middle-aged and older people tend to have, the questionnaire distributors were required to read the items in Mandarin or Taiwanese for these respondents. Therefore, we distributed 401 questionnaires. After organizing and removing the invalid responses, we recovered 392 valid questionnaires. The effective response rate was 97.8%.

Measurement instruments: We used a structured questionnaire to obtain the required data and examine the research hypotheses. According to the study goals, the questionnaire content comprised four sections: basic personal data, brand image, experience recognition and purchase intentions. All questionnaires used a 5-point Likert scale ranging from 5 (strongly agree), 4 (agree), 3 (neither agree nor disagree), 2

(disagree) and 1 (strongly disagree). We established the eight items of basic personal data by referencing the structures proposed by Wadołowska *et al.* (2009) and Yeh *et al.* (2010). We also referenced the theory structures proposed by Lin and Hsu (2011), Park and John (2012) and Wang and Tzeng (2012) and then established the experience and functional image aspects of brand image using five items with a Cronbach's α = 0.75. Regarding experience recognition, we referenced the theory structures proposed by Yoon *et al.* (2009), Teng (2011) and Backstrom (2011) to establish the function and social aspects using six items with a Cronbach's α = 0.78. Referencing theory structures proposed by Haverila (2011) and Fernández-Sabiote and Román (2011), we established repurchase and supportive recommendation aspects of purchase intentions using six items with a Cronbach's α = 0.79.

Data analysis method: For this study, we used Statistical Package for the Social Sciences (SPSS) Version 12.0 software to conduct descriptive analysis and understand the sample structure. Cronbach's α coefficients were used to test the internal consistency reliability of the scale. We used SEM to conduct confirmatory factor analysis, parameter estimation and hypothesis testing.

Analysis and discussion: Referencing the method proposed by Roberts *et al.* (2003), we reduced the second-order model of brand image, experience recognition and purchase behavior dimensions into the first-order model. This simplified the model and generated a superior goodness-of-fit. After the factors for each dimension had undergone confirmatory factor analysis, the average score for the observation variable of each factor was calculated to be the single measurement index of each factor (Anderson and Gerbing, 1988). Subsequently, we established a model based on the theory.

RESULTS

Goodness-of-fit of the theoretical model: The test results of the overall goodness-of-fit of the theoretical model and observation model show that the χ^2 value was 4.70 (p = .58) and did not reach a level of significance. The χ^2/df value was 0.78 (chi-square = 4.70, df = 6) which satisfied the evaluation standard of being lower than 3. This indicated that the theoretical model and observation data possessed excellent goodness-of-fit. In addition, regarding the index goodness-of-fit, the goodness-of-fit index (GFI) = 0.98 and the adjusted goodness-of fit (AGFI) = 0.98, both exceeding the 0.90 standard. The Root Mean Square Error of Approximation (RMSEA) = 0.03 which was lower than the fit threshold of .08. Regarding the incremental fit measures, the Normed Fit Index (NFI) = 0.97, the Non-normed Fit Index (NNFI) = 0.98 and the Comparative Fit Index (CFI) = 0.98 which all exceeded the fit standard of 0.90. The parsimonious fit index critical N (CN) value was 498.35, higher than the evaluation standard of 200. Overall, the external quality of the model presented a fairly ideal situation.

Internal quality of the theoretical model: Regarding the internal quality of the theoretical model, the evaluation results in Table 1 show that the factor loadings of the observation variables on latent variables reached a level of significance. This indicates that the measured index can effectively reflect the measured construct, yielding favorable validity evidence (Roberts *et al.*, 2003). The composite reliabilities of brand image, experience recognition and purchase behavior were respectively .51, .53 and .50. The Average Variance Extracted (AVE) of Table 1 shows that all three latent factors were higher than the 50% evaluation standard. This indicates that more than 50% of the variance resulted from the measured variables. Therefore, we determined that the three latent factors still possessed convergent validity.

Construction of model for middle-aged and older people in Chiayi county: The overall fit indices of the model mentioned previously indicated that exceptional overall goodness of fit existed between the proposed theoretical model and the observation data. This confirms that the theoretical model can fully explain observation data. Thus, after conducting the model

Table 1: Parameters of the Middle-aged and Older People's Purchase Behavior, Brand Image and Experience Recognition Model for Chiayi County

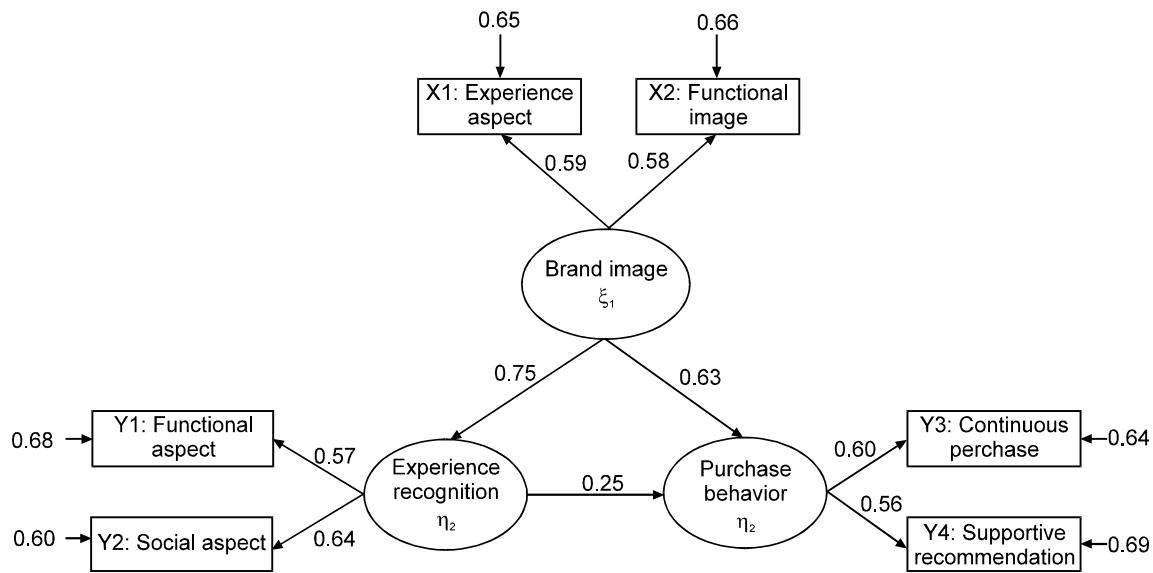| Name of latent variable	Observation variable			Composite reliability	AVE
	Measurement index	Normalized (λ)	t-value		
Brand image				0.51	0.57
	Experience aspect	0.59	--		
	Functional image	0.58	6.84**		
Experience recognition				0.53	0.58
	Functional aspect	0.57	--		
	Social aspect	0.64	6.48**		
Purchase behavior				0.5	0.57
	Continuous purchase	0.6	--		
	Supportive recommendation	0.56	6.57**		

Note: *p<.05.

Fig. 1: The model of the brand image, experience recognition and purchase behavior of middle-aged and older people in Chiayi county

fitness test, we further examined the path relationship and evaluation value of the coefficients of middle-aged and older people's brand image, experience recognition and purchase behavior model developed for Chiayi County, as shown in Fig. 1. Overall, considering middle-aged and older people in Chiayi County, brand image significantly and positively influenced their experience recognition of health food (path coefficient = 0.75, t-value = 5.18). Brand image had a significantly positive influence on purchase behavior (path coefficient = 0.63, t-value = 2.57). Experience recognition had a positive influence on purchase behavior (path coefficient = 0.25, t-value = 1.11) but did not reach a level of significance. In other words, the image of a health food brand influenced the health food experience recognition and purchase behavior of middle-aged and older people in Chiayi County. The health food image, including the use experience and functional utility, directly influenced the participants' awareness of the health product. The improved image increased the participants' intentions to repurchase the health food and further resulted in them recommending the product to their family and friends. Furthermore, health food experience recognition also influenced the purchase behaviors of middle-aged and older people in Chiayi County; however, the effect was not as significant as that of brand image.

DISCUSSION
The overall fitness value of the proposed model was within the acceptable range and possessed a certain degree of explanatory power. Of the overall model shown in (Fig. 1), the model path indicates that brand image had a significantly positive influence on experience

recognition. This result matches the perspective proposed by Park and John (2011), that is, brand image has a significantly positive influence on purchase behavior. This result also corresponds with that reported by Chien *et al.* (2011). Regarding the latent variables of purchase behavior, the factor loadings on of the continuous purchase variable were the highest (factor loadings = 0.60). This could be because middle-aged and older people in Chiayi County approve of health foods and exhibit continuous purchase behavior for related products or products with varying functionalities that are produced by the health food brand. This result agrees with that reported by Yeh *et al.* (2010). Regarding the latent variables of experience recognition, response at the community level (factor loadings = 0.64, t-value = 6.48) appear to be the deepest. This could be because the middle-aged and older people in Chiayi County tended to believe that consuming health foods can reduce general the medical costs borne by society which eliminates some of the problems related to illnesses developed by older people and the social costs of caring for the older population. They also believed that the consumption of health foods could enable older people to maintain their physical and mental abilities. This result agrees with that reported by Wadołowska *et al.* (2009).

Conclusion: The primary contribution of this study is the proposed health food brand image, experience recognition and purchase behavior model we designed for middle-aged and older people in Chiayi County. In addition, we examined the relationships among brand image, experience recognition and purchase behavior

using SEM. The results indicated the image of health food brands, experience recognition and purchase behavior model for middle-aged and older people in Chiayi County achieve satisfactory goodness-of-fit. Regarding reliability and validity, for this study, we used composite reliability, convergent validity and discriminant validity to achieve considerable levels of reliability and validity. The results indicated that the questionnaire could reliably and effectively measure the brand image, experience recognition and purchase behavior of middle-aged and older people in Chiayi County and the relationship among the three dimensions. Furthermore, based on the brand image, experience recognition and purchase behavior model for middle-aged and older people in Chiayi County, we found that brand image had a significantly positive influence on experience recognition and purchase behavior. Thus, to increase the purchase behavior and experience recognition of middle-aged and older people in Chiayi County, we recommend enhancing the brand image. This can be conducted using the experience or functional image aspects, where the experience aspect is especially important.

Suggestions: Brand management aspects of enterprises. In this study, brand image had a significantly positive influence on experience recognition and purchase behavior. In addition, data analysis showed that the experience aspect outperformed the functional image aspect. Thus, we recommend that health food enterprises support the local consumer market in Taiwan and adopt serial advertisements and related product differentiation to enable consumers to easily recognize the products that satisfy their requirements. This differentiates the product from other similar products available and demonstrates the superiority of the product compared to that of other products, thereby attaining strategic brand management. Experience aspect of enterprises. Enterprises should periodically promote health concepts (such as "prevention is preferable to cure") and host health forums (providing information regarding health diets). These activities can provide middle-aged and older people with sufficient health knowledge and skills to cultivate their own methods of health and localization. Enterprises can organize community events related to health to enable middle-aged and older people to understand their physical and mental conditions and develop self-care methods. Activities such as distributing free samples in shops and holding promotions increase middle-aged and older people's intention to use the product continuous and facilitate word-of-mouth marketing.
Purchase aspect of enterprises. The health food image of consumers primarily results from their perceptions of

value and society's response to the product. Therefore, to enable consumers to continuously purchase products and develop potential markets, enterprises must emphasize consumer satisfaction with the products or services and related issues. In addition, enterprises should employ market surveys, customer service lines and community strategies to solve consumer and market issues. Subsequently, companies should establish a database Web site and customer relationship management systems to increase the opportunities and factors that influence consumers to purchase a product.

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