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Building brand equity through industrial tourism

Hsueh-wen Chow^a, Guo-Jie Ling^a, I-yin Yen^{b,*}, Kuo-Ping Hwang^c^a Graduate Institute of Physical Education, Health & Leisure Studies, National Cheng Kung University, No. 1, University Road, Tainan City 701, Taiwan^b Department of Leisure Management, I-Shou University, No. 1. Sec. 1, Syuecheng Rd., Dashu District, Kaohsiung City 84001, Taiwan^c Department of Transportation and Communication Management Science & Institute of Telecommunications Management, National Cheng Kung University, No. 1, University Road, Tainan City 701, Taiwan

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ABSTRACT

As a consequence of rising operating and labor costs, numerous manufacturing companies in Taiwan have been closed or relocated overseas during the last two decades. Since 2003, Taiwan's government has advocated for the transformation of traditional factories into tourism-oriented facilities to increase the brand strength of the companies. As a result, industrial tourism has been boosted and many manufacturers in Taiwan are keen on establishing tourism factories; however, the association, if any, between offering industrial tourism and building a strong brand equity remains relatively unexplored. Thus, the present study sought to examine customers' perceptions of the value of a branded tourism factory through the concept of brand equity. More specifically, it was hypothesized that brand equity, which is composed of brand awareness, brand associations, and perceived quality, contributes to brand loyalty. Both qualitative and quantitative methods were employed in different phases of this study, including 1) questionnaires to identify industrial tourism factories with high brand awareness among consumers; 2) open-ended interviews regarding visitors' touring experiences to develop further questionnaires; and 3) questionnaires distributed to three food-oriented firms with similar levels of brand awareness. Analysis of the data from 312 valid questionnaires revealed that brand associations and perceived quality both positively and significantly predict brand loyalty. The results suggest that companies engaging in industrial tourism should focus on offering tourists interactive experiences to enhance brand associations and on ensuring a transparent operations process during tours to emphasize the high quality of whatever is being produced, thereby contributing to enhance brand loyalty.

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1. Introduction

Increasing global competition has placed great stress on many industries, especially traditional manufacturing industries. In earlier times, the demand for various products was always greater than the supply, so manufacturing companies only had to focus, in general, on increasing their production efficiency. However, after decades of technological advances that have accelerated production processes, supplies are now often higher than the corresponding levels of demand, forcing the various brands that exist in given markets to compete for potential customers' attention. As such, it has become increasingly difficult for customers to identify,

remember, and choose brands during purchase decision making. In addition, customers are growing more resistant to traditional forms of marketing such as print advertising and television commercials (Willmott & Nelson, 2003). Instead, consumers are increasingly seeking holistic, authentic, multisensory, and memorable experiences that are associated with the given product or service. Hence, there has been a rapid rise in the number of marketing efforts known as experience marketing, which attempts to establish a personal and meaningful interaction with the consumer (Schmitt, 1999; Tynan & McKechnie, 2009). In some sense, the memorable experiences produced by such marketing efforts effectively become part of the products in question, making them key aspects of the experience economy (Pine & Gilmore, 1999).

In order to enhance the revenues provided by customers' experiences as part of the experience economy (Pine & Gilmore, 1999), many factories have become involved in industrial tourism, which is also called industrial heritage tourism, by transforming

* Corresponding author.

E-mail address: yenyi@isu.edu.tw (I.-y. Yen).

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their manufacturing factories into tourism factories. This type of tourist attraction includes manufacturing plant tours, company museums, company visitor centers, and brand parks, all of which serve as means by which a firm can open their factory doors to customers or visitors so that they can learn about the production process, product features, and company history (Mitchell & Orwig, 2002; Otgaar, 2012). For many marketing managers, establishing such tourism factories could be an effective marketing strategy as one visit is more valuable than one hundred commercials when guests relate their positive experiences to friends and relatives (Brumberg & Axelrod, 1995).

In Taiwan, many factories were closed or relocated overseas during the last two decades as a consequence of rising operating and labor costs and the competitive global environment. In 2003, the government of Taiwan's Industrial Development Bureau noticed this trend and established "The Project to Assist Manufacturing Industries in Developing Industrial Tourism" in an attempt to help traditional factories transform into tourism factories in order to build up industrial tourism, which can act in a multifunctional manner by allowing for both manufacturing and tourism and which, therefore, may successfully promote a given brand, making it stronger and more competitive (Industrial Technology Research Institute, 2013a).

As such, many manufacturers in Taiwan have become keen on establishing industrial tourism venues where they can provide opportunities for tourists to visit, be entertained, be educated, and get to know about the given brand and products. So far, 145 tourism factories have been set up throughout Taiwan (Industrial Technology Research Institute, 2013b). However, not all of these 145 industrial tourism sites are thriving. Some have been facing problems such as a lack of attractiveness to visitors or not receiving enough visitors to support their operating costs. Such problems can lead to situations in which these industrial tourism factories must struggle for survival, to say nothing of their actually achieving any monetary or nonmonetary benefits from their industrial tourism efforts. Therefore, considerable uncertainty still exists with regard to if and how brand equity can be promoted by the establishment of tourism factories, especially in today's intense and competitive market.

It seems that the purpose of tourism factories and the concept of brand equity are, in a sense, intertwined with each other, but there have not been many previous studies that have sought to address this interconnection. In particular, the concept of industrial tourism is a relatively new one in the realm of academia (Robinson & Novelli, 2005), in spite of industrial tourism itself being commonly practiced by many US and European firms. Most industrial tourism studies thus far, in fact, have been from the US perspective. Given the fact that culture plays an important role in brand equity (Blair & Chiou, 2013, 2014) and that, so far, very few studies have explored the marketing effects of industrial tourism in Taiwan, the association between offering industrial tourism and building a strong brand through brand equity remains relatively unexplored. Thus, the aim of this research was to examine customers' perceptions of the value of branded industrial tourism through the concept of brand equity. More specifically, it was hypothesized that brand equity, which is composed of brand awareness, brand associations, and perceived quality, contributes to brand loyalty.

It is necessary, therefore, to investigate the relationship between visits to industrial tourism sites and brand equity in order to assist in the development of industrial tourism in Taiwan. As such, the objectives of this study were as follows:

1. To examine if there are any differences relating to brand equity among tourists with different visiting experiences (i.e., travel

style, product-use experience, interpreter guidance experience, and brand orientation experience).

2. To investigate if visitors to industrial tourism sites will build upon their perceptions regarding brand equity from the lowest toward the highest levels as assessed by brand awareness, perceived quality, brand associations, and brand loyalty.

2. Literature review

2.1. Origins and development of industrial tourism

Industrial tourism can be traced back to Europe in the 1960s. At that time, many industries such as the textile, mining, steel, and other heavy industries faced structural imbalances, and some of them finally had to close down. Thereafter, many of the shuttered factories decayed with time and even turned into deserted, becoming what has been referred to as "industrial heritage" (Hospers, 2002). As time continued to pass, some people came to enjoy visiting these heritage sites to reminisce and have fun, and some factory owners simply seized on the chance to transform the given outmoded manufacturing industry into an industry based on serving the purposes of tourism, a phenomenon that would eventually be referred to as "industrial heritage tourism" (Edwards & Llurdés, 1996).

Later, as the concepts of brand marketing management began drawing the attention of more and more people, some of the owners of companies in various industries began to recognize that public relations were crucial to marketing. With that in mind, some opened up their industrial environments for tourists to see, strongly promoting industrial tourism in order to show their companies and company spirits to tourists, hoping that the tourists would then like their brands more and thus allow them to reap greater revenues (Edwards & Llurdés, 1996; McBoyle, 1996; Richards, 1996). Today, industrial tourism provides visitors with a place where they can feel and experience a brand's culture, gain knowledge about the details of products, have fun, and learn about the manufacturing process by participating in hands-on activities. In this way, they can get acquainted with and even be impressed by the given brand.

As such, industrial tourism has boomed in the last two decades, growing to encompass industries selling a wide variety of products, including food and beverages, clothing, appliances, automobiles, toys, pottery and glassware, sporting goods, etc (Mitchell & Orwig, 2002). A great amount of industrial tourism falls under the food and beverage category; for example, in Axelrod and Brumberg's guide, (1997) *Watch it made in the USA: A visitor's guide to the companies that make your favorite products*, it was reported that regarding 288 plant tours, 104 of the tours were in plants producing food and beverage products. In addition, there are more than 1500 wineries in the USA that provide wine tastings and tours for consumers.

2.2. Functions of industrial tourism

Extensive literature indicates that industrial tourism can provide a variety of advantages to a company that engages in it, including intangible benefits such as securing a good reputation, building up a relationship with the public, an improved brand image, creating a bond between consumers and the brand, and increased brand loyalty (McBoyle, 1994; Mitchell & Orwig, 2002; Otgaar, 2012; Rhees, 1993), as well as tangible benefits such as opportunities to display products, increased sales through both on-site and post-visit visitors, revenues generated from the sale of tickets for the industrial tours, etc. Moreover, these potential benefits are not limited solely to end users, but may also be shared, to

varying extents, with business clients, employees, investors or stakeholders, and local residents (Mitchell & Mitchell, 2001). For example, for firms that belong to the business-to-business model, trust and understanding between the firms and their stakeholders could be fostered by allowing the stakeholders to visit a live company in the supply chain (Otgaar, 2012). Furthermore, the benefits of industrial tourism could also extend to regional economic development as it has become a niche tourism market that can draw tourists to visit and stay (Otgaar & Klijs, 2010; Otgaar, 2012). In addition to monetary benefits, industrial tourism can also serve an educational function by allowing young people to witness manufacturing processes that are rarely experienced in the present day while, relatedly, providing older generations with nostalgic experiences by allowing them to reflect on their lives in earlier times (Frew, 2010; Rhees, 1993).

2.3. Brand equity

The concept of branding has become widely accepted as one of the key purposes of marketing efforts over the past several decades (Kotler, Bowen, & Makens, 2013). The basic function of a branding strategy is to add value to a given product or service. In order to obtain strategic advantages by building, maintaining, and utilizing brands, the subject of brand equity has attracted the attention of academics and practitioners for decades (Erdem et al., 1999). Ultimately, brand equity can be used to summarize all of the various assets that are parts of a brand, to measure the performance of a brand in the past, and to predict the performance of a brand in the future (Pike, 2007, 2010).

There are at least two different perspectives through which to study brand equity, including financial-based brand equity and customer-based brand equity. For example, from the financial perspective, several studies have attempted to explain brand equity as the increase in profit or the quantity of cash flow in the future, and have also argued that the value of a brand's equity can be defined as the cost of replacing the brand or its liquidation value (Simon & Sullivan, 1993). In addition, some scholars view brand equity as an aspect of perceived value in customers' minds such that branded products and services cause customers to be biased toward the brand and/or the given products and services versus an unbranded equivalent (Biel, 1997). They argue that if consumers perceive a product to have high brand equity, they will think more positively about the given product or brand (Keller, 1993), which will, in turn, have an impact on their purchasing choices (Kim, 1990). Brand equity can also be defined as the contrast in consumer choice between a specific branded product and an unbranded product which is set at the same level in terms of product features (Yoo, Donthu, & Lee, 2000).

Much of the literature has indicated that brand equity provides a strong platform for the introduction of new products, for differentiating a company from its competitors, and for protecting the given brand from competitive attacks. Keller (2001a, 2001b) further indicated that if consumers have greater knowledge of a specific brand, they will have more favorable reactions to the elements of the marketing mix. Furthermore, as brand equity is created, customers tend to perceive the tangible and intangible features of a brand through various information sources. These perceptions will intensify the value or meaning of the brand to the consumers, and the brand equity will then influence consumer preferences and purchase intentions (Cobb-Walgreen, Ruble, & Donthu, 1995). Therefore, among firms facing keen market competition, it has become very important to establish brand equity. Aaker (1991) posited that owning one or more competitive brands is the only way to strengthen market share, and that doing so is better than having a factory without brand equity.

Aaker (1991) suggested that there are four dimensions of customer-based brand equity, all of which are widely accepted by scholars (Keller, 1993; Kim, Kim, & An, 2003; Low & Lamb, 2000; Yoo et al., 2000). The four dimensions include brand awareness, perceived brand quality, brand associations, and brand loyalty.

2.3.1. Brand awareness

Brand awareness is an essential aspect of as well as the first step in building brand value (Gartner & Konecnik Ruzzier, 2011). It can be defined as the level of brand recall and familiarity when consumers make a choice of their preferred brand (Aaker, 1991, 1996; Cobb-Walgreen et al., 1995; Keller, 1993; Yoo & Donthu, 2001). Researchers (Tasci & Kozak, 2006; Woodside & Lysonski, 1989) have identified different levels of such brand awareness. Stage one refers to a complete lack of awareness. At this stage, consumers do not know the brand or its name. Stage two stands for a level of brand recognition such that consumers can identify the brand but do not remember the brand's name. Stage three refers to brand recall; consumers can utter the brand's name after being reminded of it by others. Finally, consumers at the stage of high awareness, stage four, can make a connection between the brand and its products automatically, that is, without any reminders from others. Due to the fact that people usually choose to buy familiar products, such name awareness is very important to a product in terms of getting the product included into a consumer's buying consideration set (Tasci & Kozak, 2006; Woodside & Lysonski, 1989).

2.3.2. Perceived quality

Perceived quality is defined as the consumers' judgement of the superiority or excellence of a brand (Konecnik, 2006). The fact that consumers have high awareness of a branded product/service does not necessarily imply that they will perceive it to be of high quality. Perceived quality shapes brand image, increases the perceived value of the given brand in consumers' minds, and serves as a determinant in the brand equity model (Baloglu & McCleary, 1999; Gartner & Konecnik Ruzzier, 2011; Netemeyer et al., 2004; Pike, 2002).

2.3.3. Brand associations

The role of brand associations as an important element in brand equity management has been previously documented (Im, Kim, Elliot, & Han, 2012). It is classified into three major categories, i.e., attributes, benefits, and attitudes (Keller, 1993; Qu, Kim, & Im, 2011). The attributes are features of a brand; in other words, they constitute what a consumer thinks the brand has to offer. The benefits are values associated with the features of the brand. The brand attitudes are consumers' overall evaluations of the brand. As a whole, the potential value of a brand name is based upon specific associations and is related to its image. Brand associations influence a consumer's brand choices and purchases, increase the barriers through which competitors may need to break, and may also serve as the basis for brand extensions (Aaker, 1991, 1996; Keller, 1993). For instance, Coca-Cola can provide a new drink with a competitive advantage based upon the brand associations people already have with Coca-Cola itself, such that customers may trust the brand and thus choose the new drink when making a purchase choice.

2.3.4. Brand loyalty

Brand loyalty refers to the degree to which people are committed to a given brand as shown both by their inner attitudes reflected in lasting biases toward a specific brand, as well as by externally exhibited behaviors such as repeat purchases of a certain brand among several alternatives (Jacoby & Kyner, 1973; Odin, Odin, & Valette-Florence, 2001). In many industries, it is both time-consuming and costly to attract new customers while being

comparatively inexpensive to keep existing ones, especially when the customers are satisfied with the brand; therefore, brand loyalty can reduce losses to competitors and allow for cuts to marketing budgets. Furthermore, some existing customers may even give brand reassurance to other people they know. Brand loyalty is not just one of the dimensions of brand equity and something influenced by brand equity; rather, it is also the most important dimension of brand equity.

2.3.5. Relationships among the four dimensions of brand equity

According to the literature mentioned above, various relationships exist among the four dimensions of brand equity, i.e., brand awareness, perceived quality, brand associations, and brand loyalty. As noted, brand awareness refers to the ability of customers to know and recall a given brand initially (Keller, 1993). If someone does not even know or is unaware of a given brand name, they would barely be able to experience any sense of brand quality or extended associations, to say nothing of feeling any loyalty to the brand. In other words, brand awareness is the basic of brand equity (Gartner & Konecnik Ruzzier, 2011). Accordingly, increased brand awareness leads to better perceived quality (Yoo & Donthu, 2000) and better brand associations (Villarejo-Ramos & Sanchez-Franco, 2005).

H1. Brand awareness is positively related to perceived quality.

H2. Brand awareness is positively related to brand association.

At the next level of the causal relationships among the four dimensions, perceived quality has been shown to affect brand associations positively among a study sample of airline passengers (Park, Robertson, & Wu, 2004). Aydin and Ozer (2005) pointed out that brand image originates from consumers' accumulating experience and perceived quality of services and products. Therefore, it can be concluded that perceived quality will affect brand association directly. Also, if customers perceive that a given brand is high quality, they tend to buy this brand continually and recommend it to others (Jones, Mothersbaugh, & Beatty, 2002; de Ruyter, Wetzels, & Bloemer, 1998). This means that perceptions of good quality will help promote brand loyalty.

H3. Perceived quality of a brand is positively related to brand association.

H4. Perceived quality of a brand is positively related to brand loyalty.

Furthermore, judging from the past literature, brand images/associations also has a strong positive influence on brand loyalty. For example, when passengers perceive airlines to have remarkable brand images/associations, they may choose the same airlines in the future regardless of price (Park et al., 2004). In other words, people are more loyal to a brand if the brand has good brand associations.

H5. Brand associations are positively related to brand loyalty.

In sum, it was hypothesized that, in the order of four components of brand equity, as assessed from the bottom to top (see Fig. 1), in the order of brand awareness, perceived quality, brand associations, and brand loyalty, the lower level has positive association on the upper levels after visiting the industrial tourism (see Fig. 2).

2.4. Visiting experience and brand equity

Traveling is a dynamic experience, such that the degree to which the formation of brand equity is influenced by a given destination

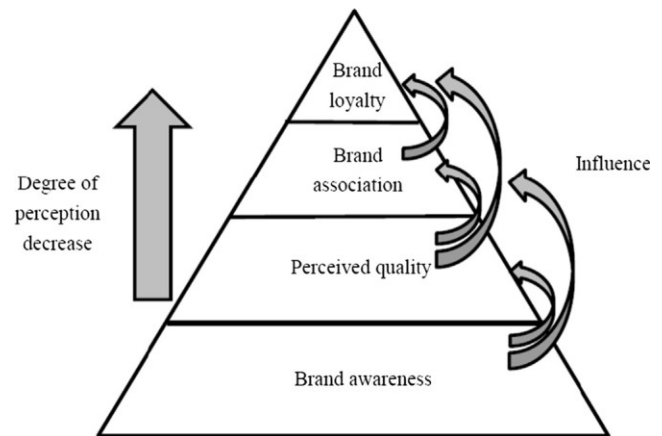


Fig. 1. The building up of brand equity from the bottom to the top: Brand awareness, perceived quality, brand associations, and brand loyalty.

might be substantially affected by the arrangements of the tour in question. For example, tourists taking part in group package tours may differ considerably from other types of tourists in terms of their motivations and personalities. Package tourists rely heavily on the information provided by tour operators regarding the specific tour destinations. A tour operator may thus serve as a mediator who can effectively reduce the promotional efforts required on the part of the tour destinations while also reducing the information search costs of the tourists (Sheldon, 1986).

Interpretation services have been widely employed in tourism services, especially for heritage tourism, because, as Ryan & Dewar put it, "the 'live' interpreter has an important impact on the total visitor experience (1995, p.295)". The functions of an interpreter include enhancing visitor enjoyment, informing visitors about sites' specific cultures and histories, and directing visitors' attentions to specific attractions for further resource or environmental management efforts (Putney & Wagar, 1973).

Several industrial tourism factories also present visitors with an orientation toward the brand of the given company. Such brand orientation has been recognized as a marketing strategy through which to build up a brand in the minds of customers (Urde, 1999). Visitors' prior experiences with the brand, whether positive or negative, also play an important role in forming the perception of a brand (Yoo & Donthu, 2001). As such, the above four visiting experiences might influence industrial tourism visitors' formation of brand equity to various degrees and should be controlled for while examining the build-up relationship of brand equity. Thus, the hypothesis is as follows:

H6. There are different perceptions of brand equity among tourists with different visiting experiences (i.e., different travel styles, product-use experiences, interpreter guidance experiences, and brand orientation experiences).

3. Research methods

3.1. Selection of study sites

As described in Section "Origins and development of industrial tourism", a majority of industrial tourism sites are run by companies in the food and beverage industries. This may be attributable to the fact that food and beverage companies are mostly business-to-consumer (B2C) businesses, such that the consumers can directly associate their products with their own daily activities. As a result, visits to such factories could greatly satisfy a customer's

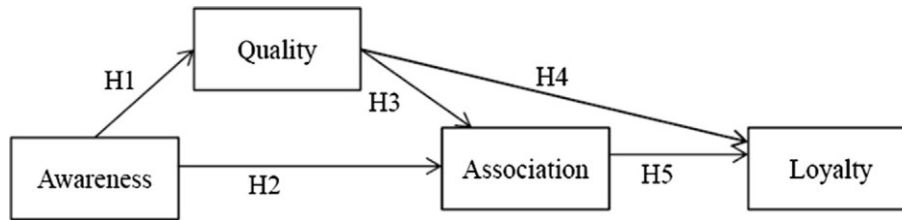


Fig. 2. Hypothesized model of brand equity.

curiosity about how these products are being made. In addition, customers tend not to be completely loyal to a certain food or beverage, as the purchasing behaviors for such products occur frequently and there are typically many alternatives on the market (Mitchell & Mitchell, 2001).

In Taiwan, because contaminated food scandals have been prevalent very recently in the food market, people's trust in food companies has deteriorated substantially. Food safety, in turn, has become an issue of increasing concern. For this reason, the brand image and the perceived quality of a brand are particularly important in food manufacturing. Moreover, for companies in the food industry, establishing brand equity is also the key to competing with rivals, and can serve as a way to win back customers' trust. Therefore, in this study, the food industry was selected as the survey target.

There were three phases of data collection in this study. In phase one, a total of 50 copies of questionnaires, which included a list of 55 food tourism factories registered by the Ministry of Economic Affairs of Taiwan, were distributed at two train stations located in two big cities in Taiwan, namely, the Taipei Train Station (30 copies) and the Tainan Train Station (20 copies), in March of 2014. As these two train stations are major transit hubs for public transportation, they are typically filled with big crowds of people with diverse backgrounds in terms of where they live, as well as their educations, occupations, genders, ages, etc. The questionnaire respondents checked off the tourism factories they had heard of. A factory was considered to have high brand awareness if the total number of respondents indicating that they had heard of the factory was over 40 (out of the total of 50 respondents). Three factories with high brand awareness were then selected as the research sites in order to rule out the effect of brand awareness of the factories. Finally, three factories with high brand awareness (the Black Bridge Sausage Museum, the BRAND's Health Museum, and the Kuo Yuan Ye Museum of Cake and Pastry) were selected for subsequent questionnaire distribution.

3.2. Questionnaire development

In order to clarify how tourists perceive the value of a given brand after visiting the related tourism factory and to develop the items of the close-ended questionnaire, 25 interviews were conducted in the targeted food factories during phase two. Interviewees were asked to answer the following questions:

1. As you passed through this tourism factory, what parts of the factory made you feel the most impressed?
2. After touring this factory, how would you describe the features of the factory?
3. If there are any differences, what are the differences in your respective impressions of this brand "before touring" and "after touring" this factory?
4. Would you like to come to this tourism factory again? Why or why not?

5. After touring this factory, what recommendation would you suggest for improvement?
6. What tourism factories have you visited before? Which one impressed you the most? Why?
7. What is the most important factor that influences your brand preference?

The resulting qualitative interview data were collected and analyzed to provide insights to assist in the development of a questionnaire specific to food and beverage-related industrial tourism in the next phase.

In order to measure the changes in the perceived values of a brand after customers take factory tours, a questionnaire was designed based on the four dimensions of brand equity proposed by Aaker (1991) and the results of the open-ended data from phase two. Four items regarding brand awareness were modified, based on the studies of Aaker (1991), Keller (1993) and Yoo and Donthu (2001), in order to measure the degree of brand awareness which visitors perceived. The items regarding perceived quality did not emphasize customers' expectations but rather emphasized customers' perceptions of brands. Six items were adopted to measure customers' perceived quality (Aaker, 1991; Cronin & Taylor, 1992; Keller, 1993; Yoo & Donthu, 2001). Furthermore, six items regarding brand associations were employed to investigate the connection between the brand and customers (Aaker, 1991; Kim et al., 2003; Low & Lamb, 2000; Yoo & Donthu, 2001). Brand loyalty is the last part of brand equity, and the final purpose of marketing. So, five items regarding brand loyalty were used based on the study by Odin et al. (2001). For all items, a 5-point Likert scale was used in which 1 = "strongly disagree", 2 = "somewhat disagree", 3 = "neutral", 4 = "somewhat agree", and 5 = "strongly agree". Table 3 lists all items included in the questionnaire.

Face validity was established to ensure that the items in the questionnaire could properly measure the variables under consideration. In this study, two experts on brand equity were invited to offer their opinions and assistance in viewing, correcting, and revising the items to make the questionnaire more representative. This study used confirmatory factor analysis (CFA) to confirm the factor structure by testing the construct validity of the items of the four dimensions of brand equity, including brand awareness, perceived quality, brand associations, and brand loyalty.

3.3. Data collection

During phase three, a convenience sampling method was used to distribute the questionnaire to visitors at each target factory who had just finished visiting the factory and were willing to answer the questionnaire. In addition, the questionnaire was administered at least twice per factory at different times, specifically, on holidays and non-holidays, to ensure that responses from different types of visitors were included. A total of 312 questionnaires were distributed in the three target factories.

4. Results

4.1. Sample demographics

A total of 312 valid questionnaires were returned for the three tourism factories (90, 114, and 108 respondents for each). The results showed that most of the participants were female (58%) and/or free independent travelers (74.7%). Half (50%) had come to the given tourism factory by car, while motorcycle was the second most common means of transportation to the factory (24.7%). Regarding age and education level, 49.7% of the respondents were between 20 and 29 years of age, 28.8% were between 30 and 39, and 92.3% of the respondents had a college degree or above (Table 1).

Regarding behaviors related to the tourism factory visit, most of the respondents (58.1%) participated in the factory tours with their friends, including colleagues and classmates, and/or with their family (54.8%) (multi-choice format). The reasons attracting people to visit the tourism factory (multi-choice format) were intellectual interest (41.3%), convenient location (29.5%), and curiosity (28.5%). The activities which the tourists engaged in most (multi-choice format) in the tourism factories were interpreter guidance (56.8%), product tasting (55.2%), and product purchasing (43.2%) (Table 2).

Table 1
Characteristics of respondents.

Descriptions	Frequency	Percent (%)
Gender		
Male	131	42
Female	181	58
Travel style		
Group travel	79	25.3
Personal travel	233	74.7
Transportation		
Car	156	50
Tour bus	69	22.1
Bus	6	1.9
Motorcycle	77	24.7
Other	4	1.3
Product-used experience		
Yes	260	83.3
No	52	16.7
Education background		
Junior high or below	4	1.3
Senior high	20	6.4
Bachelor	197	63.1
Master or above	91	29.2
Marital status		
Married	111	35.6
Single	201	64.4
Monthly income (NTD)		
Below 19,999	112	35.9
20,000–29,999	49	15.7
30,000–39,999	60	19.2
40,000–49,999	39	12.5
50,000–69,999	24	7.7
Above 70,000	28	9.0
Tour organizer		
Self	236	75.6
Travel agency	1	.3
Company	2	.6
School	67	21.5
Other	6	2
Age		
Below 19	8	2.6
20–29	155	49.7
30–39	90	28.8
40–49	33	10.6
50–59	19	6.1
Above 60	7	2.2

4.2. Results of factor analysis and reliabilities

In order to confirm the validity and reliability of the research questionnaire, confirmatory factor analysis (CFA) and coefficient alpha analysis were conducted in this study. The CFA results indicated that the measurement model was good-fit and the dimensionality was adequate ($\chi^2 = 316.033$, $df = 129$, $CFI = .910$, $\chi^2/df = 2.450$, $IFI = .911$, $RMSEA = .068$). In the reliability analysis, the item-to-total correlations and Cronbach's coefficient alphas were calculated to assess the internal consistency reliability of the questionnaire. An item-to-total correlation must be larger than .5 and at least not below .35, and a Cronbach's coefficient alpha must be larger than .6 (Hair, Anderson, Tatham, & Black, 1998). As for CFA, factor loadings represent the correlations between individual variables and factors, and the factor loading of each item cannot be less than .5. The analysis results of the factor loadings and Cronbach's alpha values for each dimension are shown in Table 3. Three items were deleted due to poor factor loadings and item-to-total correlations.

The results indicated that the item-to-total correlations are above .35, indicating that the internal consistency reliability of the questionnaire is acceptable. The Cronbach's alphas of the four dimensions were above the recommended value of .60, further confirming the reliability of the measurement items.

4.3. Travel experiences and brand equity

On average, the respondents agreed that they were aware of the brand they just visited in the given industrial tourism sites (mean = 4.20), agreed that the brand in question has quality (mean = 4.10), agreed that the brand in question is associated with themselves (mean = 3.95), and tended to express neutral brand loyalty (mean = 3.29). The independent t-test was further used to determine if the respondents differed in terms of their travel experiences (i.e., travel style, which referred to whether they visited as part of a group or were engaged in independent travel; whether they had previous experience using the product; whether they received interpreted guidance during the tour; and whether they

Table 2
Visiting behaviors of respondents related to their industrial tourism visit (multi-choice format).

Descriptions	Frequency	Percent (%)
Tour company		
Friends	180	58.1
Family (adult)	85	27.4
Family (with children)	85	27.4
Alone	3	1
Other	8	2.6
Reasons for visiting		
Convenient location	92	29.5
Themed events	62	19.9
Curiosity	89	28.5
Tasting food	45	14.4
Intellectuality	129	41.3
Children's preference	32	10.3
Elders' preference	24	7.7
Group arranged	54	17.3
Other	11	3.5
Experience activities		
DIY	51	16.5
Product tasting	171	55.2
Product purchasing	134	43.2
Interpreter guidance	176	56.8
Audio guidance	32	10.3
Brand orientation	61	19.7
Other	12	3.9

Table 3
Factor analysis and reliability analysis of questionnaire.

Factor dimension items	Factor loading	Item-to-total correlation	Cronbach's alpha	Note	Mean
Brand awareness			.717		4.20
Know the brand more	.53	.569			
Easily identify the brand	.77	.455			
Think of this brand first	.53	.359		Del.	
More familiar than others	.82	.482			
Perceived quality			.778		4.10
Comfortable environment	.37	.453		Del.	
Receptionists pleasant attitude	.39	.434		Del.	
Guidance leads to understanding	.58	.523			
Leading technology	.66	.503			
Feel confident about food safety	.71	.550			
Trust in food sanitation	.66	.603			
Brand Associations			.808		3.95
Nice atmosphere	.66	.557			
Impressed with intellectuality	.69	.575			
Brand is trustworthy	.66	.607			
Impressed with slogan	.55	.438			
Brand is close to our life	.62	.545			
Confidence in other products	.68	.657			
Brand loyalty			.830		3.29
Won't buy other brands	.63	.515			
Recommend this brand	.65	.616			
Purchase regularly	.69	.478			
Buy even if it is expensive	.74	.537			
Feel loyal to this brand	.80	.527			

Note: Items were measured on a 5-point scale, where 1 = strongly disagree and 5 = strongly agree.

received a brand orientation during the tour) with respect to the attributes of the four brand equity components.

The results showed that participants with different travel experiences varied in terms of their perceptions of brand equity. More specifically, with regard to different travel styles, there are truly significant differences between those engaged in group travel and independent travelers with regard to brand awareness ($t_{(309)} = 3.257, p < .0001$) and perceived quality ($t_{(308)} = 2.173, p = .031$). The tourists traveling with a group tended to have higher brand awareness (4.35 and 4.15, respectively) and higher perceived quality of the brand (4.20 and 4.07, respectively) than the independent tourists. In addition, prior product-use experiences had a positive impact in terms of enhancing brand associations with the given brand ($t_{(309)} = 2.141, p = .033$). With regard to the activities in which the tourists participated in when visiting the tourism factories, receiving interpreter guidance while visiting the tourism factories had positive impacts in terms of enhancing brand awareness ($t_{(309)} = -4.096, p < .0001$), perceived quality ($t_{(308)} = -3.713, p < .0001$) and brand loyalty ($t_{(310)} = -2.303^*, p = .022$); receiving a brand orientation offered by staff when visiting the tourism factories also had positive impacts in terms of enhancing brand awareness ($t_{(309)} = -3.681, p < .0001$) and perceived quality ($t_{(308)} = -3.072, p = .002$) (see Table 4). It is therefore concluded that H6 ("There are different perceptions of brand equity among tourists with different visiting experiences, i.e., different travel styles, product-use experiences, interpreter guidance experiences, and brand orientation experiences") is partially supported. Results can be referred to in Table 4.

4.4. Path analysis among brand equity dimensions

As indicated in Section "Travel experiences and brand equity", because traveling behaviors somewhat influence brand equity, this study used path analysis to test the associations among brand awareness, perceived quality, brand associations, and brand loyalty while controlling for significant traveling behaviors (i.e., travel styles, product-use experiences, interpreter guidance experiences, and brand orientation experience). The path coefficients are

provided in Fig. 3 and indicated that brand awareness is positively associated with perceived brand quality ($\beta = .43$) (H1 supported) and brand associations ($\beta = .23$) (H2 supported). Meanwhile, perceived brand quality is positively related to brand associations ($\beta = .51$) (H3 supported) and brand loyalty ($\beta = .2$) (H4 supported). Finally, brand associations is positively related to brand loyalty ($\beta = .44$) (H5 supported). Totals of 43% of the variance in brand associations and 35% of the variance in brand loyalty were explained by the path model. Overall, the results indicated that, after touring a tourism factory, brand awareness had an indirect positive relationship with brand loyalty, while brand associations had a significantly positive direct effect on brand loyalty. As for perceived quality, it had both direct and indirect effects on brand loyalty. In other words, the relationship between perceived quality and brand loyalty is partially mediated by brand associations. The total effect of brand associations on loyalty was the highest (.440), followed by the total effects of perceived quality (.429) and awareness (.284) (see Table 5).

5. Discussion and conclusions

With regard to the tested model, the results indicated that all of the five hypotheses (from H1 to H5) are supported. More specifically, the results showed that perceived brand quality and brand associations are influential predictors, while brand associations has the highest total effect on brand loyalty, followed by the perceived quality of the brand, and then brand awareness. Brand awareness refers to the level to which potential buyers can identify the brand and automatically make a connection between the brand and associated products (Keller, 1993; Kim et al., 2003; Low & Lamb, 2000; Yoo et al., 2000). In this study, the three factories were rated the most frequently by participants and represented high levels of brand awareness. It is worthwhile to further investigate different levels of brand awareness and reexamine the effect of brand awareness on brand loyalty. In many industries, it is both time-consuming and costly to attract new customers but comparatively inexpensive to keep existing ones, especially when the customers are satisfied with the brand. Brand loyalty is the most

Table 4
T-test analysis results for the four components of brand equity among tourists with different industrial tourism visiting experiences.

Brand equity components	Visiting behavior											
	Travel style		t	Product-use experience		t	Interpreter guidance		t	Brand orientation		t
	Group travel (N = 79)	Personal travel (N = 232)		Yes (N = 259)	No (N = 52)		Yes (N = 176)	No (N = 135)		Yes (N = 61)	No (N = 250)	
Brand awareness	4.4	4.1	3.26***	4.2	4.2	-.38	4.2	4.1	-4.10***	4.4	4.2	-3.68***
Perceived quality	4.2	4.1	2.17*	4.1	4.1	.22	4.2	4.0	-3.71***	4.3	4.1	-3.07*
Brand associations	4.0	3.9	.52	4.0	3.8	2.14*	4.0	3.9	-1.50	4.0	3.9	-1.32
Brand loyalty	3.3	3.2	.73	3.3	3.2	1.51	3.4	3.2	-2.30*	3.3	3.3	.61

Note: *p < .05, **p < .01, ***p < .001.

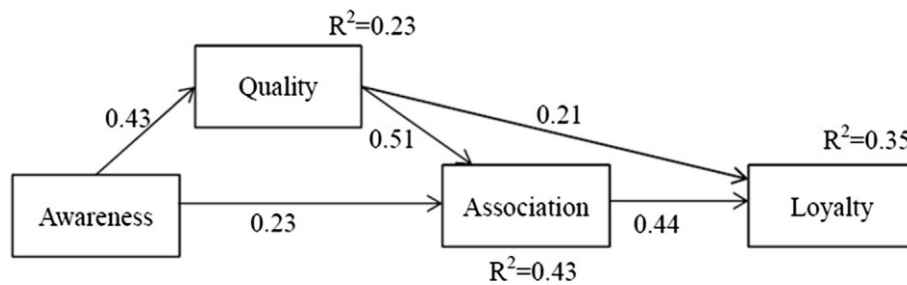


Fig. 3. Path analysis of the building up of brand equity after an industrial tourism visit. Notes: ¹Solid line indicates significant path while standardized path coefficients are shown. ² Controlled variables: Travel style, product-use experience, interpreter guidance experience, and brand orientation experience.

Table 5
Direct and indirect effects of brand equity dimensions on loyalty.

	Direct effect on loyalty	Indirect effect on loyalty	Total effect
Awareness	—	.284	.284
Quality	.21	.219	.429
Association	.44	0	.440

important dimension of brand equity. The results of this study suggested that perceived brand quality and brand associations both have predictive power with regard to brand loyalty ($\beta = .2$ and $.43$, respectively). The potential value of a brand name is based upon specific associations (Keller, 1993; Kim et al., 2003; Low & Lamb, 2000; Yoo et al., 2000). Tourists are exposed to the brand's logo, culture, souvenirs, etc. through a factory tour. All of those aspects make contributions to enhance brand associations.

Perceived quality refers to consumers' feelings regarding the quality of a product or service associated with a brand (Keller, 1993; Kim et al., 2003; Low & Lamb, 2000; Yoo et al., 2000). In tourism factories, tourists most commonly have opportunities to see the production line and the inspection laboratory. In addition, through guidance from tour guides, tourists are given the impression that the factories are hygienic, confident, and specialized. If customers perceive that a brand has high quality, they tend to buy this brand continually and recommend it to others (Jones et al., 2002; de Ruyter et al., 1998). This means that perceiving a brand to have good quality will help promote brand loyalty towards that brand. It is, therefore, not surprising to see the impact of perceived quality on brand associations and brand loyalty.

Brand association has the highest total effect on brand loyalty, followed by perceived quality of the brand, and then brand awareness (.440, .429, and .284, respectively). These findings echo the argument that the building of brand equity consists of a process of accumulating effects from the four dimensions: brand awareness, perceived quality, brand associations, and brand loyalty. It also implies that having visitors be aware of the brand is not sufficient in

brand equity building. When visitors feel that they are associated with the branded products, it is more effective for brand equity formation and maintaining.

As a result, for a brand which is seeking to promote its brand equity, managers of tourism factories should be devoted to enhancing tourists' associations with the brand as their first priority, followed by enhancing the perceived quality of the brand, in order to achieve the optimal goal of promoting brand loyalty. In practice, they should focus more attention on strategies to increase customers' connections to the brand, and then also have to deliver or even emphasize the good quality of the products associated with the brand.

The results of the study suggest that companies engaging in industrial tourism should focus on offering tourists interactive experiences that will enhance brand associations and on ensuring the operations (e.g., assembly line operations) are fully visible to visitors during tours in order to emphasize the high quality of whatever is being produced, thereby eventually contributing to enhanced brand loyalty.

According to results of the t-test statistics for the final hypothesis (H6), it is suggested that the choices of travel style, product-use experience, interpreter guidance, and brand orientation have varying influences on the partial dimensions of brand equity. Through interpreter guidance, interpreters usually share information with the tourists about the history, culture, or spirit of their brand during the visit itself, emphasizing the characteristics and quality of their products more clearly. This may directly influence tourists with the regard to the key values of the given brand, in contrast with letting independent visitors browse the exhibits by themselves passively; therefore, visiting tourism factories with guidance will have various degrees of influence on brand awareness, perceived quality, and brand loyalty among tourists. Similarly, providing a brand orientation, which is relatively formal compared with the guidance of an interpreter, creates impacts on brand awareness and perceived quality among tourists.

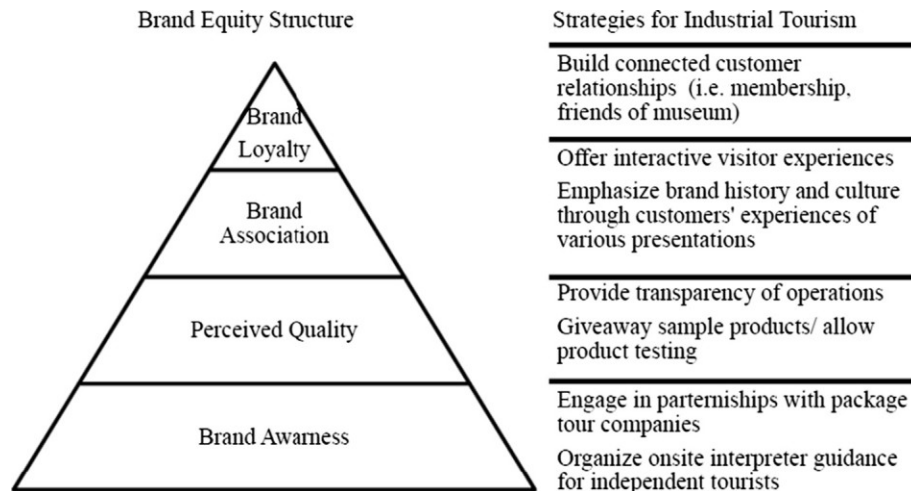


Fig. 4. Suggested strategies for operating industrial tourism factories based on the brand equity model.

With regard to travel styles, the differences may have occurred because normally tourism factories must arrange a tour guide to guide the tour group, and that guide then directly emphasizes the fame and quality of the brand to the group. Independent tourists do not necessarily have such a guide, so this may explain why travel style had a significant influence on brand awareness and perceived quality. Also, if tourists had ever used the product before visiting the factory, they may easily associate their past experience with the product with the information they receive during the visit. This could explain why product-use experience was found to be significantly related to brand association.

The empirical recommendations for the companies running the tourism factories are listed in Fig. 4.

Empirically, the questionnaire about brand equity used in the current study can be provided for use by tourism factories in making self-assessments, for identifying operating principles, and for providing insights to existing or future firms regarding the operation of their industrial tours or potential industrial tours. The questionnaire also identifies the key dimensions through which brand equity can be built up and their relationships among food industrial tourism visitors. These significant connections among dimensions can further be applied to discussions, model development, and framework development for future studies.

The current research only investigated food-related tourism factories, and the questionnaire used is thus only suitable for measuring the brand equity of food-related tourism factories. For future studies, it would be worth discussing what the differences are among tourism factories with varying degrees of brand awareness or finding out if the model of brand equity applies to other types of industrial tourism when considering both high and low levels of brand awareness.

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