台灣家樂福的顧客滿意度影響因素:聚焦於顧客體驗

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摘要

　　本研究的目的，在於分析影響家樂福顧客的消費滿意因素，並聚焦於顧客在店內的購物體驗。我們認為「便利性、賣場環境、自我一致性」會型塑顧客體驗，因此本研究擬驗證這三個因素是否與消費者滿意度相關。其中，自我一致性被認為會影響顧客體驗以及消費滿意度，但是還鮮少在大型超級市場中被驗證過。本研究採用問卷調查法，有效樣本數共計 260 份，大部分填答者的年齡落在 21 到 40 歲之間。本研究之問卷參考前人的研究而編制，並經過 100 份問卷的前測，再修正而成。同時在線上及現場發放正式問卷於台北、高雄及台南。各個變數測量都經過確認性因素分析，並獲得良好的信度及效度。實證數據採用結構方程模式檢測，研究結果發現：賣場環境與顧客滿意度具顯著正向線性相關；自我一致性與顧客滿意度具顯著正向線性相關；便利性與顧客滿意度具正向線性相關，但不顯著。綜而言之，本研究發現顧客體驗的一些因素對於家樂福的顧客滿意水準具有顯著地影響力，而且本研究的填答者多數為年輕族群，也正是家樂福前景看好的顧客群之一。本研究的成果強化了顧客滿意度的文獻，也提供家樂福些許管理意涵。

關鍵詞：大型超級市場、家樂福、台灣零售業、顧客滿意度、賣場環境、自我一致性

Factors Affecting Customer Satisfaction in Carrefour at Taiwan: Focusing on Customer Experiences

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Abstract

　　The purpose of this study is to analyze factors affecting customer satisfaction in Carrefour with a focus on customer experiences while shopping at the stores. Three factors—convenience, environment and self-congruity, which are believed to form customer experiences—were examined. Among these factors, self-congruity has rarely been tested in supermarket stores; yet it is considered an important factor affecting customer experiences as well as customer satisfaction. To identify the relationship between these three factors and customer satisfaction, a survey was conducted with a sample of 260 respondents; most of them are 21- 40 years old. The questionnaire was developed from previous research and was pilot tested with 100 respondents. The questionnaire was then revised and distributed both online and in person in three big cities in Taiwan, including Taipei, Tainan, and Kaohsiung. The data was analyzed by AMOS software using Structured Equation Method (SEM). We found that environment and self-congruity have statistically significant positive relationship with customer satisfaction. Convenience also had positive relationship with customer satisfaction; however this relationship was not statistically significant. Our findings showed that elements that form customer experiences have significant influences on level of customer satisfaction in Carrefour. The focus of this study on young customers also has meaning as they are a promising group of customers in Carrefour.

The findings of this study also strengthen the previous studies of customer satisfaction and also have managerial implications for Carrefour.

Keywords*:* **Hypermarket, Carrefour, Retail Industry in Taiwan, Customer Satisfaction, Environment, Self–congruity.**

I. Introduction

Similar to other developed countries, the retail industry in Taiwan plays a significant role in the economy and has a relatively large contribution to the country's GDP. Beginning to flourish since early 1990s, the development of this industry in Taiwan owes to the facilitation of the Taiwanese government. Both domestic and foreign brands are important players in the market and have made it highly competitive but also highly attractive. Both the characteristics of the market and the consumers are the reason. Taiwanese customers are characterized as wealthy and high demand consumers. The modern society and the high participation rate in the workforce also made them, especially women, busier. At the same time, they considered shopping as a leisure activity. Therefore, it is not easy for businesses to win customers and achieve success in this industry in Taiwan.

Carrefour is a French hypermarket brand that was found in 1959. Since then, it has achieved great success and currently is the secondly largest retailer in the world just after the American Wal-Mart. Due to the limitation of setting up mass-retailers in France, Carrefour realized the need to go oversea and the first oversea store was opened in Spain. Later the brand continued to enter other markets including other parts of Europe, America and Asia. As an important foreign hypermarket brand in Taiwan, Carrefour started its business in this island since 1989, with its first store opened in Kaohsiung. Although Taiwan is not the only Asian market that Carrefour strived to operate, it is a market that Carrefour has achieved huge success. The brand is currently the hypermarket leader in Taiwan with nearly 50% market share. This success catches attention of researchers because the brand didn't succeed in other Asian markets like Hong Kong or Japan even though it has tried hard. To perpetuate its high performance in Taiwan market, the company has invested heavily by buying other brands and continued to earn more market share. However, as mentioned above, with the high level of competition, heavy investment alone cannot be the solution, the brand needs to meet the customers' increasing expectation in order to bring them back or attract more to their stores.

In the literature of consumer behaviors, customer satisfaction is a topic that has drawn a lot of attention from researchers. Studies across industries have shown that customer satisfaction is critical to the success of business. It is also a strong predictor of sales and the attraction force to draw customers to return to the stores. Because of its own characteristics, business in food retail industry finds even higher need to increase customer satisfaction. Food retail industry is characterized as an industry that provides both goods and services simultaneously. It also has high customer traffic, low switching cost between stores and high competition. If customers visit stores frequently; there is no cost for them to switch to another store, and there are many stores to choose from, a particular store must really satisfied them so that they will come back next time. At the end of the day, customer satisfaction is something that food retailers really need to manage.

To manage the level of satisfaction with a store, it is important to know what the drivers of customer satisfaction are. Intensive research has been done in this area, and the level of customer satisfaction of each industry is affected by different factors. Providing that it is both a goods and services industry, researchers have tested the relationship between different factors and customer satisfaction in food retail industry. Price and service quality are common

factors that have been tested by many researchers across countries. However, as one of the characteristics of food retailers industry, when shopping at a store, customers do not only to consume goods but also to experience. As a result, customer experiences may have a strong influence to the level of satisfaction. As most researchers focused on the relationship between service quality and satisfaction, the importance of customer experiences to customer satisfaction have rarely been examined empirically in the literature. Motivated by this fact, we selected factors that emphasize the customer experiences of customers while shopping at Carrefour, rather than focusing on price or service quality while developing our model.

Although improving customer experiences is a trend in business world today, this topic does not appear frequently in literature. Researchers are still in the process of developing the determinants of customer experiences and trying to test different models. In this study, we adopted Verhoef et al.'s (2009) proposed definition of customer experiences, which stated customer experiences include customer's cognitive, affective, emotional, social, and physical responses to the retailer. With the limitation of this research, we only examined the cognitive aspect (with convenience factor), affective/emotional aspect (with environmental factor) and social aspect (with self-congruity factor). Our choice was both based on previous studies and the characteristics of customer experiences in supermarkets, which may be different from other forms of retailers. In addition, as mentioned above, young customers consider shopping at supermarkets as a leisure activity. Therefore, convenience, environment and self-congruity of customer experiences were chosen to reflect the leisure characteristics.

With the motivations above, the objectives of this study is to examine a model of factors affecting customer satisfaction in Carrefour supermarkets, with a focus on customer experiences and also to see which factor has the strongest influence of the level of customer satisfaction. Consequently, the objectives above are to answer the following questions:

1. Does improvement in factors including convenience, environment, and self- congruity leads to higher level of customer satisfaction in Carrefour supermarkets?
2. Among these three factors, which one has the strongest influence on the level of customer satisfaction in Carrefour supermarkets?

With the current demographic characteristics of Taiwan and the special characteristics of supermarket shoppers in Taiwan, the study focused on young customers, who are a promising group of customers for Carrefour. Also, because the operation of Carrefour in Taiwan spreads in different cities, the studies also aimed to cover a relatively wide geographic area, including three big cities- Taipei, Kaohsiung, and Tainan.

II. Theoretical Framework

1. Customer satisfaction

It is unarguable that customer satisfaction is crucial to business; therefore, there has been numerous research devoted to understanding satisfaction. Contradict to the general perception that satisfaction is a well-defined concept that everyone should know, researchers still haven't reached a consensus agreement about how customer satisfaction is conceptualized.

Customer satisfaction is defined either as an outcome or a process (Yi, 1990). In outcome-oriented view, customer satisfaction is seen as a result of consumption experience. This approach often relates customer satisfaction to consumer's psychological state responding to their experiences when they buy the products or services. One can find different definitions of customer satisfaction that is outcome oriented such as those of Howard and Sheth (1969),

Westbrook and Reilly (1983), Oliver (1981). For example, according to Howard and Sheth (1969), customer satisfaction is "the buyer's cognitive state of being adequately or inadequately rewarded for the sacrifices he has undergone", or " an emotional response to the experiences provided by, associated with particular products or services purchased, retail outlets, or even molar patterns of behavior such as shopping and buyer behavior, as well as the overall marketplace" (Westbrook and Reilly 1983, p. 256); and "the summary psychological state resulting when the emotion surrounding is confirmed expectations is coupled with the consumers prior feelings about the consumption experience" (Oliver 1981, p. 27).

Another approach is the process-oriented, which according to Yi (1990) is more common and adopted by many researchers. In process–oriented view, customer satisfaction is emphasized as an evaluation process in which the consumer compares between alternatives or between the expected and actual performance of the product (Engel and Blackwell, 1982; Tse and Wilton, 1988).

Researchers also distinguished two kinds of customer satisfaction based on the level: overall satisfaction (cumulative satisfaction) and transaction-specific customer satisfaction (Garbarino & Jonhson, 1999). While the former measures the general satisfaction that resulted from the customer's cumulative experiences with the firm, the latter focuses on the short- term, encounter-specific emotions and evaluations based on the most recent transaction with the firm (Garbarino & Jonhson, 1999).

The level of specificity also determines the way customer satisfaction is defined. Different researchers employed different levels, it can be satisfaction with a product, a consumption experience, a purchase decision experience, or with a store (Yi, 1990).

To catch the differences in nature of each industry, researchers have developed different ways to evaluate customer satisfaction. Traditionally, the Kano model (Kano, Seraku, Takahashi, & Tsuji, 1984) is a common framework to evaluate customer satisfaction with products, while the SERVQUAL model is a framework often used for services. As mentioned above, the retail industry, including supermarkets, offers goods and services simultaneously. However, in literature, many researchers applied the SERVQUAL model to evaluate customer satisfaction in supermarkets. One can find plenty of research testing the effects of service quality on customer satisfaction in supermarkets in different countries. However, this model has also been criticized that it no longer fits with today's business focus on customer experiences (Maklan & Klaus, 2011). As the world moves to "experience economy", a different approach that focuses more on customer experiences is necessary.

2. Customer experiences

Although in this study we do not have customer experiences as a construct, we selected our independent variables with a focus on it. In this section, we would like to introduce some background as well as the rationale for choosing our independent variables.

Customer experience is one of the major goals of retailers nowadays. Retailers around the world have been increasingly aware of and tried to incorporate the notion of customer experiences into their business. Some famous examples include companies like Dell, Toyota, or IBM, which the objective of providing the best customer experiences has appeared in their mission statements. Although it is well known by practitioners, there is not much in the literature about this topic. Researchers have not considered it as a separate construct (Verhoef et al., 2009), and have not reached consensus on its precise definition and its measures (Maklan & Klaus, 2011).

Verhoef et al. (2009) proposed that customer experiences "involves the customer's cognitive, affective, emotional, social, and physical responses to the retailer". Further, they suggested that customer experiences "is created not only by those elements which the retailer can control (e.g. service interface, retail atmosphere, assortment, price), but also by elements that are outside of the retailer's control (influence of others, purposes of shopping)". Their constructs are different from previous studies which tested models considered factors that are considered under the control of the retailer such as price, assortment (Baker, Parasuraman, Grewal, & Voss, 2002), scent, music, tactile input, and color (Naylor, Kleiser, Baker, & Yorkston, 2008).

According to Verhoef et al. (2009) about customer experiences, we only examined the cognitive evaluation (with convenience factor including location, assortment, selection of goods), affective/emotional evaluation (with environmental factor including music, color scheme, layout) and social aspect (with self-congruity factor to measure how the image of the brand matches with customer's self-image). Our choice was mainly based on the characteristics of customer experiences in supermarkets, which may be different from other forms of retailers. In addition, as mentioned above, young customers consider shopping at supermarkets as a leisure activity. Therefore, convenience, environment and self-congruity of customer experiences were chosen to reflect the leisure characteristics.

3. Convenience and its relationship with customer satisfaction

According to Chamhuri and Batt (2009), convenience has different meanings depending on the type of retail outlets and the age group of the consumers. In their qualitative study, convenience associated with a modern retail outlet like supermarket is" anything that saves or simplifies work and brings comfort to consumers" (Chamhuri & Batt, 2009). For consumers with fast-pace lifestyle, convenience is comprised of store facilities such as parking, trolley and baskets, proximity to other shops, extended trading hours, low level of in-store crowding, good presentation of products, and so on. In an empirical study of Reimers and Clulow (2009) it was proposed that the temporal convenience a retail store offers includes four attributes: one-stop shopping, trading hours, enclosure and proximity to work. Studies conducted in different countries (Recker & Kostyniuk, 1978; Zameer & Mukherjee, 2011; Mai & Zhao, 2004; Malai & Pitsuwan, 2002) also used elements such as location, parking, product variety as items to measure for convenience. From these research, it can be seen that the concept of convenience and location is very close (Chamhuri & Batt, 2009).

Most research mentioned above tested the relationship between convenience and store preference or patronage behaviors. However, elements of convenience such as location or waiting time have been proved to have significant positive relationship with customer satisfaction (Siskos & Grigoroudis, 2002; Tom & Lucy, 1995, 1997).

Nowadays, consumers no longer only base their shopping decision on price (Zeithaml, 1988). As it is reported in Mai and Zhao (2004) research, "many do not check the price when they place the product into their shopping basket". It was concluded that other factors must play an important role here and convenience is one such factor. From the above literature, the first hypothesis is proposed as following:

H1: Convenience is positively related with customer satisfaction.

4. Environment and its relationship with customer satisfaction

Store environment has been known as an important factor that change consumers' behaviors in stores through affecting their mood. The concept of store environment can be drawn from the S-O-R (stimuli – organism – response) paradigm. Loureiro and Roschk (2014) reported that this model was first presented in the context of environmental psychology by Mehrabian and Russel (1974) and first applied in retail context by Donovan and Rossiter (1982). This

S-O-R model defines environment as a "stimuli (S) containing cues that combine to affect people's internal evaluation (O), which in turn create approach/ avoidance responses" (Loureiro & Roschk, 2014). The S-O-R model is popular and is adopted by many researchers, but past studies often used a construct called "store atmosphere" (Baker, Grewal & Parasuraman, 1994). However, these studies did not focus on how specific store elements may be combined to create a particular environment.

Although popular, the S-O-R model has one disadvantage – as stated by Chen and Hsieh (2011) - it "did not establish explicit classification system for environment stimulus variables". To overcome this problem, Baker (1986) divided environmental factor into three categories: ambient cues, design cues, and social cues. The ambient cues include intangible conditions that could influence customers such as music, temperature, noise, and lighting. The design cues include the tangible conditions such as style, layout, and architecture, etc. Finally, the social cues are those that related to the people in the environment, like other customers and the store employees. This classification has been used by many researchers on studies about store environment.

The interior environment of a supermarket will make the customer feel comfortable and enjoyable when buying at supermarkets. Those are most important in consumers' minds when forming their behavioral responses. The literature also emphasizes the importance of environment factors to the level of satisfaction in different industries. For example, Andrus (1986) studied the effects of these factors to dental patients and have found that factors such as comfort and organization of rooms, music and temperature have influences on satisfaction. Another study on patients (Pinto & Leonidas, 1995) tested the relationship between factors such as cleanliness, decoration, temperature and satisfaction. The author found satisfaction with facility increased when comparing an old office to a new office. Mattila and Wirtz (2001) also tested the effect of scent and music on satisfaction and found a positive relationship. From the above literature, the second hypothesis is proposed as following:

H2: Environment is positively related to customer satisfaction

5. Self-congruity and its relationship with customer satisfaction

Over five decades ago, researchers in marketing has started to write about the relationship between stores, brands and products and the importance of consumer's perception and personalities (Martineau, 1958). These early scholars suggested that not only the function and material utilities of the products that matter but also the symbolic meaning of those products, which describes the customers' personalities (Levy, 1959). Different brands have different images, and consumers look for those brands that are congruent with their own self-images (Ibrahim & Najjar, 2007).Self-congruity is defined by marketing researchers as consumers who choose brands that have personalities that match with their own self-image (Ibrahim & Najjar 2007). "Self-image congruence", "self-congruence", "self-congruity", "image congruence" are used interchangeably in the consumer behavior literature (Hohenstein, Sirgy, Herrmann, & Heitmann, 2007). The 4 levels of self-congruity are ideal self-concept, real self-concept, social self-concept and ideal social self-concept (Sirgy et al., 1997; Ibrahim & Najjar, 2007; Abdallat, 2009).

The relationship between self-congruity and consumer behaviors has been long discovered by researchers. Ibrahim &Najjar (2007) stated in their research that congruity of self-image and brand personality brings a significant way to understand consumer behaviors. Similarly, other researchers like Parker (2005) confirmed that, the match or mismatch between a self- image and a brand's image, is partially a driven factors of consumer behaviors by determining whether a brand attitudes are favorable. While studying the relationship between self-congruity and consumer behaviors, satisfaction is an important factor. Most researchers are interested in the relationship between

self-congruity and customer satisfaction. Some research also tested this relationship and the results have been a mix. Most of them found a positive relationship between self-congruity and customer satisfaction (Chon, 1990; Jamal & Goode, 2001; Park & Lee, 2005; Ibrahim & Najjar, 2007; Hohenstein et al., 2007; Abdallat, 2009). Chon (1990) and Abdallat (2009) studied this relationship in tourism industry and Jamal and Goode (2001) studies in precious jewellery market, and they found that the higher the congruity, the higher the level of customer satisfaction, or a positive relationship between two variables. Park and Lee (2005) studied Korean customers from 20s to 30s and also found similar results. Ibrahim and Najjar (2007) conducted study for patrons of discount retail stores and they also found a positive relationship between these two variables. Hohenstein et al. (2007) found that brand self-congruity influences brand satisfaction, attitude, and loyalty using two samples with automobile and public transportation system. However, Hosany & Martin (2012) found that self-image congruence affects passengers' experiences but indirectly influences satisfaction levels using a sample of cruise ship travelers.

Researchers used different ways to measure self-congruity. One method is using semantic differential. This method measure the customer's perception of the brand image and their self-image separately, and then calculating the distance between these two to achieve a score that indicates the level of self-congruity. This method is called the traditional method, and it is still used by some researchers (Ibrahim & Najjar, 2007; Hosany& Martin, 2012). The new method is called the global self-congruity measure. This method uses the customer's perception about a typical customer of the brand to identify the brand image. After doing that, the customer rates their level of agreement or disagreement on whether this image matches with their self-image (Parker, 2005).Some researchers have used both methods in one study to compare the differences between two methods (Parker, 2005). From the above literature, the third hypothesis is proposed as following:

   H3: Self-congruity is positively related to customer satisfaction.

6. The relationship between environment and self-congruity

Although past research on store environment and self-congruity is abundant, few of them studied the relationship between these two factors.

Sirgy, Grewal and Mangleburg (2000) mentioned this relationship in their qualitative research about store environment, self-congruity and retail patronage. They proposed that shoppers are likely to make inferences about the patrons of a store based on environmental cues. In turn, the patron image of the store affects self-congruity as self – congruity is defined as the match/mismatch between the store patron image and the shopper's self-image. They reasoned that a retailer's store image is carefully designed and developed so that it fits and attracts their targeted customers. Customers also base on the store characteristics (such as environmental cues) to judge what kind of person typically shop at a store. From there, they may decide whether that store' patron image match with their self-image. The environmental cues that makes up the store's patron image includes many factors (product, place, price, promotion). The environmental cues related to place is characterized as music, lighting, noise, temperature (ambient cues), style, layout, architecture (design cues) and employees, other customers (social cues).

This relationship has been empirically tested in a few studies recently. Chebat, Sirgy and St.-James (2006) observed that upscale malls generated higher levels of self-congruity. From this research, Massicotte, Michon, Chebat, Sirgy, & Borges (2011) conducted a study for teenagers and adults, in which they tested whether mall atmosphere positively affects self-congruity. The results are consistent with the previous study, which means the more the mall is perceived as high in atmospheric (stimulating, bright, and interesting), the higher the level of self-congruity the

respondents perceived. The authors explained this result in light of the need for self-esteem. High in atmospheric typically are positive human traits (stimulating, bright, and interesting) and people normally want to see themselves in a positive way rather than in negative way. Their study design allows to compare two groups (teenagers who are from 15-18 years old, and adults who are above 25 years old) and leads to the conclusion that self-congruity plays a primary role with teenagers, but not with adults (who functional congruity plays a primary role). They left out the middle group (from 19- 25 years old) - the age group that our study targeted - as this group is the transitional from adolescence to adulthood.   From the above literature, the fourth hypothesis is proposed as following:

   H4: Environment is positively related to self-congruity.

III. Research Methodology

1. Research Design and Data Collection

   For the purpose of this study, we conducted a survey using self-administered questionnaire with 5 –point Likert scale. Our sampling method was convenience sampling. Our questionnaire was first written in English, then was translated to Mandarin Chinese to serve both groups of respondents: international students in Taiwan and Taiwanese. As Carrefour is operating in all over Taiwan, the questionnaire was distributed in three big cities that have Carrefour stores: Taipei, Kaohsiung, and Tainan. For this reason, it was distributed both through the internet and in person. A total of 200 questionnaires was collected in person, and there 10 of them are not usable. A total of 70 questionnaires was collected through the internet. So these made up a sample size of 260. In our sample, the number of male respondents was less than female respondents, which made up 56.2%. The majority of respondents were between 21-30 year old (74%) and under 20 year old (16.2%). This served our purpose to focus on young customers. As their age implied, most of our respondents were students (83.8%). Our respondents were both foreigners (38.1%) and Taiwanese (61.9%). As most of our respondents was students, their income range is under 20000 NTD per month, and their frequency to shop at Carrefour was quite high :13.8% shop 3-4 times per month,26.9 % shop 1-2 times per month, , and 49.2% don't shop often. Most of them get to the store by scooter (56.5%) and by walk (11.9%)

2. Measurement of the Constructs

   The dependent variable, customer satisfaction, was measured using 4 items scale. These four items are adopted from Hohenstein et al. (2007), where they had a high construct reliability of 0.948 and high convergent validity of 0.784 for their measurement of customer satisfaction. They had five items to measure brand satisfaction. We adopted four of them by dropping the question "brand X products are always excellent" because Carrefour provides products and service simultaneously.

   The convenience factor was measured with 11 items. Items 1, 2, 3, 6, 7, 8, 9, 10 were borrowed from Recker & Kostyniuk (1978, p.21), where they had 17 items with four factors, namely quality of product, accessibility, convenience and service. We adopted two items from accessibility factor, two items from convenience factor, three items from quality factor, and one item from service factor. Items 4, 5 were borrowed from Reimers & Clulow (2009, p.550), where they had 20 items to measure convenience. We adopted one item from time convenience factor and one item from car-parking-convenience factor. We also modified items 2 and 8 to make them negative- wording items. The factor loadings of the above 10 items ranged from 0.41 to 0.87 in Recker & Kostyniuk (1978) and Reimers & Clulow (2009). Lastly, we invented the item 11 "the bill provide clear information about your purchase" because we thought customers might care about their payment.

We measured environment factor with 9 items. As most of studies tested the effect of environment used experiment as their methodology, we had to modify the question to make it appropriate for our survey. Item 1, 2, 3, 4, 5, 6, 9 were adopted from Baker et al. (1994, p. 334 & 337), where they had 4 items to measure store image and 11 items to measure environment with three factors. We adopted the first three items from store image factor, item 5 from ambient factor, items 4 and 6 from design factor, and item 9 from social factor. Item 4 was modified to make it a negative-wording question. Item 7 and 8 were borrowed from the information-design construct in Loureiro & Roschk (2014, p. 215), where they had four items to measure information-design construct.

Concerning the Self-Congruity variable with four items, it was adopted from Abdallat (2009, p. 31) without any change. This measurement is called Global Self-Congruity measure.

3. Data Analysis Method

In our study, structural equation modeling (SEM) was used to test the causal relationship between three variables: convenience, environment and self-congruity and satisfaction for young customers at Carrefour at Taiwan.

We first checked if the convergent validity of our measurement was above the acceptable level. Then we used confirmatory factor analysis (CFA) to test the goodness of fit of the measurement model for the construct.

After the validity of the measurement has been confirmed, we carried out with structural equation modeling using AMOS to test the causal relationship between the variables.

IV. Analysis Results

1. Effects of demographic variables

The effects of demographic variables on the independent and dependent variables were examined in this section. In our questionnaire, we asked the respondents 10 questions regarding their demographic information, in which 4 of them (age, education, income and frequency of shopping) are interval, and the other 6 (gender, nationality, marital status, occupation, vehicle and location) are nominal.

For interval variables, we used SPSS to see if the demographic variables and other variables are correlated. The results show that only income and frequency of shopping are significantly correlated with other variables. Income is negative correlated with self-congruity, which means the higher the income level of the respondents, the lower the level of matching between their self-image and Carrefour's brand image. Frequency of shopping is both positively correlated with self-congruity and satisfaction. In other words, the more frequent the respondents shop at Carrefour, the higher the level of self-congruity they experience, and the higher their level of satisfaction toward this brand.

For nominal variables, we conducted ANOVA test to see their effects toward the main variables. We found the only nationality of the respondents have effects on the level of satisfaction. The test results indicated that French respondents are more satisfied than Taiwanese respondents and respondents whose nationality other than French or Taiwanese are more satisfied than Taiwanese respondents. Only the second relationship is statistically significant.

2. One- Level Confirmatory Factor Analysis

At first, one-level CFA was used to test our measurement models. However, for two latent variables- convenience and environment- we did not achieve good results. Therefore, we continued to try to group two items together and tested whether they are correlated. For each latent variable, we found two pairs in which the items are correlated to

each other. So for convenience and environment, we kept 4 items for each variable, the other items were dropped from our model.

(1) Convergent Validity and Reliability

Convergent validity is tested by factor loading and the significance level of estimates is accessed through t-values. It is suggested that a t-value corresponding to the parameter larger than 1.96 with large sample, using significance level of 0.05 is considered significant. Furthermore, construct reliability and average variance extracted (AVE) are measures for convergent validity. The value of construct reliability greater than 0.5 and the value of AVE greater than 0.5 are acceptable.

In Table 1, the convergent validity and construct reliability for all constructs and variables are reported. It can be seen that for two variables – satisfaction and self-congruity- all of the item-loadings are greater than 0.7. The other two variables (Convenience and Environment) item loadings were lower; however, it is still acceptable. All of the t-value was significant for all indicators in this model. Moreover, the AVE values of all variables were larger than 0.5 (except for the Location of Convenience) and all construct reliability values exceeded 0.5.

Table 1　One-level CFA

LatentVariable		Items[a]	FL	cronbach 's α	CR	AVE
Satisfaction		Sat1	0.76	0.88	0.88	0.64
		Sat2	0.82			
		Sat3	0.80			
		Sat4	0.82			
Convenience	**location**	Con1	0.58	0.583	0.59	0.42
		Con3	0.71			
	variety	Con5	0.70	0.662	0.57	0.50
		Con6	0.72			
Environment	**Atmos**	Env1	0.62	0.704	0.73	0.58
		Env2	0.88			
	Sign	Env7	0.62	0.714	0.74	0.59
		Env8	0.90			
Self-congruity		Self1	0.78	0.857	0.86	0.60
		Self2	0.83			
		Self3	0.71			
		Self4	0.78			

a: refer to appendix A for the names of items.

FL: standardized factor loading, Construct reliability (CR) = (sum of standardized loadings)^2/ [(sum of standardized loadings)^2 + (sum of indicator measurement error)]. Indicator measurement error = [1− (standardized loading)^2]. Average variance extracted (AVE) = (sum of squared standardized loading)/ [(sum of squared standardized loadings) + (sum of indicator measurement error)]

(2) Discriminant Validity

It is suggested that when the correlations between construct in CFA model is not greater than 0.85, the discriminant validity is achieved.

For convenience, the output of AMOS shown that correlation between Location and Variety is 0.42. For environment, the correlation between Atmosphere and Sign& Layout is 0.56. These correlations are all far less than 0.85, which means discriminant validity for these two variables was achieved.

3. Two-Level Confirmatory Factor Analysis

Two- level CFA was then used to test two latent variables including convenience and environment. The results were shown in Table 2. The factor loadings were not very high, only one of them (Sign and layout in Environment variable) exceeded 0.7. In terms of AVE, the value for ENV was larger than 0. But the value of CONV was less than 0.5. All construct reliability values exceed 0.5. In conclusion, the results showed that the measurement models possesses acceptable convergent validity and construct reliability.

Table 2   Two-level CFA

LV	Factor	FL	CR	AVE	Measure items
CONV	**Location**	0.66	0.59	0.42	1, 3
	Variety	0.63			5,6
ENV	**Atmosphere**	0.66	0.73	0.58	1,2
	Sign and layout	0.85			7,8

4. Common Method Bias

We tested whether the model has common factor bias problem by performing the chi square difference test for both original model（include all items）and final model (ten items were dropped). We first performed the test for our final model, we tested the multifactor model and found chi square value $\chi2 = 158.9$, df = 89. Then, we ran common single factor model and found $\chi2 = 785.8$, df = 109. If there is common method bias, the single factor model would fit well with the data just as the more complex model. We found that the single factor model fit is much worse than the multifactor model, evidenced by $\Delta\chi2 = 626.9$, Δdf = 20. At α =0.005 the critical value equals 40, much smaller than the value of $\Delta\chi2$, therefore we rejected the null hypothesis that there is no significance difference between two models. In other words, there is significant difference between one factor model and multifactor model or common method bias is not significantly presented. We further performed similar test for our original model (which all items were included). The test showed that multifactor model has the chi square value $\chi2 = 734.1$, df = 344, and the common single factor model's chi square value $\chi2 = 1366.8$, df = 350. The differences in the chi square value of the two models: $\Delta\chi2 = 632.7$, Δdf = 6. This difference is significant at 0.005 as the value of delta chi-square is much higher than the critical value (18.5). We again rejected the null hypothesis that there is no significant difference between common single factor model and multifactor model. For both original model and final model, the common method bias is not obviously shown.

5. Structural Equation Model

Based on the results of one-level and two-level CFA above, we carried out Structural Equation Model to test the causal relationship between variables. Our first model included three independent variables. Convenience variable included two factors: location and variety. Environment variable included two factors: Atmosphere and Sign &layout. Self-congruity variable included 4 items. The dependent variable included 4 items. The results show that this model does not fit well. Based on this result, we improved it by dropping factor Location of Convenience and Atmosphere of Environment. We also dropped one item of Self-congruity (SELFCON4). The new model was tested again. The results did improve and it indicated that Convenience, Environment and Self-congruity all have positive relationships with Satisfaction. The coefficients are 0.09, 0.31 and 0.36 as shown in Fig.1, respectively. However we found that the relationship between Convenience and Satisfaction was not statistically significant. Therefore, H1 was rejected, while H2 and H3 were supported. We also tested the relationship between environment and self-congruity. This relationship

was also statistically significant with a coefficient of 0.30. H4 was supported. The indicators listed in Table 3 shown that the model fits well with the data, as all indicators meet the requirement criteria.
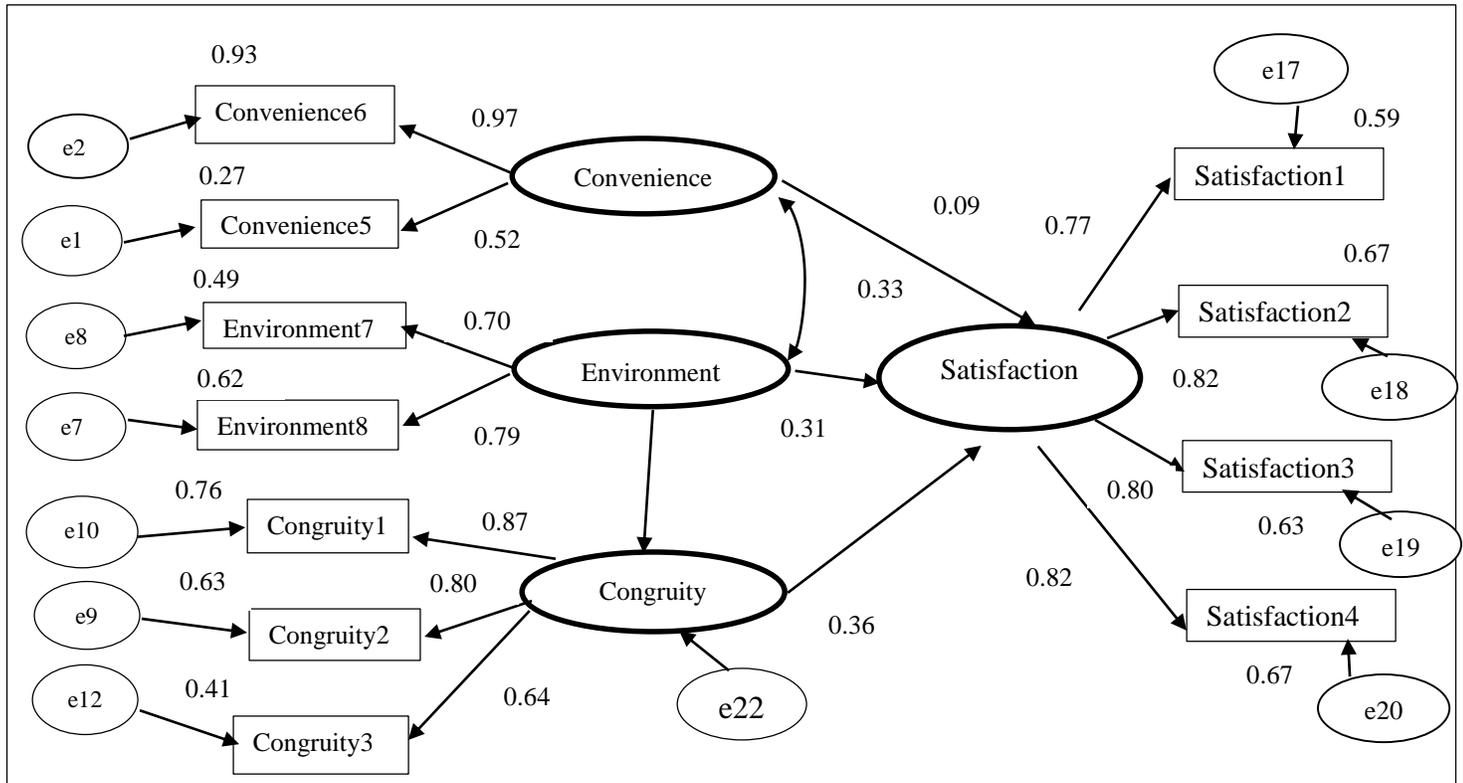

Fig.1   SEM results

Table 3   Structural Parameters-Model fit

MODEL FIT	CRITERIA	Model
χ^2	Smaller is better	31,745
d.f.	--	39
χ^2/df	1<NC<3	0.814
GFI	>.90	0.978
RMR	<0.05	0.020
RMSEA	<0.08	0.00
AGFI	>.90	0.963
NFI	>.90	0.971
RFI	>.90	0.960
CFI	>.90	1.000
IFI	>.90	1.005
TLI	>.90	1.008

6. Mediation effect of Self-congruity

We conducted chi-square difference test to see if the mediation effect of self-congruity was partial mediation or full mediation. The difference in chi-square values of partial mediation model and the full mediation model was $\Delta\chi2 = 20.097 > \chi2 (1), 0.05 = 3.84$, therefore we rejected the null hypothesis (a=0), indicating that the partial mediation model fits better than the full mediation model. We then tested the direct effect of self-congruity to satisfaction by chi-square difference test, showing that $\Delta\chi2 = 27.324 > \chi2 (1), 0.05 = 3.84$, we rejected the null hypothesis that b=0, which also indicates that the partial mediation model fits better. The direct effect of environment to self-congruity was tested using similar chi-square difference test, with $\Delta\chi2 = 13.114 > \chi2 (1), 0.05 = 3.84$, we rejected the null hypothesis that c=0, or the partial mediation model fits better. The results from these tests indicates that the mediation effect of self-congruity in our study is partial rather than full mediation. In other words, environment affects satisfaction both directly and indirectly through self-congruity.

Table 4　Models comparison

Indices	Criteria	Partial Mediation Model	Full Mediation Model (a=0)	Direct Effect	
				(b=0)	(c=0)
χ^2	Smaller is better	18.729	38.826	46.053	31.843
d.f.		24	25	25	25
χ^2/df	1<NC<3	0.78	1.553	1.842	1.273
GFI	>.90	0.984	0.969	0.963	0.974
RMR	<0.05	0.012	0.043	0.055	0.041
RMSEA	<0.08	0.00	0.046	0..057	0.032
AGFI	>.90	0.971	0.943	0.933	0..953
NFI	>.90	0.981	0.961	0.954	0.968
RFI	>.90	0.972	0.944	0.933	0.954
CFI	>.90	1.000	0.986	0.978	0.993
IFI	>.90	1.005	0.986	0.978	0.993
TLI	>.90	1.008	0.979	0.968	0.990

V. Discussions

The main goals of our study are to examine the relationships between three factors and the level of customer satisfaction for young customers at Carrefour supermarket in Taiwan. Moreover, our factors were chosen so that they reflect the customer experiences while they shop at supermarkets. Before testing these causal relationships, we want to make sure that our measurement is valid and reliable. We achieved that through showing that our measurement meets the requirements for convergent validity, discriminant validity, construct reliability and the goodness of fit for the model. The results of this study are consistent with the findings of previous studies while it provides some new aspects that have not been considered thoroughly in other studies.

For instance, we found that shopping environment has significant positive relationship with the level of customer satisfaction among young customers. Other researchers also tested this relationship in different industries and different types of respondents and also see similar results. For example, Andrus (1986) and Pinto & Leonidas (1995) both

conducted studies with patients in dental office or clinic and found a positive relationship between environment and the level of customer satisfaction. Similarly, Mattila & Wirtz (2001) also found a positive relationship between these two variables when they carried out a study in retail industry.

Another finding of our study is the positive influence of self-congruity and customer satisfaction among young customers at Carrefour, where young customers consider shopping at supermarkets as a leisure activity. The relationship between self-congruity and satisfaction has been tested by other researchers but the results have been a mix. Our results found to be consistent with Ibrahim and Najjar (2007) in discount retail stores, Chon (1990) in tourism, Jamal & Goode (2001) in precious jewellery market, Park and Lee (2005) with Korean customers from 20s to30s. The characteristic of young customer at Carrefour at our study somehow is similar to Parke and Lee (2005)'s young Korean customers, leisure orientation in precious jewellery market from Jamal & Goode (2001) and in tourism from Chon (1990), and discount retail stores in Ibrahim and Najjar (2007). However, Hosany& Martin (2012) found that self-image congruence affects passengers' experiences but indirectly influences satisfaction levels, which examined the congruity between the visiting destination and tourist's self-concept. Overall, our findings and literature showed that the self-congruity might be a more important customer experience in affecting their satisfaction directly or indirectly, especially for leisure oriented shopping.

We did not observe a significant relationship between convenience and satisfaction. Although it is counter-intuitive, academic researchers often report that convenience is often assigned less importance than other shopping motives (Reimers & Clulow, 2004). These authors proposed that this counter-intuitive findings is the result of the inconsistence between the way researchers define convenience and the way customers define it. Providing that our measuring items of convenience is borrowed from multiple sources based on different authors' perception of convenience, this maybe the reason for the insignificant relationship between these two variables found in our study. Another explanation is the characteristics of our respondents (young). For this age group, most respondents are single and are students; therefore, they have more time than older age groups who are married and working. Time scarcity is not an important issue for them, and they go shopping for fun rather than as a duty. In this case, convenience may not be an important factor compared with other factors when it comes to the level of satisfaction when shopping at Carrefour. Even so, more research is needed to study this important but controversial factor.

We also observed the positive relationship between environment and self-congruity, which has not been studied by many researchers in the literature. Our findings on this relationship is consistent with the two past studies (Chebat et al., 2006; Massicotte et al., 2011): the higher the perception about the environment, the higher the level of self-congruity. The possible explanation for this result is that customers are motivated to identify themselves with positive traits. Therefore, if they perceived the store's atmosphere highly, they will tend to see themselves consistent with the store's image. This result may have important implications for managers when they develop their store' image, as high level of self-congruity tend to lead to higher level of satisfaction and loyalty.

As environment affects customer satisfaction directly and indirectly through self-congruity, it can be seen that environment has a strongest effect to customer satisfaction among the three. The coefficient in the environment-satisfaction relationship (0.31) also shows that it has strong influence on customer satisfaction if compared with the other two. Although the role of environment in retail business has long been discovered and its relationship with satisfaction have been researched extensively, most research tested its effect in other form of retail. Our results showed that nowadays, when consumers care more about their experiences when doing their daily shopping, the role of environment in food retail business cannot be underestimated.

VI. Conclusions And Implications

The purpose of this empirical study is to examine the effects of different factors on the level of customer satisfaction among young customers at Carrefour supermarkets in Taiwan. Our results shown that among three factors –convenience, environment and self-congruity, only environment and self-congruity have significant positive relationship with customer satisfaction for young customers in Carrefour.

It can be drawn from these results that for young customers, who are likely to see shopping at supermarkets as a leisure activity, the environment inside the store and the high level of matching between the brand image and their self-concept are important to make them feel satisfied after each shopping trip. As this age group is a promising customers group in Taiwan, these results may give retailers some insights about how to target this group of consumers.

The critical role of environment and self –congruity to the success of retail stores are clear. But putting these two factors together and considering that environment affects self-congruity, and these two factors both affect the level of customer satisfaction of the store provides some implications for managers. Besides other marketing elements such as price, quality or promotion, the elements that form customer experiences should be taken into account. The role of environment should be paid attention as it has double effect- it both increases the level of customer satisfaction directly and indirectly through increasing the level of self-congruity.

As our study limits to young customer in Taiwan (under 30 year old), a group with its own characteristics, it puts a limitation on the application of our results. Future research on other age groups with different characteristics, especially related to customer experiences, may bring very different results. For example, the role of convenience might be more significant for middle aged housewives, who are busy and consider shopping as a daily task. This group of customers have different expectations when it comes to shopping at supermarkets. Therefore, the factors that form their experiences when shopping at supermarkets would also be different. Different research approaches and frameworks may be required.

By providing these additional knowledge and insights, it is likely that marketing researchers and supermarket managers could have deeper understanding about customer satisfaction and the role of customer experiences in this industry. From there, they could improve their business managing focus or explore this topic further.

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Appendix A: Measuring items

Sat1	Overall, I am satisfied with brand Carrefour
Sat2	If I compare brand Carrefour with other brands, I am very satisfied
Sat3	Brand Carrefour meet my expectations
Sat4	My decision to choose brand Carrefour is right
Con1	It is easy to get to store from home
Con3	It is near the shops I use
Con5	It has plenty of places to park
Con6	It has good variety of items
Env1	The store was attractive
Env2	The store has a pleasing atmosphere
Env7	The store information about goods and services is sufficient
Env8	The store layout make it easy to get around
Self1	The typical user of brand Carrefour is consistent with how I see myself (your actual self)
Self2	The typical user of brand Carrefour is consistent with how I like to see myself (your ideal- self)
Self3	The typical user of brand Carrefour is consistent with how I believe others see me (your social- self)
Self4	The typical user of brand Carrefour is consistent with how I would like others see me (your ideal- social self)