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Effects of Reference Pricing on Customer Purchasing Intention

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Abstract

This study attempts to investigate the effectiveness of internal (memory-based) and external (stimulus-based) reference pricing on consumer purchasing intentions. Numerous studies in existing reference pricing literature have recognized the influence that the reference price has on customers, when evaluating their purchasing decisions. This study proposes to investigate the effect of different reference pricing factors on consumer purchasing intentions in Vietnam and Taiwan, and the relation of both internal and external reference pricing with consumer purchasing intentions. Three hundred and eighty five (N = 385) respondents from Taiwan and Vietnam were selected and invited to participate in this study. Response surface regression analysis was utilized to examine the eleven proposed research hypotheses. This was done through a questionnaire designed on the Likert five point scale. The results indicate that seven of the eleven hypotheses were supported and internal and external reference pricing has shown significantly, positively influence consumer purchasing intention. Finally, the study is summarized with a conclusion and suggestions for practitioners.

***Key Words*:** *Internal Reference Price, External Reference Price, Consumer Purchasing Intention*.

Introduction

Generally, customers often set their price expectations prior to purchasing a product or service. According to Lewis and Shoemaker (1997), these price expectations are used as reference points to compare prices and make purchasing decisions. Reference pricing can be simply defined as the amount customers expect to pay for a product or service (Kalwani, Yim, Rinne and Sugita, 1990).

Companies use reference pricing when they compare the actual selling price to an internal or external reference price. All customers use internal reference pricing; the internal expectation of what a product should cost. It can also be used to refer to a customer's memory in terms of the cost, or advertising that product or service. As consumers, our experiences provided us with a reasonable expectation of how much

we should pay for common products, such as a meal, or a television, laptop… When it comes to common purchases, internal reference prices are critically important. However, some customers may have little experience with certain products, especially in services where intangibility and heterogeneity make it difficult for the customer to judge the appropriate price. In those situations, external reference pricing takes greater significance, which is provided by the manufacturer or retailer. A common use for reference pricing occurs when sale prices are compared to regular prices. It can also refer to the price of a competitor product or service, at the time of purchasing. Reference price is involved inadvertising, when marketers promote products during sales or the limits on best price buying times. Reference pricing also occurs when companies set prices slightly below most competing products. Most customers naturally choose the lowest priced products and companies use this to their advantage by creating lines of products that are similar in appearance and functionality, but are offered with slightly different features and at difference price points. Many marketing researchershave stated that customers either use external or internal reference pricing to stimulate their purchase intention. These studies have focused on how customers form their reference price points and utilize these to influence their purchase behavior. Moreover, all of these studies have examined the formation of reference price points and how they are built into internal reference pricing (IRP), external reference pricing (ERP), and the effect of these on consumer behaviors specifically purchasing intentions. Most of the studies have emphasized the effect of a reference price towards purchase intentions for physical or tangible products, where the price is normally fixed, unless a promotional activity such as a discount is introduced.

According to Daniel (1992), the impact of a reference price effect retailers' and manufacturers' optimal pricing policies. However, the impact of reference prices may lead to poor buying decisions on behalf of customers. When consumers purchase unfamiliar goods or services, they do not often have clear reference price information in mind (Yi cai, 2005).

Both internal and external reference prices have significant impacts on consumer purchasing intentions. Huang & Chen divided the participants into planned and unplanned purchase groups, and found that internal reference pricing affects both groups while external reference pricing has limited influence on unplanned purchasing intentions (Huang & Chen, 2013). Price is an indicator of purchase cost which assumes to influence consumers' choices. Assuming that consumers have accurate information concerning prices and want to seek comparable product alternative, they can determine whether a product maximizes satisfaction and meets budget constraints. However, most consumers pay more attention to those prices which reflect the price perceived in their first choice.

This study attempts to investigate the effects of reference pricing on customer purchasing intentions. To achieve this objective, we surveyed customers in Taiwan and Vietnam about their purchasing behavior and experience with reference to internal and external factors. Results of statistical analyses and discussions are not only about the relation between internal and external references, but also their effects on customer purchasing behavior. This study was summarized with a conclusion and suggestions for future study and practitioners are mentioned. The aims of thisstudy include:

- Examining the impacts of internal and external reference price factors on customer purchasing decisions. How reference pricing affect consumers' purchasing intentions and whether different reference prices play different influential roles in affecting consumer purchase decisions. Which plays the more important role between internal reference price and external reference price?
- Comparing the purchasing behavior between consumers in Vietnam and Taiwan, and determiningwhich is more dependent on the effects of reference pricing.
- Based on the results, we aim to provide suggestions and implications that can potentially be offered to companies in Taiwan and Vietnam for future reference.

Literature Review

Definition of Reference Price

The most commonly used rationale for reference pricing is Helson's AdaptionLevel Theory (1964). Adaptation level theory describes the process by which a person becomes insensitive to the effects of constant stimuli. This theory is based on the assumption that the initial effect one experiences, upon exposure to an unchanging sensory stimulus, quickly dissipates with time. The past and present experiences define the adaptation level or reference point, leading to seeking new stimuli for comparison and perception.

Memory-based and stimulus-based reference prices are two broad types of reference pricing, internal and external reference prices, provide a reasonable base for modeling purchasing behavior. Whether IRP is based on actual, fairor other price concepts, ERP is observed stimuli, such as "regular prices", that stores may display, along with a sale price for comparability. Both IRP and ERP are found to have significant effects on purchase probabilities (Mayhew and Winer, 1992).

Kalyanaram and Winer (1995) pointed out that reference pricing is an internal standard against observed prices which are compared. Kumar, Kiran and Werner (1998) found that ER performs better and has more influence than IR. For consumers who do not face stock out condition (have to buy), external and internal reference will have more impact on them rather than non stockout condition (have option to wait). Depending upon contextual conditions, ERP has more impact on brand choice than IRP.

Consumers often obtain price information by receiving and converting the information into their memory as magnitude representations. They are usually unaware of how price and value are formed and developed (Keith & Robin, 2005).

Moon, Russell andDuvvuri (2006) determined that consumers who follow reference price mechanisms in choice behaviors are in the majority (91%), over non reference price consumers. Internal reference price consumers are more sensitive when it comes to price purchasing than external reference price consumers. Consumers use price information for expressing both IRP and ERP when making a decision.

Definition of Internal Reference Price

Through survey research of Dickson and Saywer (1990), shoppers mostly use their intuition to judge price. The price consumers expect to pay for a product is usually operationalized with a promotion price from the past (Kalwani, Yim, Rinne and Sugita, 1990, 1990).

According to Mayhew and Winer (1992), IRP is the price consumers expect to pay for the brand, or think is normal or fair for that particular brand. IRP is based on the price paid by the consumer in the past (or observed price). IRP variables are significant when using large sample data or samples of single person households.KalyanaramandRussel (1995) pointed out that the internal reference price utilizes the past price as part of the consumer's information set.The ChandrashekaranandJagpal paper from 1995indicated that some IRP variables are more strongly associated with consumers' perceptions of "value" than others. Furthermore, consumers' use of internal reference prices is product specific. Consequently, it is inappropriate to use the same indicator of internal reference price for all products.

In Richard, Lakshman andTridib's research (1997) the five alternative models were tested and evaluated which included three memory-based models and two stimulus-based models. Those models are distinguished by the amount of information retrieved from both memory and previous price judgment. The

best model for reference price is consumershaving accurate informationabout past prices of a brand. The prior price observed by the consumer is the strongest determinant of consumer IRP. Memory information of recent prices has more effect on IRP than earlier prices.

According to Moon, Russell andDuvvuri (2006), through formation of price expectation, internal reference consumers mostly rely on past experience. Consumers continually monitor the price environment and condition their behavior on changes in that environment. Moreover, they use the information they have, which is based on their memory of the last time they purchased products or the most recent brand promotion. Erdem and Katz's research (2010)revealedIRP is based on economically rational behavior or price as a signal of quality and a predictor of future prices. Past prices are used to predict future prices and unobserved, imperfectly observed, quality.

Definition of External Reference Price

According to Bolton (1989), the effects of store level activities (store environment), category displays, and feature activities appear to have the largest impact on price elasticity. Consumers' expectation prices are affected by current price information and other correlated, unobserved factors. Additionally, consumers' reference prices are affected by different types of advertising and current purchase information(Jacobson & Robert, 1990).

ERP is based on a number of different kinds of price, such as the regular price, pre-sale price or discounted price, which are displayed on shelf tags. Discounted prices or coupon savings may be compared and the price is constructed, or the actual price charged by the store at the point of sale (Mayhew and Winer, 1992). Depending on contextual conditions, external reference price has more impact on brand choice than internal reference price (Kumar, KiranandWermer, 1998).

ERP is formed based on different stimuli at the point of purchase, such as advertised price, suggested retail price, actual price or the unit price of another product. Consumers use external stimuli to compare prices. The basic statement for ERP is the existence of the difference between tag prices, advertised price, transaction price and products on sale or discounted with coupons (Milan, 2004). Product categories with greater promotional frequency as features and displasy have higher use of ERP. Greater use of ERP relates to longer inter purchase times (MazumdarandPapatla, 2000).

In Kopalle's research (2003), an experiment was conducted to manipulate the discrepancy between ERP and initial price expectation. The external reference price performs based on the subjects' initial price expectations. Customers believed that ERP and the actual price at the store were identical. Consumers evaluated ERP, not only based on their initial price expectation, but also the actual price. ERP consumers remembered identifying the last brand purchased, and they used the current price at the time of purchasing as a reference to the brand to determine the last price. However, "ERP consumers" also refers to those who cannot remember purchase prices (Moon, Russell andDuvvuri, 2006).

Definition of Customer Purchasing Intention

In Dodds and Monroe's research (1985), the result showed that price has a positive influence on perception of quality, customer satisfaction and willingness to pay.

Customer purchasing intention is the probability of intention to purchase, or willingness to obtain a good or service in the future. It also refers to a repetitious purchase and return to a reference brand name (Whitlark and Michael, 1993).

Reference price effects are also important in the purchase incidence decision. Furthermore, that the reference effect in purchase incidence arises when consumers make an intertemporal utility maximizing decision: to "buy now" or "buy late" (Bell and Bucklin, 1996).

Hypothesis

Klein and Oglethorpe (1987) found that knowledge about attributes or aspiration level plays an important role in making purchasing decisions. Diamond and Campbell (1989) examined the assimilation-contrast theory, which is consistent with the experimental data. The results showed that price promotions affect participants' reference prices. This, once again, proposes that aspiration-based reference prices play a significant role into purchasing intention. Moreover, Mayhew and Winer (1992) used scanner data of both memorized prices and observed prices on shelf tags to analyze multiple reference prices. Their research suggested that both reference prices had significant effects on purchase intention. The way in which general internal reference price influences consumer evaluation and purchasing intention is also referred to in Kalyanaram and Winer (1995), and Janiszewski and Lichtenstein's (1999) research. In Vaidyanathan, Aggraval, Stem andMuehling'sresearch (2000), market internal reference price was shown to have a more positive impact on consumer attitude to the deal evaluation. However, several factors, such as price uncertainty, may affect customer price judgments and influence their purchase decision.We, therefore, proposed the following research hypothesis:

H 1: Internal reference price has a positive influence on customer purchasing intention.

Historical price is a type of reference price point which represents a consumer's personal purchasing experience (Klein and Oglethorpe, 1987). Internal reference price for each brand used in Mayhew and Winer's research (1992) was a category purchase of prices paid or charged for each brand. Last price paid, or "price image", can be referred to as price history; influencing how a consumer reacts to a price change. IRP consumers not only remember the past price and use that information, but also monitor the pricing environment. They alter their behavior based on changes in this environment. Making choices using past prices is related to higher sensitivity of price; the pricing environment plays a more important role in choice for MBR consumers (Moon, Russell andDuvvuri, 2006). In Wenzel and Martin's (2011) research, they investigated whether price chart or price history has effect on consumer's price expectation. Price expectation and purchasing intention are strongly impacted by trend, range and variance of past price. We, therefore, proposed the following research hypothesis:

H 1.1: Price history has a positive influence on customer purchasing intention.

Through Diamond and Campbell's research (1989), which was based on three theories of modification of reference pricing: adaptation-level theory, assimilation-contrast theory and the anchoring and adjustment ofheuristic, sale promotions have more effect on reference price. Among the types of promotions, only price promotions have an effect on reference price. Moreover, the price consumers expect to pay for a brand has an inverse relationship with the observed frequency of price promotions and price discounting of the brands. Frequent exposure to both price and promotional activities will increase consumer expectations and can adversely impact the consumer brand choice behavior (Kalwaniand Yim, 1992). Therefore, the following hypothesis was designed for further examination:

H 1.2: Promotion history has a positive influence on customer purchasing intention.

The impact of in-store information environments on consumer processing of price information was examined in Valarie's research (1982). This research investigated the relationship between a product's display price, or shelf tag price, and the recall price information of consumers. The results showed that

there is a significant relationship between information knowledge and behavioral responses. Bell and Bucklin (1999) suggested that consumers' familiarity interacts with store visit on a given trip or the store visit history of the consumer. The interactions of reference price effects are shown by the generally higher effects on the purchase probability more with familiar than unfamiliar stores. Consumers not only use their memory-based price to judge a store's price image, but also evoke their experiencesof that products' price in that store, to make price perceptions of a specific store (Ofir, Raghubir, Brosh, Monroe, andHeiman, 2008). Therefore, we proposed the following hypothesis:

H 1.3: Store visit history has a positive influence on customer purchasing intention.

Through Moon, Russell andDuvvuri's research (2006), consumers who have brand knowledge can access an associative network memory model held in the consumer's mind, which contains information linked to the deep memory about the brand and its meaning. This knowledge is conceptualized according to terms of two components: brand awareness and brand image. The higher the levels of brand awareness and brand image the higher the probability of brand choice and greater consumer loyalty. Brand loyalty is formed when favorable beliefs and attitudes for the brand are demonstrated in repeat buying behavior (Keller, 1993). Therefore, we developed the following thesis:

H 1.4: Customer characteristics have a positive influence on customer purchasing intention.

The deviations between the external reference price and internal reference price of a product express utility, and influence consumer purchasing intention (Daniel, 1992). Through Yuan andMonle's (2009) research, the empirical evidence revealed that point of purchase and inference-based price (or ERP) havea significant impact on price judgment decisions.In Weisstein, Andersen and Wang's (2014) research, consumers perceived higher price satisfaction, value, and purchase intention with the presence of an external reference price.Presentation of a reference price makes consumers with an ERP (higher than sale price) develop to higher purchase intention, higher inferred savings, and lower search intentions, compared to when no ERP is provided. Moreover, product valuations increase linearly as the reference price increases (Adrian, 2014).Stimulus-based reference consumers only remember the identity of the last brand purchased not the set of past prices. They use the current price of this reference brand to determine the current price of products in that store. This process tends to focus the consumer's attention on a subset of brand effects, restricting the consumer's current choice set to only those brands with sufficiently low prices (Moon, Russell andDuvvuri, 2006).Therefore, we proposed the following research hypothesis:

H 2: External reference price has a positive influence on customer purchasing intention.

Hardie, Johnson and Fader's research (1993), indicated that consumers use their last purchase occasion to determine the current price of the brand as a reference price point. Consumers who use stimulus-based reference (external reference) were affected by promotions designed to increase store loyalty by way of offering occasional brand purchases perceived as excellent value (Moon, 2002).Therefore, we developed the following hypothesis:

H 2.1: Purchase occasion has a positive influence on customer purchasing intention.

In-store shelf tags and advertising features are EPR effects and have a great influence on consumer purchasing decisions. The differences of ERP based completely on outside stimuli, not at all on memory-based prices (Mayhew and Winer, 1992). Moreover, store environment is the most direct and outstanding frame which is relevant to brand choice and other prices in store determine the consumer's reference price (Rajendran and Tellis, 1994). Reference price not only includes past prices, but also product purchase

frequency, store characteristics, and price trends (Briesch, Krishnamurthi&Mazumdar, 1997).Therefore, we developed the following thesis:

H 2.2: Store environment has a positive influence on customer purchasing intention.

Tull, Boring and Gonsior (1964) defined the reference price as price of a frequently purchased product or service. Consumers compare the price for the whole product category to the price of the brand they usually buy.If consumers do nothave past price information, they are likely to use price information from other brands or product categories to form price expectations for a particular product (Jacobson and Obermiller, 1990). Therefore, we developed the following thesis:

H 2.3: Product category has a positive influence on customer purchasing intention.

Consumers often compare internal reference prices with external prices of a product in order to perceive gain and loss. They demonstrate stronger response when there is a given price loss than comparable price gain (Daniel, 1992). Therefore, we developed the following thesis:

H 3: Consumers are more confident when both internal and external reference prices are available than when only one type of reference price is available.

In Johnson andCui's research (2013), it was suggested that if the external reference price is higher (lower) than the consumer's internal reference price, consumer's paid price will increase (decrease). In their experiment, external reference prices hadbig impact on consumers' paid price.Therefore, we developed the following thesis:

H 4: Considering that both internal and external reference prices are operative at the point of purchase, an external reference price will play a more important role than an internal reference price in customer purchasing intention.

Methodology

Procedure

The data for this study were collected via a consumer survey. To understand the effect of reference price on consumers' purchase intention in Taiwan and Vietnam market, eggs were selected because egg price change frequently within short period of time and frequently purchasing products. Responders were chosen and interviewed randomly through face – book, email, face – to – face interview, survey online websites. Most responders are Taiwanese and Vietnamese who had experienced in purchasing eggs within Taiwan and Vietnam market respectively. There were 385 usable data were entered into data analysis after deleting incomplete and insincere responses which include 182 Taiwanese (47.3%) and 203 Vietnamese (53.7%) participants. The survey questionnaire for the study was developed in English and Chinese in Taiwan and Vietnamese in Vietnam. The questionnaire consisted of eight sections and all items were measured on a five – point Likert scale, except the demographic variables.

Data Analysis

Dependence and independence variables which collected through distributed questionnaires are analyzed by Statistical version 10.0 software. Response surface regression model and automated neural network model are used for individual and combination of each independence variables in Taiwan and/or Vietnam.

Response surface methodology can be defined as a collection of statistical and mathematical techniques useful for developing, improving, and optimizing processes (Myers and Montgomery, 2002). Response surface model is combined of statistical experimental design fundamentals, regression modeling techniques, and optimization methods. This method explores the space of independent variables to develop a relationship between the yield and dependent variables. In addition, this also applied after identifying a number of important factors could control and want to find the values of the elements for optimal response. In this thesis, response surface model gives results of sum of squares of whole model and residual. Calculating parameter estimates of sigma restricted parameterization and Pareto chart of t-value for coefficients. Using a Pareto chart of the effects to determine the magnitude and the importance of an effect. The chart displays the absolute value of the effects and draws a reference line on the chart. Any effect that extends beyond this reference line is potentially important.

Two commonly important models are used in response surface methodology. In general, the response variable y may be related to k regression variables. The model is called a multiple linear regression model (first – order model, d =1) with k regression variables:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_{12} x_1 x_2 + \varepsilon \qquad (2)$$

The parameters, βi (i=0, 1 … k) are called the regression coefficients.
The quadratic model (second – order model, d=2) can be used when the interaction between variables and surface curvature of the first - order model are not optimization, the second - order model can significantly improve.

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_{12} x_1 x_2 + \beta_{11} x_1^2 + \beta_{22} x_2^2 + \varepsilon \qquad (3)$$

Beside response surface model, neural network model also used to analyze collected data. This model is widely recognized as powerful modeling tool which provides an analytical alternative to conventional techniques that are often limited by the strict hypothesis of the normality, linearity, independence variables.

Results

Consumer Purchasing Habit

According to table 1, consumers demand for eggs mostly two times or three times per week (44.4% in both Vietnam and Taiwan) and 36.4% consumers who sometimes purchase eggs per month. Some of consumers rarely purchase for eggs or just in special occasions such as New Year or holiday. Vietnamese consumers have slightly higher demand for eggs than Taiwanese consumers.

In Vietnam, there are 1300 local markets, 723 super markets and 132 shopping malls. Consumers are likely to purchase in the local market because of cheaper price and easily approach. In Taiwan, there are more supermarket and convenience stores which provide fresh food, convenience and friendly environment. There are more than half of Taiwanese consumers who often purchase in supermarket which represent 50.5% participants. Nearly half of Vietnamese consumers mostly purchase in the local market, featuring 46.3% participants.

When asking for consumer's prediction for next week price with suggests leading answer questions. In Taiwan, there are 36 responders who give specific price which expecting for next week, and nearly 150 responders who give their expected price which depending on given price range. However, there are more people who can give expected price In Vietnam which presented for mostly 2/3 responses.

Table 1: Consume purchasing habit

	Taiwan	Percentage	Vietnam	Percentage	Both	Percentage
Consumer purchase frequency						
Everyday	7	3.8	14	6.9	21	5.5
Sometimes per week	79	43.4	92	45.3	171	44.4
Sometimes per month	84	46.2	56	27.6	140	36.4
Others	12	6.6	41	20.2	53	13.8
Consumers' purchase location						
Supermarket	92	50.5	62	30.5	154	0.4
Local market	57	31.3	94	46.3	151	39.2
Egg shop	2	1.1	25	12.3	27	7.0
Others	31	17	22	10.8	53	13.8
Consumers' prediction for next week price						
The price will increase	39	21.4	29	14.3	68	17.7
The price will decrease	78	42.9	16	7.9	94	24.4
The price won't change	57	31.3	124	61.1	181	47.0
Others	8	4.4	34	16.7	42	10.9

Some of reasons for their choices are: price won't change (stable market, the price of oil decrease, or haven't had information about H5N1 disease information, the price will increase in nearly special occasion such as New Year, after that, the price will become stable again and the price of egg won't change much in 1 week.

The Result of Regression Analysis

The table 2 shows the result of effects of internal and external reference price on consumer purchasing intention in each/ both Vietnam and Taiwan. Adjusted R2 is the measure of the amount of reduction in the variability of consumer purchasing intention by using the regression variables of external and internal reference in the response surface regression model. The adjusted R2 and multiple R are close to 1 in both cases of each country and combination which demonstrate significant of the estimation of the regression model. In addition, F observed is higher than F critical value (F crit Taiwan = 1.5, F crit Vietnam = 1.49, F crit of both countries = 1.46). Furthermore, at the significant level alpha = 0.05, F crt< F observed, and P < 0.05, there is a significant statistical evidence to reject the null hypothesis. Therefore, internal reference price and external reference price have significant effects on purchasing intention. The hypothesis 1 and hypothesis 2 are supported.

Table 2: Effects of Internal Reference Price and External Reference Price to Consumer Purchasing Intention

		Multiple R	R2	Adjusted R2	F - Value	P - Value	t - Value
Taiwan	IRP	0.8309	0.6904	0.6869	199.6	0.00**	3.976
	ERP					0.00**	7.71
Vietnam	IRP	0.862	0.743	0.7406	289.42	0.00**	7.425
	ERP					0.00**	6.589
Vietnam &Taiwan	IRP	0.844	0.713	0.711	475.09	0.00**	7.93
	ERP					0.00**	10.108

Note: *: p <0.05, **: p <0.01

The results about the effect of internal and external factors on consumer purchasing intention are illustrated in table 3. The effect of price history (β = - 0.391, P > 0.05) on consumer purchasing intention is not significant. It means that there is not a negative relationship between price history and consumer purchasing intention in both countries. The hypothesis 1.1 is not supported. However, in Taiwan, the effect of price history square termon consumer purchasing intention is significant with P < 0.05. In a long time period, the price history negativelyinfluences on consumer purchasing intention. Consumers tend to remember recently price encounter than distant ones.

Similarly, the effect of promotion history (β = 0.329, P > 0.05) on consumer purchasing intention is not significant. There is not a positive relationship between promotion history and consumer purchasing intention in both countries. The hypothesis 1.2 is not supported. However, in Vietnam, there is a positive relationship between promotion history and consumer purchasing intention (β = 2.882, P < 0.001). The promotion has more influent and impact on consumer internal reference price in Vietnam than in Taiwan. Moreover, in a long time period, the effect of promotion history square term in Taiwan (β = 0.822, P < 0.05) significantlypositive effects on consumer purchasing intention. In Vietnam, the effect of promotion history square (β = -1.513, P < 0.001) significantlynegativeon consumer purchasing intention. Vietnamese consumers tend to rely on their recently encounter promotion to decide their purchasing intention. However, the longer their encounter with promotion, the more ineffective they made. In contrast, Taiwanese consumers make more purchasing decision with long term period promotion.

The effect of both store visit history (β = 0.29, P > 0.05) and store visit history square term (β = 0.217, P > 0.05) on consumer purchasing intention are not significant. There is not a positive relationship between store visit history and consumer purchasing intention. The hypothesis 1.3 is not supported. However, in a short time period, store visit history in Taiwan (β = 2.372, P < 0.001) significantly positiveeffects on consumer purchase intention. In a long time period, the effect of store visit history in Vietnam is positivelysignificant on consumer purchasing intention (β = 0.977, P < 0.05). The more time consumers spending in store the more effect on their purchasing decision.

In both Vietnam and Taiwan, the effect of consumer characteristics (β = - 0.698, P < 0.05) on consumer purchasing intention is significant. There is a negative relationship between consumer characteristic and consumer purchasing intention. In addition, not only on short time but also in long time period, there are a positivelysignificant relationship on consumer characteristics square term (β = 0.939, P < 0.05) and consumer purchasing intention. The hypothesis 1.4 is supported. In Taiwan, the effect is significant in short time, but in the long time period, consumer's decisions will be affected by their characteristics. In Vietnam, there is always a positively significant relationship of consumer characteristics effect on consumer purchasing intention.

The effect of purchase occasion (β = 1.199, P < 0.001) on consumer purchasing intention is significant. There is a positive relationship between purchase occasion and consumer purchasing intention. The hypothesis 2.1 is supported. However, the more time consumer spending on their purchasing, the less purchasing intention they made. The effect of purchase occasion square term (β = 0.45, P > 0.05) on consumer purchasing intention is not significant.

The effect of store environment (β = 0.195, P > 0.05) and store environment square term (β = 0.45, P > 0.05) on consumer purchasing intention are not significant. The consumer purchasing intention is not affected by store environment both in short time period and long time period. The hypothesis 2.2 is not supported.

The effect of product category (β = - 0.695, P < 0.05) on consumer purchasing intention is significant. There are is a negative relationship between product category and consumer purchasing intention. The

hypothesis 2.3 is supported. However, the more time consumers spending on product category, the more they lost interested in making purchasing decisions.

Table 3: Regression of effects of internal and external on consumer purchasing intention

	Taiwan				Vietnam				Taiwan and Vietnam			
	Parameter	Beta	t value	P value	Parameter	Beta	t value	P value	Parameter	Beta	t value	P value
Intercept	2.696		2.767	0.006**	0.456		0.445	0.657	1.892		2.624	0.009**
Price history	-0.495	-0.477	-1.045	0.312	-1.198	-1.229	-1.797	0.074	-0.393	-0.391	-1.073	0.284
Price history ^2	-0.21	-1.484	-1.994	0.048*	0.136	1.019	1.673	0.096	0.045	0.329	0.711	0.778
Promotion history	0.037	0.051	0.113	0.91	1.979	2.882	4.812	0.00**	0.33	0.465	1.558	0.12
Promotion history ^2	0.09	0.822	2.018	0.045*	-0.155	-1.513	-3.738	0.00**	-0.032	-0.301	-1.214	0.226
Store visit history	1.733	2.372	5.306	0.00**	-0.5	-0.769	-1.474	0.142	0.199	0.29	0.938	0.349
Store visit history^2	0.113	1.066	1.974	0.05	0.096	0.977	2.372	0.019*	0.022	0.217	0.965	0.335
Consumer characteristics	-2.099	-2.234	-5.023	0.00**	1.151	1.226	2.543	0.012*	-0.655	-0.698	-2.319	0.021*
Consumer characteristics^2	0.164	1.287	1.324	0.188	0.193	1.545	2.44	0.016*	0.118	0.939	2.073	0.039*
Purchase occasion	1.279	1.416	2.375	0.019*	0.681	0.799	1.091	0.277	1.053	1.199	2.917	0.004**
Purchase occasion ^2	0.056	0.443	0.925	0.356	-0.176	-1.561	-1.73	0.085	0.053	0.45	1.159	0.247
Store environment	0.13	0.142	0.351	0.726	-0.956	-1.062	-1.41	0.161	0.177	0.195	0.594	0.553
Store environment ^2	0.015	0.116	0.256	0.798	0.248	2.053	3.303	0.001**	0.055	0.45	1.324	0.187
Product category	-0.917	-1.076	-3.129	0.0021*	-0.269	-0.282	-0.459	0.647	-0.628	-0.695	-2.445	0.015*
Product category ^2	0.099	0.838	1.334	0.184	-0.171	-1.362	-0.902	0.368	0.092	0.754	1.569	0.118
Price history * Promotion history	0.199	1.564	2.08	0.039*	-0.233	-1.892	-2.01	0.046*	-0.115	-0.917	-1.885	0.06
Price history * Store visit history	-0.249	-1.925	-2.429	0.016*	0.244	1.951	3.263	0.001**	0.016	0.126	0.293	0.77
Promotion history * Store visit history	0.114	0.961	1.618	0.108	-0.13	-1.174	-2.501	0.01*	0.047	0.408	1.245	0.214
Price history *Consumer characteristics	0.238	1.66	1.354	0.178	0.015	0.104	0.109	0.913	0.074	0.512	0.818	0.414
Promotion history *Consumer characteristics	-0.305	-2.465	-2.561	0.011*	-0.273	-2.224	-2.77	0.006**	0.01	0.081	0.203	0.84
Store visit history *Consumer characteristics	-0.225	-1.834	-2.131	0.035*	-0.061	-0.529	-0.627	0.532	-0.186	-1.556	3.489	0.00**
Price history * Purchase occasion	0.229	1.617	1.629	0.105	0.015	0.104	0.086	0.932	0.258	1.83	2.775	0.006**
Promotion history * Purchase occasion	-0.177	-1.445	-1.824	0.07	0.284	2.389	2.342	0.02*	-0.237	-1.958	-3.944	0.00**
Store visit history * Purchase occasion	-0.214	-1.752	-2.531	0.012*	-0.163	-1.477	-1.855	0.065	-0.063	-0.542	-1.259	0.209
Consumer characteristics * Purchase occasion	0.042	0.316	0.28	0.78	0.115	0.921	0.769	0.443	-0.054	-0.422	-0.619	0.536
Price history * Store environment	-0.048	-0.329	-0.368	0.713	-0.202	-1.445	-1.426	0.156	-0.064	-0.448	-0.68	0.497
Promotion history * Store environment	0.183	1.436	1.755	0.081	0.261	2.137	2.179	0.03*	0.121	0.969	2.061	0.04*
Store visit history * Store environment	-0.118	-0.966	-1.567	0.119	-0.181	-1.557	-2.193	0.03*	-0.035	-0.296	-1.71	0.478
Consumer characteristics * Store environment	0.419	3.119	3.102	0.002**	-0.321	-2.341	-1.704	0.09	0.104	0.758	1.221	0.223
Purchase occasion * Store environment	-0.388	-2.882	-3.255	0.001**	0.006	0.044	0.05	0.96	-0.187	-1.411	-2.669	0.008**
Price history * Product category	0.195	1.392	1.666	0.098	0.212	1.511	1.3	0.195	-0.148	-1.051	-1.729	0.085
Promotion history * Product category	-0.175	-1.433	-1.496	0.137	-0.125	-1.045	-1.064	0.289	0.138	1.14	2.012	0.045*
Store visit history * Product category	0.013	0.11	0.164	0.87	0.251	2.091	2.775	0.006**	0.15	1.253	3.097	0.002**
Consumer characteristics * Product category	0.063	0.481	0.588	0.558	-0.106	-0.788	-0.516	0.607	0.023	0.173	0.298	0.766
Purchase occasion * Product category	0.155	1.179	1.116	0.266	0.005	0.041	0.031	0.976	-0.022	-0.168	-0.254	0.799
Store environment * Product category	-0.113	0.869	-1.219	0.225	0.219	1.689	1.549	0.123	-0.074	-0.568	-1.107	0.269

The response surface method also analysis the relationship between two combined independence variables and consumer purchasing intention. The effect of store visit history and consumer characteristic (β = - 1.556, $P < 0.001$) is significant. There is a negative relationship between store visit history and consumer characteristic in both countries. Similarly, the effects of price history – purchase occasion (β = 1.83, $P < 0.01$), promotion history – purchase occasion (β = - 1.195, $P < 0.001$), promotion history – store environment (β = 0.969, $P < 0.05$), purchase occasion – store environment (β = 0.187, $P < 0.01$), promotion history – product category (β = 1.14, $P < 0.05$), store visit history – product category (β = 1.253, $P < 0.001$) are significant.

According to table 4, the mean value of one type of reference price (M_{Single} = 3.803) is lower than mean value of both internal and external reference price (M_{Both} = 3.963). It means that consumer will be more confident when using both internal and external reference price than just using one type. The hypothesis 3 is supported (t value = - 2.716 and $P < 0.01$).

Table 4: The relationship between internal and external reference price with consumer purchasing intention

	Mean Single	Mean Both	t value	P	df
Single vs. Both	3.803	3.963	-2.716	0.007**	768

Note: *: p <0.05, **: p <0.01

From table 5, when both internal and external reference price existed, external reference price (β = 0.816) is important than internal reference (β = 0.798). Consumers rely on their observed price at the purchasing time than their memory prices. Therefore, the effect of external reference price on consumer purchasing intention is higher than the effect of internal reference price on consumer purchasing intention. The hypothesis 4 is supported.

Table 5: Comparing the role of internal reference price and external reference price

	Beta	R	R^2	Adjusted R^2	F	P
IRP	0.798	0.798	0.637	0.636	670.79	0.000***
ERP	0.816	0.816	0.666	0.665	763.87	0.000***

Note: *: p <0.05, **: p <0.01

Table 6: Result of examining the proposed research hypothesis

Hypothesis		Result
Hypothesis 1:	Internal reference price has positive influence on customer purchasing intention	Supported
Hypothesis 1.1:	Price history has positive influence on customer purchasing intention	Rejected
Hypothesis 1.2:	Promotion history has positive influence on customer purchasing intention	Rejected
Hypothesis 1.3:	Store visit history has positive influence on customer purchasing intention	Rejected
Hypothesis 1.4:	Customer characteristics has positive influence on customer purchasing intention	Supported
Hypothesis 2:	External reference price has positive influence on customer purchasing intention	Supported
Hypothesis 2.1:	Purchase occasion has positive influence on customer purchasing intention	Supported
Hypothesis 2.2:	Store environment has positive influence on customer purchasing intention	Rejected
Hypothesis 2.3:	Product category has positive influence on customer purchasing intention	Supported
Hypothesis 3:	Consumer will be more confident when both internal and external reference price are available than when only one type of reference price is available	Supported
Hypothesis 4:	Considering that both internal and external reference price is operative at the point of purchase, external reference price will play a more important role than internal reference prices in customer purchasing intention.	Supported

Conclusion and Implications

The study aimed to investigate whether reference price factors such as “consumer characteristics”, “price history”, “promotion history”, “store visit history”, “purchase occasion”, “store environment”, and “product category” affect consumer purchase intention in Vietnam and Taiwan. We display the results of statistical and empirical analyses in Table 1, 2, 3, 4 and further summarize the following conclusions and suggestions for future studies. Table 3 displays the results of examining the proposed research hypotheses.

The information summarized in Table 3 showed that the hypothesis 1, 1.4, 2, 2.2, 2.3, 3, 4 were supported and hypothesis 1.1, 1.2, 1.3, 2.2 were rejected. This result revealed that the internal reference price and external reference price have a positive influence on customer purchasing intention. In addition, the factor

customer characteristics, purchase occasion, and product category have a positive effect on consumer purchasing intention. Considering that both internal and external reference price existed at the purchase time, consumer will be more confidence to give decision and external reference price play a more importance role than internal reference price.

Rejecting proposed hypothesis 1.1, 1.2, 1.3, and 2.2 in this study can be explained by following reasons. Consumers are mostly influent by the observed price at the store than the price in their minds. Prices encountered on recent occasions have a greater effect on consumer's decision than distant ones. In addition, consumers use their previously encountered promotions to create their promotion expectation which based on the proportion of timers the purchased (or observed) a brand on promotion in the past. The greater the deal of promotion expectation, the lower reference price for the brand. Consumers mostly chose the familiar brand name product others than store environment.

Our study pointed out the different between each factor of internal and external reference price between Vietnam and Taiwan. The results showed that promotion history, consumer characteristics, purchase occasion factors are influent in Vietnam than in Taiwan. In addition, store visit history, product category factors are more influent in Taiwan. In Vietnam, the effect of internal and external reference price is higher than Taiwan.

From the managerial perspective, it is crucial to understand that memories based price and observed reference price can affect consumer purchase decision.It can be used to compare prices with competitors or offer an acceptable price for the products or services.In addition, using reference price effects will help managers maximize consumer's perceptions of saving and enhance the overall profit by presenting a higher price for comparison. Our study clearly shows the influent of external and internal reference price on consumer purchasing behavior in Taiwan and Vietnam.

Therefore, investors and company managers in Vietnam and Taiwan and other countries should understand the impact of each factor of reference price to determine the best price strategy, as well as appropriate investment decision in these both countries. Large proportion of sample in this study is consumers under 35 years of age and students; it may not reflect the knowledge and behavior in giving purchase decisions of Vietnamese and Taiwanese consumers in all age of group. This study focus on research the consumer purchase behavior in using their reference price, however, the particular product is just focus on egg product. Therefore, the effect of reference price on consumer purchasing intention cannot be observed obviously on different types of product in different situations. Future research can expand the research in other countries and research more sample products. The further study cans investigate consumer's willing to pay when there are internal and external reference prices occur.

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