



Preferences for Japanese Baby Powdered Milk in Vietnam: Choice Experiment and Structural Equation Modelling Approaches

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Abstract

The Vietnamese market has seen a growing influx of Japanese baby powdered milk. This study investigates key product attributes that influence Vietnamese consumers' purchase intentions and the impact of Japanese brand origin compared to domestic and other imported brands. Although consumer behavior studies exist, research on Japanese baby powdered milk in Vietnam is limited. Data from 109 social media responses were analyzed using a Choice Experiment and Structural Equation Modeling. Results reveal that Vietnamese parents show a strong preference for Japanese brands due to attributes such as nutrition labels and safety certificates, which significantly affect purchase decisions. Price sensitivity is also observed but is less critical compared to safety and nutritional value. This study highlights the importance of leveraging brand origin in marketing strategies for Japanese companies targeting Vietnam. Future research should explore additional attributes, such as flavor and health benefits, and examine the role of ethnocentrism in consumer preferences.

Keywords: Consumer Behavior, Purchase Intention, Product Attributes, Brand Origin, Nutrition Labels

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INTRODUCTION

Japanese baby powdered milk has a rather short history in the Vietnamese market.

Comparing to powdered milk brands originated from the West such as Abbott, Mead Johnson, Dutch Lady, and Nestle, which had developed an

enormous consumer base and dominated the Vietnamese imported powdered milk market since the 1990s (Interesse, 2023), Japanese powdered milk only made their official debut in Vietnam less than 15 years ago.

Starting with Wakodo, which is owned by Asahi Group Foods, in 2007, the brand appointed Hoang Duong Pharma, a Vietnamese distribution company based in Hanoi as their exclusive distributor. Very recently in September 2019, Hoang Duong Pharma was also entrusted by Megmilk Snow Brand to bring their products to the Vietnamese consumers.

Additionally, a well-known import channel is by hand, comprehended as bringing the products into the country inside traveling luggage, and such goods are called “hand-carried” goods. Since it is an unofficial and uncontrolled route, there is no record of when Japanese powdered milk started to enter the country this way. However, considering the authorized distribution channels, Japanese powdered milk can be deemed relatively new in Vietnam.

Despite the short history, without doubt, Japanese powdered milk is gaining noticeable popularity in Vietnam. According to data from General Department of Vietnam Customs, for the first four months of 2019, import value for Japanese milk and dairy products increased by 59.26% compared to the same period in 2018 (Việt Nam tăng mạnh nhập khẩu sữa và sản phẩm từ thị trường Bỉ và Nhật Bản, 2019).

This indicates that Vietnamese consumers have become more exposed to milk and dairy products coming from Japan, including baby powdered milk. Japanese baby powdered milk is highly visible throughout both offline and online markets such as supermarkets, children’s specialized stores and agencies, brands’ main

websites, third-party shopping websites and social media. In particular, even though Megmilk Snow Brand products have been legitimately imported only since the end of 2019, its official Vietnamese Facebook page attracted more than 46000 followers as of July 2020, which indicates that the brand is taking great advantage of Vietnamese most popular social media, and has achieved considerable recognition in Vietnam.

The logic behind the appreciation of Japanese baby powdered milk varies from premium quality, safety thanks to stringent ingredient selection and quality control, technological advancements; abundant nutrient supply thanks to innovative formula; and compatibility with the physiology of Vietnamese children, which to a considerable extent bears resemblance with that of Japanese children; good taste and support in constipation prevention (4 lý do sữa Nhật cho bé được đồng đẳng mẹ bỉm Việt tin chọn, 2023), (Do, 2024). Given the ease of access and the positive attitude, Japanese baby powdered milk is becoming an ideal choice for Vietnamese parents.

There is no denying that Vietnam is a very promising market for Japanese baby powdered milk. Firstly, on statistic and economic grounds, powdered milk, together with liquid milk, constitutes 75% of the Vietnamese dairy market (Khoa, 2022). The powdered milk market has been on a steady rise since 2010. In particular, the annual growth rate of the sales of powdered milk was calculated to be 19.4% in the 2010-2018 period (Kenneth Research, 2020) and 13% in 2022 as against 2021 (Khoa, 2022).

Thanks to the Vietnamese largely young population and a growing sector of middle-class urbanities, the demand for milk in general and

powdered milk in specific is increasing remarkably (Whitehead, 2020). However, the powdered milk market is still reliant on import since it is estimated that in 2009, domestic milk production could only cater for 40 – 50% of total milk consumption (Khoa, 2022). These statistics indicate that powdered milk is regarded as a prosperous and auspicious sector, and there are still rooms for powdered milk imported from Japan in Vietnam.

According to a survey conducted by Q&Me, one of the leading market research companies in Vietnam, in 2017, Japanese companies were often associated with “good quality” (Kurokawa, 2017). Additionally, 85% out of 500 respondents asked linked Japanese products with high quality (Kurokawa, 2017). Apparently, thanks to the positive perceived images, Japanese products are endorsed with immense popularity in Vietnam.

Takimoto Koji, the head of Japan External Trade Organization (JETRO) in Ho Chi Minh City, Vietnam, sensed the strong desire of Vietnamese consumers for Japanese products (Japanese products appeal to Vietnamese people's taste, 2017). It is no exaggeration to claim that Japanese products are a favourite of Vietnamese people considering big urban areas featuring various Japanese big retailers and restaurants such as AEON, Ministop, Family Mart, 711, Tokyo Deli, Gyu Kaku, Takashiyama, to name but a few.

However, Q&Me report added that Japanese products were considered expensive by more than the average, 64% in particular, This is obviously a common opinion as the price of Japanese products cost 20 – 30% higher than domestic products do (Xuan, 2018). Nevertheless, it would not be much of a worry since the increasing incomes of the young

population, which accounts for 60% of its population, are projected to boost spending.

Especially for powdered milk, Vietnamese consumers have always been willing to pay a premium price to ensure excellent nutrition quality (Vietnam Dairy Edition 2016, 2016). In a nutshell, the praise for the high quality of Japanese products suggests the likelihood that Japanese powdered milk is eminently welcomed. Despite the high price, Vietnamese, to a high degree, are willing to and capable of affording Japanese powdered milk.

The wonderful opportunities for Japanese baby powdered milk in the Vietnamese market are the main inspiration for this study. Even though Japanese powdered milk is deemed an optimal choice by many Vietnamese parents, intensive studies dedicated to Japanese baby powdered milk in the Vietnamese market are still limited. This study aims to investigate important product attributes considered by Vietnamese parents, one of which is Japanese brand origin. Moreover, the research tests the possibility that Japanese brand origin influences baby powdered milk purchase intention, and how the potential connections are set up.

This paper consists of six chapters and proceeds as below. Commencing with chapter one, background information regarding the history of Japanese baby powdered milk in the Vietnamese market and the prospective opportunities for further development are discussed in detail.

A summary of research objectives and outlines is also covered for readers to get the gist of the study and navigate themselves throughout the paper better. Chapter two introduces relevant previous studies that set the ground for this study. An in-depth explanation of key terms relating to consumers's attitudes and purchase

behavior is provided to prepare necessary knowledge prior to the main research. Chapter three, methodology, describes how the data was collected and analyzed.

Theoretical frameworks of choice experiment and structural equation modelling are also reviewed here. In addition, socio-demographic characteristics of survey respondents and a descriptive analysis of their milk consumption are summarized in this chapter. Next, chapter four examines the outcome of the research, containing significantly important product attributes of powdered milk, and the processes prompting purchase intention.

The following chapter interprets extensively what the results mean while comparing with other studies, which are either in line with or contradicting the findings of this study. After that, limitations of the studies are argued, leading to some suggestions for future studies.

Moreover, the effects and applications of this research in product marketing and predicting future trends can also be viewed in chapter five. Last but definitely not least, chapter six recaps the research and drives conclusions of key points.

RESEARCH METHODS

Product attributes play key roles in consumers' purchase decision. Product attributes are characteristics of products, which can be divided into extrinsic and intrinsic attributes. Intrinsic attributes are related to physical aspects of a product, for example, colour, flavour, form, or appearance.

Meanwhile, extrinsic attributes are not related to the physical properties of a product, and some telling examples are country of origin,

brand name, stamps of quality, price, store, and others. Since product attributes are features that a product possesses or is expected to possess, they are often used by consumers to evaluate the benefits to fit their needs and likings.

The decision of buying powdered milk is also heavily persuaded by product attributes. Previous studies about milk consumption behaviour revealed that essential product attributes were availability, accessibility, quality, safety, and brand name (Vidanapathirana, 2023), so as taste, health, price, and advertisement (Hussain & Siddiqui, 2025), nutrition-related well-being messaging, shelf-life, production date, certification, and packaging (Chen, Moradi, & Hort, 2024).

In Vietnam in particular, brand, country of origin, nutrition, and the safety of the products were the determinant factors for Vietnamese parents (Pham, 2015). Phan, Bremer, and Miroso (2020) endorsed Phan's research. Using a choice-based conjoint survey and part-worth utility, they demonstrated that quality and safety control stamps were the most important attributes for Vietnamese consumers.

Among quality and safety assessments, international standard quality and safety certifications were valued higher than domestic certifications. Nutrition ranked second as Vietnamese were found to be highly aware of the nutritional status of the powdered milk. The third runner up was country of origin and foreign brands were viewed as superior in terms of quality and safety.

Most Vietnamese parents would seek out foreign brands and products over local alternatives they said. Within non-domestic countries of origin, Vietnamese buyers favoured Western, Japanese, and Korean products over other Asian products. Even though product

attributes for powdered milk varies, in general, the current top picks for Vietnamese are possibly associated with quality, nutrition, safety, and foreign countries.

Brand origin is defined as the home country of the brand, where the headquarter of the brand usually resides in. In essence, there are fundamental differences between brand origin and product origin. Product origin is where the product is actually made (Johnson & Lee, 2009). There is only one brand origin which never changes while product origin can vary over time and encompass a combination of places for manufacture and assembly (Hamzaoui-Essoussi, Merunka, & Bartikowski, 2011).

In many cases, brand origin and product origin are the same. For example, Meiji was established in 1950 in Japan and all their products targeted domestic uses and Taiwanese, Hong Kong, and Vietnamese markets are produced in the ultimate factory in Saitama, Japan. Hence, brand origin and product origin are both Japan.

On the other hand, brand origin and product origin can be very much distinguished. For instance, even though brand origin of Uniqlo is Japan, product origin can be either Vietnam, China, or Bangladesh, depending on the location of the factory where a specific product is manufactured. The focus of this study is brand origin and it is of critical importance not to be confuse with product origin.

Brand origin is, by all means, a strong information stimulus available to consumers before consumption. When a consumer has little knowledge about a product, brand origin plays an important role in stimulating information search (Rossanty & Nasution, 2019) Surveying 213 women in Indonesia on their perspective of

cosmetics, Augusta, Mardhiya, and Widiastuti confirmed that country of origin image had a significantly positive impact on purchase intention, and the effect was mediated by information seeking (2019). This study makes use of previous findings and construct new hypothesis that is dedicated to Japanese brand origin:

Hypothesis 1 (H₁): Japanese Brand Origin has a positive impact on Information Search Intention.

Additionally, Turkish consumers were asked if they agreed with the statement that cosmetics brands in association with France, Italy, and the USA increased their liking, trust, and prestige they held for the brand. It turned out that their attitude towards French, Italian and American cosmetic brands was remarkably strong, especially for French ones since France is worldwide popular for its cosmetics products/brands.

Even though there are few Italian cosmetic brands marketed in Turkey, and Italy is not as famous as France in the cosmetic industry, the attitudes toward Italian cosmetic brands are still relatively positive thanks to the nice impression of Italy in the Turkish consumers' mind.

Similarly important, consumers' liking, trust, prestige for electronic brands were found to be the highest among those which were associated with German, Japan, and USA. On the other hand, the disapproval rates for brands associated with China, Indonesia, and Bangladesh were significantly high.

It was suggested that Turkish consumers might have been more aware of the stance and popularity of German, Japan, and USA in producing electronics and having trustworthy

electronic brands. Hence, to sum up, how consumers evaluate brand is greatly mediated by their image toward the country of origin of the brand, or the country where the brand is associated with. For the most parts, the effect is reliant on the product category of the brand, and the popularity of the country that consumers perceive.

Hypothesis 2 (H2): Japanese Brand Origin has a positive impact on Brand Attitude.

Using Structural Equation Modelling, they constructed a causal relation between foreign country of origin of brand and positive perceived product quality. Additionally, brand origin as an extrinsic cue for product quality valuation was included in many consumers decision making model sketched by Sirus (2023), Wibowo, Rizan and Febrilia (2021), Prasasti et al. (2020), etc.

However, some researchers differ whether or not brand origin is used by consumers to judge a product. For example, brand origin had no effect on product perception of 200 consumers of import crackers of Malaysia (Listiana, 2015). In an experiment on made up watch brands and sport shoe brands coming from Switzerland and America.

Hypothesis 3 (H3): Japanese Brand Origin has a positive impact on Perceived Product Quality.

Even though Switzerland is well-known for incomparable high-quality watches and America is famous for sport shoes, brand origin country was found not to exert a significant impact on product quality evaluation (Jian & Guoqun, 2007). Given the contradicting opinions and findings, the assumption for the correlation between Japanese brand origin and perceived

product quality sounds sceptical, which arises a need to conduct dedicated research on the topic.

By knowing enough information about the product, consumers can consider whether to purchase it. To put another way, information search can affect consumers' purchase intention (Augusta, Mardhiyah, & Widiastuti, 2019) and it is marketers' duty to stimulate the buyers' willingness to look up information in order to enhance purchase intention.

In the 21st century, research has especially focused on online information search intention as a mediator for (online) purchase intention. Singh (2014) employed intercepted survey to gather data and factor analysis to examine Indian consumers' online shopping motivation, information search, and shopping intention. The conclusion was that online information search was a significant predictor for online shopping intention in India.

Hypothesis 4 (H4): Information Search Intention has a positive impact on Purchase Intention

Brand attitude is defined as the overall evaluation of a brand and reflects consumers' response toward that brand (Chaudhuri, 1999). Studies have suggested that brand attitude contributes to consumers purchase decision (Salehzadeh & Pool, 2017). A positive attitude toward a particular brand will allow consumers to make a purchase from that brand, otherwise, a negative attitude will exert an adverse effect (Kartika & Kusuma, 2016).

Sigit conducted a survey in Yogyakarta City from January to May 2017 regarding Soap Mandi Citra, a bath soap brand in Indonesia (2018). Using Confirmatory Factor Analysis, Sigit discovered that brand attitude had both a direct effect and an indirect effect, which was mediated

by brand awareness, on buying interest. The author also added that an increase in the attitude toward Soap Mandi Citra would lead to a rise in interest of purchasing, hence, companies needed to formulate the right marketing strategy in order to build a positive brand image in the mind of consumers.

Hypothesis 5 (H5): Brand Attitude has a positive impact on Purchase Intention.

The influence of perceived product quality on purchase intention has been widely tested among a variety of product/service sectors. Saleem, Ghafar, Ibrahim, Yousuf, and Ahmed (2015) studied the quality of Dell laptop perceived by 130 Pakistan university students and their laptop purchase intention. A positive significant relationship between perceived product quality and purchase intention was revealed.

Asshidin, Abidin, and Borhan (2016) added that in Malaysia, perceived product quality was a significant predictor in purchasing process for both American and local products. Their finding also emphasizes the importance of qualities on decision to purchase regardless of domestic or foreign origins.

Hypothesis 6 (H6): Perceived Product Quality has a positive impact on Purchase Intention.

A choice experiment describes decision makers' choice among alternatives. It is also known as discrete choice experiments, stated (discrete) choice methods, attribute-based stated preferences methods, or choice-based conjoint analyses. Choice experiments adopt the ideas of random utility theory that a decision maker will choose the alternative that

maximizes his/her utility. The utility that decision maker i observes from alternative j is U_{ij} , $j = 1, 2, \dots, J$. Since utility cannot be observed by the researchers, it is indirectly derived from a deterministic component V_{ij} and a random error term ϵ_{ij} .

$$U_{ij} = V_{ij} + \epsilon_{ij}$$

V_{ij} is modelled as a function of attributes X_j of the alternatives and their associated coefficients β .

$$V_{ij} = \beta'X_j = \beta_1X_{j1} + \beta_2X_{j2} + \dots + \beta_kX_{jk}$$

Where β is vector of coefficients representing the marginal utility of each attribute and X_j is vector of attributes (price, quality, etc) for alternative j . Choice experiments are especially useful in to elicit preference in hypothetical situations.

Respondents were asked to choose one and only one alternative from a set of three alternatives. Each alternative encompassed a combination of four product attributes: brand origin, price, nutrition standard label, and safety certificate. Table 1 lists the attributes and levels of each attribute considered in this study.

The questions for this choice experiment were generated using R combined with the support of CEs package while following the instruction of Aizaki (2019), Aizaki (2012), and Aizaki and Nishimura (2008). The orthogonal array employed was referred from A Library of Orthogonal Arrays by Sloane (n.d.).

16 choice sets were created and then divided into two blocks containing eight choice sets each. Block 1 was assigned to survey respondents who had been born on an odd number day and block 2 was assigned to survey

respondents who had been born on an even number day. Independent variables that were incorporated in the study were shown in table 2.

Table 1. Attributes and levels considered in the choice experiment

Attribute	Description	Level
Brand origin	The country of the brand of the product and where the headquarter of the brand resides in, not where the product is manufactured in. For example: A Uniqlo T-shirt can be made in Vietnam, however, Uniqlo is a Japanese brand, hence the brand origin is Japan.	Japan
		Vietnam
		USA
		Korea
Price	Price per 100 g (VND)	34000
		48000
		62000
		77000
Nutrition standard label	The standards for nutrients that a product follows and can be mentioned in product information. Some key nutrient requirements stated by FAO and WHO are Protein (minimum 1.8g/100 kcal), Vitamin D (minimum 1µg/100 kcal), Calcium (minimum 50mg/100 kcal).	Labelled
		Unlabelled
Safety certificate	Safety certificate: The certificates granted by a third party to guarantee the safety of the product and can be mentioned product information. Some criteria stated by FAO are that the melamine content must be lower than 1mg/kg powdered milk, the milking and processing process must be placed in a disinfected environment.	Certificated
		Uncertificated

Source: Data Processed. 2024

The main aims of this choice experiment were to investigate the significance of each product attribute on purchase decision and to compare the preferences for a certain level within product attributes.

Table 2. Description of variables in choice experiment

Variable	Description
ASC	Alternative specific constant
Vietnam	If the brand origin is Vietnam, 1; otherwise, 0
USA	If the brand origin is USA, 1; otherwise, 0
Korea	If the brand origin is Korea, 1; otherwise, 0
Labelled	If the product is labelled with a nutrition standard, 1; otherwise, 0
Certificated	If the product is granted with a safety certificate, 1; otherwise, 0
Price	Price per 100g

Source: Data Processed, 2024

Next, the effect of respondents' individual characteristics on their evaluation of each product attribute variable was also explored. This part of the study is technically called cross

term analysis. All six pre-mentioned attributes of survey respondents (gender, age, income, employment status, educational level, and living area) were under study.

Table 3. Variable description for respondents' characteristics

Variable	Value	Description
Gender_H	1	Female
	0	Male
		Prefer not to disclose
Age_H	1	Under 22
		22 – 25
		26 – 30
		31 – 35
	0	Above 35
Education_H	1	Master's Degree
		Doctorate Degree
	0	Attended high school but have not finished
		Attended college but have not finished
		Vocational/Technical degree or certificate
Employment_status_H	1	Bachelor's Degree
		Employed – full time
		Employed – part time
		Homemaker
		Student
Living_area_H	0	Retired
		City/Urban area
		Suburban area
Income_H	1	Rural areas
		20.000.000 ~ 40.000.000 VND
		40.000.000 ~ 80.000.000 VND
	0	More than 80.000.000 VND
		Less than 10.000.000 VND
		10.000.000 ~ 20.000.000 VND

Note: Factors from table 1 that had no correspondents were dismissed

Source: Data Processed, 2024

Structural equation modelling is a modelling framework that integrates a number

of different multivariate techniques to examine structural relationships. It includes a

combination of measurement theory, factor analysis, path analysis, regression, and simultaneous equations. Other names of structural equation modelling are covariance

structure analysis, analysis of moment structures, analysis of linear structural relationships (LISREL), and causal modelling.

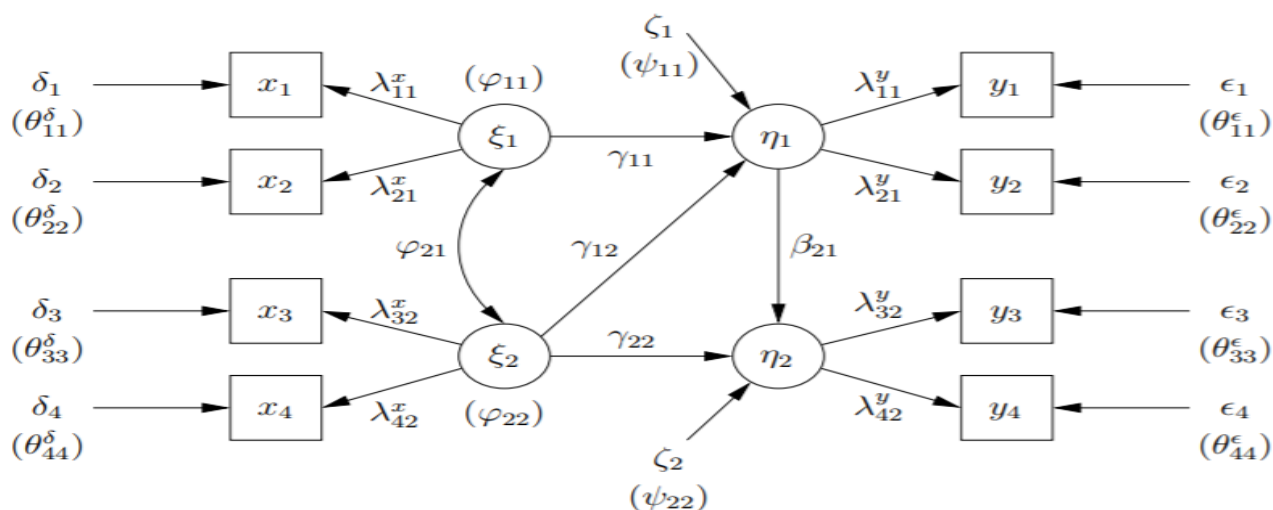


Figure 1. An example of structural equation modelling using LISREL notation (Werner & Schemelleh-Engel, 2010)

Source: Data Processed, 2024

Rather than a dependent variable and a set of predictors, systems of relationships can be revealed by structural equation modelling. Also, the framework is very well-suited for mediated research questions when indirect effects are study subjects. The interest of structural equation modelling centres latent variables. Latent variables are hypothetical constructs that are not directly observable.

However, latent variables can be accessed using observable indicators, namely observed variables, or manifest variables, which can be measured directly. The relationship between each indicator and latent variable can be estimated by a measurement model within structural equation modelling.

How latent variables are related to other latent variables is represented by a structural model, also known as latent variable model.

Figure 1 visualizes an example of structural equation modelling using LISREL notation. The description of symbols which appear in figure 1 is listed in table 4. Measurement model is described as :

$$y_i = \Lambda y \eta_i + \epsilon_i$$

$$x_i = \Lambda x \xi_i + \delta_i$$

while structural model is

$$\eta_i = B \eta_i + \Gamma \xi_i + \zeta_i$$

($i = 1, 2, \dots, n$). Structural model implies that endogenous variables are a function of the endogenous effect on themselves, together with the effects of exogenous variables on the endogenous variables and the unique factors (error terms).

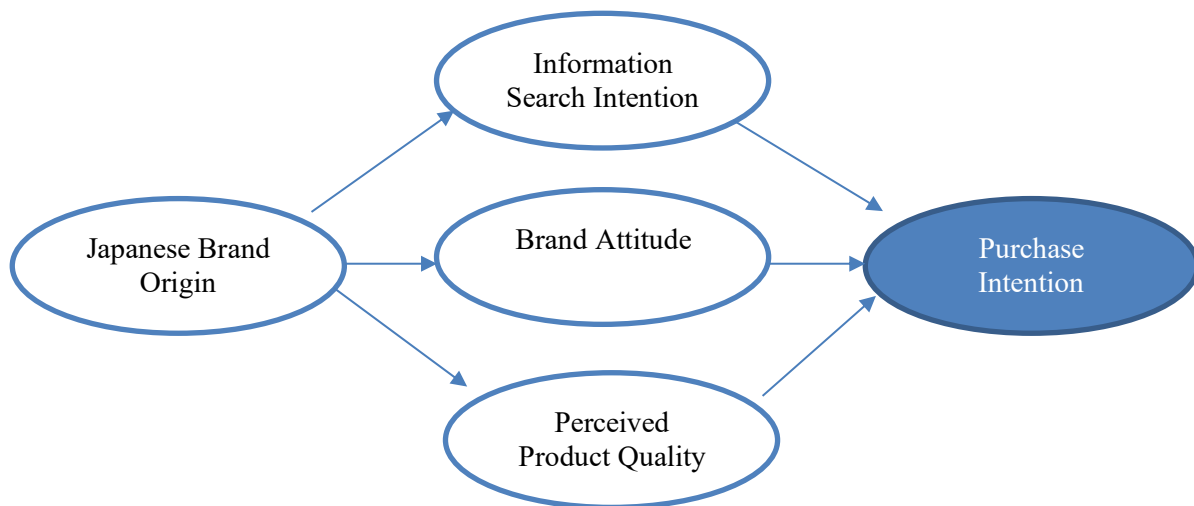
Table 4. Description of symbols in figure 1

Symbol	Explanation
x	Observed exogenous variables
ξ	Latent exogenous variables
y	Observed endogenous variables
η	Latent endogenous variables
λ (matrix symbol Λ)	Path coefficients for the effect of a latent exogenous/endogenous variable on an observed exogenous variable
γ (matrix symbol Γ)	Path coefficients for the effect of a latent exogenous variable on a latent endogenous variable
β (matrix symbol B)	Path coefficients for the effect of a latent endogenous variable on another endogenous variable
ζ	Error variables associated with latent endogenous variables
δ	Error variables associated with observed exogenous variables
ε	Error variable associated with observed endogenous variables
ϕ	Variances/Covariances of latent exogenous variables
θ	Variances of error variables
ψ	Variances of error variables that are associated with latent endogenous variables

Source: Data Processed, 2024

However, instead of analysing each level of consumers' attributes one by one, for each characteristic, a new variable was constructed which had a value of either 0 or 1. Each level of

consumers' attribute was then assigned to a value, hence two subgroups were created. For example, if the survey respondent is female, the Gender_H takes a value of 1.

**Figure 2.** Hypotheses for structural equation modelling

Source: Data Processed, 2024

On the contrary, if the survey respondent is either male or the survey respondent prefers not to disclose the gender, the Gender_H value takes a value of 0. Table 3 summaries new variables created for cross term analysis. All new

individual characteristic variables were then multiplied with product attribute variables to initiate other variables that described the interaction between consumer attributes and product attributes.

Table 5. Indicators for structural equation modelling

Code	Statement
Japanese Brand Origin (JBO)	
JBO1	When buying the imported powdered milk, Japanese country of origin is a very useful piece of information that I consider
JBO2	I look for Japanese country of origin to choose the best imported powdered milk
JBO3	I find Japanese country of origin determine the quality of the imported powdered milk
Brand Attitude (BA)	
BA1	My general impression of Japanese imported powdered milk brand is that it presents an excellent quality
BA2	My general impression of Japanese imported powdered milk brand is that it presents a prestigious product
BA3	Japanese brands have a high reputation
Perceived Product Quality (PPQ)	
PPQ1	Japanese imported powdered milk has high nutritional values
PPQ2	Japanese imported powdered milk is safe for my child/children's health
PPQ3	Japanese imported powdered milk supports my child/children's growth
PPQ4	Japanese imported powdered milk offers great value for money
Information Search Intention (ISI)	
ISI1	Even if I have already known the product and the brand, I am still willing to be more informed about the product and brand from Japan
ISI2	I like to read more information about the Japanese imported powdered milk
ISI3	I will watch out the advertisement and report about Japanese imported powdered milk
ISI4	I will consult with people who have purchased Japanese imported powdered milk
ISI5	I will consult with shopkeepers, brand representatives for their recommendation for Japanese imported powdered milk
Purchase Intention (PI)	
PI1	I will purchase/use Japanese imported powdered milk
PI2	I am willing to pay a premium for Japanese imported powdered milk

Source: Data Processed, 2024

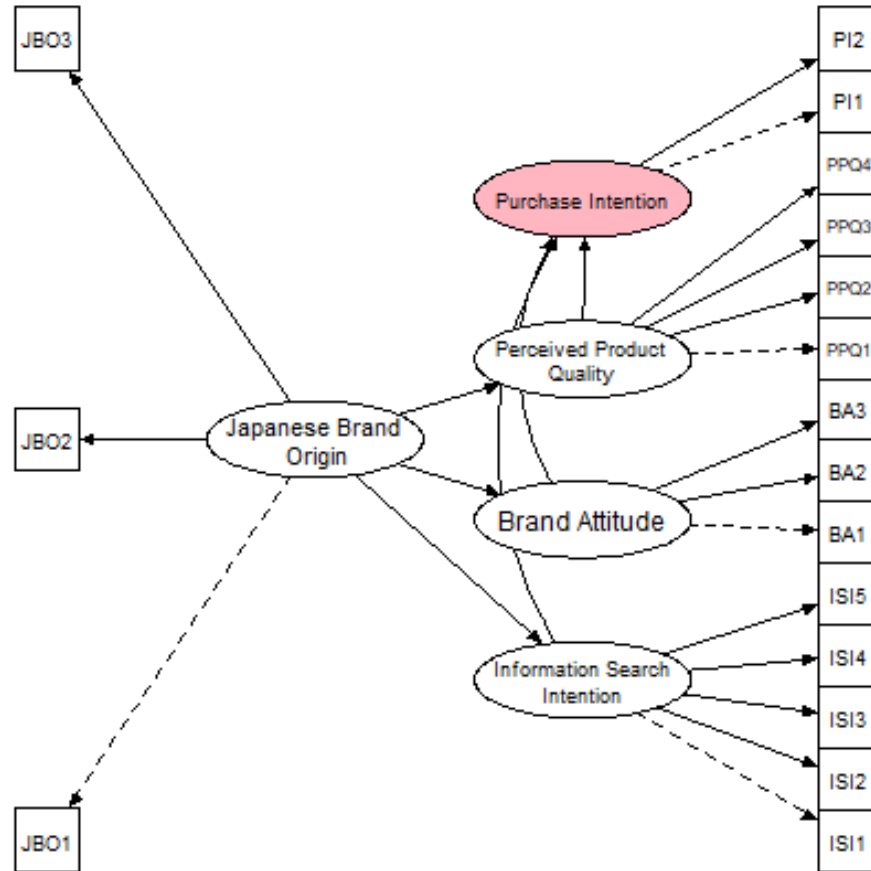
A five-point Likert scale was utilized to collect data on individual's attitudes.

Respondents were asked whether they agreed, somewhat agreed, had a neutral opinion,

somewhat disagreed, or agreed with 17 statements in part 3 of the survey (appendix 1).

Responses for each statement was then translated into data for measured indicators.

Figure 3. An illustration of the model under study



Source: Data Processed, 2024

Two to five measure indicators were expected to connect to a latent variable which represented individual attitude toward Japanese brand origin, information search intention, brand attitude, perceived product quality, and purchase intention. Statements and interpreted codes were demonstrated in table 5 and a graphical representation of the model that was desired to fit was plotted in figure 3. Data was later analysed using R in combination with lavaan package under the instruction of Rosseel (2012) and path diagram was visualized using semPlot package.

The survey was divided in four parts. Part 1 included a choice experiment where survey respondents were asked to choose only one alternative that they were most likely to purchase after contemplating a list of product attributes. Part 2 investigated milk consumption including the location(s) and personal reference source(s) when it came to purchasing powdered milk, as well as whether the customers had bought/used Japanese products and their evaluation on price and satisfaction level.

A five-point Likert Scale from (1) Disagree to (5) Agree was employed in part 3 to explore

consumer attitude towards powdered milk whose brands are from Japan and their purchase intention. Finally, part 4 covered correspondents' socio-demographic information.

There were 37 questions in total. The survey had been translated to Vietnamese before distribution.

Table 6. Socio-demographic characteristic of respondents (n = 109)

	Factors	Number of correspondents	Percentages
Gender	Female	94	86.2 %
	Male	14	12.8 %
	Other	0	0 %
	Prefer not to disclose	1	0.9 %
Age	Under 22	5	4.6 %
	22 – 25	14	12.8 %
	26 - 30	14	12.8 %
	31 - 35	19	17.4 %
	Above 35	57	52.3 %
Educational level	Attended high school but have not finished	1	0.9 %
	High School Diploma	0	0 %
	Attended college but have not finished	13	11.9 %
	Vocational/Technical degree or certificate	1	0.9 %
	Associates Degree	0	0 %
	Bachelor's Degree	44	40.4 %
	Master's Degree	44	40.4 %
	Doctorate Degree	6	5.5 %
Employment status	Unemployed	0	0 %
	Employed – part time	11	10.1 %
	Employed – full time	80	73.4 %
	Homemaker	4	3.7 %
	Student	10	9.2 %
	Retired	4	3.7 %
	Disable	0	0 %
Living area	City/Urban area	105	96.3 %
	Suburban area	3	2.8 %
	Rural areas	1	0.9 %
Household income	Less than 10.000.000 VND	11	10.1 %
	10.000.000 ~ 20.000.000 VND	42	38.5 %
	20.000.000 ~ 40.000.000 VND	39	35.8 %
	40.000.000 ~ 80.000.000 VND	10	9.2 %
	More than 80.000.000 VND	7	6.4 %

Source: Data Processed, 2024

The questionnaires were distributed via social media from June 1, 2020 to June 6, 2020. Respondents must be both Vietnamese and have a child or children who are from zero to ten years old. 109 responses were gathered. An overwhelming majority of survey respondents was females while male respondents only took up 12.8% of the study sample.

57 out of 109 study objects were older than 35. Among the other 52 respondents, 19 of them aged from 31 to 35 years old, 14 were at the 26 – 30 age group, 14 were from 22 to 25 years old and 5 were younger than 22. The number of survey respondents who had a Master's Degree was 44 and who had a Doctorate Degree was 6.

The share of Bachelor's Degree owners and Vocational or Technical Degree owners was 40.4% and 0.9%, respectively. 13 Vietnamese parents who participated in the study attended college but had not graduated, and one had not finished high school. Two third of study objects were employed full-time while the rest were either employed part-time (10.1%), homemakers (3.7%), students (9.2%), or retired (3.7 %). Despite three suburban citizens and one living in a rural area, the correspondents were based in the city.

Total household income was greatly diversified. Among 53 who earned less than 20 million Vietnamese Dong (VND) per month, 42 had an income that varied between 10 and 20 million VND, and 10 respondents only received a humble amount of 10 million VND or less. Meanwhile, the percentages of respondents whose income scattered from 20 to 40 million VND, and from 40 to 80 million VND were 35.8% and 5.2%. Only 6.4% of Vietnamese consumers involved in this study enjoyed a total household income of more than 80 million VND per month.

RESULTS AND DISCUSSION

The preferences for product attributes of Vietnamese parents under study were revealed in choice experiment. As detailed in table 7, the p-values for Vietnam, USA, and Korea were smaller than 0.001, meaning that their coefficients were statistically significant. Negative coefficients for each of these variables indicated that the study objects' valuations of baby powder milk whose brand was from Vietnam, the USA, and Korea were relatively lower than those whose brand was from Japan.

This could be interpreted as a significant preference for Japanese baby powder milk over their Vietnamese, American, and Korean counterparts. Moreover, small p-values for Labelled and Certificated, together with positive coefficients, 1.025 and 2.167, respectively, implied that Vietnamese parents under study gave serious considerations for nutrition standard labels and safety certificates.

Interestingly, the p-value for Price was 0.185, which was higher than 0.1, hence the null hypothesis that Price had a significant impact on purchase decision was rejected. In other words, price was not an important product attribute considered by survey respondents. These results suggest that brand origin, nutrition standard labels, safety certificates are contributing factors for purchase decision of Vietnamese parents while price is not. Within country of origin, Japan is placed in a higher position than Vietnam, the USA, and Korea.

The potential connections between Vietnamese consumers' personal characteristics and preferences for certain product attributes were also explored. Firstly, as for brand origin, there were only three variables that were statistically significant, which were Vietnam: *Living_area_H*, USA: *Income_H*, and USA:

Living_area_H. Negative coefficients for Vietnam: Living_area_H and USA: Living_area_H meant that respondents who lived in the cities or urban areas were the ones who considered Vietnamese and American baby powder milk lower than their Japanese counterparts.

On the other hand, given the positive coefficient for USA: Income_H, Vietnamese parents whose total household income exceeded 20 million VND per month preferred baby powdered milk that was from the USA than that from Japan. Secondly, regarding nutrition standard labels, since coefficients for Labelled: Income_H and Labelled: Age_H was statistically significant and positive, survey respondents who prioritized products with a nutrition standard label were Vietnamese who belonged to a higher income group and who was 35 years old and younger.

They, together with those who were employed full-time, and those who lived in the city and suburban areas, regarded safety certificates crucial product attributes. In contrast, significant and negative for Certificated: Education_H refers that those who had a Master's Degree and a Doctorate Degree were less concerned about safety certificates. Other insignificant effects were evidence that there were not considerable relationships between those consumers' attributes and product attributes. All in all, it is likely that Vietnamese city residents favour Japanese baby powdered milk and products with a safety certificate.

Before investigating the effect of Japanese brand origin on purchase intention, a measurement model was utilized to evaluate the association between observed variables and their underlying constructs. The relationship of each

observed variable to the latent variable is expressed in the so-called factor loading. Factor loading can be interpreted as standardized regression coefficients, which are shown in table 8, column Std.all.

For example, the factor loading of JBO2 observed variable to Japanese Brand Origin latent variable was 0.800, which can be translated as JBO2 had a correlation of 0.800 with Japanese Brand Origin factor. Henseler, Ringle, and Sarstedt (2012) mentioned that the factor loading should be higher than 0.708 to satisfy the theoretical requirements that the latent variables can explain at least 50% of its indicator's variance.

Regarding the results, most items' factor loadings were higher than 0.708, meaning that the factor extracted sufficient variance from that variable, and the factor strongly influenced the variable. The variables that failed to meet the acceptable bar of Henseler, Ringle, and Sarstedt are JBO1, ISI4, and ISI5. However, in 1999, Hulland accepted 0.5 as a cut-off for acceptable loadings, which was then supported by Truong and McColl (2011).

Additionally, to ascertain the convergent validity, Average Variance Extracted (AVE) was calculated for Japanese Brand Origin and Information Search Intention factors. Similar to factor loadings, AVE is comparable to the proportion of variance explained in factor analysis. There is a general consensus that loading which is smaller than 0.7 and larger than 0.4 can be accepted if it leads to AVE that is larger than 0.5.

Fornell and Larcker first mentioned 0.5 as the lowest range for AVE in 1981. AVE for Japanese Brand Origin and Information Search Intention was found to be 0.620 and 0.556, respectively. In other words, these constructed

explained 62.0% and 55.6% of the variance of its items. Hence in measurement model, none of the variables was suppressed. Together with p-values smaller than 0.001, it can be referred that all variables loaded their constructs. This means that the model is reliable to investigate further.

Brand origin, especially Japanese brand origin, is the centre of this study. Vietnamese parents in this study considered brand origin an important contributing factor. This is in line with a study of Luu (2012) who also investigated the influence of country of origin of imported powdered milk on the buying decision of Vietnamese parents who had children from zero to five years old.

Moreover, this study explored the preference for Japanese brand origin against their Vietnamese, American, and Korean counterparts. It is evident that Japanese baby powdered milk was placed in a higher rank than those of Vietnam, USA, and Korea, indicating that Japanese products have left a positive impression on Vietnamese consumers. Lee (2013) mentioned that consumers in developing countries favour brands from developed countries, and even suggested the desire to express their social status or prestige as a leading factor.

According to the classification of the United Nation (2020), Japan is considered a developed country and Vietnam is still a developing country. Hence, the result of this study subscribes to Lee (2013)'s theory. Also, in 2018, Dao and Heidt found that Vietnamese consumers preferred Japanese brands over domestic brands, which was supported by this study's result as the valuation of Japanese brand origin was higher than the Vietnamese one.

Various previous studies revealed the preference of Japanese products over

Vietnamese ones, or the favouritism for imported brands in general, especially those from developed countries, over domestic brands. However, a comparison between imported brand origin is still limited.

Since two-third of Vietnamese milk was supplied by foreign companies (Whitehead, 2020) and the competition is expected to be among the imported brands rather than with local brands (Vietnam Dairy Edition 2016, 2016), it is important to investigate how Japanese brands are competing with other foreign brands in the Vietnamese market.

This research discloses the valuation of Japanese against American brand origin, and Japanese against Korean brand origin, which rarely appears in other studies. The evidence provides insights into Vietnamese consumers' preference for Japanese brand origin comparing to other developed countries, and there is a definite possibility that American and Korean products are facing strong competition with Japanese products on the grounds of consumers' valuation.

Even though many American brands such as Abbott entered Vietnam in 1995, more than 20 years earlier than Japanese brands, and are highly identifiable and familiar with Vietnamese consumers, the result indicates that Vietnamese preferred Japanese products to American products, hinting the remarkable potentials of Japanese baby powdered milk.

Marketers should take advantage of this preference and highlight the "Product of Japan" information since there is every likelihood that Japanese brand origin is an unneglectable selling point. Additionally, given the comparatively positive attitude toward Japanese brand origin, the indirect influence of Japanese brand origin on purchase intention, reduced tax tariff thanks

to CPTPP, and other factors, an increase in import of baby powdered milk is highly anticipated.

CONCLUSION

This research aimed to identify product attributes that are considered by Vietnamese parents while choosing powdered milk for their child/children, and if and how Japanese brand origin facilitates purchase intention. 109 Vietnamese parents whose child/children aged from zero to ten years old answered the survey distributed via social media.

Choice Experiment was employed to investigate consumers' preference for specific product attributes, which were brand origin, nutrition standard label, safety certificate, and price, in hypothetical situations. The network involving Japanese brand origin and purchase intention through information search intention, brand attitude, and perceived product quality as mediators were explored using Structural Equation Modelling.

The outcomes provide compelling evidence that Japanese brand origin is more preferred than Vietnamese, American, and Korean counterparts. Additionally, nutrition standard labels and safety certificates are essential, while price insignificantly contributes to purchase decision. Furthermore, Japanese brand origin is a positive signal for information search intention, brand attitude, and perceived product quality.

Brand attitude and perceived product are then indicators for purchase intention while the data rule out the possibility that information search intention is engaged in purchase intention. All in all, the study affirms the positive view of Vietnamese parents toward the image of Japan, and how this notion leads to

purchase preference and purchase willingness. This argues the acceptance of Japanese products in the Vietnamese market, hence the enormous potentials.

The implementation of the study can be witnessed in product marketing, especially with powdered milk imported from Japan. Since factors affecting consumers' purchase behavior have been revealed, marketers should focus on "product of Japan", nutrient and safety information to attract Vietnamese consumers' attention. However, as survey respondents were prominently city residents, there is an impression that the application is only suitable in city or urban areas.

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