

A path analysis study of repurchase intention of food with health claim under the effect of food attributes

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ABSTRACT

The aim of this study is to identify the influence of food attributes, perceived value, consumer trust and nutritional health behavior that contribute to consumer repurchase intention of foods with health claims. Descriptive Statistics was used to analyze the demographic profile of the 313 sample of respondents. Path analysis was conducted for analyzing the causal and effect relationship between variables expressed by means of a path coefficient. The results showed that there were only indirect effects between food attributes and Intention to repurchase. However, perceived value was shown to have both positive direct and indirect effects on intention to repurchase, which were significantly mediated by nutritional health behavior and consumer trust. Research results suggest food managers develop the value of food products and monitor the customer trust and the changes of market on the food with health claims for the competition in a current environment.

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1. Introduction

Thailand's healthy food and beverage market has been growing steadily since 2017. According to a study report from the Center for Health Food Innovation (Saovapruk, 2018), the market value of healthy food and beverages in 2017 was estimated at 187,000 million baht, growing to 191,893 million baht in 2018 and continues to grow. It is expected that in 2022 the food and beverage market in Thailand will grow to 213,099 million baht, representing an average growth rate of 2.7-3.5 percent per year from 2017 to 2022. In 2020-21, when the epidemic of the novel coronavirus disease 2019 (Covid-19) crisis occurred, this epidemic also created new opportunities due to changing lifestyle and consumption habits. As people become more interested in health care of themselves in terms of hygiene, safety and looking for food products that will help strengthen their immunities. Healthy food is what consumers are increasingly aware of and attach importance to food choices. The changing in consumer behaviors has resulted in healthy food entrepreneurs both large and small firms to fully adapt new ways of doing business. As a result, the economic situation of the health food business in Thailand has a tendency to grow continuously. A review of past research found that most studies focus on the motivating factors in consumers' decision to buy healthy food, emphasizing the broad marketing mix factor of 4 Ps (Nunthasin, 2015), to formulate marketing communication strategies via social media (Panya & Seesupan, 2021). However, studies on nutritional behaviors influencing future purchases were found mainly in European countries and the United States (Van Kleef et al., 2005; Van Trijp & Van Der Lans, 2007; Verbeke, 2008). It also found that the number of studies on factors of health consciousness, food safety confidence, the perception of food value, and consumer trust affecting the consumer repurchase intention in Asian region is relatively small (Teng & Lu, 2016). Hence, the aim of this study is to identify the influence of food attributes, perceived value, consumer trust and nutritional health behavior that contribute to consumer repurchase intention of foods with health claims.

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2. Conceptual Framework and Research Hypotheses

2.1 Definition of Foods with Health Claims

Definition of Foods with Health Claims is available from a range of different sources but they still relate to each other. In terms of Foods with health claims, functional foods, Jones et al. (2008) stated that they should always be placed within the context of a healthy diet and nutritional eating Practices. Zezelj et al. (2012) suggested that food with health claims is a product group designed primarily to address consumers' concerns that food should also be beneficial for health. In addition, in the study of Talati et al. (2018) described the terms of health claims that how the nutrient relates to physical outcomes (general-level health claims) or is linked to a serious disease (higher-level health claims). As mentioned towards nutritional health practices in the Food based dietary guideline in Thailand (Bureau of Nutrition, Department of Health, Ministry of Public Health, 2021), therefore, the term of foods with health claims in this study refer to foods that relate to the health benefits, including functional foods, organic foods, vegetarian diets, which provide variety of nutrients with are low in fat, sugar, salt, additive, and high in fruit, vegetable, and fiber (Januardi & Windsari, 2019).

2.2 Theoretical Background

Repurchase Intention

Behavioral intention has been widely used in marketing literature towards predicting rational or premeditated behavior decisions in order to predict sales of new products or the repeated purchase of existing products (Diallo, 2012; Jun & Arendt, 2016; Chaveesuk et al., 2018; Chaveesuk et al., 2020). According to Ajzen (1991), behavioral intention refers to "how much of an effort [an individual is] planning to exert in order to perform the behavior", that is, the stronger the intention to perform a behavior, the more likely is its actual performance. Previous studies indicated that a major driver of the purchase intention to organic food includes the utilitarian and hedonic dimensions (Lee & Yun, 2015; Vergura et al., 2020) established by favorable perceptions of food attributes in terms of the nutritional content, ecological welfare or food safety, quality and sensory characteristics. According to De Toni et al. (2017), the antecedents' variables of the perceived value and the repurchase intention of food products display a good explanatory value. Moreover, the value perception is significantly explained by the perception that organic food is better quality, healthier, and fair priced. In their study of functional foods (Nystrand & Olsen, 2020), intention was positively associated with consumption frequency, which implies that prior experience with functional foods generates future intention to consume. Curvelo, et al. (2019) investigated the relationship between purchase intention of organic food and variables such as consumer trust, the perceived value of food product with its attributes. Their findings pointed out that the perceived value "emotional value", consumer trust, and food attribute "sensory appeal" affect the purchase intention. In addition, Lin et al. (2021) identified that perceived value plays a critical mediating role in influencing product characteristics (nutritional content, natural content, and ecological wealth) and platform characteristics (information quality, system quality, and service quality) on consumers' continuous purchase intention. Also, health consciousness is the key psychological factor of buyers influencing their willingness to pay for purchasing followed by product quality, taste, packaging, price, and convenience in shopping while purchasing health and wellness food products (Ali & Ali, 2020). Based on the most relevant aspects related to the repurchase intention of the food product, the perceived value, food attributes along with safety, nutrients, sensory, and availability, consumer trust, and nutritional health behavior were chosen for the current study, which are described below. In addition, the proposed research model is shown in Fig.1.

Food Attributes

As mentioned in previous studies (Hughner et al., 2007), the synthesized findings showed that the perception of nine food attributes including *health and nutrition concern, superior taste, concern for the environment, food safety/lack of confidence in the conventional food industry, concern over animal welfare, support of local economy, more wholesome, nostalgia, and fashionable/curiosity*, related the consumers' purchasing motives. For this study, four attributes: safety, nutrients, sensory, and availability were chosen to investigate the relationship with perceived value and the repurchase intention (Lusk & Briggeman, 2009; Zezelj et al., 2012; Lin & Yun, 2015; Curvelo et al., 2019; Lin et al., 2021). Food nutrients can be described as nutritious products, which contain various vitamins and minerals, high protein, and polyunsaturated fats. Food safety was naturally cultivated with the use of natural ingredients, fewer additives, and no artificial ingredients. Food sensory can be identified as taste, appearance, texture, and odor. Food availability can be described as the convenience to make a purchase, and easy to consume. Lusk and Briggeman, (2009) reported that consumers rated safety, nutrition, taste, and price as the most important food values, whereas the values of natural, convenience, appearance, and environment were among the moderate importance. However, the path analysis of Zezelj et al. (2012) revealed that mood, sensory appeal, and health motive were directly impacted on attitude towards functional food, but the health motive was also indirect through nutritional knowledge about specific ingredients, as well as use and trust in food labels. Regarding the study of Curvelo et al. (2019), linear regression analyses showed that the attributes "sensory appeal" affected the purchase intention of organic food. Lin & Yun (2015) investigated how consumers' perceptions of food attributes, and they found that nutritional content, ecological welfare, and sensory appeal influence consumer attitude towards the purchase intention. In the study of Lin et al.

(2021), they mentioned that product characteristics in terms of nutrition content, natural content, and ecological wealth had remarkable impacts on continuous purchase intention, without involving the perceived value. In addition, all aspects of product characteristics have remarkable impacts on perceived value that were found on continuous purchase intention.

Based on the aforementioned research findings, the following hypotheses are proposed:

- H₁:** *Food Safety has a positive effect on consumer behavioral intention to repurchase.*
- H_{1a}:** *Food Safety has a positive effect on perceptions of the value of food with health claims.*
- H₂:** *Food nutrients have a positive effect on consumer behavioral intention to repurchase.*
- H_{2a}:** *Food nutrients have a positive effect on perceptions of the value of food with health claims.*
- H₃:** *Food sensory has a positive effect on consumer behavioral intention to repurchase.*
- H_{3a}:** *Food sensory has a positive effect on perceptions of the value of food with health claims.*
- H₄:** *Food availability has a positive effect on consumer behavioral intention to repurchase.*
- H_{4a}:** *Food availability has a positive effect on perceptions of the value of food with health claims.*

Perceived Value

Previous studies showed that perceived value of the product positively affects the buying decision of consumers (Zeithmal, 1988), and has positive impact on both future behavioral intentions and behavior (Chen & Tsai, 2007). Shaharudin et al. (2010) identified the perceived value factor and its impact towards the customers' purchase intention in Malaysia, found that perceived value and health consciousness influenced the customer purchase intention. Chen & Chang (2012) found that green perceived value positively relates to both green trust and green purchase intentions. In addition, their study indicated the relationship between green perceived value and green purchase intention are partially mediated by green trust. In the study of De Toni et al. (2017), the findings showed that the perception of value of organic products significantly influences repurchase intention. As claimed by Januardi & Windasiri (2019), individual beliefs on health value have a significant influence on consumer attitude towards consuming healthy and nutritious food. Lin et al (2021) found that two dimensions of perceived value: utilitarian value and hedonic value positively impact consumers' continuous purchase intention.

Based on the aforementioned research findings, the following hypotheses are proposed:

- H₅:** *Perceived value of food with health claims has a positive effect on consumer nutritional health behavior.*
- H₆:** *Perceived value of food with health claims has a positive effect on consumer behavioral intention to repurchase.*
- H₇:** *Perceived value of food with health claims has a positive effect on consumer trust.*

Nutritional Health Behavior

Nutritional Health Behavior refers to a healthy eating guideline, which was promoted by Health Authorities (Bureau of Nutrition, Department of Health, Ministry of Public Health, 2021). Consumers with a relatively high level in healthy eating guidelines could positively influence the healthiness of their dietary behavior (Hansen & Thomsen, 2018). Related to dietary behaviors, both behavior intention and behavior are associated with people's perception of the ease and difficulty of performing the behavior of interest (Ajzen, 1991). The study by Lee and Yun (2015) indicated that consumers perceived the value of the sensation of well-being, related to the consumption of organic food and also had a positive relationship with consumers' purchase intention.

Based on the aforementioned research findings, the following hypothesis is proposed:

- H₈:** *Consumer's nutritional health behavior has a positive effect on behavioral intention to repurchase food with health claims.*

Consumer Trust

As defined by Arion et al. (1994), trust refers to the amount of knowledge and clues on which to base belief. Past Studies demonstrated that consumer trust positively affects purchase intention (Chen & Chan, 2012; Sahi et al., 2016; Zheng et al., 2021). The study of Chen & Chan (2012) indicated that green trust is positively associated with green purchase intention. Sahi et al. (2016) found that there was a direct relationship between trusting beliefs and purchase intention. In addition, Zheng et al. (2021) revealed that health consciousness, environmental consciousness, food safety consciousness, price consciousness, novelty consciousness, and trust are factors that significantly affect purchase intention and subsequently, the actual purchase of organic foods.

Based on the aforementioned research findings, the following hypothesis is proposed:

- H₉:** *Perceived trust of food with health claims has a positive effect on consumer behavioral intention to repurchase.*

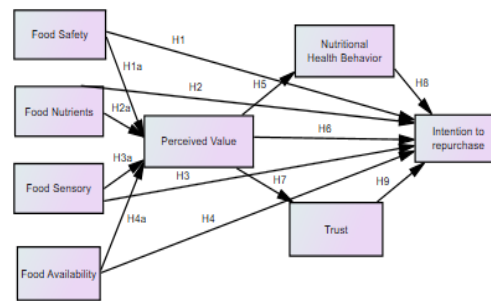


Fig. 1. Proposed Conceptual Model

3. Research Methodology

3.1 Sample and Data Collection

This study is a quantitative research, and relies on the online survey questionnaire. The population of the study is consumers in Bangkok and Metropolitan areas with the age of 18 years old and older who are already purchasing food with health claims. Data was collected from 1 December to 30 December 2021. With a purposive sampling method, the questionnaires were able to capture the consumers who were 18 years old and older, having an experience about food with health claims twice for two months ago, and stayed in Bangkok and Metropolitan areas. A total of 590 respondents were drawn to be representative of consumers. 485 questionnaires were received from respondents, 172 were eliminated as the data were being coded since they were incomplete. This resulted in 313 usable survey questionnaires, corresponding to 53% of the 590 questionnaires, which were considered to be acceptable. (Cavana et al., 2001)

3.2 Measures

The questionnaire consisted of three parts; the first part was designed to gather respondent's demographic information. Thus, dichotomous scales and categorical scales were used for questions in the first part of the questionnaire. The second part addressed questions about consumer nutritional health behavior which was assumed as an endogenous variable. Nutritional health behavior was measured with 12 items of consumption frequency, adopted from Food based dietary guidelines in Thailand (Bureau of Nutrition, Department of Health, Ministry of Public Health, 2021). Sample items included, "Eat rice, rice products, other grains and starchy food groups in abundance"; "Eat fish, lean meat, eggs, legumes and pulses regularly"; "Eat a diet containing appropriate amounts of fat"; "Avoid sweet and salty foods"; "Eat plenty of vegetables and low calorie fruits regularly". Respondents were asked to rate the items on a five-point Likert rating scale from 1 (never) to 5 (every day). These items were completed by 313 respondents, the Cronbach's alpha was 0.824 and all items were retained.

The third part was designed to examine the factors influencing the consumer behavioral intention to repurchase food with health claims. Questions in this section were developed and divided amongst four main concepts: 1) food attributes in terms of food safety, food nutrients, food sensory, and food availability, 2) perceived value of food with health claims, 3) trust, and 4) behavioral intention to repurchase. All scales in the third part contained a five-point Likert rating scale.

For the exogenous food attributes variables, there were 22 items, 5 items relating to *food safety*, 6 items to *food nutrients*, 5 items to *food sensory*, and 6 items to *food availability*. The scale for measuring all food attributes were adapted from works (Curvelo et al., 2019; Ali & Ali, 2020). Food's attributes would become prominent as they were perceived by consumers and help ones decide to consume and repurchasing. Thus, respondents were asked to rate the extent of their agreement or disagreement with ranging from 1 = strongly disagree to 5 = strongly agree. Example questions included "Food with health claims provides numerous vitamins and minerals"; Food with health claims derived from natural sources that didn't contain contaminants"; "Food with health claims has a nice texture"; "Food with health claims is widely available and easy to buy". The Cronbach's Alpha values for each food attribute variable were more than 0.88, including food safety (0.891), food nutrients (0.899), food sensory (0.887), and food availability (0.891). These items were completed by 313 respondents, and all items were retained.

Perceived value was an endogenous variable, measured with a fourteen-item scale. Measurement items were adapted from studies (Sweeney & Soutar, 2001; Hansen & Thomsen, 2018; Lin et al., 2021). Respondents were asked to complete a 5-point Likert scale with ranging from 1 (strongly disagree) to 5 (strongly agree) for questions such as: "Food with health claims helps to control body weight"; "The cost of food with health claims is value for money"; "Food with health claims is compatible with my culture and traditions". The Cronbach's Alpha was 0.897. These items were completed by 313

respondents, and all 14 items were retained. For Trust, six statements were used to assess trust in food with health claims. The scale for measuring trust was adapted from the study of Wu et al. (2021) towards consumer trust in food and food systems. Respondents were asked to rate the extent of their agreement or disagreement with ranging from 1 (strongly disagree) to 5 (strongly agree). Example questions included “Trust in food processors that have been certified for quality”; “Trust in quality food with health claims packaging processes”. “Trust in food with health claims is beneficial to my health”. Trust was an endogenous variable, which Cronbach's Alpha was 0.939. These items were completed by 313 respondents, and all 6 items were retained. Finally, the measurement of repurchase intention was adapted from studies of De Toni et al. (2017) and Lin et al. (2021). Repurchase was an endogenous variable, and composed of 5 items. Sample items included, “I regularly purchase food with health claims from the same entrepreneurs”; “I intend to purchase food with health claims before any other common foods”. Respondents were asked to rate the items on a five-point Likert rating scale from 1 (strongly disagree) to 5 (strongly agree). These items were completed by 313 respondents, the Cronbach's alpha was 0.833 and all items were retained.

3.3 Analysis

The responses were analysed using chi-square-test, *t*-test and one-way ANOVA for the differences in mean response (food attributes, perceived value, nutritional health behavior, consumer trust, and intention to repurchase) related to gender, age, educational level, income, social profile, and family members of the respondents. No significant differences were observed by educational level, income (Baht), age (year), size of family, and social profile. Due to previous studies (Grzymislawski et al., 2020), male and female respondents were significantly different in terms of nutritional health consumption behaviors. In this study, we employed the chi-square test to examine the relationship between gender and the proportion on levels of nutritional practical behaviors of all 12 items, no significant differences were found (p -value = 0.091). AMOS (version 24) was used for the structural equation modelling. The analysis of structural equations (so called path analysis) measures the direct and indirect interaction between variables (Niemczyk, 2014; Khalid et al., 2021). Path analysis is used for analyzing the causal and effect relationship between variables expressed by means of a path coefficient. In this paper, we employed path analysis as the research tool to examine the influence of food attributes, perceived value, Consumer trust and nutritional health behavior that contribute to consumer repurchase intention of food with health claim. For the analysis of the model fit, indices used included the relative chi-square (CMIN/DF), the root mean square error of approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Goodness of Fit Index (GFI), and Akaike Information Criterion (AIC). The relative chi-square (CMIN/DF) was used as a measure of model fit, a value of less than 3, represents acceptable fit (Tabachnick & Fidell). RMSEA values of less than 0.08 represent the marginal fit, while RMSEA values of less than 0.05 demonstrate a good fit to the model (MacCallum et al., 1996; Byrne, 2016; Kline, 2011). TLI, GFI, and CFI values of greater than 0.90 and 0.95 are considered as marginal and good fits, respectively (Hu & Bentler, 1999; Shevlin & Miles, 1998). The Akaike Information Criterion (AIC) is a comparative measure of fit (Akaike, 1987). AIC can be used meaningfully when more than two models are compared with each other, and a smaller AIC value suggests a superior fit (Kumar & Sharma, 1999).

4. Results

4.1 Demographic Profile of the Respondents

Descriptive Statistics was used to analyse the demographic profile of the 313 sample of respondents. Their demographic characteristics were measured by their gender, age, educational level, income, job type, and family members. The sample profile was composed of 195 (62.3%) females and 118 (37.7%) males with most respondents (27.5%) aged between 31 to 40 years old. Others were in the categories 41-50 (24.0%), 51-60 (17.3%), 25-30 (15.0%), 18-24 (8.3%), and 61 and above (8.0%). The majority of respondents were well-educated, including postgraduate (48.6%), and bachelor degree (46%). As for the income range, 35.7% of respondents had an income between 30,000 and 60,000 Baht, and others were in the range of 15,000 - 30,000 Baht (34.2%), 21.1% had an income greater than 60,000 Baht, and less than 15,000 Baht (8.9%). The social profile of respondents revealed that most of them were working as Government officers (38%), and Private Company workers (32.3%). The remaining were business owners (11.8%), in retirement with 7.3%, students (7.0%), housewives/husbands (1.9%), and state enterprise employees (1.6%). Lastly, 6.1% lived alone, 37.3% lived with families composed of 2-3 individuals, and 56.5% lived with families of 4 or more individuals.

4.2 Model Fit Evaluation

The model was tested using a multivariate statistical model using Maximum Likelihood (ML) estimation, assuming multivariate normality. Skewness and Kurtosis index were used to identify the normality of data. The data considered being normal for the range of skewness from -2 to +2 (Hair et al., 2010) and kurtosis from -7 to +7 (Hair et al., 2010). The univariate normality assessment showed relatively normal distribution as both the skewness index range was from -0.038 to +0.014 and the kurtosis index range was from -0.082 to +1.774. However, Hair et al. (2019: 94) suggested that in most cases assessing and achieving univariate normality for all variables is sufficient, and will address multivariate normality only when it is especially critical. Hence, this can be concluded that the collected data were normally distributed as both the

skewness and kurtosis index of 59 items presented are within the normal distribution range as suggested. The preliminary analysis demonstrated a good model fit ($\chi^2/df = 1.61$, GFI=0.99, AGFI=0.95, RMSEA=0.04, CFI=0.99, TLI=0.98, NFI=0.98, AIC=69.32, as shown in Table 1) (Shumacker & Lomax, 2006). However, no significant direct paths from “food safety, food nutrients, food sensory, and food availability” to “intention to repurchase” were found (Tables. 2 & 3). The second model (Fig. 2), where these four direct relationship path were removed demonstrated a great model fit ($\chi^2/df = 1.15$, GFI=0.99, AGFI=0.97, RMSEA=0.02, CFI=0.99, TLI=0.99, NFI=0.99, AIC=62.67), as shown in Table 1.

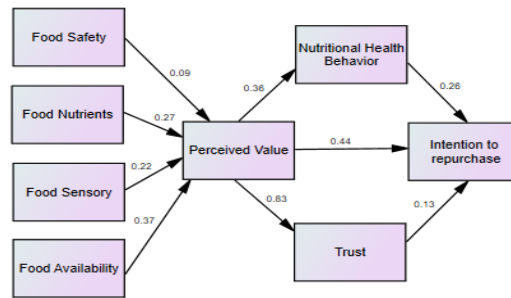


Fig 2. Modified Model of the Study

Table 1

Summary of Model Fit Evaluation

Model	CMIN/df	GFI	AGFI	RMSEA	CFI	TLI	NFI	AIC
The Proposed Model ($P = .125$)	1.61	0.99	0.95	.04	0.99	0.98	0.98	69.32
The Modified Model ($P = .315$)	1.15	0.99	0.97	.02	0.99	0.99	0.99	62.67

Source: Data from Survey

The preferred model (Fig. 2) showed that there were different paths to the intention to repurchase. The first path highlighted a relationship between food attributes (food safety, food nutrients, food sensory, and food availability) and intention to repurchase mediated by perceived value.

Table 2

Direct Effect, Indirect Effect and Total Effect of Intention to Repurchase

Structural Paths	Direct Effect	Indirect Path via Mediator	Indirect Effect	Total Effect
Food Safety → Intention to repurchase	-	Food Safety → Perceived Value → Intention to repurchase	0.040	0.059
		Food Safety → Perceived Value → Nutritional Health Behavior → Intention to repurchase	0.008	
		Food Safety → Perceived Value → Consumer Trust → Intention to repurchase	0.011	
Food Nutrients → Intention to repurchase	-	Food Nutrients → Perceived Value → Intention to repurchase	0.120	0.176
		Food Nutrients → Perceived Value → Nutritional Health Behavior → Intention to repurchase	0.026	
		Food Nutrients → Perceived Value → Consumer Trust → Intention to repurchase	0.030	
Food Sensory → Intention to repurchase	-	Food Sensory → Perceived Value → Intention to repurchase	0.097	0.143
		Food Sensory → Perceived Value → Nutritional Health Behavior → Intention to repurchase	0.022	
		Food Sensory → Perceived Value → Consumer Trust → Intention to repurchase	0.024	
Food Availability → Intention to repurchase	-	Food Availability → Perceived Value → Intention to repurchase	0.163	0.239
		Food Availability → Perceived Value → Nutritional Health Behavior → Intention to repurchase	0.035	
		Food Availability → Perceived Value → Consumer Trust → Intention to repurchase	0.041	
Perceived Value → Intention to repurchase	0.444	Perceived Value → Nutritional Health Behavior → Intention to repurchase	0.094	0.646
Nutritional Health Behavior → Intention to repurchase	0.256	Perceived Value → Consumer Trust → Intention to repurchase	0.108	0.256
		Nutritional Health Behavior → Intention to repurchase	-	
Consumer Trust → Intention to repurchase	0.133	Consumer Trust → Intention to repurchase	-	0.133

The second path, nutritional health behavior and consumer trust were the mediating variables of the relationship between food attributes and intention to repurchase. The results showed that there were only indirect effects between food safety, food nutrients, food sensory, food availability and Intention to repurchase. In addition, it is evident that perceived value was shown to have both positive direct and indirect effect on intention to repurchase, which were significantly mediated by

nutritional health behavior and consumer trust. Table 2 summarised the significance of direct, indirect, and total effects between exogenous and endogenous variables. The significance of indirect paths from mediating effects was calculated using Sobel's method (Baron & Kenny, 1986).

Hypotheses Testing

The hypothesis testing from the proposed model was performed by considering the estimated regression coefficients. All hypotheses as well as the structural paths, the standardized coefficients, the *t*-values, and the results probabilities were presented in Table 3.

Table 3
Testing the Hypotheses

Hypotheses	Unstandardized Regression weights	Standardized Regression weight	S.E.	<i>t</i> -Test	<i>p</i>	Results
H1: Food Safety → Intention to repurchase	-.021	-.026	.040	-.465	.642	Not supported
H1a: Food Safety → Perceived Value	.069	.092	.034	2.062	.039	Supported
H2: Food nutrients → Intention to repurchase	.003	.003	.060	.046	.963	Not supported
H2a: Food nutrients → Perceived Value	.246	.273	.043	5.693	.000	Supported
H3: Food sensory → Intention to repurchase	-.032	-.036	.048	-.656	.512	Not supported
H3a: Food sensory → Perceived Value	.181	.222	.035	5.196	.000	Supported
H4: Food availability → Intention to repurchase	.048	.055	.052	.923	.356	Not supported
H4a: Food availability → Perceived Value	.298	.370	.036	8.348	.000	Supported
H5: Perceived value → Nutritional health behavior	.430	.361	.085	5.035	.000	Supported
H6: Perceived value → Intention to repurchase	.473	.436	.074	6.379	.000	Supported
H7: Perceived value → consumer trust	.956	.826	.070	13.703	.000	Supported
H8: Nutritional health behavior → Intention to repurchase	.233	.256	.041	5.692	.000	Supported
H9: Consumer trust → Intention to repurchase	.126	.134	.055	2.310	.021	Supported

On the **H1** test, it has been observed that the food safety has no significance of direct path on Intention to repurchase ($\beta = -0.026, p > .05$). Also, the finding revealed that food nutrients, food sensory, and food availability showed no significant direct effect on Intention to repurchase (**H2**: $\beta = 0.003, p > .05$), (**H3**: $\beta = -0.036, p > .05$), (**H4**: $\beta = 0.055, p > .05$). However, results demonstrated a positive influence of food safety ($\beta = 0.092, p < .05$), food nutrients ($\beta = 0.273, p < .05$), food sensory ($\beta = 0.222, p < .05$), and food availability ($\beta = 0.370, p < .05$) on perceived value. These are supportive of hypotheses H1a, H2a, H3a, and H4a, respectively. The factor "perceived value" was a significant direct effect on nutritional health behavior ($\beta = 0.361, p < .05$), Intention to repurchase ($\beta = 0.436, p < .05$), consumer trust ($\beta = 0.826, p < .05$), which were supported H5, H6, and H7, respectively. Both Nutritional health behavior ($\beta = 0.256, p < .05$), and Consumer trust ($\beta = 0.134, p < .05$), showed a significant direct effect on Intention to repurchase. These are supportive of hypotheses H8, and H9, respectively.

5. Discussion

This study has examined the influence of food attributes, perceived value, consumer trust and nutritional health behavior that contribute to consumer repurchase intention of food with health claim among consumers in Bangkok and Metropolitan areas in Thailand. A hypothesized model was performed to test direct and indirect relationship among variables by using path analysis. Data collected from 313 consumers in Bangkok and Metropolitan areas in Thailand.

The main findings are that 1) food attributes including food safety, food nutrients, food sensory, and food availability were shown to have *indirect* relationships on intention to repurchase, which were significantly mediated by *perceived value*, *nutritional health behavior*, and *consumer trust*. 2) Food attributes (food safety, food nutrients, food sensory, and food availability) were demonstrated to have positive direct relationships on the *perceived value*. 3) The perceived value was shown to have both positive direct and indirect relationships on *intention to repurchase*, which were significantly mediated by *nutritional health behavior* and *consumer trust*. 4) Both *nutritional health behavior* and *consumer trust* showed a significant direct effect on intention to repurchase.

In terms of food attributes, our research confirms that the four dimensions of food attributes positively impact on the perceived value, and have indirect relationships on intention to repurchase. In the study by Lin et al. (2021), product characteristics also positively influence consumers' perceived value, and play a key leading factor to impact on consumers' continuous purchase intention. However, it seems that most of the Thai consumers are concerned about *the availability and nutrients* as important factors of food with health claims, which were likely to perceive value more than did in consumers' choices of *food safety and food sensory*. This results expands previous studies (Shrestha, 2020) that found *availability* was the important predictor for motivating the food products purchase intention. Also, Ali & Ali (2020) attested that food attributes such as *product quality, packaging, and taste* have a significant influence on willingness to pay for health and wellness food products. Perceived dietary quality was assessed as the extent to which the consumer on average believes to have a healthy food intake. (Hansen & Thomsen, 2018). However, the results differ from other studies (Curvelo et al., 2019) that mentioned the negative relationship between *nutritional content* and the purchase intention.

In terms of value factors, in this study, the perception of value of food products with health claims was shown to have positive influences on *intention to repurchase*. It is possible to infer that consumers who *perceived the value of foods* with health claims, were likely to have intention to repurchase them. This finding is in corresponding with food product marketing literature that found the perceived value as an antecedent affects the repurchase intention. (De Toni et al., 2017; Moliner et al., 2007). In addition, previous studies reported that perceived value has a positive impact on both purchase intention (Chen & Chang, 2012) and repurchase intention (Chen and Tsai, 2007; Lin et al., 2021). This finding expands past studies indicating that perceived value is an important predictor of repurchase intentions (Cronin et al., 2000; Oh, 2000).

In terms of *consumer trust* and *nutritional health behavior*, it may be inferred that consumers had a positive perception towards the value of food attributes, which were likely as motivation factors for their behaviors about nutritional health consumption and consumer trust. In addition, consumer behaviors on trust and nutritional health consumption were likely as the push factors for their behavioral intention to repurchase. The finding is consistent with other studies (Teng & Wang, 2015; Shrestha, 2020) found a positive and significant relationship between *consumer trust* on *purchase intention*. Specifically, Fariase et al. (2019) reported that *healthy consumption* has a positive influence on the repurchase intention for respondents who buy organic food.

These findings have implications for both research and practice. For research, the theoretical model was developed by integrating concepts of healthy food characteristics, nutritional health consumption, and marketing towards perceived value, consumer trust and repurchase intention. Therefore, this study demonstrates the theoretical model that highlights the key drivers of consumer repurchase intention, and how to improve the food product value in the context of the healthy food industry in Thailand. We hope our theoretical model can be used as a guideline for future research that wishes to examine the phenomenon in various marketing settings, and is applicable in the food marketing industry.

For practitioners or food managers, this study highlights the importance of perceived value, and consumer trust in influencing the intention to repurchase food with health claims in Thailand. Food managers should consider their food attributes that meet the customer needs. This study shows that the perceived value plays a major role in influencing the intention to repurchase, consumer trust, and nutritional health behavior. Hence, food managers should continuously monitor the customer trust and the changes of market on the food with health claims. Specifically, food managers should cultivate and develop the value of food products to be delivered in place for the competition in a current environment.

Finally, two limitations of this study are discussed. First, the scope of this study was limited by its population frame, which included only consumers in Bangkok and Metropolitan areas in Thailand. The sample used for analysis was drawn from its population in the two areas and was relatively small. Future research, therefore, can also expand on the present study by using samples from consumers staying in other areas with varying environments. Second, data for this study were collected by an online survey approach. A future study on food with health claims in the food industry could attempt to use multiple methods to obtain a fuller picture of data, and overcome biases that stem from the use of a single method.

6. Conclusion

This study has attempted to verify the influence of food attributes, perceived value, consumer trust and nutritional health behavior on repurchase intention in the food industry. It concludes that food attributes have indirect relationships on Intention to repurchase mediated by perceived value, nutritional health behavior, and consumer trust. There were positive direct and indirect relationships between perceived value and intention to repurchase mediated by nutritional health behavior and consumer trust. Both nutritional health behavior and consumer trust have a direct effect on Intention to repurchase. This study has also provided evidence that the theory of planned behavior can be successfully applied to the study of repurchase intention in the food industry. The proposed model for the repurchase intention in the food industry should provide guidance for service providers to evaluate and improve the value of food attributes with health claims.

References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. doi:10.1016/0749-5978(91)90020-t
- Akaike, H. (1987). Factor Analysis and AIC. *Psychometrika*, 52(3), 317-332. doi:10.1007/BF02294359
- Ali, T., & Ali, J. (2020). Factors Affecting the Consumers' Willingness to Pay for Health and Wellness Food Products. *Journal of Agriculture and Food Research*, 2, 100076. doi:10.1016/j.jafr.2020.100076
- Arion, M., Numan, H., Pitariu, H., & Jorna, R. (1994). Placing Trust in Human-Computer Interaction. *Proceedings of 7TH European Conference on Cognitive Ergonomics, Bonn, Germany (ECCE 7)*, 353-365.
- Bureau of Nutrition, Department of Health, Ministry of Public Health, Thailand. (2021). *Food-based Dietary Guidelines*, Retrieved from <https://nutrition2.anamai.moph.go.th/fbdgs>.
- Baron, R.M., & Kenny, D.A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173
- Byrne, B.M. (2016). *Structural Equation Modeling with AMOS: Basic Concepts Applications, and Programming* (3rd ed.). New York: Routledge. doi:10.4324/9781315757421
- Cavana, R.Y., Delahaye, B.L., & Sekaran, U. (2001). *Applied Business Research: Qualitative and Quantitative Methods*. John Wiley & Sons, Milton.

- Chaveesuk, S., Wutthirong, P., & Chaiyasoonthorn, W. (2018). Cloud Computing Classroom Acceptance Model in Thailand Higher Education's Institutes. *Proceedings of the 2018 10th International Conference on Information Management and Engineering - ICIME 2018*. <https://doi.org/10.1145/3285957.3285989>
- Chaveesuk, S., Chaiyasoonthorn, W., & Khalid, B. (2020, April). Understanding the Model of User Adoption and Acceptance of Technology by Thai Farmers. *Proceedings of the 2020 2nd International Conference on Management Science and Industrial Engineering*. <https://doi.org/10.1145/3396743.3396781>
- Chen, C.F., & Tsai, D. (2007). How Destination Image and Evaluative Factors Affect Behavioral Intentions? *Tourism Management*, 28(4), 1115-1122. doi:10.1016/j.tourman.2006.07.007
- Chen, Y.-S., & Chang, C.-H. (2012). Enhance Green Purchase Intentions: The Roles of Green Perceived Value, Green Perceived Risk, and Green Trust. *Management Decision*, 50(3), 502-520. doi:10.1108/00251741211216250
- Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the Effects of Quality, Value and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments. *Journal of Retailing*, 76(2), 193-218. doi:10.1016/s0022-4359(00)00028-2
- Curvelo, I.C.G., Watanabe, E.A.M., & Alfinito, S. (2019). Purchase Intention of Organic Food under the Influence of Attributes, Consumer Trust and Perceived Value. *Revista de Gestao*, 26(3), 198-211. doi:10.1108/rege-01-2018-0-010
- De Toni, D., Eberle, L., Larentis, F., & Milan, G.S. (2017). Antecedent of Perceived Value and Repurchase Intention of Organic Food. *Journal of Food Products Marketing*, 24(4), 456-475. doi:10.1080/10454446.2017.1314231
- Diallo, M.F. (2012). Effects of Store Image and Store Brand Price-image on Store Brand Purchase Intention: Application to an Emerging Market. *Journal of Retailing and Consumer Services*, 19(3), 360-367. doi:10.1016/j.jretconser.2012.03.010
- Farias, F.D., Eberle, L., & Milan, G.S., Toni, D.D. & Eckert, A. (2019). Determinants of organic food Repurchase Intention from the Perspective of Brazilian Consumers. *Journal of Food Products Marketing*, 25(9), 921-943. doi:10.1080/10454446.2019.1698484
- Grzymislawski, M., Puch, E.A., Zawada, A., & Grzymislawski, M. (2020). Do Nutritional Behaviors Depend on Biological Sex and Cultural Gender? *Advances in Clinical and Experimental Medicine*, 29(1), 165-172. doi:10.17219/acem/111817
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate Data Analysis: A Global Perspective*. Pearson Education International, New Jersey.
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2019). *Multivariate Data Analysis*, 8th edition. Cengage Learning, EMEA, Hampshire.
- Hansen, T., & Thomsen, T.U. (2018). The Influence of Consumers' Interest in Healthy Eating, Definitions of Healthy Eating, and Personal Values on Perceived Dietary Quality. *Food Policy*, 80, 55-67. doi:10.1016/j.foodpol.2018.09.002
- Hu, L.T., & Bentler, P.M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. doi:10.1080/10705519909540118
- Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J., & Stanton, J. (2007). Who are Organic Food Consumers? A Compilation and Review of Why People Purchase Organic Food. *Journal of Consumer Behaviour*, 6(2-3), 94-110. doi:10.1002/cb.210
- Januardi, F.R., & Windasari, N.A. (2019). Factors Affecting Young-Adult Consumers' Attitude on Healthy Food Consumption and Dietary Catering Purchase Intention. *Proceeding Book of the 14th ICMEM 2019 and The 11th IICIES 2019*, 7-9 August, Bari, Indonesia, ISBN: 978-623-92201-0-5.
- Jun, J., & Arendt, S.W. (2016). Understanding Healthy Eating Behaviors at Casual Dining Restaurants Using the Extended Theory of Planned Behavior. *International Journal of Hospitality Management*, 53, 106-115. doi:10.1016/j.ijhm.2015.12.002
- Khalid, B., Chaveesuk, S., & Chaiyasoonthorn, W. (2021). MOOCs ADOPTION IN HIGHER EDUCATION: A MANAGEMENT PERSPECTIVE. *Polish Journal of Management Studies*, 23(1), 239-256. <https://doi.org/10.17512/pjms.2021.23.1.15>
- Kline, R.B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). New York: The Guilford Press.
- Kumar, A., & Sharma, S. (1999). A Metric Measure for Direct Comparison of Competing Models in Covariance Structure Analysis. *Structural Equation Modeling*, 6(2), 169-197. doi:10.1080/10705519909540127
- Lee, H., & Yun, Z. (2015). Consumers' Perceptions of Organic Food Attributes and Cognitive and Affective Attitudes as Determinants of their Purchase Intentions toward Organic food. *Food Quality and Preference*, 39(January), 259-257. doi:10.1016/j.foodqual.2014.06.002
- Lin, J., Li, T., & Guo, J. (2021). Factors Influencing Consumers' Continuous Purchase Intention on Fresh Food E-commerce Platforms: An Organic Foods-Centric Empirical Investigation. *Electronic Commerce Research and Applications*, 50 (November-December), 101103. doi:10.1016/j.elerap.2021.101103
- Lusk, J.L., & Briggeman, B.C. (2009). Food Values. *American Journal of Agricultural Economics*, 9(1), 184-196. doi:10.1111/j.1467-8276.2008.01175.x
- MacCallum, R.C., Browne, M.W., & Sugawara, H.M. (1996). Power Analysis and Determination of Sample Size for Covariance Structure Modeling. *Psychological Methods*, 1(2), 130-149. doi:10.1037/1082-989x.1.2.130

- Moliner, M.A., Sanchez, J., Rodriguez, R.M., & Callarisa, L. (2007). Perceived Relationship Quality and Post-purchase Perceived Value. *European Journal of Marketing*, 41(11/12), 1392-1422. doi:10.1108/03090560710821233
- Niemczyk, A. (2014). The Application of Path Modelling in the Analysis of Consumer Behaviour in the Cultural Tourism Market. *Economics & Sociology*, 7(1), 204-216. doi:10.14254/2071-789x.2014/7-1/18
- Nunthasin, N. (2015). Factors Affecting Consumer's Consumption Behavior and Loyalty toward Health Food in Bangkok Metropolis. *Journal of Cultural Approach*, 16(29), 3-18.
- Nystrand, B.T., & Olsen, S.O. (2020). Consumers' Attitudes and Intentions towards Consuming Functional Foods in Norway. *Food Quality and Preference*, 80 (March), 103827. doi:10.1016/j.foodqual.2019.103827
- Oh, H. (2000). Diner's Perceptions of Quality, Value and Satisfaction. *Cornell and Restaurant Administration Quality*, 41(3), 58-66. doi:10.1177/001088040004100317
- Panya, P., & Seesupan, T. (2021). Perceived Value, Firm Generated Content, Used Generate Content and Customer Engagement on Health Restaurant. *Journal of Management Science Pibulsongkram Rajabhat University*, 2(2), 86-95.
- Sahi, G.K., Sekhon, H.S., & Quareshi, T.K. (2016). Role of trusting beliefs in predicting purchase intentions. *International Journal of Retail & Distribution Management*. 44(8), 860-880. doi:10.1108/ijrdm-10-2015-0157
- Saovapruk, Y. (2018). *Healthy Food and Beverages Trends*. [online] Retrieved October 14, 2021, from <https://www.prachachat.net/columns/news-268743>.
- Shaharudin, M.R., Pani, J.J., Mansor, S.W., & Elias, S.J. (2010). Purchase Intention of Organic Food: Perceived Value Overview. *Canadian Social Science*, 6(1), 70-79. doi:10.3968/j.css.1923669720100601.00
- Shevlin, M., & Miles, J. N.V. (1998). Effects of Sample Size, Model Specification and Factor Loadings on the GFI in Confirmatory Factor Analysis. *Personality and Individual Differences*, 25(1), 85-90. doi:10.1016/s0191-8869(98)00055-5
- Shrestha, S.K. (2020). Consumer Purchase Intention towards Organic Foods. *Management Dynamics*, 23(1), 37-54. doi:10.3126/md.v23i1.35542
- Shumacker, R.E., & Lomax, R.G. (2006). *A Beginner's Guide to structural Equation Modelling*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Sweeny, J.C., & Souter, G.N. (2001). Consumer Perceived Value the Development of A Multiple Item Scale. *Journal of Retailing*, 77(2), 203-220. doi:10.1016/s0022-4359(01)00041-0
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using Multivariate Statistics*. 5th ed., New York: Allyn and Bacon.
- Teng, C.C., & Wang, Y.M. (2015). Decisional Factors Driving Organic Food Consumption: Generation of Consumer Purchase Intentions. *British Food Journal*, 117(3), 1066-1081. doi:10.1108/bfj-12-2013-0361
- Teng, C.-C., & Lu, C.-H. (2016). Organic Food Consumption in Taiwan: Motives, Involvement, and Purchase Intention under the Moderating Role of Uncertainty. *Appetite*, 95-105. doi:10.1016/j.appet.2016.05.006
- Van Kleef, E., Van Trijp, H. C. M., & Luning, P. (2005). Functional Foods: Health Claim-food Product Compatibility and the Impact of Health Claim Framing on Consumer Evaluation. *Appetite*, 44(3), 299-308. doi:10.1016/j.appet.2005.01.009
- Van Trijp, H. C. M., & Van der Lans, I. A. (2007). Consumer Perceptions of Nutrition and Health Claims. *Appetite*, 48(3), 305-324. doi:10.1016/j.appet.2006.09.011
- Verbeke, W. (2008). Impact of Communication on Consumers' Food Choices: Plenary Lecture. *Proceedings of the Nutrition Society*, 67(3), 281-288. doi:10.1017/S0029665108007179.
- Vergura, D.T., Zerbini, C., & Luceri, B. (2020). Consumers' Attitude and Purchase Intention towards Organic Personal Care Products. An Application of the S-O-R Model. *Sinergie: Italian Journal of Management*, 38(1), 121-137. doi:10.7433/s111.2020.08
- Wu, W., Zhang, A., Van Klinken, R.D., Schrobback, P., & Muller, J.M. (2021). Consumer Trust in Food and the Food System: A Critical Review. *Foods*, 10(10), 2490. doi:10.3390/foods101032490
- Zeithaml, V.A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-end Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2-22. doi:10.1177/002224298805200302
- Zezelj, I., Milosevic, J., Stojanovic, Z., & Ognjanov, G. (2012). The Motivational and Informational Basis of Attitudes towards Foods with Health Claims. *Appetite*, 59(3), 960-967. doi:10.1016/j.appet.2012.09.008
- Zheng, G.W., Akter, N., Siddik, A.B., & Masukujjaman, M. (2021). Organic Foods Purchase Behavior among Generation Y of Bangladesh: The Moderation Effect of Trust and Price Consciousness. *Foods* 2021, 10(2278), 1-19. doi:10.3390/foods10102278

