

THE ANTECEDENTS OF CONSUMER LOYALTY IN PLANT-BASED FOOD AMONG VEGETARIAN CONSUMER IN THAILAND

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Abstract

Plant-based protein products are foods of the future made from vegetables, grains, and mushrooms, produced with innovation process as a high-protein food to substitute meat consumption among vegetarians. Today's growing trend of health care and environmental conservation is a growth opportunity for the plant-based foods business. The purposes of this research are 1) to study the level of antecedents, namely lifestyle, consumer perceived value, social context, innovation management for plant-based food, purchase intention of plant-based food, and loyalty of vegetarian consumers in Thailand. 2) To study the effect of antecedents, namely lifestyle, consumer perceived value, social context, innovation management for plant-based food, purchase intention of plant-based food, and loyalty of vegetarian consumers in Thailand. 3) To develop a consumer loyalty model in plant-based food for vegetarian consumers in Thailand. This research used a mixed methods research design. In quantitative research, the sample consisted of 400 Thai people with vegetarian consumption behavior, 20 times the observed variables. A multistage sampling method and a structured questionnaire were used for data collection, and Structural Equation Modeling (SEM) technique was used for data analysis. In Qualitative research, the target group was plant-based food business executives and food innovation experts, totaling 20 people. An in-depth interview technique was used for data collection. The results of this research revealed that 1) lifestyle, consumer perceived value, social context, innovation management for plant-based food, purchase intention of plant-based food, and loyalty of vegetarian consumers in Thailand are at a high level, 2) lifestyle, consumer perceived value, social context, innovation management for plant-based food, and purchase intention of plant-based food affects the loyalty in plant-based food among vegetarian consumer in Thailand, with statistical significance at the .05 level, and 3) a model of consumer loyalty in plant-based food among vegetarian consumers in Thailand developed by the researcher is named 2L2ISV Model (L: Lifestyle, S: Social Context, I: Innovation Management, V: Consumer Perceived Value, I: Purchase Intention, L: Consumer Loyalty). In addition, the qualitative research results also reveal that to build loyalty among vegetarian consumers in Thailand; the consumers need to be assured of the value of plant-based foods when plant-based foods remain expensive compared to other meat and vegetarian foods. Therefore, plant-based food entrepreneurs have implemented marketing strategies to create accurate awareness of the nutritional value and benefits to society and the environment, along with product development efforts, cost control, and modern marketing with electronic commerce (e-commerce). The results of this research can be used as a guideline for determining the promotion policy from the government to develop the potential of food entrepreneurs in food technology and marketing skills. It can be further used in practice to build consumer loyalty to plant-based food in the future.

Keyword: Antecedents / Consumer Loyalty / Plant-based Food / Vegetarian

INTRODUCTION

Today's lifestyle faces many challenges from social and environmental changes, such as the increase in the population, entering an aging society and unbalanced living behavior. In addition, environmental changes, for example, variability of the weather, degradation of natural

resources, pollution, and spread of COVID-19 have a rapid impact on life and health. These cause people to change their lifestyle behavior. They have hygiene awareness and self-protection as well as pay attention to health care, environmental issues and advancements in science to solve the problems on health care, environmental conservation and natural trends. As a result, consumers have more complex needs. Consumers are likely to start eating less meat due to awareness of the negative health effects of Non-Communicable Diseases (NCDs), such as cardiovascular diseases, cancer, obesity and allergies. They also concern about residues in meat and the threat of disease in animals, including the environment and animal welfare issues. Such changes in consumer behavior have resulted in the growth of the alternative protein food market. In particular, the market for plant-based food is expanding rapidly (Yuyangyuen & Aunyawong, 2023). This is because plant-based protein diets reduce health risks and are more environmentally friendly than meat. It is a safe and easily available protein food. High-protein vegetables are abundant in each region of the world. The cultivation and processing process is not as complicated as the production of animal protein. A study by the World Economic Forum concluded that a plant-based diet as a protein-based alternative could help address the long-term protein shortages as the world's population continues to grow and a source of protein to replace meat in the event of an epidemic. Plant-based food is the food innovation that best promotes the sustainability of the food system compared to cultured meat and insect protein (Godfray, 2019). The plant-based food is therefore an alternative protein food that can help solve health problems and the environment well. It will play an important role in the future when the world's population faces the risk factors for food security. As a result, the plant protein food industry is growing exponentially and highly competitive. There are investments in research and development of products using various plant proteins, including mushrooms and algae. The value of the plant-based food business is expanding rapidly driven by the world's largest investors and entrepreneurs such as Bill Gates, Tyson Foods, Cargill, Nestle and Unilever, etc. (Choudhury, Singh, Seah, Yeo & Tan, 2020; Marketandmarkets, 2020).

Innovation in protein food product management from plants to meet the needs of consumers and used in marketing to create awareness of new food products will help consumers understand the product and perceive nutritional, emotional, and social and price values from the consumption of plant-based protein foods. They are impressed and intend to repeat purchases because they benefit from their needs. If entrepreneurs have a deep understanding of the lifestyle of vegetarian consumers in terms of attitudes and behaviors as well as the needs and barriers that make consumers reluctant to buy, it will benefit product management and marketing strategies.

LITERATURE REVIEW

Consumer Value

The value of loyal consumers is competitive power, bringing income and profits in the long run (Nualkaw et al., 2021). In addition, loyal consumers act as a means of communicating the image of the product to new consumers, building a customer base and helping business grow (Waiyavat et al., 2022). Winning consumers' trust, engagement and continuing support for

businesses without being shaken by competitors' offers to gain loyalty, therefore, is important to the success of the plant-based food business in Thailand (Noppakate & Aunyawong, 2022). Entrepreneurs need to deeply understand the needs and lifestyle problems of consumers that drive them to choose a vegetarian diet, such as the negative health effects of meat consumption, environmental impact, and cruelty to animals, religious beliefs and sacred things. Innovative protein foods that are new and different from traditional vegetarian diets, such as tofu, soy protein and tempeh that are nutritious, healthy, environmental friendly, similar to meat attributes, easy to cook, good taste and inexpensive, meet the needs of various forms of consumers in a vegetarian lifestyle (Pintuma et al., 2021). Under the acceptance of society that supports consumption, consumers are aware of the values that are meaningful to themselves in terms of utility, social value, sentimental value and value for continued consumption (Hiranpahet et al., 2022). These encourage consumers to buy and make repeat purchases and create customer commitment, leading to the promotion of the consumption of plant protein food products by continuing to refer others (Dick & Basu, 1994; Kotler & Keller, 2016).

Purchase Intention

Food business entrepreneurs who want to succeed will never stop evolving to make their business sustainable in the highly competitive food market by creating products for new groups of consumers and improving products to remain valuable as always desired by consumers (Pintuma et al., 2020). Integrated marketing to deliver value was used to attract consumers to repeat purchases because consumers who consistently make repeat purchases generate stable income for the business (Phrapratanporn et al., 2022). In view of consumer behavior, repeat purchases show behavioral loyalty. This is the result of conative component, which is the tendency of consumers to accept the product (Schiffman & Wisenblit, 2015, p. 175; Solomon, 2019, p. 276; Pan et al., 2012, p. 153; Oliver, 1999, p. 35). The influence of attitudes on purchasing decisions changed depending on the circumstances and the attitudes perceived from the exchange of information, observation, imitation and incline to reference groups as well as the ability of consumers to purchase, including the market environment, such as price reductions of competitors, new product offer, trend/fashion and modern technology, etc. (Ajzen, 2015, Oliver, 1999). Purchase intention is therefore a variable linking between several causal factors affecting consumption trends and repeat purchases (Kavak & Gumusluoglu, 2007).

Consistently, behavior is the result of intention to act, which arises from attitude, influence of social referral groups and their ability to control intended behavior. It is determined by belief in the effects of consumption, social acceptance of product use and their own ability to achieve consumption targets. Buying decisions therefore depend on intention and if the consumer can control their purchasing ability, they will buy (Ajzen, 2015). The purchase intention is a behavioral attitude (conation) that shows the loyalty of consumers with the intention to return to buy the product again, caused by knowledge and understanding of the properties of the product, a feeling of like and satisfaction in the results of using the product. It is like the motivation or desire of consumers to make repeat purchases. It is unlikely that repeat purchases will actually occur, if it is interfered by unexpected factors such as competitor price reductions

or decreased product performance (Oliver, 1999). In addition, Espejel, Fandos & Flavián (2008) said that purchase intention reflects predictable consumer behavior in the near future, such as the products that will be purchased next time. The attitudes will change according to the learning process, arising from experience, consumer personality, received information and the influence of close people in society that currently accept (Voon et al., 2011). Oliver (1999) said that consumers accept food products that are nutritious and healthy as they are without injuring animals and reducing environmental damage with features similar to meat delicious. The use of marketing strategies offers a wide range of products at a reasonable price, suitable for the lifestyle and needs of today's consumers and accepted by society (Srisawat & Aunyawong, 2021). The communication and marketing channels give consumers a positive attitude. This leads to purchase intention and continued consumption with engagement and satisfaction. Details are as follows: 1) Product means properties and characteristics of plant protein food products that are important to consumers' purchasing decisions, 2) Marketing refers to activities that sellers do to make consumers understand what plant protein food products are and its usefulness so that consumers have confidence in the quality of the product and generate sales leads through various channels convenient for consumers, including price strategies and sales promotions, 3) Presentation process refers to informing on production process and consumption such as material details, source of food, nutritional values, storage, quality assurance and identification of vegetarian or vegan foods, and 4) Technology refers to the role of food technology used to produce protein from plants into food products with appetizing characteristics and good nutritional properties, meeting dietary needs for good health without harming animals and avoiding environmental impacts (Elzerman et al., 2013; Mousel & Tang, 2016; Bryant et al., 2019; Onwezen et al., 2020).

Social Context

The goal of all consumers is to obtain goods and services to solve problems or meet their needs as best as possible (Setthachotsombut & Aunyawong, 2020). The consumers start from searching for information, evaluate alternatives, until making a purchase decision to purchase the same product repeatedly or change, respectively. All are related to the people around them in society. The social dynamics are connected in many dimensions: economy, technology, law, culture and religion, because people live according to the beliefs of society and culture received from parents (Villegas-Puyod et al., 2022). They gain knowledge by studying, reading, consulting from peers and experts through learning, exchanging ideas and both formal and informal experiences. All of the above was compiled into an understanding and attitude towards things that affects purchasing decisions and consumption behavior. The social environment and the interaction between people in society with different roles is the social context. Social activities and social support networks influence the decision-making process of consumers, causing social change (Earle & Earle, 1999). Therefore, people in society are an important driver of consumer purchasing decisions and long-term repeat purchases. Nowadays, digital technology plays a huge role in communication (Aunyawong et al., 2020; Wisedsin et al., 2020). The influence of traditional institutional groups may be diminished due to the shift in communication patterns to the use of social networks. Digital technology has become a rapidly

growing part of marketing such as Page/LINE group members, influencer marketing, special privileges via QR Code, etc. (Sooksai et al. 2022).

Social context is an important variable in behavioral science research (Ajzen, 2015). The subjective norms in Theory of Reasoned Action and Theory of Planned Behavior that the consumers value consist of family members, close friends, dominant people or people with expertise such as supervisors, doctors, nutritionists, etc. The opinions and expectations of these groups affect the intention of behavior such as purchase intentions which leads to a purchase decision and behavioral control factors such as affordability, etc. The social context is also important in the process of diffusion of innovation (Trott, 2008; Rogers, 2003).

METHODOLOGY

The mixed methods research was used, starting with documentary research and conducting quantitative research and then qualitative research. The statistical processes and tools in quantitative research were used to obtain findings that meet the objectives of the study. The researchers started by studying the secondary data from textbooks, academic papers, and academic article related to factors in management that positively affect the competitiveness of business entrepreneurs. The concepts, theories, and knowledge were scrutinized to attain the composition of factors, namely innovation factors, administrative policy factors, organizational environment factor and spiritual leadership factors that correlate and influence competitiveness. The quantitative research aims to confirm findings derived from population studies and literature reviews. It focuses on presenting academic research results on the antecedent factors that are related and influencing the competitiveness of stainless steel entrepreneurs in Bangkok and its vicinity. Questionnaire, the quantitative research tool, consisted of measures of main variables according to the research conceptual framework. These measures were developed from research that has been reviewed in the literature and the questions have been revised to make it clear and suitable for the research objectives. The validity and reliability of the measures were tested before using them to collect data from the target population. The results were then used for statistical analysis using structural equation modeling (SEM). The population was executives, managers or employees who were assigned to perform management duties in the establishment regarding the production and sale of stainless steel products in Bangkok and its vicinity, consisting of Bangkok, Samut Sakhon, Nakhon Pathom, Nonthaburi, Pathum Thani, Chachoengsao and Samut Prakan, totaling 429 places (1 person each) (data of November 30, 2021). Random Sampling was used according to the proportion of the population and the determination of the number of samples to select establishments related to the production and sale of stainless steel products in Bangkok and its vicinity. The sample size must be at least 20 times the observational variable (Hair, Ringle, & Sarstedt, 2011). This research had 15 observed variables, so the sample was 300 people. For qualitative research, the researchers used in-depth interviews from executives and experts in the field of stainless steel products in Bangkok and its vicinity. The qualitative data was compiled, analyzed, interpreted, and linked to draw conclusions. It was used to explain the quantitative analysis results with depth, accuracy, and certainty in order to confirm and conduct in-depth analysis in this research.

RESULTS

This study analyzed survey data to test the relationship between the variables by examining the distributions of the 15 observed variables in the structural equation model, using the chi-square test (χ^2). If it found statistical significance (P-value < .50), it depicted that the variable was not normally distributed. On the other hand, if it found statistical insignificance (P-value > .50), it revealed that the variable was normally distributed.

Table 1: Statistical test of empirical variables (n=300)

Variable	M	S.D.	%CV	Sk	Ku	χ^2	P-value
New	3.97	.84	21.31	-1.877	-1.956	7.350	.025
Crea	4.09	.85	20.97	-2.774	-2.579	14.346	.001
Econ	4.04	.87	21.62	-2.556	-3.002	15.549	.000
Objc	4.11	.77	18.71	-2.248	-2.835	13.089	.001
Stra	4.15	.73	17.64	-2.123	-2.239	9.522	.009
Reso	3.96	.77	19.64	-1.466	-1.782	5.323	.070
Inve	4.13	.73	17.74	-2.128	-.790	5.153	.076
Part	4.29	.72	16.76	-3.251	-1.749	13.630	.001
Rewa	4.25	.74	17.50	-2.997	-1.869	12.474	.002
Visi	4.25	.73	17.19	-2.985	-2.223	13.850	.001
Hope	4.10	.77	18.89	-2.074	-.810	4.957	.084
Love	4.24	.69	16.33	-2.449	-1.462	8.134	.017
Cost	4.28	.72	16.96	-3.255	-2.104	15.018	.001
Time	4.40	.72	16.52	-4.258	-1.647	2.841	.000
Quli	4.29	.77	18.16	-3.581	-1.767	15.946	.000

Note: chi-square (χ^2) with statistical significance (P-value <.05) indicate a non-normal distribution.

The results of checking the normal score of the observed variables in the structural equation model with chi-square statistics (χ^2) found that resource (reso), invention (inve) as well as hope and faith (hope) were not statistically significant ($p > .05$), indicating that such variables had a normal curved distribution. In addition, all other observational variables were found to be statistically significant ($p < .05$), indicating that such variables had a non-normal distribution. This may result in an empirical model fit assessment since the chi-square (χ^2) test statistic could be problematic. So, the researchers solved the problem by finding the ratio of chi-square (χ^2) to degrees of freedom (df). The value of less than 2.00 indicated the model fit, although the test statistic (χ^2) of the model was statistically significant (p -value < .05) (Hair, et al., 2006).

Table 2: Factor Loadings. (n = 300)

Variable	Factor Loading (λ)	Error (θ)	t	R ²
Innovation (INOVA)				
Newness (new)	.53	.72	8.50	.28
Creativeness (crea)	.91	.17	13.09	.83
Economic Benefits (econ)	.66	.57	10.22	.43
Administrative Policy (POCY)				
Objectives (obje)	.83	.31	13.00	.69
Strategies (stra)	.68	.53	11.01	.47
Resources (reso)	.60	.64	9.82	.36
Organizational Environment (ENVI)				
Invention (inve)	.61	.23	9.53	.77
Participation (part)	.84	.29	12.26	.71
Rewards (rewa)	.61	.63	9.56	.37
Spiritual Leadership (SPIR)				
Vision (visi)	.70	.51	11.93	.49
Hope and Faith (hope)	.80	.35	13.56	.65
Altruistic Love (love)	.69	.53	11.67	.47
Competitiveness (COMP)				
Cost (cost)	.77	.30	9.93	.70
Response Time (time)	.63	.40	8.77	.60
Quality (quli)	.50	.45	7.50	.55
$\rho_c = .76$ $\rho_v = .52$				
Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000				

Table 3: Measurement Model (n=300)

Dependent Variable	R ²	Effect	Independent Variable			
			Innovation (INOVA)	Administrative Policy (POCY)	Organizational Environment (ENVI)	Spiritual Leadership (SPIR)
Innovation (INOVA)	.70	DE	-	.53*(3.85)	.43*(4.10)	.39*(4.68)
		IE	-	-	-	-
		TE	-	.53*(3.85)	.43*(4.10)	.39*(4.68)
Competitiveness (COMP)	.93	DE	.59*(4.53)	.55*(4.60)	.35*(4.16)	.79*(2.83)
		IE	-	.31*(4.09)	.41*(4.10)	.15*(4.63)
		TE	.59*(4.53)	.86*(4.36)	.76*(4.12)	.94*(3.33)

$\chi^2 = 133.21$ $df = 77$ $p\text{-value} = .00007$, $\chi^2 / df = 1.73$, $RMSEA = .049$, $RMR = .023$, $SRMR = .039$, $CFI = .99$, $GFI = .94$, $AGFI = .91$, $CN = 239.42$

*Statistically significant level of .05

Note: In parentheses, they are the t-test statistic values. If the value is not between -1.96 and 1.96, it is statistically significant at the .05 level

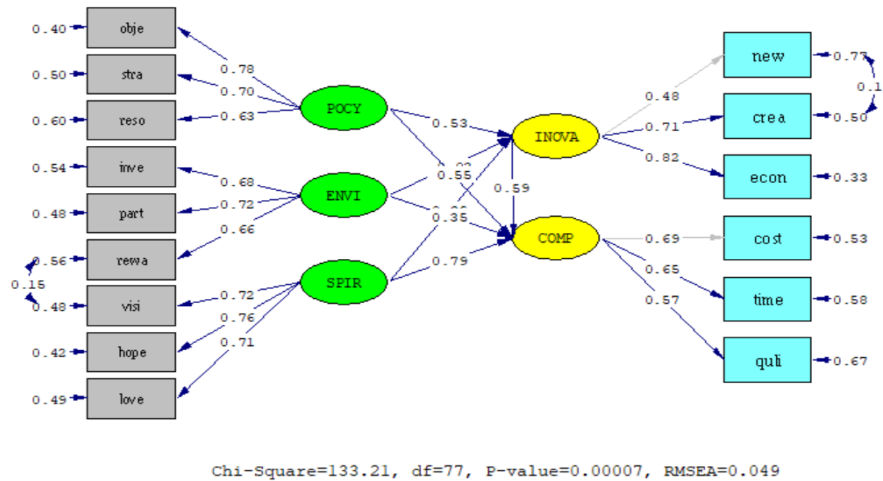


Figure 1: Modified Model (n=300)

The modified model was fit to the empirical data, which was determined from the Fit Index as follows: $\chi^2 = 133.21$ $df = 77$ $p\text{-value} = .00007$, $\chi^2 / df = 1.73$, $RMSEA = .049$, $RMR = .023$, $SRMR = .039$, $CFI = .99$, $GFI = .94$, $AGFI = .91$, $CN = 239.42$. The fit index of the modified model ($p\text{-value} = .00007$) did not meet the criteria because it was still statistically significant ($P\text{-Value} < .05$). However, because the test statistic χ^2 was sensitive to sample size, the researchers therefore also considered the χ^2 / df value, equal to 1.73, which was considered to pass the specified criteria because it was less than 2.00 (Tabachnick & Fidell, 2007). $RMSEA = .049$, $RMR = .023$, and $SRMR = .039$ were considered to pass the specified criteria because it was less than .05 (MacCallum et al, 1996; Diamantopoulos & Siguaw, 2000). $CFI = .99$, $GFI = .94$ and $AGFI = .91$ passed the criteria because it was greater than .90 (Tabachnick & Fidell, 2007). $CN = 239.42$ passed the criteria because it was greater than 200.00 (Joreskog; & Sorbom, 1996). So it can be concluded that the adjust model was fit to the empirical data and the parameter estimation in such a model was therefore acceptable.

CONCLUSION

It was found that the modified structural equation model of the antecedent factors influencing the competitiveness of stainless steel entrepreneurs in Bangkok and its vicinity is consistent with the empirical data at an acceptable level, which is determined from the Fit Index as follows: $\chi^2 = 133.21$ $df = 77$ $p\text{-value} = .00007$, $\chi^2 / df = 1.73$, $RMSEA = .049$, $RMR = .023$, $SRMR = .039$, $CFI = .99$, $GFI = .94$, $AGFI = .91$, $CN = 239.42$. The estimation was found in the structural equation model as follows:

1. Innovation (INOVA) has a direct influence on competitiveness (COMP), with the coefficient of influence of .59 and a statistical significance at the .05 level, according to the hypothesis 1: innovation has a direct positive influence on competitiveness.

2. Administrative policy (POCY) has a direct influence on innovation (INOVA), with the coefficient of influence of .53 and a statistical significance at the .05 level, according to the hypothesis 2: administrative policies have a positive direct influence on innovation.
3. Administrative policy (POCY) has a direct influence on Competitiveness (COMP), with the coefficient of influence of .55 and a statistical significance at the .05 level, according to the hypothesis 3: administrative policies have a positive direct influence on sustainable competitiveness.
4. Organizational environment (ENVI) has a direct influence on innovation (INOVA), with the coefficient of influence of .43 and statistical significance at the .05 level, according to the hypothesis 4: organizational environment has a positive direct influence on innovation.
5. Organizational environment (ENVI) has a direct influence on competitiveness (COMP), with the coefficient of influence of .35 and a statistical significance at the .05 level, according to the hypothesis 5: organizational environmental has a positive direct influence on competitiveness.
6. Spiritual leadership (SPIR) has a direct influence on innovation (INOVA) at a coefficient of influence equal to .39 with a statistical significance at the .05 level, according to hypothesis 6: Spiritual leadership has a direct positive influence on innovation.
7. Spiritual Leadership (SPIR) has a direct influence on competitiveness (COMP) with the coefficient of influence equal to .79 with a statistical significance at the .05 level according to the hypothesis 7: spiritual leadership has a direct positive influence on competitiveness.
8. Innovation (INOVA), administrative policy (POCY), organizational environment (ENVI), spiritual leadership (SPIR), can predict competitiveness (COMP) by 93%.

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