Original research article

Development of marketing management for pomelo products in Samut Songkhram province, Thailand

Ekgnarong Vorasiha1, Hathaipan Soonthornpipit2*, Pannawat Chuvichian3, Phachok Lertasawaphat1, Kassamara Sornsawan4, Majid Khan5

1 Quality Management Innovation Program, College of Innovation and Management, Suan Sunandha Rajabhat University
2 Security Management Innovation Program, College of Innovation and Management, Suan Sunandha Rajabhat University
3 Esports Management Program, College of Innovation and Management, Suan Sunandha Rajabhat University
4 International Islamic College Bangkok, Krick University
5 Massey University

* Corresponding author: Hathaipan Soonthornpipit, hathai@so@ssru.ac.th

ABSTRACT

The study presents a comprehensive examination of the market potential for Pomelo products in Samut Songkhram Province, Thailand, aiming to enhance marketing management strategies. It delves into consumer motivations, attitudes, and purchasing intentions towards Pomelo products, utilizing structural equation modeling to assess influencing factors. Samut Songkhram is identified as a prime region for Pomelo cultivation due to its unique river estuary soil enriched with minerals, creating a distinct taste profile influenced by a mix of saltwater, brackish water, and freshwater, dubbed the three-water area. This geographical and environmental advantage contributes to the high quality and consumer preference for the large white Pomelo variety indigenous to the area.

The study explores two primary agricultural practices for growing large white Pomelos: self-cultivation by landowners and orchard leasing by other farmers. Additionally, it investigates two main distribution methods: direct sales at the farm and self-managed sales by farmers or orchard owners. A quantitative analysis involving 400 potential customers, including tourists and out-of-area customers, was conducted to gauge purchase intentions.

Results from structural equation modeling indicate a significant and positive relationship between consumer motivations, attitudes, and purchase intentions, underlining the integrated influence of these factors on consumer behavior towards Pomelo products. These findings highlight the critical role of understanding consumer dynamics and the environmental uniqueness of Samut Songkhram’s Pomelos in developing targeted marketing strategies. The research underscores the significance of leveraging the unique characteristics and cultivation heritage of Samut Songkhram Pomelos to foster product differentiation and appeal, suggesting a need for innovative marketing approaches that resonate with the distinct quality and taste profiles of these local fruits.

Keywords: development; marketing management; pomelo products; Samut Songkhram province

1. Introduction
Samut Songkhram Province, Thailand, is a source of pomelos that produce good quality and are in consumer demand. Farmers in the area have started growing pomelos since ancient times. It began with planting in backyards and has continued to spread until the present, which has an area of up to 12,319 rai (4,927.6 acres) and has more than 3,242 pomelo farmers. Moreover, pomelos grown in Samut Songkhram Province have a more delicious taste than those produced in other places and have a unique identity. This is because the area of the Samut Songkhram province is a river delta where various minerals precipitate and deposit together. In addition, the soil is quite sticky; the topsoil is deep and rich in organic matter. It has the characteristics of a three-water area influenced by salt water, brackish, and freshwater. In addition, the properties of the soil in the Samut Songkhram province are that the Samut Songkhram soil series has a high potassium nutrient. This gives the Pomelo a naturally sweet taste, with a sweetness of not less than 9 degrees Brix. Such factors, therefore, can be considered unique factors that exist only in all three districts of Samut Songkhram Province, making Samut Songkhram Large White Pomelo different from other areas and creating a reputation for the province for more than 30 years.

Currently, around 90 farmers are allowed to use the Thai Geographical Indication (GI) logo, which is a mark used on products that come from a specific production area where the quality or reputation of the product is a result of production in that area. It is like a local brand that indicates the quality and origin of the products given by the Department of Intellectual Property. The characteristics of the Large White Pomelo, a traditional variety of Samut Songkhram province, are distinctive as it has no seeds. The petals of the Pomelo, which are honey-colored, are a favorite of consumers because of their delicious taste. Moreover, the characteristics of the area are unique to Samut Songkhram as it is a city with three types of water within a limited area of only three districts (416.7 sq. km.), especially in the Amphawa district and Bang Khonthi district, which are full of pomelo orchards. The conditions of the cultivation area, rich in fresh, salty, or brackish water, make the Pomelo taste exceptionally good. Recently, Samut Songkhram province Government agencies attached importance to improving the quality of Pomelo without toxins, which is safe for consumers and will expand the market.

The researchers are aware of the economic and social conditions of the pomelo farmers, which is considered a Thai way of life or the roots of Samut Songkhram province. To preserve, create, or increase skills and knowledge and to understand various forms of product marketing management among pomelo farmers, this study aims to develop and raise the production level of creating innovative products using the creative economy concept that emphasizes the value of creating sustainability according to the principles of the bio-economy, circular economy, and green economy (Bio-Circular-Green Economy) model.

Therefore, it is clear from the various studies of product marketing that a wealth of literature supports the multiple variables involved. However, the appropriate marketing model for pomelo fruit products in the specific context of community areas in Samut Songkhram province is still unclear. Hence, this research focuses on designing and examining the suitability of structural equation models in particular contexts consistent with information for stakeholders or those involved with products in the community. It can also be applied to develop the product’s marketing strategy to increase opportunities and improve competitiveness for communities in Samut Songkhram province.
2. Research objectives

(1) To study pomelo products’ marketing context and potential in Samut Songkhram Province.

(2) To study motivation, attitude, and purchase intention of pomelo products in Samut Songkhram Province.

(3) To create and study a structural equation model of the influence of motivation, attitude, and purchase intention for developing marketing strategies for pomelo products in Samut Songkhram Province.

3. Literature review

Consumer motivation is explained by Natnaree Disthan[2] as something that arises from the difference between needs or inspiration or the desire for success or results. On the other hand, attitude is explained academically as a composite of three elements: a conscious and subconscious mental state, a set of beliefs and feelings, and a habitual formation related to information and experiences that give rise to an attitude[3]. Research and various pieces of literature most often like to study attitude by dividing it into three components, i.e., (1) Cognitive Component, (2) Affective Component, and (3) Behavioral Component, where attitude is something that has its importance is the starting point of any human behavior[4]. Therefore, in studying customers’ or consumers’ consumption behavior or purchasing behavior, variables regarding the attitude that customers or consumers have towards products or products are significant. For this reason, the researchers have used attitudinal variables as one of the constructs of the structural equation model in the study of pomelo products, a specific product of communities in Samut Songkhram province.

The purchasing intention is described by Schiffman & Kanuk[5] as a structured behavioral process. The purchasing decision process of customers or consumers is the process of selecting products from two or more alternatives. Consumers will consider elements related to the purchasing decision process, including mental, emotional, feeling, and physical behavior in that environment, and purchasing decisions are activities that occur at a particular time in the entire process. As Kotler[6] explains, it is also essential that the buyer’s or consumer’s attitude partly influences purchasing decisions. Moreover, the level of purchase intention is the pre-terminal goal of the exchange of buyers and sellers, which can be considered a marketing objective.

Many pieces of literature have discussed the relationship between motivation variables on consumers’ attitudes and purchase intentions, in line with the work of Won & Kim[7], who conducted a study on consumer motivation and found that it directly influences consumer attitudes and purchase intention. This is also consistent with the literature by Matin et al.[8] that described the relationship between these three variables. A wealth of literature also studies and weighs the relationship between these three variables[9, 10, 11]. Therefore, the researchers developed research hypotheses to create a model suitable for the community’s empirical data as follows.

\[ H_1: \text{Customer motivation has a positive impact on customer attitude} \]

\[ H_2: \text{Customer motivation has a positive impact on customer purchase intention} \]

\[ H_3: \text{Customer attitude has a positive impact on customer purchase intention} \]

This allows the researchers to use hypotheses from concepts and theories to create a research framework, as shown in the picture.
4. Methods

This research employed both qualitative and quantitative methods. The details of the research operations are as follows.

(1) Studying the context and potential of pomelo products in Samut Songkhram Province is a research study using qualitative data. The details are as follows:

The population and sample were divided into two main informant groups: (1) farmers in Samut Songkhram Province and (2) government agency officials promoting pomelo products in Samut Songkhram Province, totaling ten samples.

Data are collected from documents, books, academic articles, and related research to be used as secondary data for analysis and synthesis to study the context of pomelo farmers and growers in Samut Songkhram Province. The primary data are collected using in-depth interviews with key informants as specified.

The data obtained from secondary sources and in-depth interviews are analyzed by compiling, interpreting, categorizing, analyzing, and synthesizing the data according to the specified issues.

(2) The intention to purchase pomelo products in Samut Songkhram Province, the researchers used quantitative research. The details are as follows:

The population and sample used in this research are tourists and consumers who are potential buyers of products from the community. This may be data collected from tourists traveling in Samut Songkhram province or general consumers outside Samut Songkhram province during June-July of 2023. The samples used in this research were analyzed to determine the confidence of the research instruments and used in confirmatory factor analysis (CFA).

The sample size of this research was set at 400 people to be consistent with what Hair et al. [12] and Kanlaya Wanichbanchara [13] recommended that the appropriate sample size for confirmatory factor analysis should be from 200 to 400, which is also consistent with Nutthaya Pattharapisetwong & Sawat Wanarat [14] stated that the appropriate sample size for statistical analysis using structural equation modeling has been set out as a guideline for a total of 6 sample sizes, including 50 samples (very small), 100 samples (small), 200 samples (adequate), 300 samples (good), 500 samples (very good) and 1000 samples (optimal). In this research, 400 samples will be used, which are considered to be in the range of “good” to “very good,” which is suitable for this study.

From the guidelines for determining the sample size, the researchers collected data from a sample of 450 people and used the first 50 samples to analyze the tools to see how appropriate and effective they were for
measuring the data. Data collection is both in the form of allowing tourists or consumers of pomelo products in Samut Songkhram Province to cooperate and respond immediately and as an online questionnaire that can be sent later. The questionnaire was developed by the researchers with the adaptation of related literature. The questionnaire used to collect the data is reliable because the researchers have a systematic process for developing the questionnaire. The questionnaire was checked for content validity, internal consistency, and discriminant validity. Finally, the average variance exacted (AVE) was checked for a value higher than 0.5, as Fornell and Larcker proposed the criteria. When the data collection using questionnaires was completed, the completeness of the data was checked. The selected data was then analyzed for statistical analysis.

For data analysis, the researchers used statistical data analysis using both descriptive statistics and inferential statistics or reference statistics to analyze the data, which is frequency, mean, percentage, variance, and standard deviation, as well as to analyze structural relationships of the structural equation model that the researchers have developed. To check the suitability of the structural equation model to see if it is consistent with the empirical data, as well as testing hypotheses and analyzing paths for relationships (Path Analysis), an analysis using a statistical software package. Analysis was done, and the researchers checked the completeness of the data by using the method to consider outliers. The study of relationships using the Structural Equation Modeling (SEM) technique involves studying the covariance between variables. SEM techniques can confirm, test, and estimate causal relationships in multiple equations simultaneously without performing separate analyses like regression analysis. The researchers examined the linear relationship by considering the correlation coefficient of each pair of variables and analyzing the measurement and the structural model. The measurement model uses the principles of factor analysis, a technique that studies the structure of relationships among many observable variables. In this research, the measurement model was examined. Test for validity and consistency and conduct structural testing of the model, including the fit index value of the model’s consistency with empirical data, which the researchers rely on according to criteria Standards from a literature review by Hair et al.

5. Results

5.1. The context and potential of pomelo products in Samut Songkhram province

Samut Songkhram Province is considered a source of good quality pomelo. The taste has a unique identity because Samut Songkhram province has river estuary soil, which has many minerals deposited together, making the soil of good quality and high mineral content. The land for cultivation has unique characteristics which are influenced by salt water, brackish water, and freshwater, together called the area of 3 glasses of water, resulting in agricultural products, especially the local pomelo variety of Samut Songkhram province that is famous called “large white pomelo,” that has a unique identity. The flesh of the Pomelo is not wet and has a slightly sweet and sour taste. The fruit is large and has no seeds, making it a favorite among consumers. As a result, most of the farming areas are planted with pomelos, which are grown in large numbers and considered to be the largest in the country, including Bang Sakae Sub-district, Bang Khonthi Sub-district, Amphawa Sub-district, Bang Khan Taek Sub-district, and Tai Hat Sub-district in Samut Songkhram province.

As for farmers who grow large white pomelos in Samut Songkhram province, there are two types of agriculture for farmers who grow the pomelo variety: the owner is the farmer who cultivates it himself, and the other group is farmers who rent orchards to grow Pomelo.
(1) Model 1: Farmers own orchard land to grow large white pomelos. In this case, the farmer owns the land to grow Pomelo. Farmers have owned the land long before there was agriculture by growing Pomelo, and farming areas have been passed on from generation to generation.

(2) Model 2: Farmers are tenants of orchard space to grow large white pomelos. In this case, the farmer will be the tenant of the agricultural land for growing Pomelo in the form of chartering the orchard divided according to the size of the area and will enter into a contract with the orchard owner in the condition of year-to-year rental. In this case, all the produce on the farmland will belong to the tenant.

As for the method of distribution, it can be divided into two formats as follows:

(1) Selling at the garden: Selling in front of the orchard will have tourists coming to buy from the orchard without farmers having to go out and find distribution channels. This is because Khao Yai pomelo is famous among the people, and Samut Songkhram province is considered a natural and cultural tourism destination in the country. For this reason, the Khao Yai pomelo is classified as a provincial product and interests Thai and foreign tourists.

Moreover, sales at the garden include sales to intermediaries. The Khao Yai pomelo is a well-known agricultural crop in Samut Songkhram province. So, many intermediaries buy products from the orchard, whether for export abroad or to sell and distribute products in the domestic market.

(2) The farmer or orchard owner sells it themselves: Some farmers market themselves using various channels to distribute their pomelo products, such as selling the products at festivals in the province or in Bangkok. At the same time, products are sent to be sold in various markets, such as fruit market centers, where events are held in department stores or places where OTOP product events are held.

5.2. Consumption motivation, attitude, and purchase intention of pomelo products in Samut Songkhram Province can be summarized as follows:

The researchers performed a factor analysis to examine the observable variables of each measurement model and found that the factor loading values were higher than the threshold of 0.7 for every value, thus eliminating the need to eliminate any observable variables. The researchers then analyzed the reliability test by calculating the latent variable’s composite reliability (CR) for every observed variable. The results found that motivation had a CR value of 0.840 and an AVE value of 0.636, while attitude had a CR value of 0.890 and an AVE value of 0.729, and purchasing intention had a CR value of 0.839 and an AVE value of 0.635. From the results of the reliability test of the data collection tools, which are the questions in the questionnaire, it was found that the composite reliability was in the range of 0.839 to 0.890, which is considered an acceptable level according to the internal consistency test criteria (Internal Consistency) of tools. In addition, convergent validity was assessed by calculating the average variance extracted or AVE, which showed that the AVE value of each latent variable was in the range of 0.635 to 0.729, all of which have values higher than 0.50 according to the criterion, indicating adequate and appropriate precision in measuring the variables.

From the confirmatory factor analysis (CFA), the researcher assessed the consistency of the structural equation model developed with the empirical data and obtained the following results of the model fit indices: CMIN/df = 4.081, GFI = 0.948, NFI = 0.953, RFI = 0.930, IFI = 0.964, TLI = 0.946, CFI = 0.964 and RMSEA = 0.070. Moreover, it was found that the built structural equation model was consistent with the empirical data according to the criteria. The fully improved structural equation model is shown in the picture below.
In examining the relationship between motivation and purchase intention in the first hypothesis, a factor loading of 0.26 was observed, indicating a moderate and positive relationship. The associated p-value was below 0.001, suggesting the relationship is statistically significant. The second hypothesis tested the effect of motivation on attitude and yielded a factor loading of 0.71, indicating a very strong and positive association. The p-value obtained was significant at 0.001. This result supports the hypothesis that motivation has a direct positive influence on attitude. In testing the third hypothesis that a positive attitude towards a product leads to higher purchase intention, a factor loading of 0.45 was observed, indicating a moderate positive relationship. The p-value associated with this relationship was below 0.001, far surpassing the significance level of 0.01, thereby strongly supporting the hypothesis that an attitude is significantly associated with purchase intention.

As for the path analysis, the researchers analyzed the influence effect between all variables by obtaining the influence values of the relationship between the variables directly, indirectly, and total effects. The results of the analysis are presented as follows.

<table>
<thead>
<tr>
<th>relationships</th>
<th>direct</th>
<th>indirect</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>motivation &gt; purchase intention</td>
<td>0.262</td>
<td>0.369</td>
<td>0.581</td>
</tr>
<tr>
<td>motivation &gt; attitude</td>
<td>0.707</td>
<td>-</td>
<td>0.707</td>
</tr>
<tr>
<td>attitude &gt; purchase intention</td>
<td>0.451</td>
<td>-</td>
<td>0.451</td>
</tr>
</tbody>
</table>

6. Conclusion

The confirmatory factor analysis study found that the structural equation model the researchers developed from the literature reviews was consistent with the empirical data. In addition, from the results of the hypothesis testing, the researcher was able to draw the following conclusions.

The motivation variable of consumers, including tourists, was found to positively influence both attitude and purchase intention of pomelo products in Samut Songkhram Province with statistical significance. It shows the relationship that has a positive influence, which can be explained by the fact that the higher the level of motivation of consumers or tourists, the higher their attitude and intention to purchase pomelo products in
Samut Songkhram province will be. The results of the study are consistent with the theory of reasoned action (TRA)\cite{7, 27, 28, 29, 30}, and the theory of planned behavior (TPB)\cite{31, 32}, which suggest that positive consumer motivation toward a product or service increases purchase intentions. Moreover, the findings reinforce this relationship, which is consistent with empirical studies in this domain\cite{7, 10, 29, 33}.

Furthermore, the attitude variable significantly influences purchasing intentions, acting as a critical determinant in the decision-making process. The results of the study were reinforced by the theory of reasoned action, which posits that a consumer’s intention to perform a particular behavior (e.g., purchasing a product) is primarily determined by their attitude towards that behavior and subjective norms, as suggested by Ajzen & Fishbein\cite{34}. The findings also indicated that consumers are more engaged and tend to actively seek, process, and retain information related to their interests or needs, further molding their attitudes towards particular products, which is consistent with the studies of Hoyer, MacInnis, & Pieter\cite{35}, Pop, Săplăcan, & Alt\cite{36}, and Won & Kim\cite{7}.

Moreover, the study’s results also show that attitude has a strong influence both as a mediator variable and as a direct influence on purchase intention. As the results show, even though motivation plays a pivotal role in shaping consumer attitudes, serving as the underlying force that drives purchasing intention. The level of influence from direct motivation on purchase intention is relatively small compared to attitude. It also confirmed the intricate relationship between these three variables, which is grounded in psychological principles that have been extensively explored in consumer behavior research and are consistent with the works of Albari\cite{37}, Chen et al.\cite{38}, Gunawan & Huarng\cite{39}, Herawati et al.\cite{40}, Maksan, Damir, Marija, & Cerjak\cite{41}, and Meng & Choi\cite{42}. Hence, those using the structural equation model must pay great attention to the variables of consumer or tourist attitudes towards the product, especially the study of pomelo products from communities in Samut Songkhram province.

This study has illustrated the profound impact of consumer motivation and attitude on the purchase intention towards pomelo products, underpinning the necessity for a nuanced marketing strategy that resonates with the unique attributes of the Samut Songkhram pomelo. A pivotal strategy involves leveraging the distinctive taste and quality of the Pomelo, which is deeply rooted in the province’s river estuary soil and enriched with minerals that impart a unique flavor profile to the fruit. Emphasizing the geographical indication (GI) status and the non-toxic, quality-assured cultivation practices can significantly enhance consumer trust and appeal.

Moreover, the study underscores the importance of engaging potential customers through storytelling that highlights the traditional cultivation methods, the Pomelo’s unique characteristics, and the cultural significance of pomelo farming in Samut Songkhram. Digital marketing channels, including social media platforms, can play a crucial role in this strategy\cite{43}, offering a medium to connect with a broader audience, showcase Pomelo’s unique selling propositions, and build a community of enthusiasts and advocates. Integrating customer feedback and experiences through these channels can further solidify the product’s position in the market.

Finally, Collaborations with local tourism and gastronomy sectors to promote pomelo-based culinary experiences can also augment the marketing strategy\cite{44}, offering an experiential dimension to the product that can attract tourists and locals alike. This approach not only supports the marketing of pomelo products but also contributes to the sustainable economic development of Samut Songkhram Province. Ultimately, a marketing development strategy that combines the product’s intrinsic quality with innovative engagement and promotional tactics can drive the success of pomelo products in both local and international markets, ensuring the prosperity of the pomelo farming community in Samut Songkhram Province.
7. Discussion

In the realm of marketing development for Samut Songkhram Province’s pomelo products, the study illuminates a dual-faceted approach that blends traditional marketing strategies with the potential for digital transformation. On the one hand, the emphasis on leveraging Pomelo’s unique flavor and raw materials as key marketing elements speaks to the importance of community identity and the distinct appeal of these products. The process begins with a meticulous selection of raw materials to maintain Pomelo’s exceptional taste, aiming to cultivate a positive consumer attitude and heightened purchase intention, thereby driving sales.

Transitioning to the digital sphere, a largely untapped opportunity exists to expand the visibility and accessibility of these unique pomelo products. Introducing an e-commerce platform specifically for Samut Songkhram’s pomelos could radically alter consumer engagement, transcending local boundaries to capture national and international markets. Coupled with data analytics and CRM tools, this digital shift allows nuanced understanding and engagement with consumer behaviors and preferences, enabling more personalized marketing efforts.

Moreover, partnerships with influencers and chefs will showcase Pomelo’s culinary versatility, tap into contemporary gastronomy trends, and pay homage to Samut Songkhram’s rich cultural heritage, adding layers to the product narrative. Additionally, as consumers increasingly prioritize sustainability, highlighting eco-friendly farming practices associated with pomelo cultivation can further elevate the product’s appeal. Integrating digital innovation, environmental consciousness, and cultural richness, these strategies collectively forge a robust path for enhancing the market position and sustainability of Samut Songkhram’s pomelo products amidst a dynamic global marketplace. This comprehensive approach combines traditional strengths with modern digital strategies, underscoring the importance of evolving marketing tactics to ensure the enduring success and growth of Samut Songkhram’s pomelo products.

In terms of the limitations of the study, the research centered around Samut Songkhram Province, Thailand, might not directly translate to other geographical locations or products due to regional differences in consumer behavior and environmental conditions. The predominantly local sample, focusing on potential customers and tourists within the province, may not fully capture the diverse consumer segments or international perspectives that could influence purchasing intentions in varied ways. Moreover, the rapidly changing landscape of consumer preferences and digital marketing trends necessitates ongoing reassessment of the study’s findings to ensure their continued relevance. While structural equation modeling provided robust quantitative analysis, incorporating more qualitative research could offer deeper insights into the motivations and attitudes towards Pomelo products, adding richness to the study’s conclusions. Additionally, the research possibly overlooks external economic, social, or political influences that significantly sway consumer behavior and market dynamics, like changes in tourism patterns or regulatory shifts in agricultural practices, presenting a comprehensive view of the factors at play.

Conflict of interest

The authors declare no conflict of interest.

References


