The Evidence of a Thai Restaurant’s Mass Customization Implementation for Firm Survival During the Pandemic Crisis

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ABSTRACT

To survive in any crisis, business owners and executives must be able to adapt and change in all aspects of business functions, especially in the marketing function. The aim of the study is to investigate an efficient marketing strategy to provide the implementation for firms’ survival. To explore the advantages and how to manage a mass customization strategy in the restaurant business during a pandemic period. The authors conducted the research by selecting restaurants that have proven successful and exploring the key success management factors for further proof. The results show that the moderator, customer collaboration management, of the restaurant sector has a positive impact on the relationship between consumption experience and customer satisfaction through customer engagement. Additionally, the result indicates that the strategic and process implications during a crisis must be tailored to the sub-stages.

KEYWORDS
Consumption Experience, Customer Collaborative Management, Mass Customization, Product Design

INTRODUCTION

All businesses must accept that change is a regular occurrence due to technology disruption, pandemic crises, etc., that affect consumer behavior (Pleasing customers during a pandemic, 2020). According to crisis management, the supporting theory to use to guide organizational management is contingency theory. It is an approach to organizational behavior in which explanations are given as to how contingent factors influence the design and function of organizations (Jesmin & Hui, 2012). Especially, entrepreneurial decisions like that to enter or literally create a specific market with a
particular product, can barely be described in terms of isolated one-time decision problems that can be solved just once and permanently (David & Michael, 2021). This conveys the functional change in accordance with the organizational adaptation by means of entrepreneurship via marketing function as a key front-line process (Fiore et al., 2004). Recently, consumers have been struggling with the problems of external environments that limit their consumption. From the perspective of customer value and satisfaction, customers expect an offering from a product owner with a customization strategy (Kotler et al., 2018; Slater & Olson, 2001).

A marketing strategy that sets too high or too low levels of expectations causes a negative effect on consumer behavior. In a normal situation, consumer expectations of market offerings are satisfied with basic needs that are related to the type of product or service. Especially in the case of changes in consumption behavior during the crisis, it is more necessary to understand and lead to product adjustments to meet the demand at that time (Simonson, 2005; Fiore et al., 2004).

During the pandemic crisis, many restaurants used the mass customization strategy (MC) for customer retention. MC is applied by adapting products that are suitable for eating at home with a cooking experience and responding to the atmosphere of eating. As a result, product adaptation and providing a consumption experience go hand in hand. Lack of study in MC view of the restaurant sector is crucial knowledge due to most of the research being conducted in the manufacturing industry (Gilmore & Pine, 1997; Qiang et al., 2001; Vinodh et al., 2010). To investigate customer insights to ensure the effectiveness of the MC strategy is our objective.

The paper is organized as follows. The next section analyzes the literature on marketing strategy and the development of the framework. The subsequent sections describe the design and present the results and discussion, respectively. The final section identifies the limitations and addresses avenues for further research.

THEORETICAL BACKGROUND

Market Strategy and Marketing Strategy

Market strategy is to find market opportunities, while marketing strategy is defined as a set of integrated decisions and actions through which businesses expect to achieve their marketing objectives (Morgan, 2012; Katsikeas et al., 2016; Morgan et al., 2019). In reference to the study by Varadarajan (2010), the conceptual definition of marketing strategy is as follows:

*Marketing strategy is an organization’s integrated pattern of decisions that specify its crucial choices concerning products, markets, marketing activities and marketing resources in the creation, communication and/or delivery of products that offer value to customers in exchanges with the organization and thereby enables the organization to achieve specific objectives* (Varadarajan, 2010m pp 4).

Regarding this perspective, marketing strategy formulation involves managers making explicit decisions regarding goals and the broad means by which they are to be accomplished in terms of target market selection, required value offerings, and desired position timing (Slater & Olson, 2001). Another point about strategy content and process in marketing strategy is that strategy content is concerned with specific strategic decisions, whereas strategy process is concerned with organizational mechanisms (Mintzberg & Lampel, 1999; David & Michael, 2021). To satisfy the specific strategic decisions (content), the requirements must be conducted on market segmentation, the firm’s value proposition needs to be to achieve required sales, and integrated tactical marketing program decisions, while the strategy process focuses on situation assessment, goal setting, organizational management, and control systems.
The study of marketing strategies has been broadened and enlarged due to the radical changes in technology and the environment. The worldwide marketing strategy of standardization is the concept of “one size fits all” (Keegan, 2000; Laroche et al., 2001). Standardization refers to high quality and reasonable price according to the economies of scale in production (Jain, 1989; Laroche et al. 2001; Craig & Susan, 2000). An example of a product using this standardization, strategy is the “iPhone-branded” which has a huge number of customers (Keller, 2013). The advantage of using this strategy is that mass production will result in lower costs, as well as having a single product will affect the maintenance of product quality (Kotha, 1966; Laroche et al., 2001).

Regarding massive online communication, which led to social media marketing and viral marketing. Moreover, strategies that are related to insights about the customer and technology are personalization and customization. Personalization uses information technology to capture customer data, such as demographics and time stamp from customer behavior in the customer journey. This information is stored in messages and is then processed to speculate about each consumer by guesswork. The conclusion of Dawn’s study in 2014 indicates that the product owner has the ability to send a carefully selected list of products that cater to the specific needs of consumers. This process is commonly known as the transformation of potential customers into active customers. This strategy is considered a proactive strategy while manufacturers have been struggling to respond to the growing desire among customers, and the problems of sunk cost. To overcome this negative effect, mass-produced goods are developed in the context of balancing production and supply chains, leading to MC (Qiang et al., 2001).

**Mass Customization Strategy to Support Product Design**

MC starts with the needs of customers in terms of what they want the product to be. For practical MC, customers can send their suggestions to the brand’s owner to support product design. On the product design dimension, the customers’ roles are co-producer or co-creator (Ramaswamy, 2009; Kotler et al., 2017). An easy-to-see example of this kind of marketing is Netflix, where customers have designed a technology platform in response to their preferences. Or, in the example of the Google Display Network platform, users can choose to use their preferences to decide whether they want the website to display. Therefore, this strategy combines many important aspects of marketing, including making a difference, helping to create customer technology resource management and reducing the company’s cost in product design. In the case of other products, such as cars and food, MC strategy management requires the study of product demand into two parts: core attributes (CAs) and optional attributes (OAs; Aigbedo, 2009; Franke et al., 2010). Using MC in car design means segmenting the car into CAs: body and engine, while OAs are accessories to decorate the car. The obvious point is that, during the lockdown period, selling food to customers to eat at home provides an opportunity for restaurant companies to use the MC strategy for product design while also providing a consumption experience.

Food outlets are everywhere, from small carts dotting every street and alleyway to five-star restaurants at some of the world’s finest hotels. Therefore, the outbreak of the epidemic has a greater impact on the consumption of customers. Within the restaurant sector, there are several successful restaurant chains, including several offerings such as: Suki or Thai shabu. There are about 12 Suki Restaurant companies in Thailand that are retained in this business during the pandemic crisis. The great taste of the Suki and the enjoyment customers get out of cooking their own food at their own table appeal to all age groups, from children and adults to seniors. Suki is also a popular choice for dining out in large groups. The high concentration of vegetables combined with quality cuts of meats and seafood as main ingredients—all boiled rather than fried—has allowed Suki to capitalize on the growing trend of healthier eating among the population at large. The popularity of Suki consumption by Thai people is shown by statistics of searches for “Suki” compared to “what to eat” in the past five years, as shown in Figure 1.
In recognition, these restaurants focus on manufacturing ready-to-cook products and best practice among chain restaurants: service for food, beverages, and home delivery (MK Restaurant, 2021). According to a clear market segment (family with middle or high income) and product attributes, the food design is extracted into the CA such as marinated meats, and spicy sauces, while the OA include eggs, vermicelli, or vegetables, etc. With such product design, families as consumer units will be able to find product ingredients (OA) by themselves to reduce costs as well as increase satisfaction and experience in cooking (Aigbedo, 2009; Franke et al., 2010). Meanwhile, the company will benefit from selling the CA and reduce the sunk cost of the OA. Therefore, using the MC to design products to support consumption, transportation, and cost-effectiveness in this crisis is an efficient mechanism to survive (Davis, 1989; Vinodh et al., 2010). The design based on the MC principle has many advantages, such as: product owners can concentrate only on the market segment, reducing warehousing costs, and enhancing customers’ experience in consumption (Davis, 1989; Vinodh et al., 2010). Gilmore and Pine (1997) classified MC into four levels: (1) customer collaboration management (CCM), which entails the design of customer dialogue; (2) adaptive products or product design (PRD) that can be customized based on their needs while in use; (3) packaging design; and (4) product transparency. Gilmore and Pine (1997) used MC to promote production process and design optimization, while Grenci and Watts (2007) applied MC to e-consumer services. CCM is the first level to explore customer needs, wants, and demand, furthering PRD and providing a consumption experience (CEX). Therefore, investigating the relationship between these factors will help marketers to be effective.

Customer Collaboration Management

CCM refers to acquiring customer needs and preferences for further product design on multiple dimensions, such as fabrication and modular design (Mintzberg & Lampel, 1999). From the supply chain perspective, effective collaboration with customers can release efficiencies and drive value that cannot be achieved by any one company working alone. This value is realized by improvements in service, cost, speed to market, and sustainability. Coppinger et al. (2017) suggested the following key successes of CMM: develop and document an understanding of customer needs and execution requirements; create and monitor metrics that reflect the ability to ship orders complete and on time; and document and standardize processes from order to delivery.

Essentially, customer collaboration is how brand owners gather and use customer feedback to improve their products and the customer experience overall. To get the information, brand owners must concentrate on the communication function via every channel. The three different ways to achieve the objective are: social media communication, customer experience management, and customer relationship management. Literature by Ramaswamy (2009) and Füller (2010) focused on CCM on
the issue of customers as co-producers. CCM does not convey only the customer as a co-producer aspect but also takes on the role of information sharing about product consumption (Bradshaw & Brash, 2001).

Social media platforms have provided an astoundingly valuable insight into customer interest and, vice versa, can offer consumption experience as beneficial information. According to the related theories: social exchange theory, adaption theory, and expectancy theory, knowledge sharing from each brand, which supports customer needs, is a privileged management tool focused on the identification, attraction, development, and retention of successful customer relationships, with the final objective of increasing the loyalty of profitable customers, all carried out through efficient customer knowledge management (Bradshaw & Brash, 2001; Massey et al., 2001; Rowley & Slack, 2001). Therefore, looking at the close relationship between the CCM and customer perceptions of product design, consumption experience, and customer engagement as key factors for a successful business management strategy, it definitely can be considered relevant as a firm retention strategy (Massey et al., 2001).

To achieve the goal of effective product or service design, the product owner relies on the customer’s need type and the sequence of product responses with time constraints. For example, in the first cycle of the pandemic crisis (late 2019), customers or consumers needed food to live; therefore, the product design is based on functionality (Brand Inside, 2021). As the virus first started to circulate, the shift in customer preferences was palpable. Customer demand shifted from discretionary items to those perceived as essentials. People have started to prioritize health and supply chain safety over cost and convenience. Moreover, companies should actively contribute to safety by innovating the product portfolio to provide goods that are urgently needed. After consumers have adapted their consumption in the first cycle, they require more time to support their emotional needs. Consumption experiences with their families provide them with safety, laughter, and stress relief during difficult times. These reasons force businesses to adapt their marketing strategy and implementation in an effective way, focusing on product design at the beginning of the pandemic and, afterward, focusing on the consumption experience. The restaurant sector, as evidenced in this study, also conducts CCM in this way.

Since the COVID-19 pandemic left long-duration impacts, manageable strategies used to tackle the crisis need to be given careful consideration. The three stages of management during a crisis are crisis detection, product adaptation, and design focus on quality delivery, information sharing to offer a consumption experience, and sales promotion (Ritchie, 2004).

**CONSUMPTION EXPERIENCE, CUSTOMER SATISFACTION AND CUSTOMER ENGAGEMENT**

Consumption experience (CEX) not only offers experiences but also creates sensory feelings when customers directly or indirectly interact with the organization, product, and buying environment on different occasions (Adhikari & Rao, 2013; McGinnis et al., 2012; Patrício et al., 2011). The studies by

Figure 2. Marketing implementation of the Thai Suki Restaurant during the COVID-19 pandemic
Binkhorst and Den (2009) and Grewal et al. (2009) in the tourism business found that the presentation of the store in the setting can evoke emotional responses in tourists. This study concentrated on how the customer experience is created and how retailers leverage it for the purpose of maximizing sales. On the other hand, customer experience from a reflective perspective deals with customer experience during or after the consumption of a product experience or sensory interaction (Bos et al., 2013). Additionally, Verhoef et al. (2009) and Morgan et al. (2010) explored experiential consumption through the emotions and feelings related to fantasy and fun. Consumption experience in our study dimension consists of enjoying eating with family and having experience using ingredients in the home to mix and match with the core product (i.e., delivery from a restaurant). The advantage of this type of consumption is that everyone is in a free and safe climate. In general, customer experiences may originate from the interactions between a customer and a brand, or from the service delivery (Baker et al., 2002; Middleton, 2011), etc. It is rare to find research on the dimension of family consumption experience. Customer engagement is the invisible asset of the brand owner due to customers spending more money on their brand engagement. Engaged customers will tell people about their interactions with their brands. Whether sharing a blog post or just recommending the brand to a friend or family member, engaged customers can enhance market share (Kotler & Keller, 2012). Customer engagement requires brands to make a dedicated effort toward building something that customers want to engage with. As brand owners pull customers in, customers become more closely connected to the brand, and they become even more engaged (Sprott et al., 2009).

The Role of Moderator Variable

As a moderator role, the variable plays the influence of the causal relationship between the predictor and the result variable. There are two types of moderators: category (e.g., business type, customer gender) and quantitative (e.g., level of involvement, customer satisfaction). Mila et al. (2021) did an analysis of the moderating effects of two moderators (national origin and enterprise size) and their relationship by using hierarchical regression analysis from the moderator’s perspective. Based on the findings of Uriely (2005, pp. 209) and San Martin et al. (2013, pp. 327), it can be concluded that prior customer experience plays a moderating role in the relationship between store environment, store brand, and the customer’s future experience. The other study in supply chain management has investigated the moderating effects of product design and experiences: brand, price, and promotion, on traveler buying behaviors and future experience consumption (Hung et al., 2014; Rodríguez et al., 2013). A moderating variable issue in marketing analytic applications such as Bloemer and Kasper (1995) showed that involvement had a positive moderating effect on the satisfaction-loyalty link. Recently, Piriyakul and Piriyakul (2021) found a negative effect of the Influencer variable as the moderator on the causal chain of customer-coproducer and mutual information. While Bernritter et al. (2021) found that consumer PCI (product category involvement) moderated the effects of the location at which consumers are targeted on the probability of buying the advertised product category. Additionally, Somi (2021) tested the interaction Complexity × Year to measure the varying effects of capitation on varying levels of illness severity and found negative effects. This infers that higher complexity decreases the probability of inter-district transfer in year \( t \).

Literature about the role of CCM, such as Gupta and Vijic (1999), Pine and Gilmore (1999), and Berry et al. (2002), studied the interaction of CCM and CEX impact on customer satisfaction, while Walls et al. (2011) studied the significant effect of PRD on customer engagement. Additionally, establishing partnerships between customers and businesses to use the product appropriately is a cause of customer engagement and loyalty (Walls et al., 2011). The extent to which CCM moderates the construction of PRD and CEX at the prior and past stages of customer satisfaction leads to three research hypotheses: (1) the interaction of CCM and PRD has a positive effect on customer satisfaction; (2) the interaction between CCM and CEX has a positive effect on customer satisfaction (CUS); and (3) the interaction between CCM and CUS has a positive effect on customer engagement. This
study, as well as strategic implementation, is an experience-based behavior that generates tangible and intangible perception value of customers (Baker et al., 2002; Middleton, 2011).

Conceptual Framework Formulation and Hypothesis Setting

This research framework was synthesized from academic research, theories, and evidence arising from the exploratory investigation. Contingency theory is used by firm managements to retain their business, while adaptation-level theory suggests that firms or people judge a stimulus based on the level to which they have become adapted (Helson, 1964). With the exploration of marketing implementation in the Thai Suki restaurant sector during 2019–2021, on CCM and PRD via multi-channel together with business retention. However, customer insights and responses to the marketing objectives undertaken during each crisis stage remain questionable. To prove the strategic implementation success, we confirmed the conceptual model by using data from customers of the Thai Suki restaurant sector as our sample. The antecedent and consequence factors in our causal network are shown in Figure 3.

H1: CUS is a mediator that transmitted the effects of PRD to CUE.
H2: CUS is a mediator that transmitted the effects of CEX to CUE.
H3: PRD will have a stronger effect on CUS if we make better CCM.
H4: CEX will have a stronger effect on CUS if we make better CCM.
H5: CUS will have a stronger effect on CUE if we make better CCM.

METHOD

Research Design

The exploratory management factors of the Thai Suki restaurant sector, as our evidence study, explore the empirical events of this business during early 2020 (Stage 2). After that, the obtained factors will be synthesized into the causal network model supported by theories and empirical investigations. Finally, the causal model will be confirmed through quantitative investigation (using an online questionnaire during Stage 3). The research framework is proposed in Figure 4.

Sample Structure and Data

There are two data sources: (1) observed data from the activities of the five popular Thai Suki restaurant company communications (i.e., MK Suki, Coca Suki, Taxas Suki, Earw Thai Suki, and...
Charoen Thai Suki) via their websites and social media (i.e., business activities, revenue, customer recommendations); and (2) an online questionnaire from the customers of these five companies.

The sample size and sample design: According to the unknown population size, the calculation size is based on the least low bound of Cohen (1988) and Westland (2010) to warranty the model analysis with the inequality: \( n \geq \frac{3(50(j/k)^2-450(j/k) + 1100)}{j^2} \); where \( j \) and \( k \) refer to the number of measurement items and the number of construct variables. Based on this study, \( j = 20 \) and \( k = 5 \), then the sample size is \( n \geq 100 \). The research was conducted with 450 customers. According to the number of each company branch in Thailand, we sampled 200 customers from MK Suki, 100 Coca Suki customers, and 50 customers per company from Taxas Suki, Earw Thai Suki, and Charoen Thai Suki. The link to the questionnaire was sent to the five studies companies’ fan page communities from January 2021 to September 2021. The measurement variables in each construct variable: Each construct variable consists of three measurement variables (rated on a 1–5 scale), which have been encountered in previous research, as shown in Table 1.

**Statistical Analysis Method**

Measurement standardization was performed prior to running the model by the semopy library in Python. Additionally, to support the strength of the model, we split the full model into sub-models, which aim to extract the power of the related factors.

**EXPERIMENTAL RESULTS**

**Results From Observation (Restaurant Communications During Stage 2)**

The food restaurant during the pandemic period aims to remain cost-effective, which means that the marketing strategy must be adjusted as follows: food design and then consumer experience at home. From our observation of the business data during the years 2020–2021, we have found the success of this company. For example, MK Suki, and COCA Suki have the path of success in the top five brands in Thai chain restaurants, which is indicated by the number of more than 500 branches (more than five countries). In the second quarter of 2021, the gross profit of the companies and their subsidiaries amounted to Baht 1,000 million (approximately). In the first half of 2021, the gross profit of MK Suki and its subsidiaries amounted to Baht 3,585 million. While the other four Thai Suki restaurant companies are also maintaining their business even if the revenue has decreased during the crisis situation (Brand Inside, 2021).

Based on the observation, the key factors that drive customer engagement with company revenue are supply chain management and the effectiveness of CCM in offering products, services, information, and experience. The related factors for further model confirmation by quantitative analysis are PRD and CEX.
Descriptive Statistics From the Sample

Four hundred and fifty customers were selected through stratified sampling, taking into consideration the size of the restaurants. The characteristics of the unit analysis are as follows. Of the customers, 59.5% were female, and the percentages for age groups 1 (less than 30 years), 2 (31–55 years), and 3 (over 55 years) were 21%, 55%, and 24%, respectively. The mean family size was four people.

Table 1. The construct variables and the related content to construct the measurement items

<table>
<thead>
<tr>
<th>Construct variable</th>
<th>Content to construct manifest variables</th>
<th>Sources</th>
</tr>
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<tbody>
<tr>
<td>CCM defines the business communication process to meet the customers’ needs for consumption experience.</td>
<td>The firms’ cooperation process with customers to explore the expected value in response to customer needs. The collaborative process was conducted with customer involvement via communications.</td>
<td>Ryals &amp; Knox (2001); Fiore et al. (2004); Simonson (2005); Zach &amp; Racherla (2011)</td>
</tr>
<tr>
<td>PRD explains the product offering that can be customized according to customers’ needs during use.</td>
<td>Applying technology to the manufacturing industry and develop the capability of the production chain to deliver products quickly according to customer requirements. Adapting product design based on MC that suitable to eat at home with cooking experience and responding to the atmosphere.</td>
<td>Ahlstrom &amp; Westbrook (1999); Gilmore &amp; Pine (1997); Qiang et al. (2001); Vinodh et al. (2010); Frank et al. (2010)</td>
</tr>
<tr>
<td>CEX refers to experiences that consumers get from consumption activities.</td>
<td>Improvement in product adaptation has not given only suitable products but also offered customer consumption experience. Learning from using new ingredients to mix and match for consumption is valuable, which reduces costs and increases experience in cooking.</td>
<td>Simonson (2005); Aigbedo (2009); Adhikari &amp; Rao (2013); McGinnis et al. (2012); Patrício et al. (2011)</td>
</tr>
<tr>
<td>CUS refers to the measurement that determines how happy customers are with a company’s products or services.</td>
<td>With the perspective of customer value and satisfaction, customers expect an offering from the product owner with their customization.</td>
<td>Kotler et al. (2018); Simonson (2005); Fior et al. (2004); Slater &amp; Olson (2001)</td>
</tr>
<tr>
<td>CUE refers to the positive interaction value that a customer initiates with the brand or the brand owner.</td>
<td>The level of an individual customer's motivational, brand-related and context dependent state of mind characterized by specific levels of cognitive, emotional, and behavioural activity in brand interactions.</td>
<td>Hollebeek (2011); Mollen &amp; Wilson (2010); Sprott et al. (2009)</td>
</tr>
<tr>
<td>CEX refers to experiences that consumers get from consumption activities.</td>
<td>Improvement in product adaptation has not given only suitable products but also offered customer consumption experience. Learning from using new ingredients to mix and match for consumption is valuable, which reduces costs and increases experience in cooking.</td>
<td>Simonson (2005); Aigbedo (2009); Adhikari &amp; Rao (2013); McGinnis et al. (2012); Patrício et al. (2011)</td>
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Hypothesis Testing

To analyze the conceptual framework (using questionnaire data during Stage 3), the job is divided into three consecutive tasks.

Task 1: The model with only exogenous variables, PRD and CEX, is linked to CUE through CUS. The data analysis is illustrated in Figure 3. The results show that all paths that connect any pair of adjacent variables are significant, with a \( p \)-value less than 0.001. The significance of any path is unimportant, but it helps to explain the effects of antecedents and mediators and speculate on the power of the path chains \( \text{PRD} \to \text{CUS} \to \text{CUE} \) and \( \text{CEX} \to \text{CUS} \to \text{CUE} \).

To test the mediation role by Sobel’s Z test,

\[
Z = \frac{a \times b}{\sqrt{b^2 \times S^2_a + a^2 \times S^2_b}},
\]

where \( a \) is an estimated value of \( a \)-path coefficient, \( b \) is an estimated value of \( b \)-path coefficient, and \( S^2_a \) and \( S^2_b \) are their corresponding standard errors. With the fostering of Sobel’s test, the calculation reveals indirect effects of path \( \text{PRD} \to \text{CUS} \to \text{CUE} \) and path \( \text{CEX} \to \text{CUS} \to \text{CUE} \), are 0.272 and 0.701 with the Sobel \( Z \) equal to 7.385 and 5.878 respectively. Since all \( Z \) values are greater than 2.58, this suggests that the path \( \text{PRD} \to \text{CUS} \to \text{CUE} \), and \( \text{CEX} \to \text{CUS} \to \text{CUE} \), are significant. The calculation reveals that path \( \text{PRD} \to \text{CUS} \to \text{CUE} \) is more effective than path \( \text{CEX} \to \text{CUS} \to \text{CUE} \) or, from the producer’s perspective, PRD should be more recognized than CEX. This investigation can explain that to make customers more engaged in product patronage, producers must take intensive care of product design to satisfy customers’ expectations. Most importantly, producers must care about customer satisfaction because its effect is subjectively high and it plays an important role in transmitting the effect of PRD and CEX to CUE for more patronage. The testing results induce the marketing postulate to offer products to satisfy physical needs first and emotions later.

Task 2: The former results are the indirect effects of PRD and CEX on CUE, passing through CUS. There might be some existing effects: direct effects of PRD and CEX on CUE. To be clear, the suspicious effects. We have added two paths pointing from PRD and CEX to CUE and reanalyzed the model. The result is represented in Figure 4.

With the support of Sobel’s Z test; where \( a \) is an estimated value of \( a \)-path coefficient, \( b \) is an estimated value of \( b \)-path coefficient, and are their corresponding standard errors (in Table 3). The calculation reveals indirect effects of path \( \text{PRD} \to \text{CUS} \to \text{CUE} \) and \( \text{CEX} \to \text{CUS} \to \text{CUE} \) is 0.218 and 0.154 with the Sobel \( Z \) equaling 6.897 and 5.499 respectively, which are all greater than 2.58. Therefore, the path \( \text{PRD} \to \text{CUS} \to \text{CUE} \) and \( \text{CEX} \to \text{CUS} \to \text{CUE} \), are significant.

The calculation from Sobel’s Z test reveals that path \( \text{PRD} \to \text{CUS} \to \text{CUE} \) is still more effective than path \( \text{CEX} \to \text{CUS} \to \text{CUE} \) or PRD should still be more recognized than CEX. The direct effects of \( \text{PRD} \to \text{CUE} \), and \( \text{CEX} \to \text{CUE} \) are moderately significant and lead us to conclude that CUS is not the only transmitting variable that links PRD and CEX to CUE. These investigations disclosed that

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardized coefficient</th>
<th>Unstandardized coefficient</th>
<th>S. E.</th>
<th>C. R.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRD → CUS</td>
<td>.418</td>
<td>.386</td>
<td>.047</td>
<td>7.086</td>
<td>.000</td>
</tr>
<tr>
<td>CEX → CUS</td>
<td>.295</td>
<td>.272</td>
<td>.043</td>
<td>5.948</td>
<td>.000</td>
</tr>
<tr>
<td>CUS → CUE</td>
<td>.671</td>
<td>701</td>
<td>.045</td>
<td>9.646</td>
<td>.000</td>
</tr>
</tbody>
</table>
CUS is a partial mediator between PRD and CUE, and CUS is also a partial mediator between CEX and CUE. The results show that there are some other hidden variables that act as mediators.

The mediation analysis shows that the model should not only be aware of antecedent factors but also of the mediator to enhance CUE. Without the mediation analysis, the model may miss the interpretation of changes in the outcome variable. In this study, there might be more variables other than CUS hidden that transfer the effects of PRD and CEX to CUE.

Besides the significant roles of two antecedent variables and a mediator, there is a crucial question about the background of marketing management in the context of collaboration between customers and firms. According to the observations in Stage 2 (during the pandemic crisis), CCM was a dominant function for supporting product design. Additionally, in Stage 3, the CCM variable focuses on consumption experience sharing, which led to the introduction of this variable as a moderator in the synthesis model. Therefore, the model analysis is going on Task 3.

**Task 3:** Testing, the model with CCM as moderator, since CCM as a moderator, the three paths from CCM are added, i.e., path PRD→CUS and the new model shown in Figure 5. From Figure 5, all paths are significant except for two links: PRD*CCM→CUS and CUS*CCM→CUE.

What we really want to investigate is whether the conditional indirect effects of paths PRD→CUS→CUE and CEX→CUS→CUE change after they have been moderated by CCM, or in other words, what values of CCM in pick-a-point levels cause change in CUE. The analysis found that two of three interactions are not significant. The non-significant interactions are not an issue because the matter is to know what the conditional indirect effects should be with the varying levels of moderator.

From Tables 5 and 6, the results show that at three different levels of CCM in pick-a-point conditioning values, all conditional indirect effects are significant and increase with CCM levels. It is observed that all indirect effects are laid on the 95% confidence limit, or in other words, the 95% confidence limit does not include zero. The investigation reveals that to make more sales or receive

<table>
<thead>
<tr>
<th>Path</th>
<th>Standardized Coefficient</th>
<th>Unstandardized Coefficient</th>
<th>S. E.</th>
<th>C. R.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEX → CUS</td>
<td>.295</td>
<td>.273</td>
<td>.046</td>
<td>5.948</td>
<td>.000</td>
</tr>
<tr>
<td>PRD → CUS</td>
<td>.419</td>
<td>.386</td>
<td>.046</td>
<td>8.405</td>
<td>.000</td>
</tr>
<tr>
<td>CUS → CUE</td>
<td>.521</td>
<td>.516</td>
<td>.049</td>
<td>10.537</td>
<td>.000</td>
</tr>
<tr>
<td>PRD → CUE</td>
<td>.157</td>
<td>.146</td>
<td>.043</td>
<td>3.384</td>
<td>.000</td>
</tr>
<tr>
<td>CEX → CUE</td>
<td>.202</td>
<td>.184</td>
<td>.041</td>
<td>4.488</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Figure 5. CUS transmits the effects of PRD and CEX indirectly to CUE (Model 1)**
Figure 6. CUS transmit effects of PRD and CEX both directly and indirectly link to CUE (Model 2)

Figure 7. Moderated mediation model (Model 3); CUS transmits the effects of PRD and CEX to CUE both directly and indirectly, with CCM acting as a mediator

Table 4. Statistical results from the analysis

<table>
<thead>
<tr>
<th>Causal path</th>
<th>Standardized coefficient</th>
<th>Unstandardized coefficient</th>
<th>S. E.</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEX → CUS</td>
<td>.267</td>
<td>.249</td>
<td>.045</td>
<td>5.555</td>
<td>.000</td>
</tr>
<tr>
<td>PRD → CUS</td>
<td>.426</td>
<td>.396</td>
<td>.045</td>
<td>8.828</td>
<td>.000</td>
</tr>
<tr>
<td>CCM → CUS</td>
<td>-.078</td>
<td>-.072</td>
<td>.045</td>
<td>-1.607</td>
<td>.108</td>
</tr>
<tr>
<td>CCM*PRD → CUS</td>
<td>-.035</td>
<td>-.033</td>
<td>.045</td>
<td>-0.729</td>
<td>.466</td>
</tr>
<tr>
<td>CCM*CEX → CUS</td>
<td>.211</td>
<td>.185</td>
<td>.042</td>
<td>4.374</td>
<td>.000</td>
</tr>
<tr>
<td>CUS → CUE</td>
<td>.664</td>
<td>.690</td>
<td>.044</td>
<td>15.627</td>
<td>.000</td>
</tr>
<tr>
<td>CCM → CUE</td>
<td>-.094</td>
<td>-.090</td>
<td>.056</td>
<td>-1.200</td>
<td>.068</td>
</tr>
<tr>
<td>CCM*CUS → CUE</td>
<td>.061</td>
<td>.049</td>
<td>.034</td>
<td>1.429</td>
<td>.153</td>
</tr>
</tbody>
</table>

Table 5. Conditional indirect effect CEX→CUS→CUE on pick-a-point values of CCM from bootstrapping mechanism

<table>
<thead>
<tr>
<th>CCM</th>
<th>Effect</th>
<th>BootSE</th>
<th>BootLLCI</th>
<th>BootULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.873 (low CCM)</td>
<td>.216</td>
<td>.045</td>
<td>.137</td>
<td>.316</td>
</tr>
<tr>
<td>.046 (medium CCM)</td>
<td>.311</td>
<td>.039</td>
<td>.238</td>
<td>.394</td>
</tr>
<tr>
<td>.965 (high CCM)</td>
<td>.423</td>
<td>.056</td>
<td>.315</td>
<td>.530</td>
</tr>
</tbody>
</table>
more patronage, the firm, in this study, MK restaurant (Stage 3), must recognize the importance of the antecedent of the consumption experience, which is more important than product design. The interactions have strong effects on customer engagement, both directly and indirectly, through customer satisfaction. Customer satisfaction is a hidden variable that is dug out to be seen. Previous studies revealed that CUS affects customer engagement more but not in a mediating role. Without mediation analysis, PRD and CEX will be over-recognized. It is worth noting that after adding direct links to PRD→CUE and CEX→CUE to the framework, the previous direct effects of PRD→CUS and CEX→CUS decreased by about 7%. The decline reveals that CUS was not the only one of the hidden transmitting variables but, however, a very important cause of change in CUE. Producers then must retain these three factors in mind while producing or servicing. Another important investigation is the moderating role of CCM. The results show that higher levels of CCM cause a fairly high change in indirect effects of PRD and CEX, so firms must choose to practice more CCM with adaptive management under crisis change.

**CONCLUSION AND DISCUSSION**

CCM means that producers and customers work together to create measures, goals, and action plans to help customers and producers, on the other hand, attract more customers and retain existing customers. This management organizes several touchpoints linking the organization to the customer in order to induce and retain them, e.g., data sharing, shared success planning, communication, customer knowledge management, customer recovery management, and co-producer management. After some time practicing in CCM activities, customer needs, and organizational drawbacks are found and fixed accordingly. CCM practices are flexible and not the same but change with time and context. For example, the Thai Suki restaurant sector perceived customer complaints about food safety during the early COVID-19 pandemic (Stage 2); the restaurant had implemented CCM to search for customer needs and better packaging and delivery that still maintained food quality and taste. Issues on food quality, taste, and safety were introduced to CCM for intensive consideration for immediate consumption and for a long time-chilled in the refrigerator. In addition to Stage 3 (mid-2020 to the present), CCM is focused on information sharing for cooking and eating. The information as consumption experience of having lunch or dinner with family leads to satisfying emotions and reducing stress.

Since the Thai restaurant’s revenue decreased from the period before the pandemic and went on the other spectrum of the pandemic. However, the Thai Suki restaurant is still in business with a gross profit of more than 5%. So, empirical evidence of the company’s management led the authors to formulate an academic work to test the causal model, especially the power of CCM as a moderator, and test it by using customer data. The findings are consistent with the studies by Swarnkar et al. (2012) and Coppinger et al. (2017) on marketing strategy. In the first period of the 2020 pandemic, customer demand had shifted from discretionary spending on most items to essential spending on some items, especially those prioritized for health, optimal cost, and convenience, supporting the finding of Kim et al. (2021).

Table 6. Conditional indirect effect PRD→CUS→CUE on pick-a-point values of CCM from bootstrapping mechanism

<table>
<thead>
<tr>
<th>CCM</th>
<th>Effect</th>
<th>BootSE</th>
<th>BootLLCI</th>
<th>BootULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.873 (low CCM)</td>
<td>.213</td>
<td>.043</td>
<td>.139</td>
<td>.304</td>
</tr>
<tr>
<td>.046 (medium CCM)</td>
<td>.290</td>
<td>.038</td>
<td>.222</td>
<td>.368</td>
</tr>
<tr>
<td>.965 (high CCM)</td>
<td>.378</td>
<td>.053</td>
<td>.284</td>
<td>.488</td>
</tr>
</tbody>
</table>
As a result, the restaurant created a product design that focused on hygiene and logistics, resulting in a high PRD impact on the CUS ($\beta = 0.418^{**}$). Further, the analysis found that social media strongly influences mass customization and results in product and package design. This finding is consistent with the studies by Verhoeff et al. (2009), Morgan et al. (2010), and Bos et al. (2013). The product design was conducted at the beginning of 2020 (CCM with a focus on product design), and our sampled data was gathered during January–September 2021, which was the period that CCM practice (focusing on consumption experience sharing) and resulted in Model 3. The insignificance of the interaction of CCM*PRD on CUS is due to the focus of CCM in the middle of 2020.

With such product design (Stage 1), families as consumer units will be able to find optional products by themselves to reduce costs as well as increase satisfaction and experience in cooking (Aigbedo, 2009; Franke et al., 2010). However, insignificant does not matter because the conditional effects of CCM can be found significant in a pick-a-point view. Therefore, the company must play a role in supporting the consumption experience via CMM. The proper model from the data analysis is Model 3, with the results showing that (1) CEX’s influence on CUS and CUE, (2) PRD’s influence on CUS and CUE, (3) CUS’s influence on CUE, and (4) CCM as the moderator variable on the path between CEX and CUS are the strongest due to the fact that CCM focuses on consumption experience during Stage 3. The finding on the moderator role is different from the studies by Uriely (2005) and San Martin et al. (2013), which found the “prior customer experience is a moderator of store environment and store brand on the customer’s future experience.” Hung et al. (2014) and Rodríguez et al. (2013) found the moderating effects of marketing mixed on traveler buying behaviors and future experience consumption; the promotion is equivalent to consumption experience.

Managerial Implications

Crisis management is the root cause of dynamic management for firm survival. This management depends on many factors, such as business capability to be adaptive in all functions to meet the organizational objectives (Fiore et al., 2004). The products that require major changes are the barriers for SMEs. But this is an opportunity for some products that can use new designs or adaptations with less investment, such as hygiene products and food. Kotler et al. (2018) recommended that marketers should consider strategies and implement them based on their ability to satisfy customer needs, wants, and demands. Effective customer collaboration management in the technology era can be conducted on many platforms of communication. Messages from customers and consumers, both in negative and positive directions, are soft assets of businesses that create added value as tangible assets in finality, as asserted by Fiore et al. (2004). The findings also indicate that the moderation role of CCM should be flexible and focused on reducing the pain points on the customer journey during a crisis. As the results of the study show, the early stage of the COVID-19 pandemic, CCM, is focused on gathering the knowledge to use in product design from customer collaboration, while the later stage concentrates on providing consumption experience and sales promotion. Knowing the characteristics of the market segment and the firm’s capability to tailor products and services using the mass customization concept can increase net profits (Qiang et al., 2001).

The outperformance of CCM compared to CSR is that CSR aims to manage positive relationships between the product owners and their customers, but CCM enlarges to investigate, exchange, and share knowledge and relationships. With confirmation from studies by Jiao and Tseng (2004) and Grenci and Watts (2007), our results on how to implement CCM in dynamic situations are strengthened. Additionally, the finding suggests two guidelines for crisis management: conduct effective functions to support MC and investigate customer emotional needs and respond to them with highly relevant content.

Theoretical Implications

According to the study by Hsieh and Chang (2016), being a co-producer is driven by needs, consumption experience, and self-esteem theory. And with business as the initiator of transferring
experience to customers, they will give feedback to create an expert co-producer. Customer information in any dimension is classified as intellectual capital in the context of social capital theory (Bilig, 2000; Rowley & Slack, 2001). This theory is particularly rooted in the notion of commitment, trust, norms, and informal networks, and it believes that social relations are valuable resources. Social capital theory and social exchange theory have a strong correlation; the social exchange process brings satisfaction when people receive fair returns for their expenditures. The results from hypothesis testing confirm the benefit of the social exchange theory: between product owners and customers. The remarkable impact of the interaction between CCM and PRD is lessened for CUS because, at Stage 2, CCM has focused on product design. Moreover, the CCM during the pandemic cycle is supported by the Contingency theory. The CCM’s role as moderator on the causal path is extended to marketing management academics.

Limitations and Further Research

The research has limitations with the experiment data conducted on the restaurant sector during the COVID-19 pandemic (2019–2021). Since the food design in restaurants is different from other products, then using mass customization may not be applicable to practice. Moreover, to implement CMM, the management section must continue to follow up on the crisis to support organizational change management. However, the success of the restaurant sector is a pilot study compared to other industries that cannot struggle for survival. Additionally, the other products that are able to be organized as core and optional product attributes can apply the study to manage for competitive advantage. In the case of a product that has restrictions on modification to meet consumer demand, organizations must require long-term planning to use this concept. Our research gap is the adaptation of the non-consumer goods sector under crisis. This leads to the next study, which will propose the issue of exploring a novelty in strategic management to retain businesses. SMEs and micro-SMEs are the biggest groups and are spread throughout the entire country.
REFERENCES


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