

Analysis of the Factors Affecting the Long-term Survivability of Chiang Mai Restaurants Using Analytic Hierarchy Process (AHP)

การวิเคราะห์ปัจจัยที่มีผลต่อความอยู่รอดในระยะยาวของร้านอาหารในจังหวัดเชียงใหม่ด้วยวิธีการวิเคราะห์เชิงลำดับชั้น (AHP)

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Abstract

During the COVID-19 pandemic, ensuring the sustainability of restaurants has become a pressing concern for owners around the world. To investigate the factors that allowed renowned restaurants in Chiang Mai, Thailand, to survive the crisis, we conducted interviews with 15 experienced restaurant owners who have been in business for more than ten years. Using the Analytical Hierarchy Process (AHP), we asked them to identify the essential factors for their businesses' survival. Our analysis allowed us to determine the significance and weight of each factor.

Our findings indicate that restaurant quality was the most significant factor with a score of 45.16%, followed by the adaptation factor with an importance weight of 26.79%. The least significant factor was government involvement, with a weight of 3.03%. We recommend that restaurateurs prioritize preserving the quality of their food and the restaurant's original concept while keeping costs manageable for long-term success. Relying too heavily on government assistance may not be a reliable strategy. Additionally, restaurant owners should focus on maintaining food quality and service, adapting to changing circumstances, prioritizing financial stability, and ensuring hygiene and safety. By using this information, restaurant owners can better navigate crises and successfully run their businesses in the future. Overall, our study's results will be useful for entrepreneurs and stakeholders in the food and beverage industry as they provide insights into the survival factors that are critical to running a successful SME restaurant business in Chiang Mai.

Keywords : restaurant, crisis, sustainability, pandemic, analytic hierarchy process

บทคัดย่อ

ในช่วงการแพร่ระบาดของโรคติดเชื้อไวรัสโคโรนา (COVID-19) ความมั่นคงของธุรกิจร้านอาหารกลายเป็นเรื่องที่สร้างความกังวลใจให้แก่ผู้ประกอบการธุรกิจร้านอาหารทั่วโลก เพื่อศึกษาปัจจัยที่ช่วยให้ร้านอาหารต่าง ๆ ในจังหวัดเชียงใหม่ของประเทศไทยรอดพ้นจากวิกฤตนี้ ผู้วิจัยจึงได้ดำเนินการสัมภาษณ์เจ้าของร้านอาหารที่มีประสบการณ์มากกว่า 10 ปี จำนวน 15 ร้าน โดยใช้วิธี Analytical Hierarchy Process (AHP) เพื่อระบุปัจจัยสำคัญที่ช่วยให้ธุรกิจรอดพ้นจากวิกฤตนี้ จากการวิเคราะห์นี้ช่วยให้สามารถกำหนดความสำคัญในแต่ละปัจจัยได้

ผลการวิเคราะห์พบว่า คุณภาพของวัตถุดิบอาหารและบริการเป็นปัจจัยที่สำคัญที่สุดด้วยคะแนน 45.16% ตามด้วยการปรับตัวกับวิกฤตที่เผชิญอยู่มีคะแนนรองลงมาอยู่ที่ 26.79% และปัจจัยที่มีผลน้อยที่สุดคือนโยบายช่วยเหลือจากรัฐบาล มีคะแนนเพียง 3.03% จากผลวิจัยพบว่า กลยุทธ์ดั้งเดิมของร้านอาหารที่มุ่งเน้นในแง่ของการรักษาคุณภาพอาหารรวมถึงการจัดการต้นทุนและทรัพยากรให้คุ้มค่าเป็นวิธีที่ช่วยให้ประสบความสำเร็จในระยะยาว ส่วนการหวังพึ่งความช่วยเหลือจากภาครัฐอาจไม่สามารถใช้เป็นกลยุทธ์ได้หากมองตามความเป็นจริง เราจึงแนะนำให้เจ้าของร้านอาหารให้ความสำคัญกับการรักษาคุณภาพของอาหารและบริการ รวมถึงปรับตัวเข้ากับการเปลี่ยนแปลงที่อาจเกิดขึ้นอยู่ตลอดเวลา ให้ความสำคัญกับเสถียรภาพทางการเงินของร้าน และยกระดับความสะอาดและความปลอดภัย ซึ่งเจ้าของร้านอาหารสามารถนำข้อมูลชุดนี้ไปใช้เป็นแนวทางรับมือกับวิกฤตได้ในอนาคต

คำสำคัญ : ร้านอาหาร วิกฤต ยั่งยืน โรคระบาด กระบวนการวิเคราะห์เชิงลำดับชั้น

Research Background

Chiang Mai, the second largest city in Thailand, has become a popular destination for tourists due to its cultural richness and scenic beauty. However, despite the opportunities that the city presents for entrepreneurs in the tourism-related business, such as restaurant operators, it is widely believed that Chiang Mai is one of the most challenging regions in the country to conduct business in, particularly in the restaurant industry (Suksomwat, 2022). In recent years, restaurant owners in Chiang Mai have faced greater difficulties than their counterparts in other cities, including the capital city of Bangkok. The COVID-19 pandemic has only exacerbated these challenges, causing the revenue of the food and beverage industry in the city to decline by over 25%, according to government reports (Suksomwat, 2022). While the Thai government has implemented various measures to control the outbreak, these efforts have only made things more challenging for restaurateurs, whose sales and revenue have been directly impacted by the pandemic. Small and medium-sized enterprise (SME)

restaurants in particular have been hit hard by the economic impact of the pandemic. For many of these establishments, the crisis has proven insurmountable, forcing them to shut down. However, a few SME restaurants have managed to weather the storm, thanks to the implementation of detailed plans designed to help them respond to and survive crises. The stories of these SME restaurants are interesting to explore because they highlight the qualities that allow their owners to succeed in an extremely challenging urban environment like Chiang Mai. The aim of this study is to identify and examine the essential elements that have enabled SME restaurant owners in Chiang Mai to succeed, particularly in the face of crises such as the COVID-19 pandemic. Specifically, the study seeks to identify the factors that Chiang Mai province restaurant owners prioritized in determining how important it was for their establishments to survive both in normal circumstances and during the pandemic crisis. By identifying these essential elements and the weight of each factor, the study aims to determine which factor is the most important in enabling SME restaurant owners to succeed in a difficult urban environment like Chiang Mai. The results of this study will be valuable to restaurant owners and entrepreneurs in the food and beverage industry, as they will provide insights into the survival factors that are critical to running a successful SME restaurant business in Chiang Mai. By using this information, restaurant owners will be better equipped to navigate crises and successfully run their businesses in the future.

Research Objectives

The main objective of this study is to investigate the prioritized factors of Chiang Mai province SME restaurant owners for surviving challenging times, specifically during the COVID-19 pandemic, and to identify the key essential elements that enabled their success, while also determining the relative weight of each factor to determine which is the most important.

Literature review

The Analytic Hierarchy Process (AHP)

The Analytic Hierarchy Process (AHP), introduced by Thomas L. Saaty in 1977, is a decision-making method that uses pairwise comparisons to establish priority scales based on expert opinions. It measures relative intangibles using absolute judgment scales to compare the dominance of one element over another. Researchers use a 1-to-9 numerical scale to assess importance, analyzing both qualitative and quantitative data through interviews. AHP is a valuable tool for multi-criteria decision-making, helping to prioritize factors and guide research and decisions. (Saaty, 1977)

Factors Affect Restaurant Survivability of Post Covid-19 Eras

Operating a restaurant is difficult, but it becomes even more challenging during a crisis like the COVID-19 pandemic. Restaurants need both internal and external support to survive in such situations. This section of the study will explore the theories used to develop hypotheses about the various factors that influence a restaurant's ability to survive in the post-COVID era.

Government Factor

The first factor affecting the survival of a restaurant to be discussed is the government factor. Especially in the era of the COVID-19 outbreak, governments of each country play a role in managing the epidemic and revitalizing the economy in countries around the world (Department of Disease Control, 2022), and with the government's role in all sectors in the lives of the people. Therefore, it is undeniably true that the government also has a big share of effect on SME restaurant survivability mentioned in this research too. The subfactors in this category include: government initiatives, political stability, government epidemic control, inflation control, and economic stability.

Adaptability Factor

The second factor affecting the survival of the restaurant is the ability to adapt. From the research of Chuyingsakulthip (2021), it has been concluded that the adaptability of the restaurant is an important factor in managing the restaurant to survive in COVID-19. According to Chuyingsakulthip's research (2021), failing to adapt to a changing environment is one of the reasons why restaurants fail. In order to manage a restaurant through the crisis, flexibility is therefore crucial. The subfactors in this category include: cost management, marketing, selling character, and flexibility.

Financial Factor

The third factor affecting the survival of the restaurant in the post-COVID-19 era is the financial factor. Chuyingsakulthip's (2021) research has placed extra financial support as the most important factor in surviving the COVID-19 era due to government epidemic control policy forcing these restaurants to shut, but they did not subsidize anything. So, the restaurants have to spend their own money and those owners who did not have enough money to pay for their expenditures could not survive. Parsa et al. (2005) state that the lack of capital is the key element of failure in restaurant management. The moment of COVID-19 is making a huge financial crisis for the whole restaurant industry. (Kulshreshtha & Sharma, 2022) Therefore, from these data, we can conclude that one of the main reasons that restaurants do not survive this epidemic crisis is that financial status factors certainly play a significant role. The subfactors in this category include: capital, debt control, and sales.

Quality Factor

The fourth factor affecting the survival of the SME restaurant entrepreneurs in the post-COVID-19 era is the quality of the restaurant itself. Although many studies have developed different models to explain the factor that affects restaurant quality, these models are all agreed on one fact: the restaurant quality itself directly affects its own survivability, and the good-quality restaurant tends to last much longer than the poor one. The subfactors in this category include food quality, service quality, hygiene, and location.

Technology Factor

The fifth factor affecting restaurant survival in the post-COVID-19 era is technology adaptation. Embracing technology is crucial for restaurant success (Parsa et al., 2005). Over the past decade, various types of restaurants have adopted technology to improve customer relationships, marketing, and service. The COVID-19 pandemic accelerated this trend, as restaurants needed to shift to contactless experiences to minimize virus spread (Halpern-Lanz & Szymanski, 2020; Karniouchina et al., 2022). The pandemic also changed consumer habits, boosting online media and food delivery usage (Kulshreshtha & Sharma, 2022). Essential technologies include: delivery support systems, digital marketing, digital payments, and management aids.

Methodology

The Criteria Design for Selected Sample

The purpose of this study was to gather data from small and medium-sized (SME) restaurant entrepreneurs in Chiang Mai, Thailand, who were able to survive the COVID-19 pandemic. SME restaurants are defined as small and medium-sized restaurants that operate independently, have limited financial resources, and a relatively small number of employees (Sheng, 2019). These restaurants typically provide unique and specialized dining experiences to attract customers, despite having a smaller customer base and revenue stream than larger chain restaurants. To ensure the reliability of the interview sample for Analytic Hierarchy Process (AHP) analysis, the selection criteria for this research were twofold: (1) the restaurant must have been in operation for over 10 years, covering the COVID-19 outbreak in Thailand, to ensure their experience in surviving the crisis and the related issues, and (2) the restaurant must still be widely known and well-liked by the general population. The Wongnai restaurant database, the most widely used food and recommendation data-base provider in Thailand, was used to select the restaurants that meet these criteria. The SME restaurant must be in the top 10% of the category to be considered an expert and be selected for an interview. Only owners or top management who make decisions for the business were selected as

restaurant representatives to provide information for this study, and their identities will be kept confidential. The sustained success of these restaurants for more than a decade provides evidence of their outstanding expertise. Purposive sampling was used to select a sample of 15 restaurant entrepreneurs for this study based on their ability to survive the COVID-19 pandemic, the length of time they have been in business, and their current popularity among the general populace. This approach ensures that the sample represents the relevant population of restaurant entrepreneurs in Chiang Mai who have the necessary experience and knowledge to provide relevant and reliable data for the study. By using this information, the study provides an in-depth analysis of the decision-making process of these experts in the restaurant industry.

Table 1 List of Interviewees

List of Interviewees					
No	1	2	3	4	5
Position	Owner	Owner	Manager	Owner	Owner
Restaurant Type	Full Service	Full Service	Full Service	Small	Small
No. of Branch	1	3	1	1	1
No	6	7	8	9	10
Position	Manager	Owner	Manager	Owner	Owner
Restaurant Type	Full Service	Small	Full Service	Full Service	Small
No. of Branch	1	2	1	1	1
No	11	12	13	14	15
Position	Owner	Owner	Owner	Owner	Owner
Restaurant Type	Small	Full Service	Small	Small	Small
No. of Branch	2	1	1	1	1

Adapted from Chuyingsakulthip (2021)

AHP Questionnaire Development - Creating Decision Making Hierarchical Tree

As outlined in the preceding chapter's literature, the researcher constructed a model to explain the variables that could impact the survival of small and medium-sized enterprise (SME) restaurants during the crisis as objective states. The hierarchical tree used to develop the AHP model comprises five primary factors, each of which contains several subfactors, as shown in Figure 1.

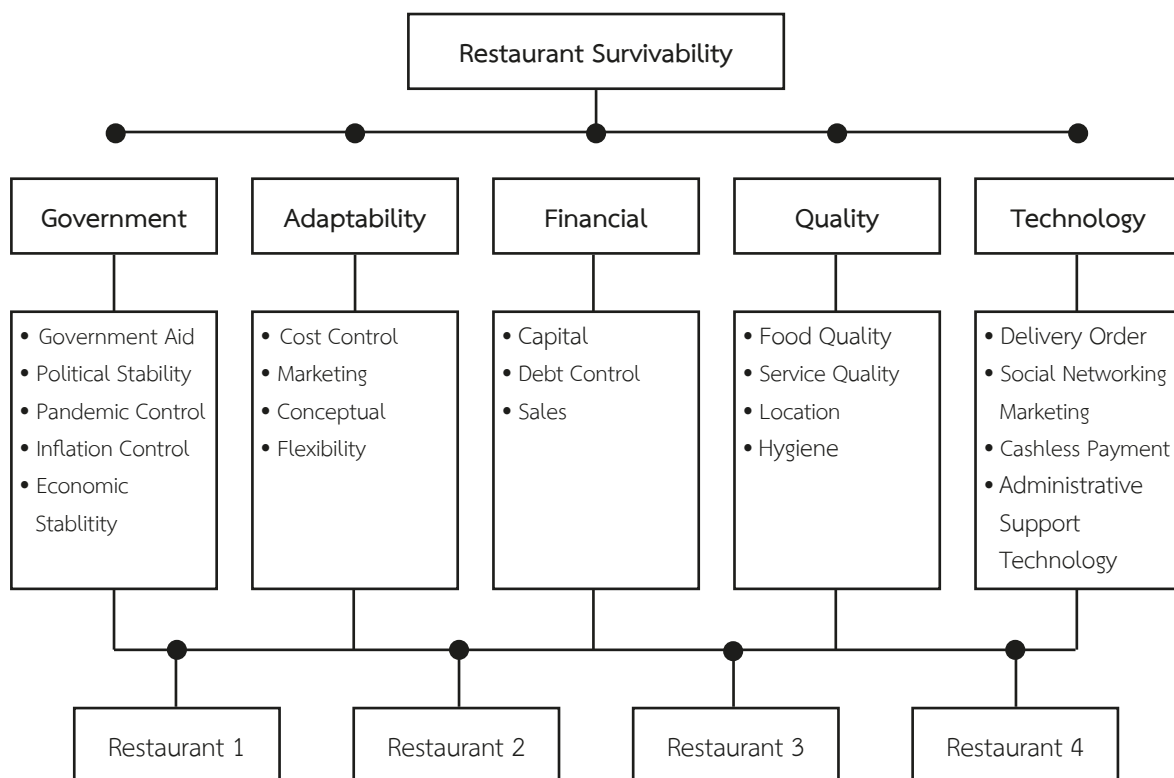


Figure 1: Hierarchical Structure Tree (Researcher, 2024)

The unique feature of AHP (Analytical Hierarchy Process) is that it can generate both qualitative and quantitative data due to its methodology, which is based on expert interviews. The AHP method converts qualitative data collected from expert interviews into numerical values, thus allowing the Hierarchical Structure Tree (shown in Figure 1) to be used as a framework for expert evaluation in collecting both types of data (Saaty, 2008).

The Importance Value Attribute Fundamental Scale

In order to conduct pair comparisons for the factors, a questionnaire is distributed to the respondents, who are asked to evaluate the relative importance of each criterion. The respondents must verbally express their priorities using different levels of importance, such as most important, considerably more important, slightly more important, etc. These priorities are then converted into numerical values by the researcher to provide a more accurate analysis. Saaty (2008) has created a pairwise scale with importance values attributed to each number. Table 1 shows the scale and importance values for each number, which are used to compare the weights and determine the relative importance of each factor in the decision-making process.

Table 2 The Fundamental Scale

The Fundamental Scale		
Intensity of Importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
2	Weak or slight	Experience and judgement slightly favour one activity over another
3	Moderate importance	
4	Moderate plus	
5	Strong importance	Experience and judgement strongly favour one activity over another
6	Strong plus	An activity is favoured very strongly over another, its dominance demonstrated in practice
7	Very strong or demonstrated importance	
8	Very, very strong	
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation

Source: Saaty (2008)

Data Collection

Dong & Saaty (2014) emphasize that in AHP analysis, the quality of the interview sample is more important than its quantity of large sample size. Therefore, it is necessary to select respected experts in the relevant field as interviewees. The data collection process will involve a designed interview questionnaire, and restaurants that meet the set criteria will be selected for the study. Face-to-face interviews will be conducted on-site at a location that is convenient for the interviewee to gather accurate AHP data. To minimize the chances of misinterpretation during data collection and interview, the researcher will provide relevant information during the interview and explore intriguing interview-related themes.

Data Analysis

Create Comparison Matrix from the gathered data

Table 3 The Comparison Matrix Pairwise

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1	a_{12}	a_{13}	a_{1n}
Factor n	a_{n1}	a_{n2}	a_{n3}	1

Whereas a_{12} is the importance of factor 1 compared to the importance of factor 2 related to the objective of the study and equal to $1/a_{21}$ which is a reciprocal. Row by row and column by column, the pairwise comparison of related factors continues until it reaches the “n” factor, which is considered the final factor.

Calculate the importance weight of each factor

The eigenvector is then computed after the pairwise comparison matrix using normalized matrix averages. When faced with an incompatible matrix, calculation should be repeated several times in order to reach convergence among the set of answers into successive repetitions of this process. Then, the following formula is applied to transform the raw data into meaningful absolute values and normalized weights. (Taherdoost, 2017)

Normalize weight (w) = ($w_1, w_2, w_3 \dots w_n$) $A = \{a_{ij}\}$ with $a_{ij} = 1/a_{ji}$

$Aw = \lambda_{\max} w, \lambda_{\max} \geq n$

$$\lambda_{\max} = \frac{\sum a_{ij} w_j - n}{w_1}$$

A : pair wise comparison

w : normalized weight vector

$\lambda_{\max}$: maximum eigen value of matrix A

a_{ij} : numerical comparison between the values i and j

Calculation Consistency Ratio

The consistency ratio (CR) is then calculated using the formula $CR = CI/RI$, where the consistency index (CI) is then measured using the following formula in order to validate the results of the AHP. The value of RI will be taken from Table 4 and is related to the dimension of the matrix. It should be noted that a consistency ratio of less than 0.10 confirms the validity of the comparison's findings. (Taherdoost, 2017)

$$CI = \frac{\lambda_{\max} - n}{n - 1}$$

Table 4 The Value of Random Consistency Index

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.5	1.49

Source: Golden & Wang (1990)

Result and Discussion

1. Major factor related to restaurant survival during crisis.

Table 5 Pairwise Comparison Matrix And Weights: Major Factor

	Government	Adapability	Financial	Quality	Technol- ogy	Weight
Government	1.000	0.1235	0.1299	0.1176	0.2041	3.03%
Adapability	8.1000	1.0000	1.5000	0.5882	6.3000	26.79%
Financial	7.7000	0.6667	1.000	0.1923	4.8000	18.03%
Quality	8.5000	1.7000	5.2000	1.0000	7.3000	45.16%
Technology	4.9000	0.1587	0.2083	0.1370	1.0000	7.00%

Table 5 shows that quality is the top priority for restaurant survival during a crisis, scoring 36.76%, followed closely by adaptability at 35.83%. Conversely, technology and the government are considered the least important factors, with scores of 5.15% and 3.52%, respectively. Interviews with restaurant experts support these findings, with most prioritizing the restaurant's original quality during tough times. While some experts also value adaptability, they consider it to be slightly less important than quality. Most experts believe that the financial aspect is important but not as crucial as quality and adaptability, which they typically place at a similar level of importance. Experts view technology as helpful but not essential for restaurant survival. Additionally, the role of the government in Thailand's restaurant industry is not significant, making it harder for restaurants to survive. As a result, these factors are considered less important for restaurant survival.

2. Government factor related to restaurant survival during crisis.

Table 6 Pairwise Comparison Matrix and Weights: Government Factor

	Government Initiatives	Political Stability	Pandemic Controlled	Inflation Controlled	Economic Stability	Weight
Government Initiatives	1.0000	0.4167	0.1923	0.1887	0.1493	4.44%
Political Stability	2.4000	1.0000	0.6000	0.3333	0.2857	9.89%
Pandemic Controlled	5.2000	1.6667	1.0000	0.7143	0.2041	15.07%
Inflation Controlled	5.3000	3.0000	1.4000	1.0000	0.1786	19.38%
Economic Stability	6.7000	3.5000	4.9000	5.6000	1.0000	51.22%

Regarding the government factor, the data presented in Table 6 highlights that economic stability is ranked as the most crucial factor by experts, with a weight of 42.36%. Political stability, pandemic control, and inflation control follow closely, with equal importance weights of 14.63%, 17.04%, and 20.33%, respectively. In contrast, government initiatives are assigned the lowest weight, accounting for 5.63%. Interviews with restaurant experts support these findings. Experts unanimously agree that the government's primary focus should be on ensuring economic stability, as this will facilitate increased purchasing power and lead to sustained economic growth. This, in turn, would promote a positive image of a strong economy. However, in a poor economy with low purchasing power, restaurants may struggle to survive. Analysis of the statistics in the table reveals variations in the experts' rankings of inflation control, political stability, and pandemic control. While the importance of these factors varies slightly, government initiatives such as emergency assistance are viewed by the majority of restaurant owners as irregular and not dependable for long-term sustainability. Hence, such measures can only be considered as a bonus for restaurants striving to achieve sustainable success. If the government can maintain good economic stability, emergency measures may not even be necessary. This discrepancy in the importance ratings of these factors is attributed to the role they play in ensuring the sustainability of the restaurant industry.

3. Adaptability factor related to restaurant survival during crisis.

Table 7 Pairwise Comparison Matrix and Weights: Adaptability Factor

	Cost Controlled	Marketing	Conceptual	Flexibility	Weight
Cost Controlled	1.0000	2.3000	0.1852	0.3030	11.50%
Marketing	0.4348	1.0000	0.1695	0.3448	7.38%
Conceptual	5.4000	5.9000	1.0000	3.6000	57.97%
Flexibility	3.3000	2.9000	0.2778	1.0000	23.15%

According to Table 7, which presents the adaptability factor pertaining to the survival of restaurants during crises, the results indicate that the conceptual factor was given the highest priority by experts, receiving a score of 42.67%. The cost-controlled factor was ranked as the second most important, with a score of 29.02%. Flexibility was identified as the third most significant factor, receiving a score of 17.06%. Finally, marketing was deemed the least important factor, with a score of 11.25%. Based on expert interviews, the unique selling

proposition of most restaurants is their exceptional service quality, particularly the quality of their food. However, restaurants in Chiang Mai face the challenge of satisfying customers' demand for high-quality food while also providing good value for their money. While there is a premium market in Chiang Mai, customers are knowledgeable and will not pay for overpriced products that do not meet their expectations. Therefore, Chiang Mai restaurant owners find it difficult to manage costs while working within a constrained profit margin. Table 6 data reveals that conceptual and cost control factors are the most crucial to Chiang Mai restaurateurs. While managing a restaurant with flexibility is important, it is not enough to ensure business survival if the restaurant cannot deliver the type of dining experience customers want or if it cannot manage costs effectively. Therefore, flexibility is less important than the previous two factors. For Chiang Mai restaurateurs, marketing is the least important factor. While they do engage in marketing, seasoned restaurateurs establish their reputation in the community through word-of-mouth advertising in the beginning. Once established, maintaining quality and a reputation that endures are often considered more important.

4. Financial factor related to restaurant survival during crisis.

Table 8 Pairwise Comparison Matrix and Weights: Financial Factor

	Capital	Debt Controlled	Sales	Weight
Capital	1.0000	0.6250	0.1613	10.85%
Debt Controlled	1.6000	1.0000	0.1961	15.83%
Sales	6.2000	5.1000	1.0000	73.32%

The financial factor was analyzed, according to the data presented in Table 8, and experts rated sales as the most important element with a score of 45.80% in this category. Debt management was the second most crucial factor, scoring 29.92%. The capital factor was considered the least important, scoring 24.28%. Based on the interviews conducted with SME restaurant representatives, it was found that sales profit is the most crucial aspect of the financial picture, as it ensures the sustainability of any business. Even non-profit organizations require profits to support their operations. The ultimate goal of all actions taken by restaurants, such as upholding service standards, marketing, promoting, and cost control, is to generate a profit. Therefore, it is not surprising that sales profit was identified as the number one priority. It is important to note that some of the interviewees did not have access to traditional funding sources such as bank loans or mortgages and had to borrow money from

unofficial sources at higher interest rates to keep their restaurants afloat. They all agreed that the debt that follows them is daunting, and maintaining a low debt level is more crucial to the restaurant's survival than having a sizable amount of capital on hand. Although having a large amount of working capital is desirable, it is only beneficial if the restaurant can generate enough profit to cover the interest on loans taken out to expand the business. Given the current economic crisis, consumers' purchasing power has decreased, making it more crucial to reduce costs, especially liabilities, than having a lot of working capital in the system.

5. Quality factor related to restaurant survival during crisis.

Table 9 Pairwise Comparison Matrix and Weights: Quality Factor

	Food Quality	Service Quality	Location	Hygiene	Weight
Food Quality	1.0000	4.1000	5.3000	1.8000	51.75%
Service Quality	0.2439	1.0000	1.9000	1.5000	19.35%
Location	0.1887	0.5263	1.0000	0.9091	11.51%
Hygiene	0.5556	0.6667	1.1000	1.0000	17.39%

Based on the data in table 9, for the quality factor related to restaurant survival, food quality was deemed the most important factor for restaurant survival during a crisis, with a weight of importance of 51.58%. Hygiene was the second-most important factor, given a priority of 21.15%, while service quality was the third-most important, with a priority of 18.90%. Experts gave the location factor the lowest priority, with a rating of only 8.37%. The experts who were interviewed on the topic of restaurant survival in a crisis generally agreed that the most important factor for restaurants in Chiang Mai is the quality of their food. It is widely known by customers in the region that any decline in food quality can have serious long-term consequences for a restaurant's success. Many of the experts even stated that they would be willing to earn less or lose money on occasion to maintain the high standard of food quality. Other factors, such as service, location, and hygiene, are considered to be more flexible. While the hygiene of food is important, some experts believe that certain popular dishes, such as raw meat-containing Laab, are not particularly hygienic, and customers may tolerate certain levels of contamination. Food and sanitation factors are more important than service quality, but that's not to say that service quality is not important. Customers are more likely to tolerate less-than-perfect service than poor-quality food or an unclean environment. Location is less important than other factors, but for a new restaurant, it may be a critical factor. For established restaurants with good reputations, other factors, such as food quality and sanitation, may be more important to survival than location.

6. Technology factor related to restaurant survival during crisis.

Table 10 Pairwise Comparison Matrix and Weights: Technology Factor

	Online Delivery System	Social Network Marketing	Cashless Payment	Administrative Support	Weight
Online Delivery System	1.0000	1.0000	0.8333	4.5000	29.08%
Social Network Marketing	1.0000	1.0000	0.4762	3.5000	23.78%
Cashless Payment	1.2000	2.1000	1.0000	5.6000	40.37%
Administrative Support	0.2222	0.2857	0.1786	1.0000	6.76%

The delivery order was identified as the most important technological factor for restaurant survival by most experts, as presented in table 10, scoring at 41.66%, followed by cashless payment at 26.58%, social network marketing at 25.15%, and administrative support technology at 6.62%. Restaurant experts interviewed agreed that selling food through online ordering channels is crucial for restaurants to survive crises, especially during the COVID-19 pandemic, where dining in restaurants is prohibited. Many experts even stated that their businesses would not survive without online food ordering. While both cashless payment and social networking for marketing are viewed as important technological innovations, neither is as essential as receiving online food orders for restaurant survival. Administrative support technology was viewed as the least critical factor, with only a few experts using it for minor conveniences.

Discussion

Based on the data examined, the table below summarizes the significance of each subfactor in terms of restaurant survival over the long term.

Table 11 All subfactor weighted related to restaurant survival during crisis.

Factor	Government Initiatives	Political Stability	Pandemic Controlled	Inflation Controlled	Economic Stability
Importance Weight	0.002	0.0052	0.006	0.0072	0.0149

Table 11 All subfactor weighted related to restaurant survival during crisis. (continued)

Factor	Cost Controlled	Marketing	Conceptual	Flexibility	Capital
Importance Weight	0.104	0.0403	0.1529	0.0611	0.0455
Factor	Debt Controlled	Sales	Food Quality	Service Quality	Location
Importance Weight	0.0561	0.0858	0.1896	0.0695	0.0308
Factor	Hygiene	Online Delivery Order	Social Network Marketing	Cashless Payment	Administrative Support Technology
Importance Weight	0.0778	0.0215	0.013	0.0137	0.0034

According to the data from Table 11, experts give the highest priority to food quality when determining a restaurant's long-term viability, scoring it at 0.1896. Cost control comes in third at 0.1040, with conceptual coming in at 0.1529, for the second-most significant factor. Government initiatives are rated as the least significant factor at 0.0020. These results are consistent with the interview data collected in the previous chapter. The study highlights several important factors for restaurant survival during a crisis. The first and most crucial factor is quality. Maintaining the quality of food and service is essential for restaurant survival, especially during tough times. Customers are more likely to return to a restaurant if they are satisfied with the quality of their experience, and this can help to ensure repeat business and a steady stream of revenue. Another important factor for restaurant survival is adaptability. This refers to the ability of restaurants to adapt to changing circumstances, such as a pandemic or economic crisis. In this study, experts rated the conceptual factor as the most important element of adaptability. This includes things like menu changes, new marketing strategies, and other initiatives that can help restaurants adapt to changing circumstances. Cost control is also important, as restaurants need to balance the need to maintain quality with the need to keep costs under control. Government initiatives were found to be less important for restaurant survival. While economic stability and political stability were rated highly by experts, government initiatives were viewed as less dependable for long-term sustainability. This highlights the importance of self-sufficiency for restaurants, as they need to be able to adapt and survive on their own without relying on external support. The financial aspect

is also important for restaurant survival. Sales were identified as the most crucial element, followed by debt management and the capital factor. Maintaining low debt levels is more crucial to restaurant survival than having a sizable amount of capital on hand, especially during an economic crisis when consumers' purchasing power has decreased. Finally, the study highlights the importance of hygiene for restaurant survival during a crisis. With the increased focus on health and safety during the pandemic, hygiene has become a key concern for customers. Restaurants need to ensure that they have effective cleaning procedures in place and that they are following all relevant health and safety guidelines.

Based on these findings, several suggestions can be made for restaurant owners looking to improve their chances of survival during a crisis. Firstly, they should focus on maintaining the quality of their food and service, as this is essential for customer satisfaction and repeat business. They should also be prepared to adapt to changing circumstances through initiatives such as menu changes, marketing strategies, and cost control measures. Restaurant owners should also prioritize financial stability, focusing on sales and debt management to ensure that they are not overburdened with debt during tough times. Finally, they should pay close attention to hygiene and safety, following all relevant guidelines and implementing effective cleaning procedures. In addition to these suggestions, restaurant owners may also want to consider investing in technology to improve their efficiency and streamline their operations. This can help to reduce costs and improve the overall customer experience, making it easier to attract and retain customers. To summarize the discussion, this study provides valuable insights into the factors that are most important for restaurant survival during a crisis. By focusing on quality, adaptability, financial stability, and hygiene, restaurant owners can improve their chances of success and achieve sustainable growth over the long term.

Conclusion

In conclusion, the study conducted on the factors affecting the survival of restaurants during a crisis in Chiang Mai provides valuable insights for restaurant owners and policymakers. The findings suggest that maintaining quality and adaptability are critical for restaurants to survive during difficult times. Moreover, economic stability, sales, and low debt levels are essential factors for ensuring the sustainability of restaurant businesses. It is clear from the study that restaurant owners should prioritize maintaining the quality of their food, hygiene, and service quality, which are significant selling points for their businesses. Additionally, they must be willing to adapt to changes and embrace cost-controlled measures to maintain their profitability. The government can also play a crucial role in ensuring the survival of

restaurants during a crisis by providing economic and political stability. While government initiatives were not deemed a significant factor for restaurant survival in the study, policymakers can still provide support by introducing policies that promote economic and political stability. It is worth noting that the COVID-19 pandemic has had a significant impact on the restaurant industry globally, making the findings of this study even more relevant. Restaurant owners and policymakers must recognize the importance of the factors highlighted in this study and take proactive measures to ensure the survival of the industry during and after the pandemic. In conclusion, by prioritizing quality, adaptability, economic stability, sales, and low debt levels, restaurant owners and policymakers can work together to ensure the survival of the restaurant industry in Chiang Mai and beyond.

Limitations

This study has certain limitations that must be acknowledged. Firstly, the geographic scope of the study is limited to Chiang Mai, Thailand, and the findings may not be generalizable to other regions or countries. Additionally, the data collection began in 2022, and future revisions or changes in the characteristics of the data group may impact the study's results. Secondly, the research is based on interviews with SME-scale restaurant owners in Chiang Mai who have a minimum of ten years of experience, which may lead to differing perspectives on restaurant management compared to other study samples. These limitations highlight the need for further research in other regions and with a broader sample of restaurant owners to gain a more comprehensive understanding of the factors that influence restaurant survival during a crisis.

Suggestions

Since Chiang Mai, Thailand, has a different restaurant operating culture than Bangkok and has high administrative difficulty, this research gathered data from experts who opened restaurants there. As a result, using the same interview method to collect data in other areas may result in different restaurants. Restaurant industry professionals with ten to sixty years of experience provided the samples that the researchers gathered for analysis. Therefore, the perspectives of each expert may differ due to generational differences and experiences with various worldviews. The criteria for collecting data can be divided if a researcher has helped this research to develop further in order to obtain more precise research results. Finally, because the world is still experiencing an economic crisis as a result of the epidemic crisis, the period of time the researcher collects the data cannot be considered the time

during which the crisis has completely passed. So, if additional researchers gather comparable research data in the future, they might be able to access a different and more precise data set from the post-crisis period when economic stability is attained and it might produce different outcomes.

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