



Thai cuisine restaurant performance in the United Kingdom (UK): A SEM analysis

Panadda Supawan*
Faculty of Administration and Management
King Mongkut's Institute of Technology Ladkrabang (KMITL)
Thailand
E-mail: 56611312@kmitl.ac.th
Orcid ID: 0000-0003-2339-7613

Assist. Prof. Dr. Puris Sornsarut
Faculty of Administration and Management
King Mongkut's Institute of Technology Ladkrabang (KMITL)
Thailand
Orcid ID: 0000-0001-6054-3953

Assoc. Prof. Dr. Paitoon Pimdee
Faculty of Industrial Education and Technology
King Mongkut's Institute of Technology Ladkrabang (KMITL)
Thailand
Orcid ID: 0000-0002-3724-2885

Corresponding Author *

Abstract

The United Kingdom's out-of-home (OOH) foodservice industry in 2019 is estimated to be worth over £56 billion, with Thai cuisine restaurants estimated to be over 1,600 in this U.K. service sector. As such, the authors set out to investigate which factors influenced a Thai restaurant's performance (PF) in the United Kingdom. An analysis was conducted on the six hypotheses interrelationships between a Thai cuisine restaurant's food safety and hygiene leadership (RFSHL), service capability (SC), competitive advantage (CA), and performance (PF). Initial analysis was conducted by the use of confirmatory factor analysis [CFA], followed by a structural equation model [SEM] path analysis using LISREL 9.1 of the study's four latent variables. From the audited questionnaire sample of 368 Thai restaurant entrepreneurs and managers, the factors affecting PF were RFSHL, SC, and CA, which total effect [TE] values of 0.77, 0.50 and 0.29, respectively. The results showed that all the model's variables influenced the performance (PF) of Thai restaurants operating in the U.K. as the combined influence of the factors (R^2) was 59%. It must be also noted that data suggests that restaurant entrepreneurs must embrace technological change and the use of social media platforms along with smartphones to facilitate the UK consumers shift to convenience, takeaway, and home delivery. There is also the need to market Thai food as a healthy and delicious alternative to other foods and create in-restaurant 'ambiance'.

Keywords: Competitive advantage, England, food safety, hygiene, service capability.

Introduction

The UK out-of-home (OOH) foodservice industry in 2019 is estimated to be worth over £56 billion (NPD, 2018). The sector is particularly diverse, with the Asian and Oriental restaurant sub-industry relatively large (De Angelis, 2013). Furthermore, according to the NPD Group, in 2018 UK diners who chose to eat out rose by 83 million visits over 2017, with delivery disrupters



growing by 101 million (Robinson, 2017). Restaurants who adopt delivery as a route to market share will be part of a £656 million sector which is up 17% in 2019.

Additionally, healthy eating has become a mainstream dining trend in recent years, with Thai cuisine popular in an estimated 15,000 restaurants globally (Karp, 2018). Reasons for such popularity include its palatability, delicacy, and preparation meticulousness, as well as its high nutritional value. Because diners now expect healthy options in all restaurant types and segments, chefs need to comply by offering such without sacrificing flavour.

As such, Thai cuisine continues to grow in popularity in the U.K. From its very humble beginnings in London in 1967 when the first Thai restaurant emerged, only four more Thai restaurants were registered through the 1970s (Sornsarut & Sawmong, 2017). However, by 2000, registered Thai restaurants in the U.K. exploded to over 300 (The Caterer, 2014), and today there are an estimated 1,600 Thai restaurants throughout the U.K., mostly owned by Thai immigrants (Gerrard, 2014). Thai cuisine popularity in the U.K. was again confirmed in 2017 when a Thai restaurant in SoHo was crowned the “best restaurant in the U.K.” (Coghlan, 2018). This was preceded by ‘*Nahm London*’ becoming the first Thai restaurant to ever receive a Michelin Star in 2002 (McGowan, 2002; Olmsted, 2012).

However, the estimated 600 London Thai restaurant scene has been stated to be underrated, with world-famous dishes such as *pad Thai*, *massaman curry* and *tom yam kung* soup available across most parts of the city (Time Out London, 2019). Furthermore, when CNN conducted a travel survey of 35,000 international restaurant diners, of the 50 world-class dishes being voted on, four Thai dishes soared into the top ten (Cheung, 2017).

Comparatively, according to the Royal Thai Embassy in Washington, D.C., there are 300,000 Thai-Americans in the U.S., with many as owners or workers in one of the estimated 5,400 Thai cuisine restaurants in the US (Karp, 2018). In 2019, Germany was reported to have around 600 Thai restaurants (Charoensuthipan, 2019), with the Thai government promoting the certification and export of Thai chefs to Germany to fill the ever-growing Thai cuisine food and restaurant business.

Therefore, given both the ever-increasing global and UK diner interests in Thai cuisine, the researchers sought out to investigate what elements were essential in a Thai cuisine restaurant business in the U.K. As such, this paper is broken into six parts, including part one’s introduction, part two’s literature review, part three’s materials and methods section, part four’s results, part five’s discussion, and finally part six’s conclusion.

Objectives

1. To investigate the interrelationships of the factors influencing a Thai cuisine restaurant’s performance in the United Kingdom.
2. From the use of a CFA to determine if the data and the model fit.
3. To use an SEM of the factors influencing a Thai cuisine restaurant’s performance in the United Kingdom.

Literature Review

Restaurant Food Safety and Hygiene Leadership (RFSHL)

According to the World Health Organization (2001), one of the most common and important health problems is the transmission of disease from infected food, with 8% to 10% of the



population at some point being affected. Also since 1970, the frequency of foodborne diseases has increased by over 300%, with over 48 million cases and 3,000 deaths occurring each year in the US (USDA, 2013).

Furthermore, Wall et al. (1996) have reported that group food poisoning can occur from the slightest negligence in the food-preparation or packaging process. Griffith et al. (2010) have also written that food poisoning occurrences happen in 70% restaurants, with staff associated foodborne illnesses normally occur one after another with the occurrence frequency increasing (Greig et al., 2007). Kibret and Abera (2012) also wrote that the most frequent reasons for illness are inadequate staff hygiene, cross-contamination, and inadequate time or temperature, which indicates the need for improvement in food handlers' knowledge and handling practices. Yiannas (2008, 2009) added that food safety culture is revealed in an organization by the ability to communicate ideas to staff about hygiene and food safety. Pragle et al. (2007) also commented that an employee's personal feelings and attitudes about a customer's health and their sense of responsibility concerning their job will affect their behaviour in food safety.

Therefore, from the authors' literature review related to RFSHL, the following three manifest variables were determined. These included the *restaurant provides resources to apply food hygiene and safety practices* (x1), *restaurant rewards employees for using new knowledge and skills on the job* (x2), and *co-worker encouragement of food hygiene and safety skills* (x3). Additionally, three hypotheses were conceptualized for the analysis which included:

- H1: RFSHL directly influences SC.*
- H2: RFSHL directly influences PF.*
- H3: RFSHL directly influences CA.*

Service Capability (SC)

According to Nada and Ali (2015), for Turkish and Danish SMEs to create value and survive, they need to innovate in services and continuously improve or create new services which sustain a CA (Bullinger et al., 2003). Furthermore, Su (2011) reported that service innovation in ethnic restaurants plays a major role in diner's behavioural intention and experience.

However, the service quality of a restaurant is a difficult thing to access, as judgments are concerning the service outcome and the service delivery process. Other researchers have suggested that the quality of the food, the physical environment, and the service of the staff are the most important elements in a restaurant's service quality capability (Canny, 2013; Dulen, 1999). Also, the food's presentation, its freshness, the number of healthy options, taste, and the temperature has been suggested as essential to SC (Namkung & Jang 2008). Additionally, the restaurant's design, the professional skills of the staff, and their interaction with the customers are also other essential elements to SC (Wu & Liang, 2009).

Therefore, from the authors' literature review related to *service capability* (SC), the following five manifest variables were determined. These included This restaurant provides high-quality service (y1), this restaurant provides service punctual (y2), this restaurant provides service reliably as promised (y3), this restaurant provides satisfactory post-sales service (y4), and this restaurant provides quickly to service requests (y5). Additionally, two additional hypotheses were conceptualized for the analysis which included:

- H4: SC directly affects CA.*
- H5: SC directly affects PF.*



Competitive Advantage (CA)

Sustainable CA occurs when organizations cannot mirror the advantages that CA provides. To be competitive and achieve a sustainable CA, firms need to embrace Porter's (1985) 'generic strategies'. These include maintaining cost leadership, providing products and unique services, and maintaining a direction and focus.

Furthermore, for a restaurant to maintain its CA, they must monitor their *cost*, *quality*, *delivery* options, and *flexibility*. One way to reduce cost is to develop an effective method for resource management, which is an inexpensive and effective method to accomplish this (Atkin et al., 2012; Liu & Wei, 2013; Sigalas et al., 2013; Sigalas & Economou, 2013). Quality is another aspect of responding to a diner's expectation (Mjilanga et al., 2014). Delivering excellent value is also essential to CA which entails creating a culture which is innovative (Agus & Hassan, 2011). And finally, there is flexibility which is the ability to respond quickly in the shortest possible time.

Therefore, from the authors' literature review related to *competitive advantage (CA)*, the following six manifest variables were determined. These included *this restaurant provides on-going customer relationships* (y6), *this restaurant offers special deals to keep customers* (y7), *this restaurant maintains customer long term relationships* (y8), *this restaurant has excellent customer and staff interaction* (y9), *this restaurant interact with customers to design offerings that meet their needs* (y10), and *this restaurant provides support systems to customers to help them achieve better value* (y11). Finally, one additional hypothesis was conceptualized for the analysis which included:

H6: CA directly influences PF.

Performance (PF)

Many small to medium enterprises (SMEs) use a mix of financial and nonfinancial measures to evaluate performance (Ahmad, 2017; Harif et al., 2012). In many aspects, restaurants can be classified as SMEs and therefore, many studies related to SMEs can be applied as SMEs play a pivotal role in economic growth, employment creation and they ensure that income is distributed equitably within an economy (Moorthy et al. 2012). According to Krishna et al. (2012), an SME's performance is determined by their capabilities to survive in a competitive market and their sustainability in the long term. Their financial performance is determined by how assets are utilized from their primary enterprise activity and generate future cash flow to the entity (Majenga & Mashenene, 2014). These include profit, sales, and cash flow. However, Evans et al. (2010) have also written that non-financial performance is an evaluation measurement of an organization's quality stated using non-monetary units such as employee satisfaction, customer satisfaction, and product development.

Therefore, from the authors' literature review related to a restaurant's *performance (PF)*, the following two manifest variables were added to the study. These included *financial performance* (y12) and *nonfinancial performance* (y13).

Conceptual Model

The authors have an extensive literature review conceptualized the following six hypotheses and framework (Figure 1):

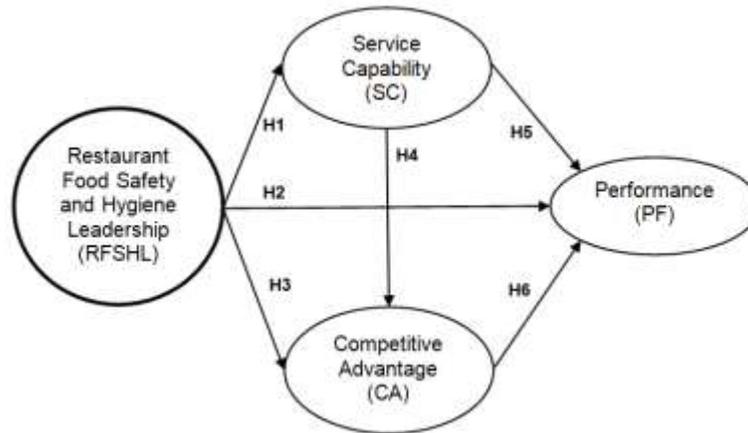


Figure 1. Conceptualized Model (Source: Authors' research from theory and literature)

Materials and Methods

Population and Sample

The population was Thai restaurant entrepreneurs and managers in the United Kingdom that had been identified in the Thai Office of Foreign Trade Promotion database in London, Cambridge, Oxford, Newcastle, and other smaller towns and villages in 2017 (Table 1).

Table 1. Thai cuisine restaurants in the United Kingdom.

Location	Population	Sample
London	476	230
Cambridge	109	53
Oxford	224	108
New Castle	206	100
Other towns	185	89
Total	1,200	580

Source: Thai Office of Foreign Trade Promotion database and authors' survey

Research Tools

The questionnaire consisted of five parts, in which part 1 contained seven items about the owner/manager's personal information including their gender, age, education level, and position. Furthermore, there were three further questions which were:

1. How many years have you managed this restaurant?
2. How many employees are in this restaurant?
3. How many customers visit your restaurant per day?

Parts 2 - 7 used a seven-level scale to inquire as to the management's opinions concerning each survey item. The number '7' was used to 'most agreement', '4' indicated 'quite a lot agreement',



and '1' indicated 'least agreement.' Additionally, from the experts' feedback and the pre-test of 30 questionnaires not used in the subsequent sample, Cronbach's α was determined to be from 0.87 – 0.91 (Table 4), which was ranked as 'good' (Cho & Kim, 2015). This included part 2's RFSHL with 3 items ($\alpha = 0.87$), part 3's SC with 5 items ($\alpha = 0.88$), part 4's CA with 6 items ($\alpha = 0.88$), and finally, part 5's PF with 2 items ($\alpha = 0.91$).

With the targeted population defined by the Thai Office of Foreign Trade Promotion database of 1,200 Thai restaurants in the U.K., contact was initially made by e-mails. If a response was not received, a phone call contact was initiated to inquire if the restaurant's owners or managers would be kind enough to participate in an academic study concerning Thai restaurant performance. The response was good from which questionnaires were e-mailed to the contact source for the restaurant. From this process, 580 questionnaires were returned. After inspection and audit of the questionnaire, 368 were found to be complete to be used for the analysis. This represented a response rate of 63.45%.

Data Analysis

LISREL 9.10 was used to conduct an initial CFA and the subsequent SEM between the variables conceptualized to be influencing PF. Interpretation of the accuracy of the SEM on PF made use of goodness-of-fit [GoF] criteria detailed in Table 3. If the calculated statistics passed the established GoF criteria, it supported the model's accuracy being consistent with the empirical data.

Results

Restaurant Owner/Manager Characteristics

Table 2 details the results from part 1 of the restaurant owner/manager's questionnaire. Clearly, women are in the majority (68.21%) of owners/managers within the U.K. Thai cuisine restaurant business. The owners/managers also are well educated as 65.49 reported having either an undergraduate or graduate degree. Also, from the 368 audited questionnaires used, there was almost an even distribution between owners (50.54%) and managers (49.46%). Also, most (38.04%) were between 31-40 years of age.

Table 2. Thai cuisine restaurant manager/owner characteristics ($n = 368$)

Gender	Sum	%
Man	117	31.79
Woman	251	68.21
Total	368	100
Age		
21-30	22.00	5.98
31-40	140.00	38.04
41-50	98.00	26.63
51-60	70.00	19.02
Over 60	38.00	10.33
Total	368	100
Level of education		
Never finished high school	30	8.15



Finished high school	75	20.38
Attended college but never finished	22	5.98
A BA or BS degree	84	22.83
Master's degree or higher	157	42.66
Total	368	100
Position		
Owner	186	50.54
Manager	182	49.46
Total	368	100

Source: Authors' research questionnaire

The GoF Analysis

From the CFA analysis, a GoF assessment was made to determine if the data fits the model. From that analysis, all indices were validated (Table 3).

Table 3. GoF analysis.

Indices	Criteria	Values	Results	Supporting theory
Chi-square: χ^2	$p \geq 0.05$	0.73	validated	Rasch (1980)
Relative Chi-square: χ^2/df	≤ 2.00	0.89	validated	Byrne et al. (1989)
RMSEA - root mean square error of approximation	≤ 0.05	0.00	validated	Hu and Bentler (1999)
GFI - goodness of fit index	≥ 0.90	0.98	validated	Jöreskog et al. (2016)
AGFI - adjusted goodness of fit index	≥ 0.90	0.96	validated	Hooper et al. (2008)
RMR - root mean square residual	≤ 0.05	0.02	validated	Hu and Bentler (1999)
SRMR - standardized root mean square residual	≤ 0.05	0.02	validated	Diamantopoulos and Siguaw (2000)
NFI - normed fit index	≥ 0.90	0.99	validated	Schumacker and Lomax (2010)
CFI - confirmatory fit index	≥ 0.90	1.00	validated	Bentler (1990), Lei and Wu (2007)
Cronbach's α	≥ 0.70	0.87-0.91	validated	Tavakol and Dennick (2011)

Source: Authors' CFA analysis using LISREL 9.1

CFA Results

Table 4 shows the external latent variable RFSHL and the internal latent variables SC, CA, and PF results testing.

Table 4. CFA analysis results for both the internal and external latent variables.

Latent variables	α reliability	AVE	CR	Manifest variables	loading	R ²
Restaurant Food Safety and Hygiene Leadership (RFSHL)	0.87	0.60	0.82	This restaurant provides resources to apply food hygiene and safety practices. (x1)	0.78	.61
				This restaurant	0.82	.67



Latent variables	α reliability	AVE	CR	Manifest variables	loading	R ²
(external latent variable)				rewards employees for using new knowledge and skills on the job. (x2)		
				Co-worker encouragement of food hygiene and safety skills. (x3)	0.73	.53
Service Capability (SC) (internal latent variable)	0.88	0.42	0.78	This restaurant provides high-quality service (y1)	0.69	.47
				This restaurant provides service punctual (y2)	0.68	.45
				This restaurant provides service reliably as promised (y3)	0.61	.37
				This restaurant provides satisfactory post-sales service (y4)	0.72	.52
				This restaurant provides quickly to service requests (y5)	0.50	.24
				This restaurant provides on-going customer relationships (y6)	0.50	.25
				This this restaurant offers special deals to keep customers (y7)	0.61	.36
				This this restaurant offers special deals to keep customers (y8)	0.70	.48
				This restaurant has excellent customer and staff interaction (y9)	0.70	.48
				This restaurant interact with customers to design offerings that meet their needs (y10)	0.66	.44
				This restaurant provides support systems to customers to help them achieve better value (y11)	0.67	.44
Performance (PF) (internal latent variable)	0.91	0.76	0.86	Financial Performance (y12)	0.81	.66
				Nonfinancial Performance (y13)	0.93	.86

Source: Authors' analysis

Direct Effect [DE], Indirect Effect [IE], and the Total Effect [TE] Analysis

The values from the correlation decomposition by use of the DE, IE, and the TE (Bollen, 1987) is shown in Table 5, which confirms that all the causal variables in the SEM had a positive effect on the Thai restaurant PF, which can be combined to explain the variance of the factors affecting PF

(R²) by 59%. Additionally, the influence of the three latent variables on PF was shown to most influenced by RFSHL (TE = 0.77), SC (TE = .50), and CA (TE = .29).

Table 5. The interrelationships values between the latent variables

Dependent variables	R ²	Effect	Independent variables		
			RFSHL	SC	CA
Service Capability (SC)	.61	DE	0.78**		
		IE	-		
		TE	0.78**		
Competitive Advantage (CA)	.66	DE	0.48**	0.43**	
		IE	0.33**	-	
		TE	0.81**	0.43**	
Performance (PF)	.59	DE	0.24*	0.38**	0.29*
		IE	0.53**	0.12	-
		TE	0.77**	0.50**	0.29*

Source: Authors' analysis, **Sig. < .01

Table 6 further supports the reliability of the SEM's results as all factors showed good levels of internal consistency, as their composite reliability [CR] was between 0.80 and 0.86 (Bollen, 1987). Figure 2 also presents the final SEM, while Table 7 details the results of the hypotheses testing.

Table 6. SEM variables influencing PF

Latent variables	RFSHL	SC	CA	PF
RFSHL	1.00			
SC	.70**	1.00		
CA	.64**	.76**	1.00	
PF	.63**	.72**	.69**	1.00
ρV (AVE)	0.57	0.57	0.43	0.76
ρC	0.80	0.86	0.82	0.86
Square root of the AVE	0.75	0.75	0.65	0.87

Source: Authors' SEM analysis, **Sig. < .01

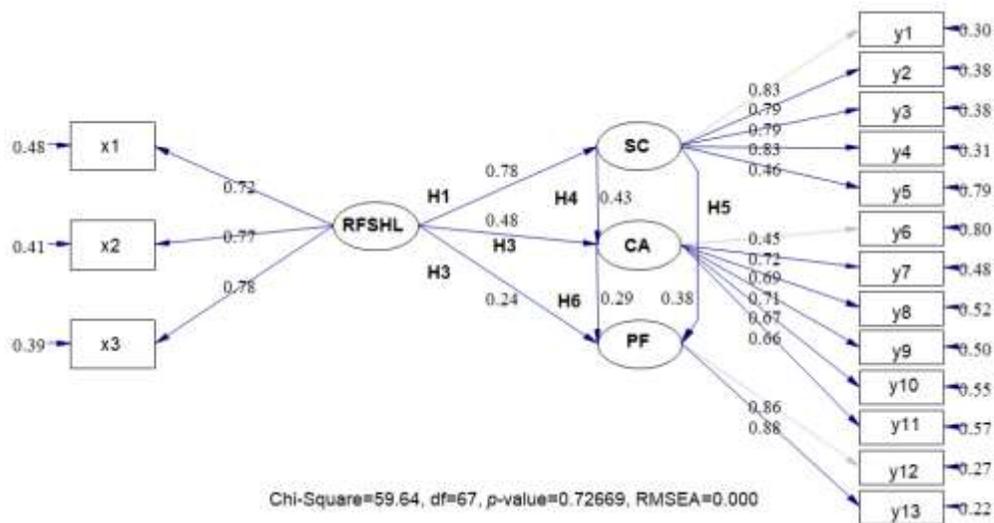


Figure 2. Final Model (Source: Authors' SEM analysis)

Table 7. Final hypotheses testing

Hypotheses	Correlation coefficient (<i>r</i>)	t-test	Results
H1: RFSHL directly influences SC	0.78	13.43**	Consistent
H2: RFSHL directly influences PF	0.24	2.55*	Consistent
H3: RFSHL directly influences CA	0.48	5.21**	Consistent
H4: SC directly influences CA	0.43	4.38**	Consistent
H5: SC directly influences PF	0.29	2.73*	Consistent
H6: CA directly influences PF	0.38	4.67**	Consistent

Source: Authors' analysis, *Sig. ≤ .05, **Sig. ≤ .01

Discussion

From the research to develop a causal model to investigate what influences the performance of Thai restaurants in the U.K., a determination was made that all the model's causal variables positively influenced performance (PF), which can be explained by the 59% of the variance of the factors influencing PF (R^2). Stated by the level of importance, factors influencing PF were RFSHL, SC, and CA, with total effect [TE] values of 0.77, 0.50 and 0.29, respectively.

Restaurant Food Safety and Hygiene Leadership (RFSHL)

SEM analysis determined that there was a very strong and positive interrelationship in H1 between RFSHL and SC as $r = 0.78$, the t-test value = 13.43, and $p \leq 0.01$. Also, although weak, there was a positive interrelationship between H2's RFSHL and PF as $r = 0.24$, the t-test value = 2.55, and $p \leq 0.05$. However, there was a moderate and positive interrelationship between RFSHL and SC as $r = 0.48$, the t-test value = 5.21, and $p \leq 0.01$.

The three hypotheses all showed the importance that restaurant entrepreneurs and managers place on their establishment's hygiene and food safety. This is consistent with numerous studies with Isara et al. (2010) concluding the importance of regular training/retraining, as well as food handler health education.

Service Capability (SC)

SEM analysis also determined that there was a moderate and positive interrelationship in H4 between SC and CA as $r = 0.43$, the t-test value = 4.38, and $p \leq 0.01$. Also, although weak, there was a positive interrelationship between H5's SC and PF as $r = 0.29$, the t-test value = 2.73, and $p \leq 0.05$.

Furthermore, from the study's analysis of the manifest variables, it is interesting to report that the Thai restaurant managers and owners felt that SC had the greatest impact on their business. Specifically, they felt service reliability (y_3) was the most important aspect of the survey taken as the mean = 4.66, S.D. = 1.11. This was closely followed by their restaurant provides satisfactory post-sales service (y_4) as the mean = 4.61, S.D. = 1.16.



Table 8. SC aspect results.

Item/Aspects	Mean	S.D.	Skew	Kurt
This restaurant provides high-quality service (y1).	4.42	1.13	-.12	.12
This restaurant provides service punctual (y2).	4.51	1.06	.18	.01
This restaurant provides service reliably as promised (y3).	4.66	1.11	.10	-.10
This restaurant provides a satisfactory post-sales service (y4).	4.61	1.16	-.07	.12
This restaurant provides quickly to service requests (y5).	4.17	1.26	-.29	.34

Source: Authors' questionnaire analysis

The study's results by H4 and H5 are consistent with Kivela et al. (2000) who also determined that food quality and service were strongly correlated to a customer's expectation. This is also consistent with Baker et al. (2002) who wrote that the strongest correlation with customer expectations was service level. In the US, Kara et al., 1995 also reported that fast-food customers wanted service speed, quality, and low price. In Thailand, Tangtatswas et al. (2019) indicated that Thai fast-food helps restaurant entrepreneurs keep up with their customer's ever-changing demands for tastes, textures, and delicious combinations.

Competitive Advantage (CA)

In the model's final hypothesis, H6's interrelationship between CA and PF was also shown to be positive but weak as $r = 0.38$, the t-test value = 4.67, and $p \leq 0.01$.

The study's findings are consistent with research in Thailand, in which Thai fast food restaurant entrepreneurs were stated to face highly competitive, fast-paced, and highly stressful environments (Tangtatswas et al., 2019). Furthermore, Angelova and Zekiri (2011) have written that competitive businesses rely on service quality and customer service for their sustainability.

Performance (PF)

From the three interrelationships involved with a Thai restaurant's PF, all were determined to be positive and weak (H1, H5, and H6). Some have suggested that a partial explanation for the weakness is due to the nature of restaurants surveyed, as most were independent enterprises that were not part of major chains.

In the study, PF was investigated both as financial and nonfinancial aspects. Results showed that the financial aspects (y12) had a greater impact (mean=4.52, S.D.=.91) on the Thai restaurant managers and owners than that of the nonfinancial aspects (y13) (mean=4.37, S.D.=.99).

Conclusion and Implications

The authors developed a study of the interrelationships and influences of a Thai restaurant's food safety and hygiene leadership (RFSHL), the restaurant's service capability (SC), and their competitive advantage (CA) on the restaurant's performance (PF). Furthermore, the sample was drawn from a population of over 1,200 Thai cuisine restaurants in the United Kingdom, which are mostly entrepreneurial affairs run mostly by Thai immigrants.

To the owners and managers, they placed greater importance on their restaurant's RFSHL over both CS and CA. It must be also noted that data suggests that restaurant entrepreneurs must embrace technological change and the use of social media platforms along with smartphones to facilitate the UK consumers shift to convenience, takeaway, and home delivery. There is also the



need to market Thai food as a healthy and delicious alternative to other foods and create in-restaurant 'ambience'.

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