

IDENTIFYING THE CHALLENGES FOOD TRUCK BUSINESSES IN BANGI, SELANGOR

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Abstract. The food truck industry in Malaysia has experienced substantial growth, emerging as a significant alternative to traditional brick-and-mortar restaurants. Its increasing popularity as a dining option is attributed to the nation's vibrant culinary landscape, diverse populace, and ongoing urbanization. Despite their mobile nature, food truck entrepreneurs in Malaysia share the objective of delivering optimal customer service and experiences, akin to established restaurant businesses. However, achieving financial sustainability in this contemporary market presents considerable challenges due to heightened competition within the food truck sector. This study aims to identify the salient challenges encountered by food truck business entrepreneurs operating in Bangi, Selangor, and to explore the strategies they employ to mitigate these obstacles. Employing a qualitative research methodology, in-depth interviews were conducted with food truck business owners in Bangi to garner rich insights into the difficulties they face. The findings reveal that adverse weather conditions, particularly heavy rainfall prevalent in Bangi, significantly impede operations and customer acquisition. In response to these challenges, entrepreneurs primarily focused on enhancing customer service and expanding delivery options, emphasizing customer needs and leveraging online platforms to reach patrons unable to visit their physical locations. The outcomes of this research contribute to a deeper understanding of the operational challenges faced by food truck entrepreneurs in Bangi, offering valuable insights for the industry and future academic inquiry.
Keywords: *food truck, food business, entrepreneurship, interview, operational challenges*

Introduction

In the present day, the food truck industry in Malaysia has experienced remarkable growth, particularly among the local population. The concept of food trucks has captured the imagination of people, generating a significant impression in their minds. Food trucks can be defined as “large-wheeled vehicles from which food is cooked and sold, and which move from location to location, sometimes on a daily basis” (McNeil and Young, 2019). According to Ibrahim (2011), food trucks serve as a platform for social engagement, driven by the influence of social networks and the current trends that are embraced by people. Additionally, the government also played a supportive role in fostering the growth of this convenient business by offering various programs and policies aimed at encouraging young entrepreneurs to embark on business ventures (Ismail et al., 2018). Mobile food vendors or food trucks offer a practical option for accessing nutritious food at a lower cost compared to convenience stores. These portable food trucks establish connections with the local residents, fostering relationships that facilitate the promotion of healthier food choices. Moreover, the direct interaction in face-to-face transactions allows food truck owners to gauge customer responses and gain insights into the communities they cater to. Food trucks have become a popular trend in the restaurant sector, drawing in consumers and capturing their curiosity (Yoon and Chung, 2018). This has attracted more customers, particularly those who are enthusiastic and love trying new things. According to Petersen (2014),

the food truck sector has benefited from key consumer trends like the usage of social media and the desire for food that is sourced locally in gourmet food trucks. In addition, Gen-Z is the group that has high interest in food truck business, either in doing food truck business or becoming a consumer as they tend to have high curiosity to try new things that are trending in the market.

On the other hand, the food truck industry in Malaysia has gained positive feedback from local consumers especially in the Klang Valley area, where food truck businesses have gained its popularity and witnessed high demand among urban dwellers (Mokhtar et al., 2017). This food truck business surprisingly gets high demands from the customers that results in an increase of food truck vehicles in Malaysia. Food truck business in Malaysia provides a competitive and healthy market environment that leads to various options of food now available even from different cultures and races. There are approximately 100 thousand food trucks currently existing in Malaysia and addition of five food trucks were added every month to fulfill the customers' demands (Stanton, 2000). In recent decades, food trucks that utilize mobile kitchens have now become one of the most popular choices among food lovers due to its uniqueness that was not shown by the casual and dine-in restaurant. Ibrahim (2011) claimed that the evolution of the food industry caused more people to have a high desire to try local gourmet food especially through influence of social media. Additionally, he noted that going to a food truck has evolved into a social activity that inspires cities and builds community, both of which may contribute to the development of significant consumer trends in the food sector. Numerous studies are focusing more on the evolution of the food truck business and some of them also mention about the acceptance of customers towards the food truck business. There are less studies that were done for the challenges in operating a food truck business especially in the Bangi area. The challenges that were faced by this operation might come from external and internal factors that caused them to face difficulties in expanding their food truck business and at the same time to gain profit.

Food truck entrepreneurs often faced challenges in maintaining their business, especially with the increasing competition in the food industry. This issue has caused food truck entrepreneurs to struggle in their daily operation and eventually had to close their business. DOS (2021) stated that Small Medium Enterprise (SME) contribute 47.8% to employment opportunities, 37.4% to GDP but 80% of them fail to survive after 3 years. In addition, SME entrepreneurs mostly start their business without any guidance after receiving startup tools (Bernama, 2017). Therefore, it is not just a worrying issue to the food truck entrepreneur in Malaysia, but to our economic growth as well. In addition, the food truck business now has become a good platform for entrepreneurs to start their own business especially for the younger generation. The food truck industry encompasses mobile food service businesses operating from large motorized vehicles or trailers. These units integrate kitchen infrastructure to enable the cooking, preparation, serving, and sale of varied culinary products, offering a convenient purchasing avenue for consumers in numerous locations (Koay et al., 2023). Although food trucks seem easy to operate, it has to comply with the requirements that were set up by the Ministry of Health Malaysia in terms of food safety, certificates, and even permits to operate at a certain location. Nevertheless, documentation of the food truck business in Bangi is still lacking and more research is needed. Thus, this research paper offers in depth observation into some of the challenges faced by the food truck business in Malaysia. Therefore, the objectives of this study are to identify the challenges faced by owner-operated food truck businesses and to assess the measures

they employ to address these challenges. This study aims to provide insights and knowledge for current and aspiring food truck entrepreneurs, enabling them to anticipate and overcome potential obstacles. Furthermore, it seeks to facilitate early preparation, helping them avoid future business difficulties. Finally, this research serves as a foundational reference for future studies exploring challenges within the food truck industry in different locations.

Literature review

Food truck phenomenon

The concept of mobile food vending dates back to the 17th century in New Amsterdam (now New York City), where early pushcarts offered basic sustenance like meat pies and sandwiches to urban workers lacking lunchtime commuting options (Butler, 2014). While these early forms lacked cooking capabilities, Ibrahim (2011) notes the more recent emergence and proliferation of gourmet food trucks in major urban centers such as Portland, New York, Chicago, and Atlanta. Food truck festivals are increasingly recognizing these mobile eateries as a contemporary addition to local cultural landscapes. In the United States, the food truck industry has become a significant and rapidly growing segment of the broader food service sector (Anenberg and Kung, 2015). The rising popularity of street food has contributed to the mobile food sector serving daily meals to a substantial portion of the American population (Othman et al., 2018). Several factors fueled this growth, particularly following the 2008 economic recession. Martin (2014) highlights the increasing consumer demand for unique and gourmet culinary experiences, especially in urban areas driven by evolving preferences. Simultaneously, Esparza et al. (2014) as well as Weber (2012a) pointed to the increased availability of skilled chefs due to economic downturns and subsequent unemployment in the culinary field, creating a skilled labor pool for the burgeoning food truck market. Furthermore, food trucks offer lower barriers to entry compared to traditional restaurants, presenting a more affordable and flexible business model that attracts entrepreneurs and small businesses. Globally, food trucks are gaining significant traction, representing a robust \$1.2 billion market with a consistent annual growth rate of 12.4% (Myrick, 2016). Although not a novel concept, this mobile venture provides an appealing entry point for innovative ideas with relatively low initial investment (Frommer and Bert, 2012). However, in Malaysia, food truck operators face considerable challenges related to legal licensing and sustainability concerns (Mokhtar et al., 2018; Wahab et al., 2017). Despite these hurdles, the popularity of food truck dining in Malaysia, first observed around 2014 (Mokhtar et al., 2018), continues to increase. The Malaysian Food Truck Association (MAFTA) reported over 820 registered members nationwide in 2019, with Kuala Lumpur and Putrajaya alone having issued over 1,000 food truck licenses (Bernama, 2019). The food truck industry in Malaysia, particularly in areas like Bangi, presents a promising avenue for high-impact entrepreneurship with significant growth potential, especially with support from governmental or local authorities through promotional activities, regulatory streamlining, and financial or infrastructural assistance.

Food trucks around the world and Malaysia context

Highlighting the historical significance, a study explains that Auckland's successful food truck scene, now a key tourist attraction with promising growth, evolved from the

New Zealand pie cart tradition of the 1930s. These early carts offered affordable, quality meals, a legacy that has contributed to the food trucks' current role in preserving culinary traditions and ensuring good food quality and nutrition. In Indonesia, food truck trends gained significant popularity starting in 2014 (Asmoro et al., 2019). This surge is attributed to the low initial capital required to start such a business and the ease with which customers can locate food trucks, offering convenient and affordable food options. Their increasing popularity stems from their ability to offer diverse cuisines and provide a positive dining experience (Wicaksono and Kahfi, 2019). Essentially, a food truck is a specially adapted vehicle offering the flexibility to relocate based on customer demand. Regarding the United States, Loomis (2013) argues that issues like unemployment, financial hardship, and urban decay significantly impacted the national economy. Consequently, policies were implemented that ultimately reshaped the social, cultural, and economic environment of cities. For instance, Florida's food truck business regulations support "urban economic development," positively impacting the industry and benefiting both local governments and food truck entrepreneurs. By 2023, the United States had an estimated 36,000 food trucks, marking a 10% increase compared to 2022. Food trucks gained traction in Malaysia around 2010 and have since maintained their popularity within the food industry. The uniqueness and convenient concept of food trucks, characterized by diverse and visually appealing designs and facilities worldwide (Mokhtar et al., 2017). Their uniqueness and specialty also attract many young entrepreneurs as a viable startup option (Cardoso et al., 2014). The millennial generation (Gen-Y) has significantly shifted eating habits and lifestyles, particularly in dining out (Bhuyan, 2011), influencing trends within the food market. Furthermore, food trucks contributed a substantial 37% to the \$1.4 billion revenue in 2011, indicating a highly competitive market environment in Malaysia. Notably, the Klang Valley area, including Bangi, has seen an average increase of five new food trucks monthly due to growing demand within the food industry market (Selvanayagam, 2020).

Food truck entrepreneurship

Entrepreneurship is defined as the process of identifying opportunities to create new ventures, emphasizing innovation, risk-taking, organization, and resource allocation (Shane and Venkataraman, 2000). Beyond simply starting a business, entrepreneurship involves creating and capturing value, especially in dynamic and unpredictable environments (Mishra and Zachary, 2015). This ongoing process is driven by the entrepreneur's aspirations and intentions to seek rewards from their endeavors, focusing on a two-stage paradigm of value creation and appropriation within the entrepreneurial process. As the number of food truck operators grows, competition intensifies. This rivalry extends beyond fellow food truck owners to include traditional restaurants, fast-food chains, and the increasing prevalence of online food ordering (Ramly et al., 2022). Despite the widespread growth of the food truck phenomenon and business, significant concerns persist among entrepreneurs regarding the challenges of successfully operating and sustaining a food truck venture. Conversely, a key advantage of food trucks is their operational flexibility, allowing them to relocate and reach a wider target audience. Moreover, the younger generation, particularly Gen-Z, exhibits a tendency towards independence and aspires to business ownership. This demographic shows increasing interest in the food truck industry, often pursuing it as a passion alongside established careers. Despite potentially lacking formal education or prior experience, they

independently venture into the food and beverage sector, demonstrating a willingness to learn and confront future risks associated with new ventures.

Challenges in food truck business

Food truck businesses face various challenges, notably in monitoring and controlling demand. Factors like weather conditions, local events, and seasonal variations can significantly impact customer numbers and food preferences. This unpredictability complicates inventory planning, potentially leading to food waste or shortages. Maintaining a balance between offering diverse and appealing menu options while efficiently managing inventory to meet fluctuating demand remains a constant challenge for operators aiming to provide a satisfactory customer experience. Wahab et al. (2017) noted that La Famiglia food truck in Wilayah Persekutuan experienced a profit loss during the first week of Hari Raya due to inaccurate demand forecasting. Unlike fixed establishments, the mobile nature of food trucks makes it difficult to accurately predict and cater to the evolving preferences of their customer base. Furthermore, adhering to specific regulations and standards for food truck premises and equipment presents a significant challenge for entrepreneurs. Unlike traditional brick-and-mortar establishments, food trucks must comply with strict health, safety, and hygiene regulations while being mobile. Compliance with local health codes, fire safety regulations, and licensing requirements can vary considerably across different locations, creating a complex and ever-changing set of challenges for food truck entrepreneurs. Additionally, the limited space within food trucks necessitates careful attention to the functionality and maintenance of appliances, including cooking equipment, refrigeration, and storage, to meet industry standards. Navigating these regulatory complexities requires continuous diligence and adaptability, as operators must consistently update and modify their setups to conform to diverse municipal and state regulations, ensuring safe and legal operation. According to Abdullah et al. (2022), non-compliance with facility and appliance requirements can lead to business shutdowns. Moreover, obtaining the necessary licenses and permits to operate a food truck is often a considerable hurdle for entrepreneurs. Weber (2012b) highlights the daunting task of securing a seller's permit, complying with health department regulations, and acquiring permits and licenses for the truck itself, such as vehicle registration and food service licenses. Similarly, Othman et al. (2018) mentioned the difficulties mobile food truck owners face in obtaining initial licenses due to a lack of clearly defined regulations. Therefore, securing the required licenses is a crucial initial step for anyone venturing into the food truck business.

Materials and Methods

Well-defined and robust theoretical frameworks coupled with appropriate research methodologies are hallmarks of sound research. This study employed a cross-sectional design to ensure accurate data collection and comprehensive descriptive analysis. As notes, this approach involves collecting data at a single point in time to examine the characteristics of a target population. This method facilitates easier data gathering and minimizes concerns about attrition, allowing for the swift assembly of a complete dataset. Unlike cohort studies that often have specific participant criteria, cross-sectional studies typically focus on the random selection of participants from a relevant target population (Martínez-Mesa et al., 2016). Data acquired through cross-sectional

methodologies offer several advantages and strengths, particularly in identifying diverse motivations and experiences among informants.

Sampling

Purposive sampling, a non-probability sampling technique, is frequently employed in social sciences to select participants based on specific criteria relevant to the research question (Patton, 2002). Rather than aiming for a statistically representative sample of the broader population, researchers utilize purposive sampling to gain in-depth understanding of particular subgroups or phenomena (Palinkas et al., 2015). The goal is to identify and select information-rich cases that can provide valuable insights and detailed knowledge about the topic under investigation (Suri, 2011). This approach is particularly useful in qualitative research designs that prioritize depth over breadth, allowing researchers to strategically focus on individuals or cases that can best illuminate the complexities of the phenomenon (Patton, 2002). In qualitative research, data saturation is a crucial concept that refers to the point at which no new information or themes are emerging from the data being collected (Guest et al., 2020). It signals to the researcher that sufficient data has been gathered to provide a comprehensive understanding of the phenomenon under investigation (Saunders et al., 2017). When data saturation is reached, continued data collection is unlikely to yield additional insights, indicating that the research has achieved a point of informational redundancy. Data saturation, the point at which no new information or themes are emerging from the data, can be influenced by the homogeneity of the study population. For homogenous study populations, saturation can be achieved with sample sizes ranging from 5 to 24 interviews (Constantinou et al., 2017). While precise data on the number of food trucks operating specifically in Bangi are currently unavailable, there are approximately 70 food trucks in the broader Klang Valley region. Therefore, this study aimed for a minimum of 10 samples or until data saturation was achieved for comprehensive analysis. The study focused on food truck entrepreneurs operating in Bangi, Selangor, at the time of the research. Data was collected through in-person interviews to encourage detailed discussion and build rapport, thereby enriching the information gathered.

Data collection process

This study employed a qualitative research approach to gather in-depth data from participants, aligning with the research objectives. Qualitative research is characterized by its exploration of real-world issues to gain deeper understanding and insights, offering rich and detailed explanations that go beyond the numerical focus of quantitative methods (Tenny et al., 2022; Moser and Kortsjens, 2017). This approach is particularly effective in uncovering the nuances of participants' experiences, perceptions, and behaviors, emphasizing the 'why' and 'how' rather than just the 'what'. While qualitative research can be integrated with quantitative methods in mixed-methods designs, this study utilized a standalone qualitative approach. In-depth, semi-structured interviews were the primary data collection method, recognized for their ability to elicit detailed accounts of participants' experiences (Parveen and Showkat, 2017). These interviews aimed to explore the challenges faced by food truck entrepreneurs in Bangi and the measures they have taken to address them. To ensure accuracy and facilitate thorough analysis, voice recordings were used to capture participants' responses for later reference. The interviews conducted in this study were

structured around two primary research questions. The first question aimed to identify the specific challenges encountered by food truck business entrepreneurs operating within Malaysia. Subsequently, the second question explored the various measures and strategies adopted by these entrepreneurs in response to and for overcoming the identified challenges. The interviews were conducted physically, allowing for direct interaction between the interviewer and participants. Interviewers approached informants at their food truck locations during business hours, first obtaining their consent to participate. While the interviews were audio-recorded, interviewers also took notes to capture key points of the conversation. Subsequently, the audio recordings were transcribed, and these transcriptions were reviewed three times to ensure accuracy. The average duration of each interview was approximately 12 minutes. Specific inclusion and exclusion criteria were established for the selection of respondents, as detailed in the *Figure 1*.

Inclusion criteria	Exclusion criteria
•Malaysian •18 years old and above •Owns a food truck business	•Non-Malaysian •Below 18 years old •Does not own a food truck business

Figure 1. Inclusion and exclusion criteria of the respondents.

Based on the study's objectives, a semi-structured interview protocol was developed to guide data collection from informants. This protocol, informed by previous research on the food truck industry, was adapted to specifically address the current study's aims. The open-ended nature of the questions allowed informants to freely share their experiences and perspectives. To ensure comprehensive data collection, the questions were categorized into external and internal factors influencing the operation of a food truck business, thereby prompting informants to provide detailed and relevant responses. The interview questions were prepared in both English and Malay to facilitate better understanding and encourage comfort among the informants. The core themes explored during the interviews were the challenges encountered by food truck entrepreneurs and the strategies they employed to address these challenges. The data collection process was designed to directly address the research objectives concerning the challenges and coping mechanisms of food truck entrepreneurs. Initially, the interview protocol was established to ensure the interviewer effectively covered the necessary topics. Subsequently, a target population and sample size were determined, leading to the selection of food truck entrepreneurs operating in the Bangi area as informants. During the interviews, the interviewer aimed to elicit detailed accounts from the informants, utilizing verbal prompts to encourage elaboration. To ensure accuracy and facilitate subsequent analysis, voice recordings were made of the interview sessions.

Data analysis

To ensure accuracy and minimize errors during the analysis, voice recordings were made of all interview sessions with the informants, serving as direct references. The

collected interview data was subsequently transcribed and analyzed using content analysis. This method was chosen for its capacity to interpret the meanings, intentions, and consequences embedded within patterns and themes present in the communication content (Azizan et al., 2018). The data analysis process commenced with a thorough review of each recording to pinpoint the challenges and corresponding measures identified by the food truck entrepreneurs in their responses. Following this initial review, labels were assigned to specific codes, representing distinct characteristics related to both the challenges and the coping strategies employed in operating their businesses. These codes were then systematically dissected and organized into broader categories based on shared attributes. Subsequently, an analysis was conducted to explore potential interrelationships between the themes that emerged from this coding and categorization process. Finally, the identified themes were rigorously reviewed for relevance and suitability to ensure an accurate and meaningful representation of the key elements within the dataset. The data collection steps employed in this study is shown in *Figure 2*.

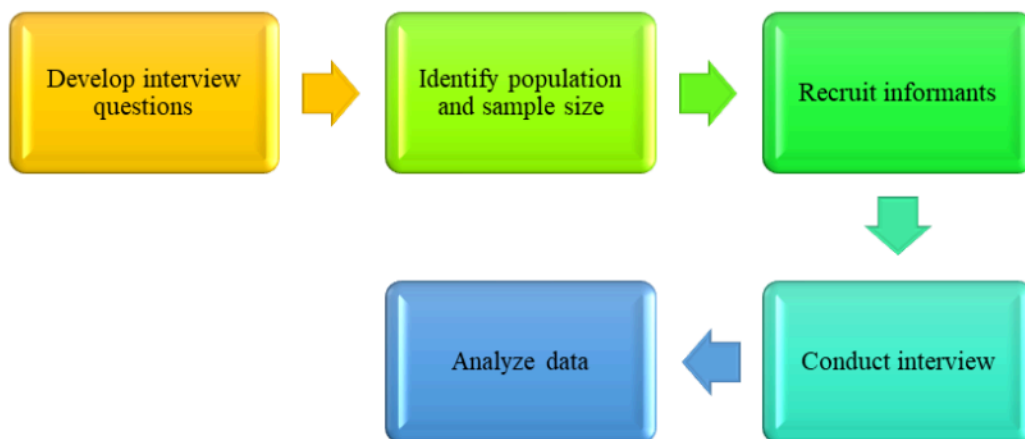


Figure 2. Data collection steps in this study.

Results and Discussion

Based on the research objectives outlined in the initial chapter of this study, the entirety of the interview data has been meticulously examined and is thoroughly discussed within this section. To facilitate a clear and organized analysis, the discussion of the analyzed data is structured into two distinct parts: first, an exploration of the various challenges encountered by food truck entrepreneurs in the operation of their businesses; and second, a detailed analysis of the strategies and measures implemented by these food truck business owners to address these challenges effectively.

Demographics

This research successfully gathered comprehensive insights from 12 informants, all of whom are actively engaged as food truck business entrepreneurs in the Bangi area. In accordance with ethical research protocols, the personal information of each informant has been kept strictly confidential to ensure their privacy and is used solely for contextual reference within this study. The demographic profiles of the 12 food truck entrepreneurs interviewed in Bangi reveals a relatively balanced gender representation,

with six males and six females participating in the study. The age of the informants spans a range from 25 to 36 years old, indicating a generally youthful cohort of entrepreneurs in this sector. Notably, there is a concentration of individuals in their late twenties, suggesting this age group is actively involved in food truck ventures within the area. In terms of business types, the sample exhibits diversity within the food truck industry. Several entrepreneurs specialize in specific popular items such as Takoyaki (represented by two informants), Ayam Gunting, Nasi Ayam Goreng Kunyit, Nasi Lemak, and Baby Pancake. Others offer broader categories like "drinks and smoothie," "pasta," "masakan panas" (cooked dishes), fruits smoothie," "Western food," and general "drinks," highlighting the varied culinary landscape of the food truck scene in Bangi. The experience levels among the informants in operating their food truck businesses range from a relatively new entrant with one year of experience to a more established operator with eight years in the field. A significant portion of the entrepreneurs (five out of twelve) possess around three years of experience, suggesting a degree of stability within the local food truck market. Overall, the table provides a snapshot of a diverse group of food truck entrepreneurs in Bangi, varying in gender, age, the specific food or beverage they offer, and the duration they have been operating their businesses. A summary of the anonymized personal information collected from each participant is presented in the *Table 1*.

Table 1. *Demographics of the food truck entrepreneurs.*

Informants	Gender	Age	Types of food truck business	Experience in food truck operation
Informant 1	Male	26	Takoyaki	4 years
Informant 2	Female	28	Drinks and smoothie	3 years
Informant 3	Female	28	Pasta	2 years
Informant 4	Female	27	Ayam gunting	3 years
Informant 5	Male	29	Nasi ayam goreng kunyit	2 years
Informant 6	Female	29	Masakan panas	3 years
Informant 7	Female	25	Nasi lemak	4 years
Informant 8	Female	36	Fruits smoothie	8 years
Informant 9	Female	32	Baby pancake	1 years
Informant 10	Male	34	Takoyaki	3 years
Informant 11	Male	28	Western food	3 years
Informant 12	Male	30	Drinks	2 years

Challenges faced by food truck entrepreneurs in operating their business

The findings of this study reveal several significant challenges encountered by food truck entrepreneurs in operating their businesses in Bangi. These obstacles often impede customer acquisition and negatively impact sales. This section will delve into three primary themes that emerged from the data analysis regarding these challenges such as (1) weather and location, (2) existing competitors, (3) costs relating to permit and certification, and (4) operation and inventory management.

Weather and location

A prominent and uncontrollable factor affecting food truck operations is adverse weather conditions. The unpredictable weather patterns in the Bangi area significantly disrupt business, particularly during rainy periods. Informants consistently reported a decline in customer traffic and subsequent sales drops during rain. For instance, Informant 2 stated, "*My biggest challenge at the time being is definitely the weather... this rainy season causes my sales to drop as not many customers come to buy my drinks.*" Similarly, Informant 5 noted, "*I usually have difficulties in doing business during rainy days... not many people come during heavy rain as most of our customers*

love to dine in and relax at the open table that we prepared in front of the food truck." This sentiment was echoed by Informant 6, who mentioned reduced profit and food wastage due to fewer customers on rainy days, and Informant 9, who lamented the difficulty in operating and the reduced customer base during the frequent rainy seasons. Beyond the impact on customer turnout, one informant highlighted the logistical challenges posed by rain. Informant 7 explained, *"...during rainy days, it is really difficult to drive our food truck and the road will be slippery. Plus, sometimes there's also traffic jam due to the heavy rain,"* leading to potential delays in arrival or earlier departures. These findings align with previous research by Truong (2019), which identified weather as a factor negatively impacting food truck earnings, as it encourages people to stay indoors and can even lead to temporary cessation of operations. The study also emphasized the need for strategies to mitigate the financial impact of unfavorable weather, considering fixed expenses.

Existing competitors

The competitive landscape of the mobile food truck industry presents a significant hurdle for entrepreneurs in Bangi. Informants acknowledged facing competition from numerous other food trucks offering diverse menus, some with dine-in facilities. Moreover, traditional establishments like restaurants and roadside hawkers in the same vicinity were also identified as key rivals. Informant 5 stated, *"Ummm I think my biggest competitors are definitely restaurants and small hawkers around me that sell the same menu as our food truck. At the same time, food trucks that operate around me... are also one of my biggest competitors even though we offer different menus."* Informant 10 echoed this, saying, *"...there are many competitors for our business in Bangi, especially food trucks that sell the same menu as us."* A study by Shafieizadeh et al. (2021) suggested that in the face of increasing competition, ethnic food trucks can enhance their market share by cultivating authentic customer experiences. The research indicated that perceptions of authenticity positively influence quality perception and satisfaction, leading to memorable dining experiences. Strategies such as using authentic cutlery, ethnic uniforms, and music can help differentiate ethnic food trucks from competitors.

Costs relating to permit and certification

Securing the necessary licenses and permits emerged as a substantial challenge for food truck entrepreneurs in Bangi. The complex documentation and regulatory requirements associated with obtaining operational licenses were perceived as daunting and time-consuming. Furthermore, entrepreneurs are required to cover the initial licensing fees and subsequent renewal costs to operate legally. Informant 3 emphasized this difficulty, stating, *"Yes, getting a permit is really difficult for my food truck business. Because when we are moving from one place to another place, we need the permit, so different places, different permits, and we also need to pay the permit fee."* Informant 4 further highlighted the burden of extensive paperwork, noting, *"It is really difficult to obtain licensing before operating as I need many important documents to be prepared before operating."* This necessitates significant time and effort from entrepreneurs to navigate the application process and ensure regulatory compliance. Beyond the complexity of the application process, the cost and the lengthy approval times for permits were also identified as major challenges. Informant 5 pointed out that

obtaining a license is "*quite costly*," making it a significant consideration for aspiring food truck operators. Informant 8 expressed frustration with the protracted processing times, stating, "*It is very hard to obtain permits for food trucks nowadays... they took longer time to process and even reach more than 3 months.*" These findings are consistent with research by Othman et al. (2018), which identified licensing as a primary obstacle for food truck startups in Malaysia. The study highlighted the lack of specific regulations for mobile food truck businesses due to their relatively recent emergence. Consequently, local councils like Majlis Perbandaran Kajang (MPKj), Majlis Bandaraya Shah Alam (MBSA) and Majlis Bandaraya Subang Jaya (MPSJ) categorize food trucks under "Temporary Hawker" licenses, requiring renewals as frequently as every three months. This frequent renewal cycle poses an ongoing challenge for food truck owners, particularly in areas like Bangi. It should be noted that Bangi area falls under the jurisdiction of MPKj.

Operation and inventory management

Shortage of raw ingredients

Maintaining a consistent supply of fresh, high-quality ingredients is crucial for food truck businesses. However, external factors such as fluctuating prices and seasonal availability can lead to shortages, posing a challenge for entrepreneurs in Bangi. Informant 8, specializing in fruit smoothies, explained, "*I always had a shortage of raw ingredients... sometimes it is very hard to obtain fruits especially when it's not the season of the fruits that I use.*" Similarly, Informant 12, a coffee vendor, mentioned experiencing shortages of specific coffee beans due to high demand and reliance on a direct supplier from Indonesia. These experiences corroborate Truong (2019) findings, which indicated that poor inventory management, including food supplies and costs, can impede food truck business growth. The study noted challenges related to sourcing high-quality, potentially expensive ingredients and difficulties in managing sales and logistics during peak seasons, leading to shortages. This underscores the importance of an effective management system in handling the intricacies of food truck operation.

Limited menu option

The confined space within a food truck inherently restricts the variety of menu options that can be offered. While a focused menu can contribute to efficient service, it can also create difficulties in catering to diverse customer preferences. Informant 4, selling Ayam Gunting, noted customer requests for more flavors beyond the standard spicy option, such as mushroom and cheese. Informant 12, a drinks vendor, mentioned customer feedback during their startup phase that prompted them to expand their menu to include caramel lattes and non-coffee beverages, which proved popular. They also expressed plans for future menu expansions. The data suggests that while entrepreneurs are responsive to customer demands for more variety, the practical limitations of their mobile kitchens and the need for menu development, ingredient sourcing, and market research can make adding new items a lengthy process. Truong (2019) research supports the significance of menu diversity in the success of food truck businesses, encompassing serving sizes, options, food styles, and overall menu offerings. The study also highlighted the importance of menu adaptation for special events and festivals, aligning the offerings with the event's atmosphere.

Measures taken by food truck entrepreneurs in facing the challenges

In response to the various challenges encountered, food truck entrepreneurs in Bangi have adopted several proactive measures to sustain and enhance their businesses. Two primary themes emerged from the data regarding these strategies such as (1) utilization of technologies and (2) provision of high quality services.

Use of technologies

Online marketing

Recognizing the power of digital platforms, many food truck entrepreneurs are increasingly leveraging online marketing strategies to boost visibility, engage with their target audience, and mitigate operational challenges. This approach allows them to connect with potential customers beyond their physical location, particularly during periods of low foot traffic. Informant 6 shared, *"We promote through our social media such as Facebook and Tiktok and inform people that we are operating as usual and provide them with food content to enhance our food truck marketability."* Informant 7 highlighted the use of original, high-quality visuals, stating, *"We utilized our own original graphic of food whereby all the pictures of the menu were taken by us so that customers could expect that the pictures that they see is what they will get. We also use our own pictures for promotion or marketing through social media platforms."* Furthermore, Informant 9 described the strategy of collaborating with food influencers to broaden their reach: *"We often invite food influencers to do food reviews and ask them to promote it on their social media such as TikTok, Instagram and Facebook to attract more customers and enhance our food truck visibility."* These findings align with Truong (2019) study, where most food truck operators agreed that online marketing is a highly effective and cost-efficient way to attract more customers, especially when traditional word-of-mouth marketing proves insufficient for launching new events or products. The study also noted that some operators who did not engage in online marketing experienced lower customer numbers and visibility.

Online delivery

To overcome limitations in reaching customers due to adverse weather or time constraints, food truck entrepreneurs have increasingly embraced online delivery services through platforms like Lalamove and Grabfood. This proactive adoption allows them to tap into a wider customer base and enhance accessibility. The convenience of online ordering enables them to deliver their offerings directly to consumers' homes. By establishing reliable and efficient delivery systems, these entrepreneurs can expand their market reach, increase revenue streams, and adapt to the evolving demands of the food industry. Informant 9 shared their experience with Lalamove, stating, *"We offered delivery options to our customers through lalamove, whereby customers can order our baby pancakes online and lalamove riders will bring the food to the respected customer."* Informant 3 also utilized Lalamove for their pasta delivery, noting its convenience and ease of use. A study emphasizes the growing importance of technology, particularly social media and delivery systems, in enhancing the sustainability of food truck businesses, a trend that continued even after the COVID-19 pandemic. Their research on food trucks in France highlighted how partnerships with local delivery services like Deliveroo and Justeat increased business visibility and brand

awareness, differentiating them from competitors by offering the convenience of doorstep delivery.

High quality services

Improve customer service

Acknowledging the challenges inherent in the food truck business, some entrepreneurs have prioritized enhancing customer service to foster greater client satisfaction and loyalty. These efforts involve continuous improvement and customization of services to meet evolving customer expectations, often through actively seeking and responding to feedback. Informant 1 emphasized the importance of being accommodating, stating, *"I tried to fulfill my customers' request as much as I could as long as it is not beyond my limits. It is really important to prepare physically and mentally when dealing with customers so that my business can improve in the near future."* Informant 8 highlighted their responsiveness to suggestions, saying, *"I always make sure my service to the customers is excellent, for example, if they give suggestions or make a special request for the menu, I will take it into consideration."* Informant 12 underscored the central role of customers, noting, *"Whatever business we do, customers are our top priority. Therefore, we take customer feedback seriously and improve what we can so that we could give the best service for them. I also love to see my customers happy with drinks that we make."* Truong (2019) research supports the significance of improved customer service, with respondents indicating efforts to engage in brief conversations with customers to gather feedback. Warm greetings were also identified as a simple yet effective way to attract more customers. The study suggested that basic sales skills and a willingness to fulfill customer requests are key to enhancing customer service.

Unique menu and service offerings

To overcome challenges related to menu limitations and food quality perceptions, food truck entrepreneurs have adopted strategies focused on providing distinctive and innovative menu selections coupled with exceptional service. They also strive to optimize their operational efficiency to enhance customer satisfaction. Informant 11 highlighted the focus on efficiency and quality, stating, *"Since we also received complaints and feedback from customers, we are making sure that our operation is much more efficient. Customers do not have to wait longer to receive their order. Plus, our quality of food is also the same or better than what was offered at regular restaurant."* Entrepreneurs also aim to provide a service experience comparable to or even exceeding that of traditional restaurants, despite the constraints of a mobile setup. This involves utilizing high-quality ingredients and cooking techniques to ensure superior food quality. Informant 1 shared their approach to menu differentiation, saying, *"Umm, based on what we did before, we try to make our menu as different as possible from other dine-in restaurants. We try to make our food as presentable, at the same time do a combo price for mixed toppings to encourage customers to try different toppings of our takoyaki."* These findings align with Truong (2019) study, which emphasized the importance of consistent food quality as a differentiator for food trucks. Respondents believed that the unique and delicious taste of their food fostered customer loyalty. The study also noted the significance of offering various service options, such as dine-in or

takeaway, and considering portion sizes and food temperature to cater to diverse customer preferences.

Conclusion

This study faced limitations, mainly due to the short data collection period (September to December), which may have restricted the diversity of perspectives from food truck entrepreneurs in Bangi. Some unique challenges and insights could have been missed. Additionally, time constraints during interviews, caused by the entrepreneurs' busy schedules, may have led to rushed responses, limiting the depth of the findings. Another significant limitation lies in the restricted sample size of this study. As the research was specifically focused on food truck entrepreneurs operating within Bangi, the number of participants was inherently limited. This smaller sample size consequently yielded a finite amount of data regarding the challenges encountered and the measures implemented within their businesses. To achieve data saturation, which signifies that the point of maximum information gain has been reached and a comprehensive understanding of the phenomenon is attained, a larger number of informants would ideally be required. The limited sample size thus potentially restricts the generalizability of the findings and may not fully represent the diverse range of difficulties and solutions present within the broader food truck entrepreneur community. To address the limitations encountered in this study and to gain a more robust understanding of the experiences of food truck entrepreneurs, several recommendations can be considered for future research endeavors. Firstly, future studies should consider expanding the geographical scope of the investigation beyond a single location like Bangi. By including multiple or significantly larger locations with a greater density of food truck businesses, researchers can access a larger and more diverse sample size. This broader reach would likely enhance the accuracy and generalizability of the data obtained, providing richer insights into the various challenges and coping mechanisms employed by food truck entrepreneurs across different contexts. Secondly, future research could benefit from employing longer and more in-depth interview formats. Allocating more time for each interview would allow researchers to delve deeper into the specific challenges faced by entrepreneurs, thoroughly explore the underlying causes of these issues, and gain a more comprehensive understanding of their experiences and the evolution of their business journeys.

Ultimately, to achieve a more comprehensive understanding of the multifaceted struggles and triumphs of food truck entrepreneurs, future research should prioritize allocating sufficient time for thorough and insightful interviews conducted across a wider geographical area. This approach would ensure that a greater diversity of voices are heard and that their experiences are documented with the depth and detail necessary to provide a truly representative picture of the challenges and solutions within this dynamic sector. In conclusion, this research engaged with a total of 12 food truck entrepreneurs operating in Bangi to investigate the challenges they face and the measures they undertake to overcome them. The findings revealed three primary themes regarding the challenges: weather and location, costs for permits and certification, and operation and inventory management. Among these, adverse weather and locational issues emerged as the most frequently cited obstacle, affecting seven of the informants. Regarding the strategies employed to address these challenges, two main themes were identified: the use of technologies and the provision of high-quality services. A

significant number of informants were utilizing digital tools such as social media and delivery applications to enhance their business visibility and build brand awareness. Furthermore, prioritizing customer satisfaction was identified as a key strategy for achieving success in the food truck business within the Bangi area. Finally, it is hoped that the insights generated by this study will offer valuable guidance to both aspiring and current food truck entrepreneurs regarding the potential challenges they may encounter. The findings also aim to provide a foundational understanding that can inform and direct future research endeavors focused on the food truck industry in Malaysia, encouraging more extensive and in-depth investigations into this evolving sector.

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Conflict of interest

The authors declare that no conflicts of interest exist with any individuals or entities concerning this research study.

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