



## Evaluating the Use of Multi-Sided Platforms on the Brand Performance of Malaysian SME Food Outlets

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### ABSTRACT

The Malaysian food industry has been increasingly using the services of multi-sided platforms (MSPs) to offer online food delivery services, especially in urban cities such as Kuala Lumpur and Penang. Various global research has also found consistent indications that this trend will continue to grow over the next few years. This service involves the active collaboration between MSPs such as GrabFood and Foodpanda, delivery riders, end consumers, and food outlets. While there are many studies that evaluate the MSP business model and consumer behavior in this industry, there are limited studies that focus on the perspective of the food outlets. This study will address this research gap while focusing specifically on Malaysian SME food outlets to see if using MSPs to offer online food delivery services can improve their brand performance, both in terms of financial performance and brand equity. In addition, the study evaluates the effect that a food outlet's intellectual capital has on the decision to use MSPs. The study also includes perceived environmental turbulence as a moderating variable on the relationship between MSPs and brand performance. The result of the study shows the impact of different intellectual capital assets on business model innovation activity. It also shows that there is no significant moderating impact of environmental turbulence on this industry even though there is evident turbulence. Lastly, the results show that using MSPs does improve the brand performance of Malaysian SME food outlets.

## 1. Introduction

The use of multi-sided platforms (MSPs) has exploded in recent years. This can be seen across various industries such as e-commerce, ride-hailing, payments, and others [1]. Some of the most valuable companies in the world such as Uber, Amazon, and Alibaba are examples of multi-sided platforms, sometimes known as super apps or aggregator platforms [2]. One such industry that is thriving through the use of MSPs is the online food delivery industry, with large players such as GrabFood, Foodpanda, Shopee Food, and others.

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According to Acumen Research and Consulting [3], the Malaysian online food delivery industry is set to surpass \$319 million by 2026 (approximately RM1.5 billion). This represents a significant amount of revenue since there are only several large players in the Malaysian market. As of September 2022, Foodpanda claims 49% of this space while GrabFood has 48% of the market share [4]. This trend is not unique to Malaysia alone but can be seen throughout the neighboring countries in Southeast Asia. This industry is now on pace to reach US\$49.7 billion in 2030.

Many of the existing research circles around the development of the technology or the business model of multi-sided platforms [2]. This includes the companies operating the MSPs such as Beep and AirAsia, the consumers using the services, and the service providers such as the delivery riders. However, an essential participant to this equation are the retail food outlets, especially small and medium enterprises (SMEs) that may struggle to turn a profit through the intense and increasing competition [5].

As such, this paper has a few research objectives that focuses on the perspective of the Malaysian SME food outlets:

- i. To evaluate the impact of a food outlet's intellectual capital on the use of multi-sided platforms.
- ii. To evaluate the moderating effect that perceived environmental turbulence has on the relationship between the use of multi-sided platforms and brand performance.
- iii. To evaluate the brand performance of food outlets after using multi-sided platforms.

## **2. Literature Review**

### *2.1 Multi-sided Platforms*

Multi-sided platforms (MSPs) have been used for decades in multiple industries around the world but have seen exponential growth in recent years due to internet technology, where its potential have been highlighted during the Covid-19 pandemic. An MSP is simply a platform that provides the ability for two or more stakeholders to interact or conduct various types of transactions [6]. The system is set up in a manner that more participants from one side will attract more participants from the other side, and vice versa [7]. Most MSPs today start off focusing on a specific transaction then later innovate further to add other functions progressively, ultimately becoming a super app [8].

The MSP that this paper will focus on are online food delivery platforms/aggregators. Currently, the top online food delivery platforms in Malaysia include GrabFood, Foodpanda, and Beep. However, newer multi-sided platforms like Delivery Eat, Shopee Food, and AirAsia Delivery are slowly increasing their market share [9]. Many of these platforms are international brands and do see a potential in the Malaysian market. In this study, respondents that use any of the above service providers will be accepted as respondents.

### *2.2 Brand Performance*

In this study, brand performance is categorized into financial performance and brand equity. Financial performance is an important measure and essential to a firm's survival and growth. A poor financial performance can reflect underlying problems within a firm, which will eventually affect the operations and future potential [10]. According to Murphy, Trailer, and Hill [11], financial performance can be measured through financial indicators such as revenue, sales growth, profitability, return on investments, market share, and net profit. Financial performance can be influenced by both internal and external factors such as firm size, capital structure, and inflation [12]. Given that this article is evaluating the financial performance of SME food outlets, the measures need

to be applicable and appropriate for firms of this size. Therefore, this study will use sales growth, net profit, operating income, and return on investment to evaluate the impact of using MSPs on Malaysian SME food outlets' financial performance.

On the other hand, brand equity is an important component to measure a firm's performance. Brand equity can be defined as how customers, members, and other stakeholders perceive of the brand, or what they associate the brand with, which can affect the brand in terms of sales and margins [13]. Different authors have selected different indicators of brand equity such as brand loyalty, trustworthiness, brand awareness, perceived quality, brand associations, and other proprietary brand assets [14]. For this study, the authors have selected the dimensions that allows a better understanding and measurement of this industry and its operators. This includes brand loyalty, brand awareness, brand image, perceived quality, and trustworthiness.

### *2.3 Intellectual Capital*

Intellectual capital typically consists of human capital, structural capital, and relational capital depending on the varying schools of thought [15]. According to this classification, human capital refers to the skills and competencies embodied within the workforce in a company, which also includes the collective training, education, experience, and expertise. Structural capital, sometimes known as internal capital, refers to the knowledge within the organization such as operational processes, information systems, databases, intellectual property, and even the culture [16]. Finally, relational capital refers to the relationships that a firm has with external parties such as customers, suppliers, partners, and also includes its brand name and reputation.

In the past, there have been various studies that indicate that a firm's intellectual capital has a direct and significant impact on a firm's innovative activities and also its performance. In this study, human capital refers to the employees within a food outlet including management level employees and also operational workers. According to Hosomi [17], the constructs evaluate whether the employees are skillful, creative, IT savvy, and motivated. The structural capital construct will then evaluate the food outlets' transaction time, new idea implementation, information access, and internal procedures [18]. Lastly, the relational capital construct evaluates internal relationships among co-workers, as well as external relationships [17].

### *2.4 Business Model Innovation*

Business model innovation (BMI) represents one of the underlying concepts in this paper. BMI can be defined as a new, viable structure of costs and revenues that supports the value delivery to the customers [19]. Simply put, BMI includes a new method of delivering value to the customers. BMI activities can stem from the firm's own initiatives or as a result of technological advancements and other organizational changes [20]. As with most innovation implementations, BMI does have its inherent risks. When a firm creates a new system or adjusts its existing policies, there are various risks of failures. For example, companies may overestimate the new business model's effectiveness, the transition from the previous model to the new one may be overwhelmingly complex, or that the existing employees simply do not buy in to the new system [21].

While the majority of traditional food outlets in Malaysia do not offer food delivery services, using MSPs to implement online food delivery services do require some form of business model innovation. There may be reluctance from the food outlet operators due to various uncertainties during the implementation and also post-implementation. Therefore, this study aims to alleviate some of the

uncertainties and doubts that Malaysian SME food outlets may have regarding the benefits of MSPs towards their financial performance and brand equity.

### *2.5 Perceived Environmental Turbulence*

Environmental turbulence refers to the degree of unpredictability and changes that a firm face as a result of its external environment [22]. Past research has found it to have a significant effect and brand performance, where some lost value because of the existing turbulence and others gained from the opportunities it presented [23]. From a negative point of view, environmental turbulence can cause a company to lose access to a certain group of consumers, reduce a brand's ability to differentiate itself, or diminish the existing relationship with certain consumers [24].

There are several possible causes of environmental turbulence such as the competitive environment, market conditions, technological advancements, and others. However, it may be difficult to measure such phenomena in a cross-sectional study. Therefore, this study will use perceived environmental turbulence as a moderating variable instead. In this case, the food outlet owners and managers will rate the degree of environmental turbulence from their experience and current perception of the industry. Including this variable into the study is important as there is often a clear difference between firms that are proactive and those that are reactive with regards to formulating strategies to respond to environmental turbulence [25].

Based on the above literature, the following hypotheses have been formulated:

- 1a. Human capital has a positive impact in the use of multi-sided platforms.
- 1b. Structural capital has a positive impact in the use of multi-sided platforms.
- 1c. Relational capital has a positive impact in the use of multi-sided platforms.
- 2a. Perceived environmental turbulence has a moderating effect on the relationship between the use of multi-sided platforms and financial performance.
- 2b. Perceived environmental turbulence has a moderating effect on the relationship between the use of multi-sided platforms and brand equity.
- 3a. The use of multi-sided platforms has a positive impact on a firm's financial performance.
- 3c. The use of multi-sided platforms has a positive impact on a firm's brand equity.

### **3. Methodology**

This is a quantitative study that will target the owners and managers of Malaysian SME food outlets. The main purpose is to understand the relationships between the different variables mentioned above [26]. The study uses Google Forms' questionnaires to collect data from the respondents, then SPSS and SmartPLS to analyze the collected data.

Prior to distributing the questionnaire to the main target respondents, the questions were first examined by 5 subject matter experts to ensure that content validity has been achieved. After that, a pilot test was conducted among 30 respondents to evaluate the feasibility of the study.

The questionnaire uses structured questions to allow for a more uniform response, enabling a more reliable analysis. The first section collects data about the respondents' respective food outlets, such as type of food outlet, years of establishment, annual revenue, etc.

This was followed by questionnaire items that examine the food outlets' intellectual capital, their use of MSPs, perceived environmental turbulence, financial performance, and brand equity changes after using MSPs. All the questionnaire items were adapted from past indexed journals and when appropriate, most of the questionnaire items used a 5-point Likert scale.

Given that the use of online food delivery services is more popular in urban areas, this study will focus on the food outlets within Klang Valley, eliminating minor differences between geographical regions that may affect the results of the study. Also, there is a large number of users in this area. Operators in this region were accepted as respondents as long as they are local SME food outlets and they have been using such MSPs within their operations.

The data collectors were briefed, and questionnaires were distributed via online means or face to face meetings. With regards to sampling, this study adopted the quota sampling method, where the entire region was split into 9 areas and the respondents used convenience sampling to collect 20-30 responses within each region. The data collection concluded after a total of 220 valid responses were collected.

Of the 220 responses, 41.8% were casual dining food outlets, 22.7% were fast food outlets, 21.4% were cafes, and the remaining respondents were from fine dining restaurants and hawker stalls. A majority of them (55%) have been operating their businesses for more than 3 years, 33% have been in business for 1-3 years, and the remaining 11.8% have started over the past year.

From the pool of respondents, 40.5% perceived themselves as being in the growth stage, while 39.5% perceived themselves to be in the maturity stage. 15.5% are start-ups, while 4.5% see themselves in the declining stage. Given that most of them are SME food outlets, it is reasonable that 39.1% have an annual gross revenue of less than RM500,000, 37.3% have between RM500,001-RM999,999, and the remaining achieved more than RM1 million over the past year.

## 4. Results and Discussion

### 4.1 Results

Aside from the descriptive analysis, the study also used SPSS to check for common method bias. The results for the Harman's single factor test indicate that the maximum variance extracted by one factor is 33.705%, therefore not having common method bias issues [27]. Following which, the data was exported to SmartPLS for further analysis.

The first part was to evaluate the measurement model. According to [28], the first step is to evaluate the internal consistency reliability through Cronbach's alpha and composite reliability (Table 1). In this study, the Cronbach's alpha fell between 0.85 to 0.917, and composite reliability were all above 0.6. This confirms consistency reliability within the study.

**Table 1**

Validity and Reliability

	Cronbach's Alpha	Composite Reliability	AVE
BEQ	0.917	0.959	0.747
BMI	0.888	0.895	0.691
FIN	0.85	0.916	0.682
HC	0.873	0.881	0.614
SC	0.863	0.867	0.593
RC	0.865	0.868	0.6

Then, the convergent validity was tested through the outer loadings and average variance extracted (AVE) to ensure the indicators reflect the same construct. Based on the results, the outer loadings were all above 0.708 and the AVE fell between 0.593 to 0.747, confirming convergent validity [28]. Finally, discriminant validity was evaluated through cross loadings and Fornell-Larcker criterion to ensure each construct is fundamentally different from each other. Based on the results, both were well within the parameters and thus confirmed discriminant validity.

The second part was to evaluate the structural model, starting with assessing collinearity. This was done through testing the variance inflation factor (VIF), and all the values were below 5.00, meaning that there were no collinearity issues in this study [28]. Then, the relationship between the constructs were examined. Based on the results, relational capital has a significant impact on BMI activities, and BMI has a significant relationship on financial performance and brand equity. However, human capital and structural capital did not portray such results. Figure 1 shows structural model in SmartPLS.

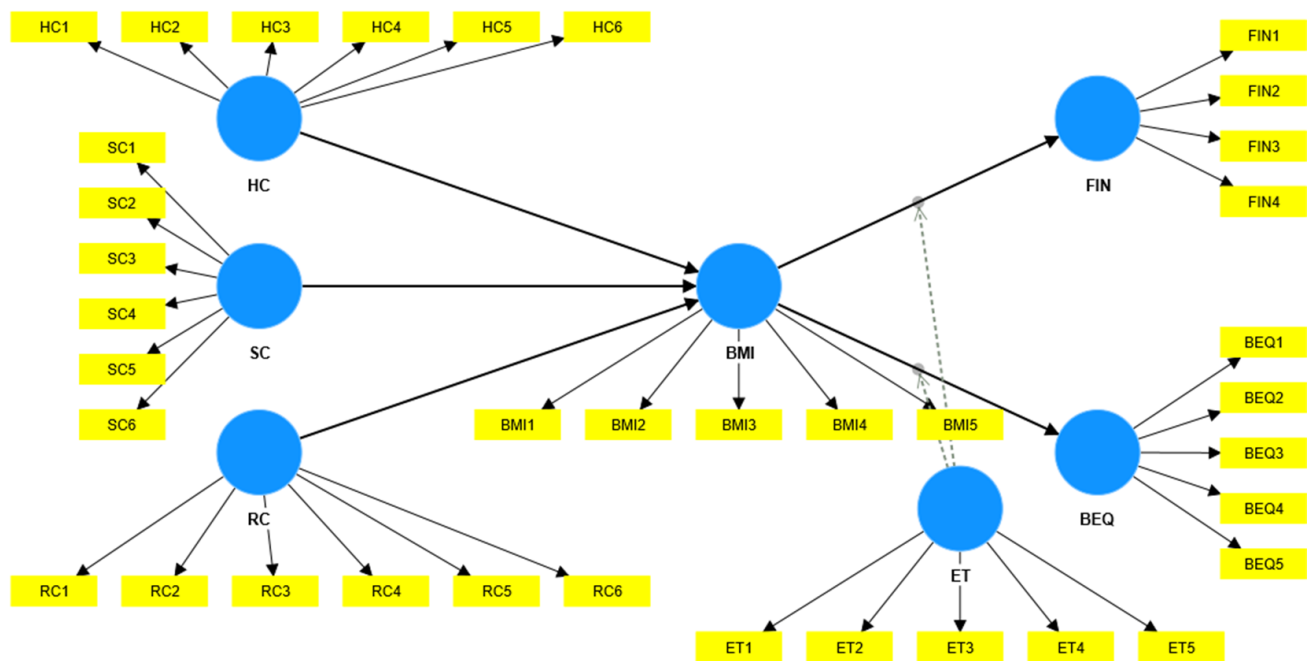


Fig. 1. Structural model in SmartPLS

The next step in the current study was to evaluate the coefficient of determination, which is the R2 value. This measure shows the predictive accuracy of the constructs. While there are no fixed guidelines to measure R2, BMI has a 0.368 R2 value, while FIN and BEQ have lower values of 0.105 and 0.166 respectively. With regards to the effect size (f2), Cohen [29] suggests that 0.02 represents a small effect size, and 0.15 and 0.35 refers to medium and large effects respectively. In the current study, BMI has a small effect on financial performance and a medium effect on brand equity, relational capital has a medium effect on BMI, while human capital and structural capital had minimal effect on BMI.

Finally, the moderating effect of perceived environmental turbulence on the relationship between BMI and brand performance was evaluated. Based on the analysis, environmental turbulence did have a significant impact on both financial performance and brand equity. However, there was no moderating effect present in the relationship. To sum up the hypothesis testing, 1c, 3a, and 3b were supported, while the rest were not supported.

#### 4.2 Discussion

Based on these results, there are a few observations that can be drawn. Firstly, human capital and structural capital do not have a significant impact on BMI. In the context of this study, the food outlets' human capital and structural capital do not have a significant impact on the use of MSPs. One reason for this phenomenon is that most employees in food outlets are only responsible for

operational activities, which may not necessarily contribute to BMI activities or other improvement initiatives. As for structural capital, the use of MSPs may not require a high intensity of such resources and the implementation is relatively easier than other types of innovation. Whereas the impact of relational capital may be more obvious as the use of MSPs requires the active collaboration of multiple parties such as the MSP, delivery riders, and food outlets.

Furthermore, the results indicate that using MSPs does indeed improve food outlets' financial performance and brand equity. The significant results can be an encouraging indication for SME food outlets to adopt this trend and offer online food delivery services. As these services become more common especially in urban cities, not providing such services may even put the food outlets at a competitive disadvantage. The data collectors also found it difficult to find respondents that operate fine dining restaurants, where offering delivery services may not match their service strategies.

As for the moderating effect between using MSPs and brand performance, the results did not show a significant impact. This means that even though there is an evident level of perceived environmental turbulence in this industry, it does not increase or decrease the impact that MSPs have on brand performance.

## **5. Conclusions**

While this study employs the latest data and reflects the current market conditions, there are several factors that can limit the application of the results in future decision-making processes. For starters, the ongoing war between Russia and Ukraine, the economic downturn, and the increasing inflation may have a direct or indirect impact on business activities in the retail food industry in Malaysia. Furthermore, the ability of Malaysians to work remotely may also impact the use of multi-sided platforms that run online food delivery services.

The completion of this research should benefit the body of knowledge with regards to the use of multi-sided platforms and also the online food delivery service. The research should also benefit industry practitioners as they continue to improve their respective business operations. This is also in line with the Malaysian government's ongoing initiatives to encourage entrepreneurial and economic development, as seen in the various schemes and programs to assist and motivate practitioners. For instance, they can strategize the use and installation of intellectual capital into their operations more effectively. They can also proceed with the use of MSPs based on the higher chances of success based on the above empirical evidence. Furthermore, the environmental turbulence within the industry should have a significant impact on this operation.

Future researchers are encouraged to continuously monitor the evolving nature of this industry as the competition continues to grow. Research can also be conducted with varying types of respondents such as international food chains and micro food businesses. If Malaysian consumers continue to adopt the online food delivery trend, future research can also focus on ghost kitchens, which solely depend on multi-sided platforms.

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