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# Investigating Motivations for Customers to use Interactive Self-service Technology in Fast-food Restaurant

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**Abstract**

Today's explosion of technology revolutionizes the fast-food industry worldwide, including Malaysia. Increasingly, restaurant management teams have begun to embrace technology to provide electronic services to customers without requiring direct interaction with personnel. These technological interfaces have known as self-service technologies (SSTs). However, the use of SSTs has been the topic of recent studies. The issues that arise include the customer's reluctance to use the SSTs caused by technical errors, device failure, and the customer's involuntary participation in self-service technology. Therefore, the indication of customer experiences to create a holistic understanding in implementing technological change for an individual is still lacking. Thus, this study aims to investigate why customers use SSTs in the fast-food industry? This study employs qualitative research using in-depth interviews with ten customers who have experienced using the SSTs and physical observation. Thematic analysis was used to analyse the interviews after verbatim transcription. Five motivations for customers' SSTs usage have been identified in this research: meeting needs, alternative options, convenience, access to lower prices and forced usage. As a result, restaurants may better serve customers by understanding the customer journey and using the research's findings to guide their service while providing SSTs.

**Keywords:** Self-Service Technology, Fast-Food Restaurants, Motivations, Qualitative Research, In-Depth Interview

## Introduction

Several businesses in the hospitality industry, especially fast-food restaurants (FFR), have turned to multiple information technology platforms in order to make the process of providing their services to customers even more effective and efficient, as well as to increase the overall level of service quality (Shiwen et al., 2022). According to Kattara and El-Said (2013) a current pattern in the hospitality industry is the movement of some companies utilizing self-service technology (SST), where customers are enabled to co-produce services, as opposed to the traditional services provided by human staff. This is one current trend in the hospitality sector. Therefore, by applying SST, hospitality companies can provide their services using a lesser workforce, according to (Lin and Hsieh, 2011). In hospitality industry which includes FFR, it is traditionally more dependent on human labour than other industries, so the cost savings that can result from lower personnel costs can have a significant impact for hospitality businesses (Shiwen et al., 2022).

The use of cashless touch-screen kiosks or tablets, where customers can independently order and pay for their meals, illustrates recent trends in FFR. This kind of self-service has gained popularity since 2014, when McDonald's, a well-known FFR, introduced the opportunity to place orders and purchase services utilizing tablet-based touch-screen devices (Hanks et al., 2016). Tablets with touch screens have replaced condiments like ketchup bottles and salt shakers on many FFR tables in recent years (Ahn & Seo, 2018). This trend has been adopted by a number of additional restaurant chains (Park et al., 2021). As an example of this trend, quick-service restaurants like Taco Bell have announced that automated self-service kiosks will take the role of human cashiers at all of their sites by 2020. This move is intended to shorten the amount of time it takes to complete each transaction (Shiwen et al., 2022). Businesses that utilise SST have experienced a boost in total earnings as customers buy more food and impose fewer demands on human waiters (Hanks et al., 2016). Better customer service results from this mechanism's increased service flexibility and shorter waiting period for service (Park et al., 2021). Additionally, this technique effectively compiles data about a customer's usage (Ozturk et al., 2016).

As indicated earlier, a significant proportion of choices to implement SST emerge as a motivation for the sense of operational efficiency connected to labour reductions. Despite the growing interest in SST among hospitality firms, little is known about how technology affects how services are provided and how customers are treated. The development of SST in service-oriented businesses aims to significantly impact both the financial health of service providers and the satisfaction of their customers. This is in contrast to the majority of other industrial technologies designed to increase retail revenue (Banyan Hills Insights, 2018). However, just like other kinds of services, SST can experience problems due to a malfunction in the underlying technology or an error made by a user. From the consumer point of view, the motivation to use SST could be because it more user-friendly than the standard service since the service may be available 24 hours a day instead of being limited to daytime hours of operation such as mobile food applications.

Moreover, consumer participation in the service delivery process can improve customization and service satisfaction (Kelly et al., 2019). However, some consumers are still hesitant to use SSTs due to some issues and challenges faces. One of it is because of the security issue (Palau-Saumell et al., 2019; Park et al., 2019). Customers are concern about the

interface that they feel is not user-friendly or intuitive which can lead to making an error when using it and some consumers lack the technological knowledge and self-efficiency to use it properly. Otherwise, consumers could refuse to provide any personal data or information such as a card password since the consumer does not trust the technology's security features. According to (Kelly et al., 2019), there is a risk that an incorrect product or service will be ordered online and that a credit card will be compromised.

In addition, the literature on hospitality has paid little attention to this subject (Ahn & Seo, 2018; Shin & Perdue, 2019). The body of literature that is currently available has two significant problems. First, most SST research follows the standard service attribute-satisfaction study paradigm, which focuses on SST as a service feature without considering how specific SST design elements affect service perception and customer experience. This is a major flaw in the research. By applying a qualitative research methodology, the purpose of this study is to address the motivation of customers in using SSTs and to contribute to an improvement in our knowledge of the technology employed in self-service restaurants.

The qualitative technique develops design attributes by transforming customer requirements into design objectives (Akao, 1990). Alternatively, qualitative research finds customer needs and wants at the same time, converting them into a personalised product or service design to meet those needs. As a result, service providers can rank the key design elements according to how well they support business objectives and customer needs. Consequently, qualitative is referred to as the "voice of the customer" as an effective method of product development based on a review of customer demand. It is recommended that this customer-driven approach can be used for both tangible and intangible items, such as services (Paryani et al., 2010). The qualitative approach enables the disclosure of the interactions between customer preferences and SST technical design features on several levels. In order to better understand SST qualities from customers in the setting of fast-food restaurants, the current study used the qualitative technique in this respect. In particular, this study aims to employ the qualitative method to examine consumers' motivations for using SST at FFR Thus, it is anticipated that this research will both strengthen understanding of how SST can be applied to enhance services in hospitality settings and motivate additional SST technique uses in hospitality service, with a particular focus on FFR.

**SST in Restaurant Industry**

SST can be known as a service that customers provide using any technology facility at the moment of the service encounter (Beatson et al., 2006; Meuter et al., 2000; Zheng et al., 2020). This service does not include the customers having direct contact with frontline employees. As a result, customers are regarded as co-producers and contributors to the overarching process of service delivery (Lin & Hsieh, 2011). Several businesses, like the hospitality industry, which includes FFR, have greatly embraced SST due to the development of information technology and a revolutionized service landscape. SST has seen widespread implementation in a myriad of different contexts throughout the whole hospitality sector. According to Shin and Perdue (2019) state that SST can be classified based on its intended use. Some examples of these categories include mobile SST (for example, mobile hotel check-in and check-out), online SST (for instance, online flight check-in), onsite SST (for example, self-service kiosks), transaction services (for example, hotel and flight reservations), and self-help services (for example, hotel SMART concierge systems).

The restaurant business is one of the many diverse facets of the hospitality sector that has enthusiastically adopted SST. Through mobile apps, tablets placed at tables, and self-

service kiosks, modern restaurant patrons can explore menus, place their own orders, and personalize their meals. SST, such as tabletop multi-touch screens, has been utilised to boost customer participation in the service process since the restaurant business began implementing in-store iPads before the end of 2013 (Ahn & Seo, 2018). Since 2014, customers at Chili's and Applebee's, two of the largest casual dining restaurant chains in the United States, have been able to place their orders and pay their bills using tablet-based touch-screen devices (Hanks et al., 2016).

The increasing prevalence of SST applications in the hospitality sector is a trend that will be closely tracked in the future. Compared to when restaurants focused solely on providing traditional customer care forms, SST implementation has resulted in higher check averages and increased marginal margins (Hanks et al., 2016). Kelly et al (2019) provides empirical evidence to support his claim that when customers complete their orders using SST, they tend to spend 20–30 percent more at restaurants. This is because using SST devices is simple to tack on additional condiments and drinks. As a direct consequence of this, patrons of modern restaurants are strongly urged or even compelled to make use of SST (Beatson et al., 2006).

Compared to the previous year, slightly showed a considerable increase in the number of customers using SST as according to (Ahn and Seo, 2018). Based on this study's findings, few studies have investigated the roles of SST on customers' motivation. The accuracy and reliability of the service provided by SST are significantly higher than those provided by human employees (Hanks et al., 2016). As a result, better levels of perceived service personalization and better control over the service delivery process due to consumers' involvement are considered to be important benefits of SST (Meuter et al., 2000). Bitner, Ostrom, and Meuter (2002) emphasised that SST promotes customer satisfaction and loyalty as a result of its successful ability to transform the traditional service that human employees deliver. They also indicated that customers are encouraged to favour SST over human assistance because the process is completed more quickly and customers have easier access to the service (Bitner et al., 2002). In a similar vein, Collier and Barnes (2015) discovered that the hedonistic features of SST, such as perceived control, can be a strong predictor of customer delight. In a separate piece of research, Kim and Qu (2014) concluded that the perceived usefulness, convenience, and compatibility of SST characteristic will enhance the experience, satisfaction, and positive attitude of SST users.

**Method**

Despite the growing interest in SST among scholars and practitioners alike, implementations of SST in actual FFR service contexts remain relatively uncommon(Ivanov & Webster, 2019). As a result of this, it was determined that an exploratory qualitative approach would be most appropriate for this study. As a investigation technique, the researchers decided to use a combination of observations and semi-structured interviews. This was because they could produce rich data despite only having a small number of cases and respondents (Suchan & Brewer, 2000). The gathering of data took place throughout the months of September and December of 2020. After conducting considerable research, it was determined that the Klang Valley area would be the most suitable place in which to carry out this study. This was due to the fact that the majority of FFRs that already had SSTs installed are primarily located in the Klang Valley area. A list of FFR was compiled after thorough research. A total of five FFRs from a variety of companies were contacted in order to set up site visits. The purpose of these visits was to conduct onsite observations as well as interviews with the customers. Observation access was allowed to a total of four FFR (two in KFC and

two in McDonald's). However, only two of the fifteen respondents who were contacted were able to schedule a formal interview, indicating problems with scheduling as well as concerns about safety brought on by the widespread of the COVID-19 pandemic and purposive sample method was adopted aimed at gathering information from what Aguinis and Solarino (2019) refer to as "elite informants." The most important factor that was considered when choosing who would participate in the interviews was whether or not the informants had prior experience with SST and a thorough comprehension of how and why the technology was applied in FFR. When investigating emergent phenomena, Bogner, Littig, and Menz (2009) highlight the significance of interviewing subject matter experts to gain access to their pertinent interpretive knowledge, also known as "know-why," as well as their procedural expertise, also known as "know-how."

The primary purpose of the observations was to identify patterns of behaviour within the following five main areas of service production and delivery: (a) meet and greet, for example, what takes place when customers enter the establishment; (b) ordering and check-in, for example, who takes the order and who deals with ordering requests; and (c) eating and clearing, for example, what takes place if there is a problem with the food or if customers wish to order something else; (e) what occurs after the order has been ready, such as whether the customer takes it themselves or whether the employee sends it, and if the latter is the case, how this is managed. (d) paying, such as how payments are received and policies on gratuities. In addition to these five areas, several contextual considerations, such as the placement of SST within the servicescape, were also considered.

The length of time spent observing each subject was, on average, four hours. This purpose was to record a diverse set of interactions between customers and SSTs over a single service period (breakfast, lunch, or dinner), or during peak service time if that was possible. In establishments whose primary function was the provision of food services, the observer would take a seat inconspicuously among the customers being evaluated. After each observation session, a methodical approach to member checking was carried out following the recommendations made by (Lincoln and Guba, 1985). Debriefing took place at this point, during which the observer discussed the fieldnotes and sought clarification or confirmation on matters for which the observer had some uncertainty.

In accordance with the methodology described by Creswell and Clark (2017) and Wong and Wickham (2015), a three-step thematic analysis was carried out for each of the research questions with the help of the qualitative analysis tool Nvivo (version 11 software package). In the first step of open coding, each answer text was broken down into smaller parts, such as a phrase, a sentence, or a paragraph, depending on the information included within the transcription, to investigate the underlying notion. First, the answer texts for each question were coded individually to increase inter-coder reliability. Next, similarities and differences between the answers were reviewed to come to an agreement on the coding rules and codes (Wong & Wickham, 2015). After going through the axial coding operations, the first-order codes were placed into their respective second-order code categories (Wang, Hung, & Huang, 2019). For instance, responses that were data-coded as "quick and prevent congestion" and "avoiding contacts gaps" were categorized as "efficient" in the responses to the first question. Lastly, aggregate themes were formed from the second-order codes that were obtained. As an illustration, the terms "efficient" and "easy" were compiled to form the phrase "efficiency and convenience service." All of the findings were evaluated once more. Following the conversations between the coders, these results were recoded once more. Finally, the

analysis and theme categories were reviewed and improved by a third expert reviewer responsible for and published the results of several qualitative research projects.

**Findings**

The following part illustrates the findings from the data analysis pertaining to the customer motives in using SST at FFR. Customers utilised the SST in the FFS for five new reasons, which were discovered. To demonstrate the result, quotes from in-depth interviews were used.

**Efficient and Convenience Service**

The convenience that comes along with using SSTs is the primary draw for many customers. When respondents reflect back on their experiences with the SST, they frequently use the word “convenience” and variations of the word. Once respondents mention about convenience, they are referring to the fact that the SST mode has supplied them with a service that is both more effective and more easily accessible than any other service channel that is now available. When respondents are particularly queried about their motivations for using the SST, the majority of respondents focus on convenience or describe service situations in which they were inspired to use the SST owing to the more accessible and efficient service it could provide. During the interview, 8 of the 15 respondents brought up the subject of convenience, which indicates the topic's significance.

After the initial briefing provided by the author, the respondent in an interview may begin the conversation with the following phrase, which is presented in the following quotation. This respondent indicates, without being pushed, that she is prone to utilise SSTs because of the fact that they are "convenient." This is demonstrated by the quotation that follows. In addition, she explains what she understands the term "convenience" to mean, namely that it identifies a service that is "more effective" than the other available service channels.

> *When I don't have time to cook, I've started using mobile applications to place my meal orders instead. And in most cases, they are quite good and incredibly effective. Therefore, it is really convenient when you get the food and you do not have to stand in line or even leave your house to obtain it, and you already have it* (Informant 4)

**Forced Usage due to Policy Requirements**

The data presented in the preceding section demonstrated that customers are encouraged to using SSTs because it is practical for them to do so. In addition to the above, Intriguingly, the findings suggest that consumers may perform using SSTs when they are motivated by circumstances, as opposed to when they are motivated by their own convenience. Even individuals who view SSTs as having positive implications may occasionally turn to using SSTs despite their preference not to do so. For instance, in 7 out of the 15 in-depth interviews, the topic of forced usage is included in the discussion of various SST usage scenarios. This was the case. In numerous times, participants have mentioned that they "will have to" use a certain SST, despite the fact that they would have wanted to utilise another service channel. According to the participants, their decision utilise SSTs is "sometimes not by choice" and "I am being compelled to use them" (SSTs). This type of motivation is referred to as "forced usage" since it is denoted by the pronounced expressions "had to" and "forced to."

Participants claim to have used SSTs in order to avoid any negative effects, such as not being able to obtain desired services or receiving such services at a higher cost when SST usage is avoided. Participants often suggest that they have used SST in order to prevent any negative effects on other participants.

The following passage from the interview, which clearly indicates this reason, includes the word forced usage, which was offered without being prompted:

> *If you do not rely on self-service technology, you will be at a disadvantage waiting for, and it will be a longer amount of time before you acquire the essential information or get the service or the goods. I believe that is the exact argument being made there. Technologies that enable customers to serve themselves are unquestionably at the forefront of this movement* (Informant 2)

**Access to Lower Price**

The third factor influencing SST usage is the availability of lower prices. This is a key SST usage incentive, as indicated by the fact that 8 out of 15 in-depth interviews mention it. In customer reflections of SST interactions, it is common to hear that SSTs are utilised because they enable access to "cheaper," "better bargains," and "lower pricing." Participants mention phrases such as "price," "money saver," "discounts," "cost savings," "cheaper," and "cost factor" when expressing their motivations. These words express a customer's incentive in terms of receiving a better deal or communicating with the least priced channel.

The first factor of the access to lower price motivation is a lower purchase price, which indicates that customers have the potential to obtain the foods at a reduced price when they utilise an SST. Respondents who cite the reduced purchase price as a motive frequently mention that they had a limited budget assigned for the purchase of the particular menu in inquiry. In addition, because of the cheaper purchase price, they were willing to settle for a certain amount of reduced flexibility; but, they would not risk falling victim to online fraud. The distinction between the lower price motivation and the forced usage motivation might be conceptualised as being analogous to the distinction between the sentences "I want to" and "I have to."

> *I once had an experience of buying Pizza Hut, when usually I can collect point if I buy thru website and also got a free meal, usually mushroom soup when I order with certain amount* (Informant 10)

**Meeting Needs**

People shared their perspectives and experiences regarding how the SST satisfies their expectations for customer service within the context of this subtheme. There was widespread agreement among responders that the product component was more essential than the transaction, despite the fact that technological advancements might increase or decrease the difficulty of making contact and maintaining connection. Different requirements that are satisfied by SST devices can result in varying degrees of perception. However, due to the impact of factors such as time constraints, stress, and social anxiety on the experience, many participants expressed their wish for a less complicated but still precise and reliable procedure. The subtheme of meeting needs, which highlights the sociability aspect of consumer encounters, was brought up more frequently among male participants than female ones. Participants who were between the ages of 18 and 40 were also more likely than other participants to discuss this secondary issue.

Respondents 5 provided further information regarding the topic, nothing that the transaction process does not actually substantially affect the customer experience. The quality of the product is of greater significance to Participant 5, and this becomes one of the participant's motives for using the SST:

> *I don't think you'd affect whether or not I wanted to go there. I suppose that the meal and the high-quality item decide where other customers go. Therefore, I suppose no one would say, "I'd like to go to King Burger because everything is automatic," in comparison to Starbucks or whatever, but I suppose after you've been there, I believe technological innovation is worthwhile, you are seeking guidance, especially in the fast-food industry [...] you're not calling for them to serve you necessarily - it's customers that create it* (Informant 2)

**Discussion**

The results of this research offer a comprehensive look at the point of view of customers with regard to the many factors that motivate them to make use of SSTs. The respondent in this study cited the following motivations for their use of SST: convenience, forced usage, access to lower price and meeting needs. The opinion that SSTs functionally benefit the customer is reflected in the literature, and is supported by the convenience, control, and access to lower price (Cetto et al., 2015). The findings of this study introduce the forced usage and meeting needs which counter the established utilitarian view of SSTs in the literature (Oliveira et al., 2021; Park et al., 2021). These findings explain the various, and sometimes contradictory, reasons at play, ranging from using SSTs to accommodate the client (motivated by convenience) to using SSTs to accommodate the service provider (forced usage motivation). In addition, customers may use SSTs not only for their own gain (in terms of convenience, access to lower prices and the meeting needs), but also for the benefit of both other customers and the environment.

In the research that has been done, various motivations for use and the accompanying gratifications sought by customers have been identified. These include things like convenience (Collier & Kimes, 2013; Lee & Yang, 2013), access to the service around the clock (Oliveira et al., 2021), control (Shiwen et al., 2022), time and money savings (Palau-Saumell et al., 2019), enjoyment or fun (Collier & Barnes, 2015; Meuter et al., 2000). This study has found that the motivations of convenience and access to lower price have emerged as leading service outcomes that help customers achieve more efficiency in their lives by managing a budget and coping better with busy personal, family, and work schedules. This finding is in line with the findings that have been found in the existing body of academic research. The satisfaction of the customer's goals of wanting pleasure, novelty, and amusement was achieved in another way by the service outcome of enjoying the engagement with the SST. The means-end chain theory (Gutman, 1982) provides an explanation for all of the aforementioned reasons. This theory implies that customers desire service outcomes that give them utilitarian and hedonic value from using SST (Cetto et al., 2015).

**Conclusion**

To summarise, the findings that relate to the purpose of the research demonstrate new customer motivations that do not represent direct utilitarian or hedonic value for the customer as a result of engaging in SST usage. Customers can use SST to suit service providers, which is known as forced usage motivation. This is in contrast to the convenience motivation,

which drives customers to use SST because it is convenient. As a result, customers may use SSTs even if they believe that SSTs help the service provider more than they benefit, although customers may still use SSTs. This study aimed to investigate customer motivations because those motives influence how customers would use SSTs and how they will rate their overall experience with SST usage (Galdolage, 2020). The outcomes of this research reveal that the reasons for using SST are a significant factor that plays a role in the underlying determination of customer experiences with SST. The contribution that this research makes to the practise can be used by the management to come up with strategies and instructions that will make it easier for SSTs to be used. Also, the stakeholders can fully understand and point out how SSTs in the foodservice industry can meet the needs and interests of businesses and customers. Last but not least, this study can be used in future research to look at and compare similar samples from different countries.

**Significance of Study**

**Practical**

In the rapidly changing technological environment of the twenty-first century, the alignment between policy-making to develop information systems and its action plan implementation has become crucial, as failure to recognise and exploit the benefits of new technologies can be catastrophic for organisations. With the escalating reliance on the Internet and the expanding use of SSTs globally, companies must comprehend and assess the newest SSTs applications that are beginning to appear at their doors. The purpose of this research was to determine why Malaysian customers utilise SSTs. For the restaurant industry, particularly the fast-food restaurant industry, and customers who are still hesitant to adopt SSTs or are in the process of gathering information on it, this study can provide insights into the benefits that significantly influenced their peers' decisions to implement this innovation as a method of service in restaurants, particularly fast-food restaurants.

**Theoretical**

Theoretically, this study will add to the new body of knowledge in the field of technology innovation by focusing on how SSTs can be used. There are two ways to do this. First, it gives the results of a study that was done with people of a different age and culture in Malaysia. Second, it offers a different way of thinking about how customers use and experience SSTs, which is an interpretive paradigm, and a different way of getting information about the factors that affect customers' experiences with SSTs, which hasn't been done much before because most studies have used a quantitative method (Wang et al., 2012; Baron et al., 2006).

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