Research Article

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Consumer's Motivations to Used Self Service Kiosk in Fast Food Restaurant

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Abstract

The rapid growth in information and communication technology (ICT) has enabled hospitality operations to use a range of technologies to facilitate service to the consumer and to optimize consumer experience and satisfaction. Self Service Technology (SST) is one ICT that enables consumers, without or at least with the assistance of employees or service providers to build service. The kiosk is one used commonly by SST. Restaurants utilize self-service kiosks (SSK) for consumers to locate, configure and do the payment for their food and drink orders and have been widely utilized by the fast-food restaurant to lowered the expense of personnel, increased processing quality and the precision of orders, boosted upsell sales and is typically an appealing choice for millennial consumer and younger workers. Several pieces of research have helped to understand why consumers are choosing SSK, describing the different factors that affect the preference. Most of previous research on the adoption of technology over focus on adoption factors in the trial stage and the usage of student samples. Thus, this study explores the motivations of consumer which focus on millennial between 18 to 34 years old in using SSK in a fast-food restaurant. This qualitative research obtained the data from interview sessions with informants from the consumers of fast-food restaurants applying SSK. The interviews were transcribed verbatim and analysed using thematic analysis with the help of Nvivo software for analyse. Findings showed that among the motivations of consumers in using SSK are convenience, meeting needs, and alternative options. In conclusion, the findings of this research can facilitate existing restaurants in managing the technology applied and, at the same time, improve their service in offering a SSK to millennial customers.

Keywords:

Self-service technology; self-service kiosks; fast-food restaurant; motivations; millennial

1 Introduction

Technology has become an important factor in business activities that are aligned with the expansion of telecommunications, computer technology, and software. The massive increase of technology has made it possible to use various technologies, especially in the food industry, to improve consumer services and to improve consumer satisfaction during the last two decades (Baba et. al., 2020). Self-service kiosk (SSK) is one of the most revolutionizing innovations for the food services industry in Malaysia (Euromonitor, 2019). SSK technology has been widely utilized by fast-food restaurants. This has lowered the expense of personnel (Robertson et. al., 2016) increased processing quality (Kaushik et. al., 2015) and the precision of orders (Kincaid et. al., 2010), boosted upsell sales and is typically an appealing choice for millennial consumer and younger workers.

From the consumer angle, SSK may be inspired to be more user-friendly than the standard service because the service is accessible 24 hours a day instead of being limited to working hours such as mobile food applications. The introduction of SSK in the operation of a service is linked to systemic changes forcing consumers to play a proactive role and pushes companies to play a critical role in this activity (Hilton & Hughes, 2013). The process can lead towards increased consistency and quality with their services (Kelly et. al., 2017). The co-production process begins with the consumer determining the intent and agreeing to engage in the co-production process. In the decision-making process, consumer understanding of the characteristics and purpose is determined not only by how but also by how the customer engages in co-production (Egger, 2010). Although previous studies have been conducted on user opportunities to use SSK, the study effectively shows that only the services will benefit from technically appropriate uses of SSK (Shahid Iqbal et. al., 2018; Suarez, et. al., 2019; Wei, et. al., 2016).

Certain consumers, however, still hesitant to use SSK because they consider it to have functionality and protection and flaws; (Balakrishnan & Dwivedi, 2021; Djelassi, et. al., 2018; Sinha, et. al., 2019). For example, consumers may be worried about making errors by using the kiosk, as they feel that its design is not user-friendly or efficient and that they lack the technical expertise and self-efficiency to make good use of it. Or they may be hesitant to include any private information or data, such as a debit card password because they do not trust the kiosk's security features. Despite these factors, the NRA report reveals that 49 % of customers prefer to communicate with employees rather than SSK (NRA, 2020). Such examples demonstrate that the reaction of consumers to an SST (i.e., either they accept or reject it) might rely on their interpretation and understanding of it (Moreno & Tejada, 2019). Restaurant providers need to know more about the evaluation and perception of SSTs by consumers.

Several types of research have helped to understand why consumers are choosing SSK, describing the different factors that affect the preference. Many pieces of research on the adoption of technology, however, have concentrated on initial use rather than repeat use (Fernandes & Pedroso, 2017). In addition, most SSK studies were performed in a hospitality setting in hotels and airport contexts (Ahn & Seo, 2018). In fast-food

restaurant settings, relatively few were performed (Ciftci, et. al., 2021; B. Lee & Cranage, 2018), and even fewer studied consumer motivations and technology adoption (Hilton, et. al., 2013; Kelly et al., 2017).

Generally, this study proposed to contribute additional knowledge by conducting a study on motivations to use SSK in the fast-food industry. By examining the motivations in using self-service kiosk technology within this industry, the consumer's acceptance and motivation towards this application can provide leaders valuable information as it pertains to return on investment and labor cost saving. In term of practical benefits especially for the fast-food restaurant and customers, this study can provide insights regarding the benefits to utilize this innovation as a way of service at the restaurants and it also help the operators to develop appropriate operational strategies regarding SSK based on the findings in this research.

2 Literature Review

2.1 Self Service Kiosk in Fast Food Industry

Restaurant owners have experimented with using and providing self-service technology to increase consumer loyalty. Self-service technology in the food sector enables consumers to control their customized orders more effectively. The great majority of accepted SSTs in the restaurant sector provide a display device for ordering food, drink, and payments, which can be displayed at a table in a restaurant. If the restaurant industry was traditionally reluctant to embrace modern technologies, some fast-food restaurants are using SSTs to tell the difference service from rivals (Wang, 2017). Mobile ordering, online coupons, interactive menu boards, mobile applications, and self-service kiosks are some of the developments in the fast-food industry (Wei et al., 2016). Kiosks are self-service devices with a wide touch-screen that allows consumers to order food, modify their items on the menu, as well as pay their bills without engaging with staff. Kiosks are among the newest form of SST in fast food restaurants. The key reasons why fast-food restaurants implement such kiosks are derived from several reasons.

Firstly, to increased sales. Research indicates an association with self-service technology between increased sales and non-face-to-face instructions (Ahn & Seo, 2018). SSKs encourage consumers to order easily, without having to worry about complicated menus or being judged for their choices (Heidenreich & Handrich, 2015). A consumer is not responsible for any problems. At least one study suggests that consumers avoid purchasing more complicated products, products with higher calories, and items with names that are difficult to pronounce in front of others (Lian, 2018). The decision to use an SSK eliminates these barriers and allows the consumer to spend freely. Improved sales may also result in the introduction of the fast-food kiosk because of rising sales. Ironically, previous research suggests, SSKs are connected to quicker service, and typically consumers are less willing to order at kiosks than at counters. They may therefore feel more comfortable taking their time with an SSK rather than an order

with an employee, which might prompt them to order more and spend more money using an SSK (Mladenow, et. al., 2018).

The implementation of SSK can also increase consumer satisfaction since consumers can personalize their products and create meals based on their individual preferences at the kiosk. This potential may be based on the results of a recent study that shows that over 50 % of fast-food diners agree that restaurant technology makes their meals more enjoyable and more than one-third favour restaurant choices with greater technology (Walker & Johnson, 2006). The millennial generation showed enthusiasm for self-service technology as a significant part of the fast-food restaurant target market. Millennial consumers, having grown up with modern technologies, seem to be more confident than their older self-service peers, perhaps so much to consciously search for it, as they find it to be easy and effective (Gong & Yi, 2018).

Certain market segments which can benefit from SSK include consumers with accessibility problems: those with hearing impairment; and those who are not fluent in their language (Barua, et. al., 2018). The possibility of a face-to-face encounter may be an inhibiting factor for certain individuals within two categories, one that discourages them from patronizing the restaurant for fear that they will not understand the employee or that the employee will not understand them. From this viewpoint, the chance of irritation, disconcertion, or mistake for an "interaction" of SSK is much less. Issues of pronunciation, grammar, spelling, and audibility are irrelevant, allowing these customers fairly simply, quickly, and precisely to place and pay their orders (Joe, et. al., 2020). SSK will also enhance its customer experience.

Labor costs cause service providers to find ways of providing services without having to pay workers for themselves (Lee & Lyu, 2019). This problem will no doubt be compounded in new legislation that raises the lowest wage by about 30 %. As roughly (52%) of employees already earn minimum wages, this development is of considerable concern for fast food employers, which prompts them to explore the introduction of labor-reducing solutions such as SSRs ever more closely. Such reasons support the acquisition of greater knowledge in this area. Nevertheless, the technology implementation activity of fast food has received little consideration from hospitality researchers. Furthermore, there were few studies conducted which established appropriate research models to determine whether the consumer is happy with the implementation and usage of new technology in the restaurant industry.

2.2 Self Service Kiosk Experience in the Fast-food Industry

Technology will improve service quality and increase consumer satisfaction (Tuomi, et. al.,2020), demonstrating the importance of incorporating creative methods and technologies into businesses to continue to provide a strategic advantage (Lee & Allaway, 2002). Touchscreen technology or SSK is also used as the ideal tool for usability, control, and management software in the fast-food industry (Liljander, et. al., 2006). SSK gives fast food restaurants the ability to expand their offerings in such a way as to boost their strategic advantage (Moreno & Tejada, 2019).

Recently, the use of SSK has been implemented into the fast-food restaurant industry to minimize consumers' waiting times and improve their overall experience when ordering food (Cross, 2017), SSK requires the use of a computer or facilities that allow consumers to participate in self-service operations, such as ordering food in fast-food restaurants (Wang, 2017). Monoblocks or all-in-one mobile personal computers are usually found in fast-food restaurants, according to Wei et al. (2016). A more immersive tablet technology such as iPad has been used by many fast-food restaurants (Wang, 2017).

The ordering of food is one of the most popular implementations for SSK at fast-food restaurants (Leung, et. al., 2020; Wang, 2017). A mixed-method survey was performed by Leung et al. (2020) investigating the effectiveness, accuracy of knowledge, consumer satisfaction, and accessibility of electronic touch screens and paper-based menus while ordering food. The researchers gathered information through survey questionnaires and evaluation of order times, requests for customization, and staff notes. The data analysis findings showed that the interactive interface system was substantially more effective than the conventional paper-based menu in terms of improving order details quality, consumer satisfaction, and revenue. The results show that restaurant owners will benefit from the introduction of SSK for their consumer service, particularly when it comes to ordering food.

Related research was carried out by Wang (2017) on the use of mobile touch screen devices, including iPads, as a way to order the substitution of the more conventional paper-based menu. The key purpose of the research was to investigate how the use of a touchscreen interface system would affect the attitudes of consumers as regards the survival of restaurants providing food sensory-screen technology. The results show that the interest perceived in restaurants by the touchscreen system was greatly influenced by both practical (ie, perceived usefulness, ease of use) and emotional influences (i.e., novelty, enjoyment). Based on these findings, past research suggested that managers should invest in touch screen technologies to boost the overall efficiency of restaurants' consumer service.

In summary, technology is used mostly to enhance consumer satisfaction in the literature on SSK in the fast-food industry (Mladenow et al., 2018; Neuhofer, et. al., 2015). SSK has been reported to have a positive impact on customer satisfaction in fast food restaurants due to decreased waiting times and accessibility (Mladenow et al., 2018).

3   Methodology

The qualitative method emphasizes how individuals are interpreting their world and experiences (Merriam & Tisdell, 2016). Qualitative analysis is based on the assumption that evidence is more than values presented on a Likert scale or yes-and-no responses, which is the basis for a more comprehensive interpretation of the topic of study (Merriam & Tisdell, 2016). The researcher is the instrument in qualitative analysis because the methods of data collecting focus on the relation and findings of the

researcher (Merriam, 1998). For this study, the research design used was case study research, which is qualitative research in which the researcher explores a real-life, single case of exploring the consumer motivations to use SSK in fast food restaurants through detailed, in-depth data collection involving multiple sources of information which is interviews, audio-visual materials, and documents (King, et. al., 2018). In this case study, the researcher examined the motivations of a consumer to use the SSK. The researcher gathered these data from the consumers who have used SSK in fast food restaurants. Understanding the deeper underlying meaning held by those affected by the events studied and how people interpret their personal experiences is the core of qualitative research (Kudlats, et. al., 2014).

Meanwhile, the population of research refers to the intended group that the researcher wants to study to collect data and provide a better understanding of the studied phenomena. In this study, the population includes millennials between 18 to 34 years old who purchase at fast food restaurant. This is due to a report by Statistica (2018) mentions that the average number of consumers who visit fast-food restaurants was between 18-34 years old. Due to the convenience of having interview participants in this area, the sampling frame was millennial-age individuals living in Klang Valley. This demographic acted as the basis of the sampling frame and the actual sample used by the researcher for the study.

This study has performed purposive sampling which is a non-probability sampling that allow the samples being chosen based on the key characteristics or demographic factors that play a critical role in the study issue (Silverman, 2013).

The inclusion criteria of this study are as follows: (a) generations aged 18 to 34 and (b) in a fast-food restaurant have used SSK. Respondents in the prior interview questions should have used both face-to-face interaction and SSK to provide relevant information. This study carried out a pre-recruitment training questionnaire to assess not just the age of the prospective candidate, but also the level of interaction the applicant encountered using mobile devices in fast foods restaurants.

Th sampling technique of this study are based on snowball technique where it allows each of the initial seven participants applied to one more participant as a guide before saturation points had been reached (Silverman, 2013). Participants were recruited by choosing individuals who had personal knowledge of the study. The initial contact was made by phone call. When data saturation was reached, each additional participant received one referral (Silverman, 2013).

This study use the primary data through interview. Throughout the interview process, two audio recorders were used as a main recorder and backup if one device failed. The interviews were conducted at a convenient venue, allowing the interviewer to monitor the environment and ensuring confidentiality for the participants. About 20-30 minutes each interview lasted, the shortest 18 minutes, and the maximum 29-minute interview. The interviews were documented and all audio recordings were transcript and analysed using Microsoft Word and Nvivo.

4 Findings

4.1 Demographic

The sample size of this study consisted of 5 millennials between the ages of 18 and 34 in Klang Valley. The summary of participant demographics is outlined in Table 1, gender and ethnicity averages are reported in Table 2, and the average education level and average age are reported in Table 3. During interviews, the researcher documented the participants' ethnicity, gender and age. The majority of participants were Malay, aged between 24 - 34 years of age. Despite differences in demographic data, the perceptions that the researcher uncovered during data collection and analysis were generalizable to many different contexts. The researcher observed many similarities across ethnic, gender, and education-level groups.

Table 1: Summary of Participant Demographics

No. of Participants	Age range	Gender	Ethnicity
1	30-34	Female	Malay
2	24-29	Female	Chinese
3	24-29	Male	Malay
4	24-29	Male	Malay
5	18-23	Male	Indian

To ensure the full spectrum range of the millennial generation is specifically included in the fast-food industry, this study gathered data from 5 interviews featuring millennials aged from 18 to 34 years. The findings show that while all 5 participants have used SSK technology in fast food, the use of this technology has yet to be introduced in the entire local region, according to original interviews. Two of the participants had experience with SSK technology in fast food, and their encounter was with McDonald Aeon Bukit Tinggi, where the technology had already been applied, whilst another three of the respondents were using SSK at the KFC kiosk in Serdang. All participants shared the impression that technology is increasingly transcending the fast-food industry and that it will be readily adaptable in the fast-food industry.

Throughout the data analysis, this study formed three thematic groups. This study developed concepts from these categories to explain the general perceptions of the categories. Respondent's views were also classified by class and age categories due to variations in the dataset. Two demographic groups (male and female) and three age ranges (18-23, 24-29, 30-34) was analysed to compare the perceptions of SSK technologies users. This study determined the number of occurrences for each theme and the subject has been coded in the data set accordingly. The themes found in this study included the motivations to use.

4.2 The Motivations to Use SSK

Firstly, the respondents addressed how the SSK interface reflects a successful technological development that will contribute to greater consumer self-efficiency. Positive features of SSK technologies, incentives to prefer SSK solutions over conventional consumer engagement methods, and the potential benefits of fast-food technology implementations. In every group of subthemes related to the theme of progress and self-efficacy, participant interviews quotes are recorded. During participant interviews, this study found three sub-themes: convenience demands satisfaction and alternative options. The most popular sub-theme of the SSK interface, be it in self-checkouts or fast-food restaurants. The participants also defined their perceptions of good customer experience by balancing customer service criteria with the quality of the product being purchased.

4.2.1 Convenience

Many participants suggested that the interactive SSK is more comfortable and faster than other types of consumer contact. Respondents agree that technical approaches are always favourites due to the prevalence of technology in daily life so the user would have greater contact control. Consumers and employees interact with one another in the traditional setting to better understand the transactions. SSK is considered useful because it minimizes potential contact gaps and misunderstandings. Respondents have also said that the consideration of SSK to be a smoother and simpler processing tool, even though the use of SSK might not be a faster process. When comparing the expectations of ease between men and women, women talked more often about convenience than men. The convenience subtheme was prominent in all age levels but it was seen that the technology's everyday effect on real-life leads to technological achievements.

The advantages of convenient strategies have been defined by Participant 1 stating:

> *I like when I use SSK which I don't feel pressure to do the selection. I have my own time to select and modify my menu. Sometimes, when I do the order at the counter, the employees do not understand my demand. By ordering using SSK, I can check and re-modified my order.*

Participants 3 further elaborated on the ease of use and the reasons individuals may be drawn to SSK:

> *I just choose the menu that I want and pay. As easy as that. No need for a long waiting time. I can save my time and get my food faster.*

SSK technologies and complex lifestyles can be ideal for certain participants. When people face new and unforeseen situations, they have had the potential to make the situation more manageable and controlled.

4.2.2   Meeting needs

Within this subtheme, people described their experiences as to how customer service expectations are complied with in the SSK technologies. While the complexity of contact and engagement varies through technological updates, most respondents indicated that the content of the product was more important than the social experience during the transaction. Different requirements addressed by SSK devices is perceived differently. Yet, because of the influence of variables such as time limits, stress, and social anxiety on the overall experience, many participants shared their desire for a simplified process that was exact and effective. Male participants discussed more often than women the subtheme of meeting needs which emphasizes the socialization aspect of consumer experiences. Persons aged 19 to 24 were also more likely than other participants to talk about this sub-theme.

Respondents 5 elaborated on the subject, stating that the transaction process does not truly have a significant influence on customer experience. For Participant 5, the quality of the product matters more significantly and become the motivations to use the SSK:

> *I don't feel you'd have an impact on whether or not I'd like to go there. I assume that the food and the quality product themselves decide where other consumers are going. So, I guess anyone wouldn't say "I 'd like to go to King Burger because all is automatic" versus Starbucks, or whatever, but I guess after you've been there, I think technological innovation is worthwhile, you are seeking guidance, particularly in the fast-food business [...] you're not calling for them to serve you necessarily – it's customers that create it ...*

Respondents 2 noted that due to improved costs and maintenance requirements, the technological implementations in the fast-food industry will possibly continue:

> *Eventually, technology will kill the regular consumer. For how much effort you do, I agree that, even with any failures, you will get the same thing and likely the same outcome — perhaps you'll be able to get the same results from your machine, and then you miss the talk from person to person, but at least you know that [mean] it's likely that the order will be correct or [...] this is a little quicker.*

According to respondents, the increasing demand for fast and easier consumer services will contribute to a rising technology prevalence.

4.2.3   Alternative Options

According to the respondents, another motivation to use SSK technologies is that people can choose different choices depending on their circumstances. Many consumers prefer self-checkouts and SSK technologies when they are accessible because they are less distracting and more secure. Some respondents find that technical solutions require social interactions to be avoided. For more and more social interactions influenced by social media, work pressures, and societal norms, more individuals will consciously search for technological alternatives to escape contact. However, this sub-theme has been frequently explored in both age and gender groups, indicating that social versatility is a generalizable attribute for different populations.

Respondents 5 suggest that people prefer touch screen technologies to protect their privacy or to prevent potentially awkward social interactions:

> *Sometimes, when I feel frustrated and avoid talking with*
> *people I will choose to eat and when I go to the restaurant, I*
> *will prefer to use the kiosk since I will feel distracted and stress*
> *if the employees don't understand what I want actually. Yaaa..*
> *It's good to have technology like this…*

The alternative option subtheme in this study explained the various views that millennia had on SSK. Concerning the subjects of convenience and needs, consumers stressed the millennium perceptions of customer service in the fast-food industry, in particular through the relation of the use of SSK as a part of customer service. The alternative subtheme was SSK technology as a choice for millennia if social experiences in these restaurants had to be avoided. Many of the respondents found awkward to communicate with a machine; so, they chose encounters with human. This subtheme related to the millennial generation expectations and was based on the previous numerous researchers (Shahid Iqbal et al., 2018; Suarez et al., 2019; Tuomi et al., 2020; Wang, 2017; Wei et al., 2016; Wunderlich, et. al., 2013). The subtheme of convenience focused on speed and facilitation in existing transactions and on the reduction of misunderstandings and communication barriers. This study found out that using SSK in fast-food restaurants has benefited consumers, in particular when it comes to food orders (Canziani, et. al., 2016; Prause, 2019; Suarez, et. al., 2019; Yang, et. al.,2014). The subtheme meeting needs to highlight the role of technology in the delivery of quality products and simplifying the transaction process. Some researchers (Canziani et al., 2016; Prause, 2019; Suarez et al., 2019; Yang et al., 2014) addressed this topic as an effectively improving the perceptions of consumers in the purchasing of food in fast-food restaurants.

5 Conclusion

Three subtopics were generated in this study which are convenience, meeting needs, and alternative options. This study underlined how the millennial generation viewed the use of SSK in the fast-food industry as part of customer service. The focus of the issue was also the expectations from millennials to strengthen the quality of the product and customer service by SSK technologies.

About the existing literature, results were expected to be more leaning towards the positive of the consumer with regards to SSK as a form of consumer service interaction. Moreover, the researcher expected that consumer was open on SSK since they were exposed to use technology and to a digital lifestyle; however, they also believed that there were issues concerning its full implementation from the findings, especially when it would replace human interactions. Lastly, the results showed that technology would be eventually integrated into the fast-food industry and millennials seemed to be anticipating that move from the leaders in the fast-food industry.

Findings of this study have reduced the literature gap on how consumers were motivated to use SSK as a form of customer service interaction in fast food industry. The results have shed light in terms of the expectations that consumer especially millennials have on technology. In addition, these findings extended the literature with regard to the SSK in fast food industry and in the future of customer service. Moreover, this study shed some light on the perceptions of consumer on how technology will be implemented in the fast-food industry.

6 About the author

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