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User interface (UI) on self-service kiosks' machine in fast-food industry in Nueva Ecija, Philippines: Its' correlation towards customers' experiences

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Abstract: This study aims to analyze the impact of human-computer interaction (User Interface) on self-service kiosks in the fast food industry in Nueva Ecija, Philippines, and how it affects customer experiences. The study aimed to outline the demographic characteristics such as age, gender, and education level, as well as how often individuals visited fast food restaurants. Additionally, it evaluated participants' opinions on the user interface of self-service kiosks in fast food establishments, focusing on ease of use, satisfaction, and intention to continue using them. Based on the findings of the research, most of the participants aged 21 to 35 utilized self-service kiosks at fast-food establishments, with 66.9% being female. Most of the participants, accounting for 31.5%, are college undergraduates who visit the fast food restaurant on a weekly basis. Utilizing a self-service kiosk at a fast food establishment is simple and convenient, streamlining the service process. Patrons at the fast-food establishment had a positive experience utilizing the self-service kiosk and plan to keep using it to streamline their ordering process. When faced with the issue, 41.04% of respondents experienced technical and mechanical problems that disrupted their ordering process or timing. Based on the findings, recommendations have been crafted, including a development plan created by the researcher to enhance the storage operation.

Keywords: *Artificial Intelligence (AI), Customer Experience, Fast Food, Self- Service Kiosks Machine, User Interface (UI).*

1. Introduction

As technology has progressed, the User Interface (UI) has become increasingly pivotal across various technological platforms. The user interface acts as the connection point between individuals and digital devices, including all interactive components that help users interact with a system as per the Compass Glossary, 2023. The rise of the technological revolution has transformed how individuals worldwide live and work, leading to a new era marked by changes in growth and opportunities. In his 2023 study, Paul emphasizes the significant influence of the digital revolution on the restaurant sector. He points out how many restaurants are using fast technological progress to improve their operations and meet the changing needs of tech-savvy customers. The transformation is clearly visible in the physical spaces of restaurants as well as in their online representation, showcasing the significant impact of digital advancements. The idea of "fast food" was formally acknowledged by Merriam–Webster in 1951, signifying a notable advancement in dining culture driven by social, urban, and economic shifts during the 20th century. Fast-food restaurants transformed the dining scene with their speedy, straightforward meals and minimal support, leading to a significant shift in people's eating routines (Fast Food, 2015). This trend has its roots in ancient civilizations, with street vendors offering quick meals to people in need, showcasing the ongoing importance and popularity of fast food over the course of human history (History of Fast Food, 2024). Fast food is a prominent sector within the food and beverage industry, prioritizing customer satisfaction. According to Graves (2023), customer satisfaction

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is described as the degree of happiness with a product or service, highlighting its significance in achieving business prosperity. Advancements in technology have significantly improved the efficiency and convenience of fast-food consumption. Self-service kiosks have been instrumental in enhancing service quality. These kiosks optimize the ordering process, simplify procedures, and provide a user-friendly interface, ultimately improving the overall customer experience (Westwood, 2023). Self-service kiosks provide customers with convenience and control, enabling streamlined self-service tasks and check-ins being available 24/7 helps reduce the need for human assistance, which can boost operational efficiency for businesses. By reducing the time spent on basic inquiries and transaction facilitation, self-service kiosks allow employees to concentrate on improving business processes and handling pressing tasks (TouchSource, 2021). Introducing self-order kiosks has proven to boost revenue and cut down on staffing expenses, providing patrons with a smooth ordering and payment process (Kendall, 2024).

In the Philippines, the fast-food industry is seeing steady expansion due to the increasing number of people opting to eat out. Allied Market Research (2020) has highlighted a substantial growth in the Philippine fast-food industry, with market size expected to hit $7.9 billion by 2026. In Nueva Ecija, a province in the Central Luzon region, the fast-food industry is flourishing, with prominent chains such as Jollibee and McDonald's implementing self-order kiosks in specific branches to improve customer experience and operational efficiency. Nevertheless, the extensive use of self-service kiosks brings about certain difficulties, such as customer dissatisfaction and a sense of reduced personal interaction. Some individuals may struggle to grasp this technology, which could result in confusion and discontent with the ordering procedure. In light of the swift technological progress and its effects on the fast-food sector in Nueva Ecija, researchers stress the significance of comprehending customer experiences. An investigation is being conducted to evaluate the impact of human-computer interaction (User Interface) on self-service kiosks and how it relates to customer experiences in the fast-food industry in Nueva Ecija, Philippines. The study aims to provide insights into this changing environment and its effects on businesses and customers. The purpose of this study is to assess and evaluate the influence of human-computer interaction (User Interface) on self-service kiosks' machine and its correlation towards customer experiences in fast food industry in Nueva Ecija, Philippines. In line with the above problem, specifically this study aims to answer the following questions. First, is to determine the demographic profile of the respondents in terms of age, sex, educational attainment, and frequency of visit to the fast-food restaurant. Second, is to assess the perception of the respondent in using the User interface (UI) on self-service kiosks' machine in fast food restaurant in terms of ease of usefulness, satisfaction, and continuance intention to use. Lastly, to identify if there is a significant difference between the different demographic profile of the respondents and their perception in using User Interface (UI) on self-service kiosks' machine in fast food industry.

2. Review of Related Literature

Customer Satisfaction. The fast-food sector is a constantly changing part of the global food market, deeply rooted in modern culture because of its affordability and convenience (Tyler, 2023). Throughout history, White Castle is recognized as the trailblazing fast-food chain, starting on the US west coast in 1916, but it was the emergence of McDonald's in the late 1940s and early 1950s that really drove the industry ahead. At the core of the triumph of fast-food establishments lies in their capacity to swiftly and effectively prepare food, resulting in carefully crafted menus. Instead of intricate recipes prepared by expert cooks, the focus is on simplicity, with many ingredients prepackaged and cooking appliances designed for convenience (Queen, 2024). Moreover, consistency is a primary objective, guaranteeing

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Self-Service Kiosks' Machine. An interactive touchscreen terminal is available for customers to conveniently purchase goods and services through self-service. This innovation enables customers to easily browse product options, make purchases, and finalize transactions on their own, using a combination of hardware and software features. By allowing customers to help themselves at their own speed, these kiosks simplify procedures and speed up service delivery. As pointed out by Nnamani (2022), customers who choose the self-service option have full control over their buying choices, making it easier to quickly pick out items they want and complete the checkout process smoothly. By having this level of independence, it not only decreases mistakes in orders but also shortens wait times, leading to an improved customer satisfaction and experience.

User Interface (UI). Churchville (2024) observes that in the early days of computing, user interfaces were rudimentary, typically comprising just a few buttons on an operator's console. During this era, punched cards produced by keypunch machines served as the primary method for inputting data and computer programs into these early machines. While advancements have since rendered punched cards obsolete in most computer systems after 2012, some voting machines persist in utilizing this outdated technology. The term "User Interface" (UI) refers to the interface through which a human interacts with a computer or device. This encompasses various components such as keyboards, mice, display screens, and desktop layouts. Moreover, UI extends to the interface that facilitates user interaction with websites or software programs. Essentially, UI serves as the intermediary enabling direct interaction between the user and the system.

Recognizing the significance of a well-designed UI, UmassAmherst (2023) underscores the importance of developing programs with high-quality UIs to enhance service delivery and customer experiences. By prioritizing user-friendly interfaces, organizations can optimize user engagement and satisfaction, thereby improving overall usability and functionality.

3. Materials and Methods

3.1. Research Method

The study utilized descriptive analysis methods to investigate and assess the influence of human-computer interaction (HCI) on the performance of self-service kiosks in the fast-food industry, specifically focusing on customer satisfaction. We used a quantitative approach, analyzing percentages, frequencies, weighted means, and statistical tools like ANOVA to thoroughly evaluate the impact of HCI on self-service kiosks and its effects on customer satisfaction.

3.2. Research Locale

The study was carried out in Nueva Ecija, Philippines, where there were identified respondents. Respondents in this study were from different municipalities of Nueva Ecija, Philippines. The province is divided into four congressional districts comprising 27 municipalities and 5 cities. The province has the most cities in the Central Luzon region.

3.3. Respondents of the Study

The research participants include individuals aged 18 to 65 who frequent fast food establishments. In particular, they make up a significant population of 1,490,153 in Nueva Ecija, Philippines. These people have been actively involved in using self-service kiosk systems, gaining first-hand experience to evaluate and analyze the effects of human-computer interaction, especially user interface (UI), on the functionality and usability of these self-service kiosks. Our primary goal is to explore the connection

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between interaction dynamics and the customer experience in the fast-food industry in Nueva Ecija, Philippines.

3.4. Sample and Sampling Procedures

The researchers utilized a snowball sampling technique, a type of non-probability sampling, to gather data for their study. This approach involves choosing participants with unique characteristics or traits. Just like a snowball growing in size as it rolls, this sampling method keeps building on itself, expanding until the researchers gather enough data to conduct a comprehensive analysis, resulting in significant findings that can guide decision-making in an organization (Bhat, 2024).

The individuals selected for this study were those who had used self-service kiosks at fast-food chains in Nueva Ecija. There were 385 respondents in the sample, selected from a total population of 1,490,153. In order to establish the sample size, the researchers made use of the Raosoft application. This tool computed the necessary sample size with a 95% confidence level and a 5% margin of error.

3.5. Research Instrument

This study used a survey questionnaire and in face-to-face interview to gather information of the respondents. The researchers adopted questionnaires entitled "Customer Satisfaction from the Self – Service Kiosks' UI/UX and the Customer Continuance Intention to Use" by Xavier E et al., (2023), to find out the influence of human-computer interaction (UI) on self-service kiosks' machine and its correlation towards customer experience in the fast food industry in Nueva Ecija, Philippines. Survey questionnaires are a set of objectives questions used to gain detail insights of the respondents to accomplish the objectives of the study. The survey questionnaires consisted into three parts;

Part I include the demographic profile of the customers. It was constructed by the researchers and the instrument used was a checklist filled out by the respondents.

Part II of the assessment consist of questions about the User Interface (UI) on self-service kiosks' machine and its correlation towards customer experience. It is composed of four parts; which are Perceived ease of use, Perceived usefulness, Satisfaction, and Continuance intention to use. It was formulated in the modified 4-point Likert scale (4) Strongly Agree; (3) Agree; (2) Disagree; (1) Strongly Disagree. Respondents of the study were instructed to rate the statement and answer the questions.

The research instrument was validated; corrections and suggestions were incorporated into the final draft; interviews were done with professionals to check the reliability and validity of the instrument.

3.6. Data Gathering Procedure

Following the approval of the research topic titled "Examining User Interface (UI) on Self-Service Kiosks in the Fast-Food Industry in Nueva Ecija, Philippines, and its Impact on Customer Experiences," the researchers commenced the process of collecting relevant data and information from online sources. This gathered data served as the foundation for developing research questionnaires, which were subsequently subjected to scrutiny by experts for feedback and suggestions aimed at enhancing their effectiveness. To validate the questionnaires, a trial run was conducted to assess their reliability and accuracy. The validity of the research instrument was confirmed through expert evaluation, wherein the experts rated the instrument, yielding a weighted mean of 4.03, indicating a high level of validity. Additionally, the reliability coefficient of the instrument was assessed to ensure internal consistency, resulting in satisfactory values indicating a dependable tool for data collection. With positive reliability findings in hand, the researchers sought approval from their respective research advisers to proceed with the study, particularly considering that in-person survey questionnaires were to be utilized. Upon receiving clearance, the researchers initiated the survey process by engaging with customers at various fast-food chain restaurants. Clear instructions were provided to the respondents regarding the questionnaire's content and the modified 4-point Likert scale for response, which ranged from "strongly agree" to "strongly disagree." Ensuring confidentiality, the researchers assured respondents that their identities would remain anonymous and addressed any queries they may have had regarding the study.

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Subsequently, respondents were given the opportunity to complete the questionnaire under the researchers' guidance. Following distribution, the collected questionnaire responses were compiled and analyzed for further interpretation and insights.

3.7. Data Analysis Techniques

The information gathered from the community was encoded, tallied, and examined. The data collected were analyzed using statistical methods such as percentage, frequency distribution, weighted mean, analysis of variance (ANOVA). The findings were translated using the scale below.

Table 1.
Scale for interpretation.

Scale	Mean range	Interpretation	Description
4	3.26 – 4.00	Strongly agree	Highly in favor
3	2.51 – 3.25	Agree	In favor
2	1.76 – 2.50	Disagree	Not in favor
1	1.00 – 1.75	Strongly disagree	Highly not in favor

Table 1 shows the scales employed by the researchers to analyze and describe the data to assess the advancement of rice production by utilization of modern agricultural machinery. The 4-point Likert scale used by researchers to identify the perspective of the respondents regarding the advancement of rice production using modern agricultural machinery.

Table 2.
Scale used for interpretation of analysis of variance (ANOVA).

P- value (Size of correlation)	Decision
P-value less than 0.05	Reject the null
P-value greater than 0.05	Accept the null hypothesis

Table 2 shows the scales used by the researchers in interpreting the Analysis of variance (ANOVA) is an analysis tool used in statistics that splits an observed aggregate variability found inside a data set into two parts: systematic factors and random factors. The systematic factors have a statistical influence on the given data set, while the random factors do not. Analysts use the ANOVA test to determine the influence that independent variables have on the dependent variable in a regression study. The researchers aim to determine the significant differences between different profile of the demographic profile of the respondents and their perception in using user interface or self-service kiosks machine in fast food industry

Aside from the said scale, the researchers used the following statistical tools to classify, tabulate, and analyze the data per the objectives of the research study:

In describing the business technical aspect of the respondents, the researchers used frequency and percentage.

To analyze the utilization of modern agricultural machinery for the advancement of the rice production, the researchers employed weighted mean and ranking.

To identify the significant difference between the different demographic profile of the respondents and their perception in using User Interface (UI) on self-service kiosks' machine in fast food industry, analysis of variance (ANOVA) was used by the researchers.

4. Results and Discussion

4.1. Demographic profile of the respondents and Its Significant Difference in Using User's Interface

This part described the demographic profile in terms of age, sex, educational attainment and frequency of visit to the fast-food restaurant.

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Table 3.
Demographic profile of the respondents in terms of age.

Age	Count	Percentage	Sum	Average	Variance
0-20	130	33.9%	447.82353	3.44480	0.10477
21-35	160	41.7%	563.17647	3.51985	0.11982
36-40	60	15.6%	207.41176	3.45686	0.10209
41-45	16	4.2%	54.58824	3.41176	0.11765
46-above	18	4.7%	63.82353	3.54575	0.05976

Table 4.
Significant difference between age and experience in using user interface.

Source of variation	SS	Df	MS	F	P-value	F crit
Between groups	0.599005005	4	0.149751251	1.371882728	0.243043487	2.395492276
Within groups	41.37068213	379	0.109157473			
Total	41.96968714	385				

Interpretation: Table 4 shows the result for the significant difference between age and experience in using user interface. Since the p-value (0.24) is greater than $\alpha = 0.05$, we accept the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that all of the group means are equal. This means that the five age intervals lead to the same average satisfaction

Table 3 presents a summary of the age distribution among respondents. This data shows that the majority of participants are between 21-35 years old, making up 160 people or 41.7% of the entire sample. Close attention was paid to the age group of 0-20 years, which included 130 respondents, making up 33.9% of the total. In the data, there are 60 individuals aged 36-40 years, accounting for 15.6% of the sample. Additionally, 18 respondents are aged 46 years and above, representing 4.7% of the total. Lastly, the age group of 41-45 years consists of 16 respondents, making up 4.2% of the total. The primary age range of the participants is 21-35 years old, with a considerable number being students and working professionals.

According to the data, millennial are the main users of kiosk machines due to their convenience and efficiency in processing orders. This age group shows a stronger preference for using self-service kiosks than older demographics. In 2024, a study by Revenue Management Solutions LLC reinforces this trend by showing that 58% of millennial opt for kiosk ordering, while only 17% of Baby Boomers and 37% of Generation Xers prefer this method.

Table 5.
Demographic profile of the respondents in terms of Sex.

Sex	Count	Percentage	Sum	Average	Variance
Female	257	66.75%	887.76471	3.45434	0.10566
Male	128	33.25%	449.05882	3.53590	0.11392

Table 6.
Significant difference between sex and experience in using user interface.

Source of variation	SS	df	MS	F	P-value	F crit
Between groups	0.565390	1	0.56539	5.21634	0.02292	3.86592
Within groups	41.404297	382	0.10839			
Total	41.969687	385				

Interpretation: Table 6 shows the result for the significant difference between sex and experience in using user interface. Since the p-value (0.02) is less than $\alpha = 0.05$, we reject the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that not all of the group means are equal. This means that the two sexes do not lead to the same average satisfaction.

Table 6 shows how respondents are distributed by gender. There are 257 females, making up 66.9% of the group, and 127 males, accounting for 33.1%. The data emphasizes the significant number of

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women among the participants, who are identified as the main users of kiosk machines for placing orders. According to the respondents, women are more likely to use kiosk machines than men, possibly because men are less familiar with the technology.

According to a study by Na et al. (2021), gender has a moderating effect on the connection between the technology readiness index and consumers' continuous intention to use self-service restaurant kiosks. Research findings indicate that women show a slightly higher preference for using self-service kiosks than men. It suggests that while there may not be a noticeable difference in the initial acceptance of self-service kiosks between genders, women are slightly more likely to continue using this technology in the long run.

Table 7.
Demographic profile of the respondents in terms of educational attainment.

Educational attainment	Count	Percentage	Sum	Average	Variance
High school graduate	90	23.4%	314.0588235	3.489542484	0.103948352
High school undergraduate	84	21.9%	292.7058824	3.484593838	0.100772839
College graduate	89	23.2%	323.4705882	3.634500991	0.069398546
College under graduate	121	31.5%	406.5882353	3.36023335	0.11981374

Table 8.
Significant difference between educational and experience in using user interface.

Source of variation	SS	Df	MS	F	P-value	F crit
Between groups	3.869417358	3	1.289805786	12.8641136	5.06261E-08	2.628394646
Within groups	38.10026978	380	0.100263868			
Total	41.96968714	385				

Interpretation: Table 8 shows the result for the significant difference between educational attainment and experience in using user interface. Since the p-value (0.00000005) is less than $\alpha = 0.05$, we reject the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that not all of the group means are equal. This means that the four educational attainment do not lead to the same average satisfaction.

Table 7 shows the educational accomplishments of the participants, indicating that the majority are college undergraduates, with a total of 121 individuals or 31.5%. Next in line are high school graduates, making up 90 respondents or 23.4%, followed by college graduates with 89 individuals or 23.2%, and finally, high school undergraduates with 84 participants or 21.9%. It's interesting to point out that most of the individuals who used the kiosk machine for ordering were college undergraduates. According to the feedback from the survey participants, college undergraduates, including both students and working individuals, tend to eat at fast-food restaurants and prefer using self-service kiosks.

Ylupse's (2020) findings shed light on a significant trend among college undergraduates: the rising utilization of kiosks within fast-food establishments. This observation aligns with broader research conducted in 2018, which indicated a notable preference among young consumers, with approximately 80% favoring the use of kiosks and tablets for placing food orders. This preference could be attributed to the early and pervasive exposure of this demographic to handheld technology. Growing up in an era dominated by smartphones, tablets, and other digital devices, college undergraduates are accustomed to interfaces that prioritize convenience, efficiency, and interactivity. Consequently, the intuitive nature of kiosks aligns well with their technological proficiency and preference for streamlined experiences. The adoption of kiosks by this demographic reflects not only a shift in consumer behavior but also underscores the importance for fast-food outlets to adapt their service models to meet the evolving needs and expectations of younger generations. As digital natives, college undergraduates are driving the integration of technology into various aspects of their lives, including the dining experience, thereby shaping the future landscape of fast-food consumption.

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Table 9.
Demographic profile of the respondents in terms of Frequency of visit in fast-food restaurants.

Frequency of visit in fast food restaurant	Count	Percentage	Sum	Average	Variance
Once a week	293	76.63%	1023.058824	3.49166834	0.111430204
Once a month	89	23.2%	306.4117647	3.442828817	0.103498733
Once every 2 months and above	2	0.5%	7.352941176	0.084775087	0.084775087

Table 10.
Significant difference between frequency of visit in fast-food restaurants and experience in using user interface.

Source of variation	SS	Df	MS	F	P-value	F crit
Between groups	0.239404133	2	0.119702066	1.092887084	0.336295814	3.019411119
Within groups	41.73028301	381	0.109528302			
Total						

Interpretation: Table 10 shows the result for the significant difference between frequency of visit in fast-food retaurants and experience in using user interface. Since the p-value (0.34) is greater than $\alpha = 0.05$, we accept the null hypothesis of the one-way ANOVA and conclude that we have sufficient evidence to say that all of the group means are equal. This means that the three frequency of visitation lead to the same average satisfaction.

Table 9 shows how often people in the study went to fast food restaurants. According to the data, 76.63% of people, which is 293 individuals, visit fast food establishments once a week. This is followed by 23.6% of individuals, which is 89 people, who visit once a month. A very small percentage, just 2 people or 0.5%, come by once every two months or less. It's interesting that a considerable number of participants use kiosk machines and visit fast food establishments every week.

Maze's (2023) research underscores the potential of kiosks to significantly impact the dynamics of fast-food restaurants, particularly in terms of revenue generation and customer engagement. Their findings suggest that the integration of kiosks into these establishments can lead to an upsurge in average spending per customer and a notable boost in overall sales. This phenomenon is particularly pronounced among individuals who frequent fast-food establishments, indicating that kiosks resonate strongly with this segment of the customer base. The convenience and efficiency offered by kiosks likely contribute to this trend, as they streamline the ordering process and provide additional opportunities for suggestive selling. By capitalizing on the preferences and behaviors of frequent customers, fast-food restaurants stand to benefit from the strategic implementation of kiosks as a means to enhance both financial performance and customer satisfaction

4.2. User Interface (UI) On Self-Service Kiosks' Machine in Fast Food Restaurant

This part described the User interface (UI) on self-service kiosks' machine in fast food restaurant in terms of perceived ease of use, perceived usefulness, satisfaction and continuance of use.

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Table 11.
Assessment of user interface (UI) on self-service kiosks' machine in fast food restaurant in terms of perceived ease of use.

Perceived ease of use	Weighted mean	Verbal interpretation	Rank	Decision
1. Using fast food restaurant Self - Service Kiosk does not require much effort.	3.43	Strongly Agree	5	Highly in favor
2. It doesn't take much time to learn to use fast food restaurant Self - Service Kiosk.	3.45	Strongly Agree	4	Highly in favor
3. Self - Service Kiosk instruction is clear and easy to understand.	3.49	Strongly Agree	2.5	Highly in favor
4. It is easy to get service and product through Self - Service Kiosk in fast food restaurant.	3.49	Strongly Agree	2.5	Highly in favor
5. Self – Service Kiosk in fast food restaurant is easy and convenient to use.	3.57	Strongly Agree	1	Highly in favor

The information from the Table 11 on Self-Service Kiosks in fast food restaurants emphasizes that customers are highly in favour (with a weighted mean of 3.57) of the ease and convenience of using these kiosks. Moreover, the data suggests that using these kiosks is effortless, with a weighted mean of 3.43 and described as strongly agree. It appears that the self-service kiosks in fast food restaurants are seen as easy to use and enhance the overall customer experience. As per feedback, these kiosks offer a convenient method for customers to order and pay without any trouble.

In a recent investigation by Enghelhardt (2022), the impact of implementing contactless dining methods is explored, revealing an initially hesitant reception that has since transformed into widespread popularity among customers. This shift is primarily attributed to the inherent convenience and safety measures embedded within contactless dining practices. Self-service kiosks stand at the forefront of this transformation, empowering customers to independently navigate the ordering and payment processes. By integrating self-payment kiosks into their operations, fast-food establishments can effectively cater to customer preferences for streamlined and secure dining experiences. Not only does this approach enhance convenience and comfort for patrons, but it also aligns with the evolving expectations of a digitally savvy consumer base, ensuring that fast-food chains remain at the forefront of innovation within the industry.

Table 12.
Assessment of User interface (UI) on self-service kiosks' machine in fast food restaurant in terms of perceived usefulness

Perceived Usefulness	Weighted mean	Verbal interpretation	Rank	Decision
1. Self - Service Kiosk in fast food restaurant saves time and complete transactions quickly	3.38	Strongly Agree	5	Highly in favor
2. Self - Service Kiosk in fast food restaurant improves service efficiency.	3.45	Strongly Agree	3	Highly in favor
3. Self - Service Kiosk in fast food restaurant makes service easier	3.59	Strongly Agree	1	Highly in favor
4. Self-Service kiosk in fast food restaurant exceeded my expectations.	3.47	Strongly Agree	2	Highly in favor
5. Using Self - Service Kiosk in fast food restaurant makes me satisfied.	3.43	Strongly Agree	4	Highly in favor

As presented on Table 12, respondents are in strong agreement that self-service kiosks in fast food establishments simplify the service process, as shown by a weighted mean of 3.59. Likewise, the participants overwhelmingly support the idea that these self-service stations are efficient and enable fast transactions, although the average score is slightly lower at 3.38. It indicates a strong inclination towards restaurants that use self-service kiosk systems due to their efficient service process.

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Nnamani (2022) sheds light on the transformative impact of self-service kiosks in enhancing customer-business interactions, emphasizing their role in offering a convenient, efficient, and self-directed experience. This innovative approach not only streamlines operations but also significantly elevates the overall customer experience. By empowering patrons to take control of their ordering process, self-service kiosks contribute to heightened satisfaction levels while concurrently slashing wait times, a crucial factor in fast-paced environments. Furthermore, the introduction of self-service kiosks opens avenues for additional sales opportunities, as customers may be more inclined to explore menu offerings and add-ons independently.

In fast-food restaurants and similar quick-service settings, self-service kiosks serve as a pivotal tool in redefining the customer journey. They enable individuals to navigate the ordering process, make payments, and access pertinent information autonomously, thus reducing dependency on staff assistance. This not only frees up employees to focus on other critical tasks but also fosters a sense of empowerment and convenience for customers. As a result, self-service kiosks emerge as a cornerstone of modern customer service strategies, embodying the principles of efficiency, autonomy, and customer-centricity in the ever-evolving landscape of dining experiences.

Table 13.
Assessment of User interface (UI) on self-service kiosks' machine in fast food restaurant in terms of satisfaction.

Satisfaction	Weighted mean	Verbal interpretation	Rank	Decision
1. Self-service Kiosk in fast food restaurant is close to the Self-Service Technology that I expected.	3.43	Strongly agree	3.5	Highly in favor
2. I feel happy while using Self - Service Kiosk in fast food restaurant.	3.49	Strongly agree	2	Highly in favor
3. I had a good experience using the self-service kiosk at the fast food restaurant.	3.51	Strongly agree	1	Highly in favor
4. Self - Service Kiosk in fast food restaurant gives greater control over completing transactions.	3.32	Strongly agree	5	Highly in favor
5. Using Self - Service Kiosk in fast food restaurant makes me satisfied.	3.43	Strongly agree	3.5	Highly in favor

Based on the information provided Table 13, customers were pleased with their use of the self-service kiosk at the fast food restaurant. The weighted mean of 3.51 suggests a high level of agreement about their positive experience. On the other hand, the part of the kiosk that provides more control over transactions got a slightly lower weighted mean of 3.32, showing a strong agreement with this idea.

The findings suggest that customers generally hold a favorable perception of self-service kiosks within fast-food establishments, considering them to be a convenient and gratifying addition to their dining experience. This aligns closely with the assertions put forth by the Grubbrr Team (2021), indicating that kiosks play a pivotal role in alleviating frustration among customers by delivering consistent and efficient service, thereby fostering an environment conducive to heightened satisfaction levels.

The positive reception of self-service kiosks can be attributed to several factors. Firstly, these kiosks offer patrons the flexibility to browse menu options at their own pace, customize orders according to their preferences, and complete transactions autonomously. This autonomy not only streamlines the ordering process but also empowers customers to tailor their dining experience to suit their individual needs and preferences.

Moreover, the consistent performance of self-service kiosks contributes to a sense of reliability and dependability, mitigating the likelihood of errors or inconsistencies in order fulfillment. Customers can rely on kiosks to accurately process their orders and payments, thereby reducing instances of frustration stemming from mistakes or delays.

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Additionally, the efficiency of self-service kiosks plays a pivotal role in enhancing customer satisfaction. By expediting the ordering and payment process, these kiosks help minimize wait times, enabling customers to enjoy their meals promptly and without unnecessary delays. This efficiency is particularly crucial in fast-food establishments, where speed and convenience are paramount considerations for customers.

Table 14.
Assessment of user interface (UI) on self-service kiosks' machine in fast food restaurant in terms of continuance of use.

Continuance of use	Weighted mean	Verbal interpretation	Rank	Decision
1. I will continue to use fast food restaurant Self-Service Kiosk for easy transaction.	3.52	Strongly agree	3	Highly in favor
2. I will continue to use fast food restaurant Self-Service Kiosk to save time.	3.59	Strongly agree	1	Highly in favor
3. I will continue to use fast food restaurant Self-Service Kiosk because it is convenient to use.	3.56	Strongly Agree	2	Highly in favor

Based on the data provided Table 14, it is clear that customers are highly inclined to use self-service kiosks at fast-food establishments to speed up their transactions. The weighted mean of 3.59 shows a strong agreement with this view. Furthermore, respondents widely agree on the convenience provided by these kiosks, with a weighted mean of 3.52 and a corresponding interpretation of strongly agree. The results highlight the common choice of using fast-food restaurant kiosks to improve the ordering process and save time.

The research underscores a significant trend: customers are increasingly drawn to self-service kiosks owing to their inherent efficiency and time-saving advantages. This observation resonates strongly with the assertions put forth by Ashfaq (2024), who posits that the adoption of self-service kiosks correlates with heightened customer satisfaction, primarily driven by the reduction in wait times, enhanced convenience, and the provision of a more personalized experience.

In addition to efficiency gains, self-service kiosks offer a heightened level of convenience, allowing customers to place orders at their own pace and convenience, without feeling rushed or pressured. Moreover, the ability to customize orders and explore menu offerings in a self-directed manner adds a layer of personalization to the dining experience, catering to individual preferences and dietary requirements.

Overall, the integration of self-service kiosks represents a strategic investment in enhancing customer satisfaction and loyalty. By addressing the need for efficiency, convenience, and personalization, these kiosks not only meet the evolving expectations of today's consumers but also contribute to a more seamless and enjoyable dining experience.

5. Conclusion

The researchers were able to draw the following conclusions based on the findings: Most self-service kiosk machines in fast food restaurants in Nueva Ecija are used by millennials, as seen by the maximum proportion of 41.7% of the users being between the ages of 21 and 35. According to the respondents, 66.9% are female users, and 121, or 31.5%, of them are college undergraduates. According to the respondents, 76.63% of the respondents frequently visit the fast-food restaurant once a week.

With a weighted mean of 3.57, self-service kiosks in fast food restaurants that are easy and convenient to use ranked highest among perceived ease of use, indicating that self-service kiosks provide an easy and convenient way for customers to place orders and make payments in fast food restaurants. With a weighted mean of 3.59, self-service kiosk machines in fast food restaurants ranked highest among perceived usefulness, indicating that self-service kiosk machines can accelerate the ordering procedure and support easier services in fast food restaurants. With a weighted mean of 3.51, customers

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had a good experience using the self-service kiosks at the fast-food restaurant, indicating that self-service kiosk machines provide an excellent and consistent customer experience, which can lead to increased customer satisfaction. With a weighted mean of 3.5, customers will continue to use self-service kiosk machines in fast food restaurants to save time, ranking highest among those who continue to use them, indicating that they are enjoying using kiosk machines. Aside from their efficiency, people also save time.

The following recommendations were made based on the findings and conclusions presented.

Due to the technical and mechanical issues that lead to inconvenience for users, the researchers recommend several strategies for fast food restaurants to utilize kiosk machines to optimize their effectiveness and enhance the customer experience. Researchers suggest implementing proactive maintenance protocols to prevent downtime and minimize disruptions to operations. This includes regularly updating software, performing routine inspections, and promptly addressing any technical issues that arise.

The researchers recommend several strategies for addressing slow processes in kiosk machines. Fast food restaurants may implement queue management systems or time-saving features within the kiosk interface, such as quick-order buttons for popular items or suggested meal combinations.

The researchers recommend this study to fast food restaurants to enhance and promote the importance of utilizing kiosk machines to develop a more futuristic service quality experience. By integrating cutting-edge technology like kiosk machines into their operations, restaurants can cater to the modern consumer's desire for convenience, efficiency, and customization.

For future researchers, this study provides a valuable resource for delving deeper into the realm of kiosk machines within fast food restaurants. It lays the groundwork for extensive analyses, comparative investigations, and the generation of fresh insights regarding consumer behaviour, ordering preferences, and market dynamics.

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