

THE EFFECT OF PERFORMANCE APPRAISAL ON EMPLOYEE PRODUCTIVITY

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ABSTRACT

This study aims to analyze customer perceptions of the use of technology in restaurant services and its impact on customer satisfaction and overall experience. The rapid development of digital technology has significantly transformed the culinary industry, particularly in service aspects such as online ordering applications, digital payment systems, self-service kiosks, and QR code menus that are increasingly implemented in restaurants. The research method used is a quantitative approach with data collection techniques through questionnaires distributed to restaurant customers who have experienced technology-based services. The results indicate that most customers have a positive perception of technology usage, as it enhances service efficiency, accelerates the ordering process, and provides convenience in transactions. However, several challenges remain, including limited technological literacy among some customers and reduced face-to-face interaction with staff, which may affect the emotional aspect of customer experience. Therefore, restaurants need to optimize the integration of technology while maintaining personalized service to balance efficiency and customer satisfaction. This study is expected to contribute to the restaurant industry in developing effective technology-based service strategies that are customer-oriented.

Keywords: *Customer perception, restaurant technology, service quality, customer satisfaction, digitalization*

INTRODUCTION

Customer perceptions of the use of technology in restaurant services are an important aspect that needs to be examined in depth in the current era of rapid digitalization. Almost every sector, including the culinary industry, has undergone significant transformation due to the integration of technology into various aspects of operations and service delivery. Restaurants no longer rely solely on conventional interactions between staff and customers but have increasingly adopted various innovations, such as app-based ordering systems, QR codes for accessing digital menus, cashless payments through electronic wallets, and the use of artificial intelligence to improve service efficiency. These technologies are implemented to provide customers with greater convenience, faster service, and a more comfortable dining experience. However, the success of such technological implementation largely depends on how customers perceive, understand, and experience the benefits of these technologies throughout their interactions with the restaurant. Positive perceptions are likely to encourage technology acceptance and customer satisfaction, whereas negative perceptions may lead to resistance and dissatisfaction with the services provided by the restaurant (Iqbal, 2024).

From a consumer behavior perspective, customer perceptions of technology use in restaurant services are not formed in a simple manner but are influenced by various complex and

interconnected factors. These factors include the perceived ease of use of the technology, the benefits perceived by customers, the level of trust in digital systems, and previous experiences with similar technologies. In addition, demographic characteristics such as age, educational background, and socioeconomic status may significantly influence how customers evaluate technology used in restaurant services. Younger customers who are accustomed to digital technology tend to have more positive perceptions than older customers or those who are less familiar with technology. These differences present a challenge for restaurants in designing technology-based service systems that can be accepted by customers from diverse segments. Therefore, a comprehensive understanding of the factors that shape customer perceptions is essential for determining the successful implementation of technology in restaurant services (Kurniati et al., 2024).

The use of technology in restaurant services also provides significant opportunities to create more personalized and interactive customer experiences. Through technology, restaurants can collect data on customer preferences and use this information to provide menu recommendations that match individual tastes. This not only enhances customer satisfaction but also strengthens the relationship between customers and restaurants in the long term. However, despite these benefits, concerns regarding personal data security may also influence customer perceptions of technology use. Customers may feel hesitant or uncomfortable if they believe that their personal information is not adequately protected. Therefore, restaurants need to ensure that the technological systems they implement provide a high level of security and effectively protect customer privacy (Nareswari & Suryaningsih, 2024).

In addition to providing convenience, the use of technology in restaurant services can also change the pattern of interaction between customers and service providers. Customers now have greater control over their choices without having to rely entirely on restaurant staff. For some customers, this is considered a form of efficiency and freedom in enjoying restaurant services. For others, particularly those who value social interaction, the use of technology may reduce the overall dining experience. This demonstrates that customer perceptions of technology are not necessarily positive and may vary depending on individual preferences. Therefore, restaurants need to consider maintaining a balance between technological implementation and human interaction when delivering their services.

In facing increasingly intense business competition, restaurants are required to adapt to changing trends and customer needs, including the use of technology. Technology can serve as an important strategy for improving operational efficiency and service quality. However, the implementation of technology that does not align with customer needs and expectations may instead have negative consequences. Customer perceptions are an important indicator for evaluating the success of technology implementation in restaurant services. When customers are satisfied with the use of technology, they are more likely to return and develop loyalty toward the restaurant. Conversely, if customers feel uncomfortable with the technology used, their intention to revisit may decrease.

The study of customer perceptions regarding the use of technology in restaurant services is therefore highly important. Such research can provide an understanding of how customers evaluate and respond to technological innovations implemented by restaurants. The findings can serve as a basis for developing more effective and efficient service strategies. Restaurants can adjust their use of technology according to the characteristics and preferences of their target customers. In this way, technology can function not only as an operational support tool but also as a means of enhancing the overall customer experience. Ultimately, the appropriate use of technology can help restaurants strengthen their competitiveness and maintain their presence amid the increasingly dynamic development of the culinary industry.

LITERATURE REVIEW

a. Customer Perception

Customer perception is a highly complex psychological process through which individuals receive, select, organize, and interpret various types of information obtained from their surrounding environment in order to develop an understanding of a particular service or product. In the context of restaurant services, customer perception is particularly important because it determines how customers evaluate the overall quality of the service they receive. This perception is not only shaped by direct experiences but is also influenced by initial expectations, brand image, and previous experiences with the restaurant or similar services. In addition, emotional factors such as feelings of comfort, satisfaction, or disappointment also contribute to the formation of customer perceptions of a service. Each customer has a different background, preference, and level of understanding; therefore, perceptions may vary even when customers receive the same service. Consequently, understanding customer perceptions is essential for restaurants in developing effective service strategies that meet customer expectations (Rorizanda & Suharto, 2024).

Customer perception is also influenced by various internal and external factors that are interconnected and contribute to an overall evaluation of restaurant services. Internal factors include motivation, experience, and customer attitudes toward the use of technology in service delivery. Meanwhile, external factors include the quality of service provided, ease of access, and interactions between customers and restaurant employees. In today's digital era, technology has become one of the key factors influencing customer perceptions of restaurant services. Customers tend to have more positive perceptions when the technology used provides convenience, speed, and comfort throughout the service process. Conversely, if the technology is perceived as complicated or unhelpful, it may lead to negative perceptions that can affect customer satisfaction and loyalty.

b. Technology

Technology in the restaurant industry refers to various digital systems and innovations used to support operations and improve the quality of service provided to customers. The forms of technology used are diverse, ranging from digital ordering systems and mobile applications to QR codes and integrated cashless payment systems. These technologies are intended to improve efficiency, accelerate service processes, and reduce operational errors in restaurants. In addition, technology enables restaurants to provide customers with a more modern and convenient experience. Customers can easily order food, make payments, and access menu information through digital devices. Therefore, technology has become an important element in creating a competitive advantage in the restaurant industry (Budhiartha & Wibowo, 2025).

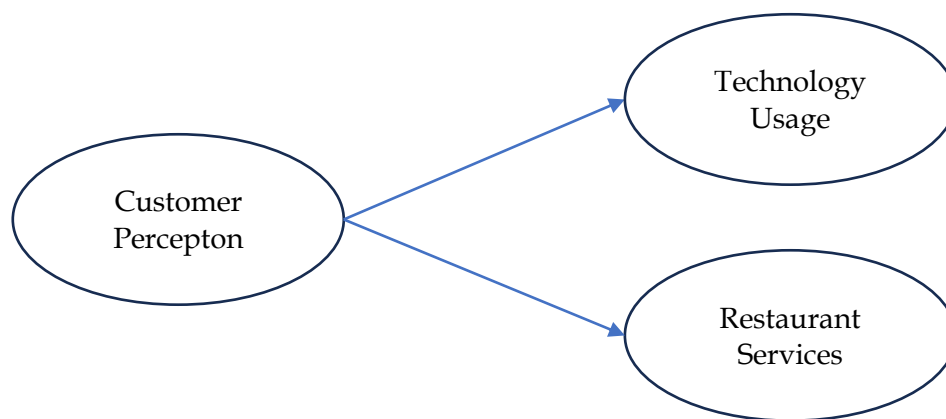
The implementation of technology in restaurant services also presents several challenges that need to be taken seriously by business operators. Not all customers have the same level of digital literacy, meaning that the use of technology may create difficulties for some customers. Furthermore, system disruptions or technological errors can interfere with the service process and reduce the quality of the customer experience. Data security and privacy issues are also important concerns regarding the use of digital technology in restaurants. Customers need to feel secure when using payment systems or digital applications provided by restaurants. Therefore, restaurants must ensure that the technology they implement is not only advanced but also user-friendly, secure, and reliable.

c. Restaurant Services

Restaurant service refers to a series of activities carried out by service providers to fulfill customers' needs and expectations while they are at the restaurant. These services encompass various aspects, ranging from welcoming customers and taking orders to serving food and providing post-consumption services. Service quality is one of the primary factors determining customer satisfaction with a restaurant. Good service is characterized not only by speed and accuracy but also by the friendliness, politeness, and professionalism of employees. In addition, the restaurant atmosphere and environmental comfort also contribute to the overall customer experience. Therefore, restaurant services should be designed comprehensively to create a pleasant and satisfying experience for customers (Simatupang & Kurniawan, 2022).

Along with technological developments, restaurant services have undergone significant changes in recent years. Interactions between customers and service providers no longer depend entirely on human staff but increasingly involve digital technology. The use of self-service kiosks, ordering applications, and automated systems has become part of innovation in restaurant services. On the one hand, technology can improve efficiency and reduce customer waiting times. On the other hand, the use of technology may reduce the social interaction that has traditionally been a characteristic of restaurant service. Therefore, restaurants need to maintain a balance between the use of technology and the human touch when delivering their services (Susanti et al., 2025).

Figure 1. Conceptual framework



METHOD

Customer perceptions of the use of technology in restaurant services in qualitative research are understood as how customers interpret, experience, and evaluate their interactions with various forms of technology, such as digital ordering systems, automated cashier applications, QR code-based menus, and cashless payment services. These technologies are considered not only in terms of their practical functions but also in relation to the convenience, ease of use, speed, and emotional satisfaction experienced by customers throughout the service process. Therefore, in a qualitative approach, researchers explore customers' subjective experiences in depth through interviews, observations, or focus group discussions to understand how such technologies influence their perceptions of service quality. The research examines whether the technology is perceived as helpful or, conversely, as a source of difficulty, as well as the extent to which customers accept the transition from conventional service systems to technology-based services. The primary focus is on the meanings constructed by customers based on their

actual experiences in the field rather than merely on numerical or statistical data. Thus, the findings are expected to provide a comprehensive understanding of customers' attitudes, preferences, and expectations regarding the use of technology in the context of restaurant services.

In conducting qualitative research, researchers generally employ a flexible and exploratory approach using data collection techniques such as in-depth interviews with customers who have used technology-based restaurant services, direct observation of customer interactions with the available technological systems, and documentation of various customer responses or feedback. The data collected are then analyzed thematically by identifying specific patterns that emerge from the participants' responses, such as perceptions of ease of use, service speed, levels of satisfaction, and challenges encountered. Through this analysis, key themes can be identified to provide a comprehensive understanding of customer perceptions. In addition, researchers must ensure the trustworthiness of the data through techniques such as triangulation, member checking, and prolonged engagement in the field so that the research findings have a high level of credibility. Ultimately, this research not only provides an in-depth understanding of customer experiences but can also serve as a basis for restaurant managers to improve technology-based service quality in accordance with customers' needs and expectations.

RESULTS

The research findings indicate that customer perceptions of technology use in restaurant services in the Gading Serpong, BSD City, and Karawaci areas are generally positive, particularly in terms of service convenience and efficiency. Most customers reported experiencing significant changes in the ordering process, which was previously conducted manually but has become faster and more practical with the assistance of technologies such as QR code menus and digital ordering systems. Customers no longer need to wait for servers to come and take their orders; instead, they can directly select menu items using their personal devices. This benefit is particularly noticeable when restaurants are crowded, as the technology helps reduce queues and waiting times, which are often major complaints associated with conventional service.

Rina Pratiwi (21 years old, a university student in BSD City), one of the informants, explained that the use of technology in restaurant services provided a much more efficient experience compared to the manual system. She stated, "I feel that it is more practical. I just scan the code and immediately choose the menu, so I do not waste time waiting for the server to come, especially when the restaurant is crowded." This statement indicates that for younger customers who are accustomed to using digital technology, such systems can serve as a highly helpful solution for improving service convenience and speed. In some cases, customers also feel that they have greater control over their orders because they can view the complete menu directly without feeling rushed while being served by restaurant staff (Putri & Yosepha, 2023). In addition to efficiency, the research findings also indicate that the use of technology can create a modern impression and enhance the restaurant's image in the eyes of customers, particularly consumers who consider the atmosphere and concept of a dining establishment to be part of their overall consumption experience. Restaurants that use technology tend to be perceived as more innovative, professional, and up to date, giving them a distinct appeal compared to restaurants that still rely on traditional service systems. This added value not only affects customer satisfaction but may also influence customers' decisions to revisit the restaurant or recommend it to others (Riupassa, 2025).

This finding is further supported by Andi Saputra (24 years old, a private-sector employee in Karawaci), who stated that the presence of technology in restaurant services created a more attractive and organized impression. He said, "When there is a system like this, it looks more modern and organized, like a restaurant that is serious about keeping up with the times." This statement demonstrates that customer perceptions are influenced not only by food quality but also by the service system used. Therefore, technology can become an important element in building a restaurant's branding and positioning amid increasingly intense competition in the culinary industry. However, not all customers have entirely positive experiences, as several challenges remain in the use of such technology, particularly among customers who are less familiar with digital devices or when technical problems occur, such as unstable internet connections. These conditions may interfere with the ordering process and cause discomfort for customers, meaning that technology intended to simplify the service process can instead become an obstacle in certain situations. This indicates that the implementation of technology in restaurant services needs to be supported by adequate infrastructure and systems that are easy to use for customers from different backgrounds.

Siti Rahma (30 years old, a housewife in Gading Serpong) described her experience with these challenges by stating, "Sometimes when the signal is weak, it is difficult to open the menu, and I also prefer being able to ask the server directly so that things are clearer." This statement demonstrates that there is still a need for direct interaction between customers and servers as part of a more personalized and helpful service experience, particularly for customers who are not accustomed to using technology or who require further explanations about the available menu. Overall, the findings indicate that the use of technology in restaurant services has a significant impact on customer perceptions in terms of efficiency, modernity, and the overall service experience. Nevertheless, the implementation of technology should also consider users' readiness and continue to provide conventional service alternatives so that customers from different backgrounds can feel comfortable. Therefore, maintaining a balance between technology and human interaction is essential for creating optimal restaurant services that comprehensively meet customers' needs and expectations.

The findings also indicate that the successful implementation of technology in restaurant services is determined not only by the availability of digital devices themselves but also by how the technology is fully integrated into the restaurant's operational system. Poor integration may create new problems that hinder the service process, which is supposed to become faster and more efficient. For example, a lack of synchronization between the digital ordering system and the kitchen may result in order errors that directly affect customer satisfaction. This condition demonstrates that technology cannot operate independently without the support of a strong and well-organized internal system. In addition, employees may experience an increased workload if they have to make manual adjustments due to an unintegrated system. Therefore, proper system management is required through continuous planning and evaluation to ensure that technology provides optimal benefits.

User experience is a crucial factor in determining the successful use of technology in restaurant services. Not all customers have the same level of digital literacy, meaning that overly complex systems can become obstacles during the ordering process. A simple interface design, clear navigation, and fast system responses are important elements in supporting user convenience (Kurniawan, 2022). When customers experience difficulties in using the system, they are more likely to feel frustrated and reluctant to use it again. This demonstrates that technological sophistication must be balanced with ease of access for all customer groups. Therefore, system development should be user-oriented so that the technology can be utilized to its full potential.

On the other hand, the implementation of technology in restaurant services also brings significant changes to the role of employees, particularly servers. Servers no longer function solely as order takers but also act as facilitators who assist customers in using digital systems. This change requires improved competencies, particularly in technological literacy and interpersonal communication skills. Human interaction remains an important element in creating a pleasant customer experience, even though some service processes have been automated. In addition, servers play an important role in bridging the gap between technology and customers who experience difficulties in using digital systems. Therefore, employee training and human resource development are essential aspects of supporting digital transformation.

Customer data security is also a major concern regarding the use of technology in restaurant services. Digital systems often require customers to access specific networks or even provide personal information. This situation makes customers more cautious when using the available technology. Concerns about potential data breaches may reduce customer trust. Therefore, restaurants need to ensure that the systems they use meet high security standards. Transparency in data management is also important to make customers feel safe and comfortable when using digital services.

The use of technology in restaurant services also affects customer behavior in making purchasing decisions. Customers become more independent because they can directly view and select menu items using their own devices. This allows customers to explore various options without feeling pressured by the server. On the other hand, easy access to information may also encourage impulse purchases, particularly when promotional features or recommendations are available. This condition demonstrates that technology functions not only as a service tool but also as a marketing strategy. The interactive experience provided by technology can also enhance overall customer satisfaction. Therefore, the use of technology should be strategically designed to provide maximum benefits.

The implementation of technology in restaurant services demonstrates a significant transformation in the way services are delivered to customers. Technology can improve efficiency while creating a modern impression that adds value to restaurants. Nevertheless, the success of its implementation still depends on the readiness of infrastructure and human resources. In addition, the level of customer acceptance of technology is another determining factor that cannot be overlooked. Therefore, a balance between digital services and direct interaction is necessary to ensure that all customers feel comfortable. With the appropriate approach, technology can become an effective solution for continuously improving the quality of restaurant services.

The implementation of technology in restaurant services also provides opportunities for restaurant managers to conduct more in-depth analyses of customer data in order to understand consumption behavior patterns. Every customer interaction with a digital system, such as menu selections, ordering frequency, and food preferences, can be automatically recorded and processed into strategically valuable information. This data can be utilized to develop more targeted marketing strategies, such as personalized promotions or menu adjustments based on emerging customer demand trends. Thus, technology functions not only as an operational tool but also as an important instrument for data-driven business decision-making. However, the use of such data must continue to consider ethical and privacy aspects to avoid creating concerns among customers. Transparent and responsible data management is essential for maintaining customer trust in the systems being used. Therefore, restaurants need to establish clear policies regarding the use of customer data so that the benefits of technology can be maximized without creating harmful risks.

Technological developments in restaurant services also have the potential to encourage the creation of more diverse and creative service innovations, such as integration with digital payment systems, the use of artificial intelligence for menu recommendations, and the implementation of self-service concepts, which are increasingly being adopted by modern restaurants. These innovations provide customers with new experiences that focus not only on food consumption but also on interaction with the technology being used. This condition indirectly enhances the competitiveness of restaurants amid an increasingly dynamic and competitive culinary industry. Nevertheless, innovations must continue to consider customer needs and convenience so that they do not appear to force customers to use technology that may instead create difficulties. Maintaining a balance between innovation and convenience is an important factor in creating a positive customer experience. Therefore, every form of innovation should be tested and adjusted to the characteristics of the target market being served.

The sustainability of technology use in restaurant services largely depends on management's ability to continuously evaluate and adapt to changing customer needs and developments in the business environment. Technology that is relevant today may not necessarily remain effective in the future. Regular evaluation of the systems being used is therefore important for identifying weaknesses and opportunities for improvement that can enhance service quality. In addition, customer feedback should be considered in system development to ensure that the technology implemented genuinely meets user expectations. Adapting to technological developments is also a strategic step to ensure that restaurants remain competitive within the industry. Thus, technology implementation should be viewed as a dynamic and continuous process rather than merely a temporary change. Through an adaptive and responsive approach, restaurants can create service systems that are not only efficient but also capable of providing satisfying customer experiences in the long term.

The implementation of technology in restaurant services also has the potential to improve the consistency of service quality provided to customers because digital systems can minimize human errors in order recording and ensure that every instruction provided by customers is accurately transmitted to the kitchen without information distortion. This consistency is particularly important for maintaining service standards amid high customer volumes during peak periods. With automated systems, each order can be processed through the same workflow, thereby reducing the possibility of differences in service among customers. However, technology-based consistency still requires human supervision to ensure that the quality of the final outcome is maintained. This demonstrates that technology and human resources must work synergistically to achieve optimal service (Paramita et al., 2017). Therefore, effective system management is a determining factor in maintaining the stability of restaurant service quality.

On the other hand, the implementation of technology can also improve the overall operational efficiency of restaurants because digital systems can reduce the need for time- and labor-intensive manual processes. This efficiency affects not only service speed but also long-term operational cost savings. Restaurants can allocate their resources to other more strategic areas, such as improving food quality or developing service concepts. However, the initial investment required to implement technology can be relatively substantial and therefore requires careful planning. In addition, system maintenance is an important aspect of ensuring that the technology continues to function properly. Therefore, decisions regarding technology adoption should consider the balance between the costs incurred and the benefits obtained.

The use of technology in restaurant services also influences customers' perceived value because fast and convenient services are often associated with higher quality. Customers tend

to perceive restaurants that use technology as having higher service standards than restaurants that continue to rely on conventional systems. This perception may increase customer loyalty and encourage customers to revisit the restaurant in the future. However, perceived value is not determined solely by service speed but also by the quality of interaction experienced by customers. If technology is used without considering customer comfort, the perceived value of the service may decrease. Therefore, it is important for restaurants to maintain a balance between efficiency and customers' emotional experiences.

Technology also enables restaurants to increase transparency throughout the service process, particularly regarding menu information, prices, and order status, which can be accessed directly by customers through their devices. This transparency gives customers a greater sense of control because they can monitor their orders without having to rely entirely on servers. This can increase customers' trust in the service system being used. However, transparency also requires a high level of data accuracy to ensure that the information displayed does not mislead customers. Inaccurate information may instead significantly reduce customer trust. Therefore, accurate and real-time data management is essential for supporting service transparency.

Technological developments in restaurant services demonstrate that the culinary industry is moving toward increasingly modern and digitally based service systems, with customer experience becoming a primary focus of every innovation implemented. This transformation not only changes how customers interact with services but also how restaurants manage their operations and business strategies. Nevertheless, the success of this transformation largely depends on restaurants' ability to adapt technology to the diverse needs of their customers. Flexibility in providing service alternatives is essential to ensure that all customer segments can continue to receive appropriate services. In addition, continuous evaluation of the systems being used is important to ensure the relevance of technology in the future. Thus, technology can become an effective tool for creating superior, adaptive, and sustainable restaurant services.

DISCUSSION

Customer perceptions of the use of technology in restaurant services generally indicate that the presence of technology has significantly changed the way customers interact with services. Processes that were previously manual have now shifted toward digital and more self-directed systems, giving customers greater control over their experiences, from ordering to payment. This transformation creates greater time efficiency and reduces customers' dependence on restaurant staff. However, it also changes the dynamics of service, which was initially based on direct interaction and has gradually become more system-oriented. Thus, technology functions not only as a supporting tool but also as a factor that shapes the overall consumption experience, particularly in modern restaurants where speed, accuracy, and convenience are highly valued. In addition, the use of technology in restaurant services is closely related to changes in customer behavior and preferences. As customers become increasingly accustomed to digital convenience in their daily lives, they tend to have higher expectations regarding the speed and practicality of restaurant services. This makes technology an important factor in enhancing customer satisfaction because it can fulfill these needs more effectively than conventional methods. Nevertheless, the level of technology acceptance varies among individuals and is influenced by factors such as age, educational background, and digital literacy. Therefore, although many customers find technology helpful, certain groups may still experience difficulties or feel uncomfortable when using it.

On the other hand, the use of technology also affects the emotional and social aspects of the customer experience. Reduced direct interaction between customers and restaurant staff may influence the quality of interpersonal relationships that were previously an integral part of restaurant service. Consequently, the dining experience is evaluated not only in terms of efficiency but also in terms of the comfort and personal connection perceived by customers. Some customers may feel that the service has become less personal because most activities are carried out through digital devices. Therefore, restaurants need to consider maintaining a balance between technology use and human touch in order to continue providing customers with a pleasant and memorable experience (Sudirjo et al., 2023). Overall, the findings indicate that technology use in restaurant services plays an important role in improving service quality, operational efficiency, and the modern image of restaurants from the customers' perspective. However, its implementation should be carried out thoughtfully by considering users' readiness, system usability, and the continued availability of conventional service alternatives for customers who require them. In this way, technology can function not as a barrier but as an inclusive solution capable of serving different customer segments. Thus, the success of technology implementation in restaurant services largely depends on how well the technology is integrated with customers' overall needs and expectations (Andirwan et al., 2023).

Furthermore, the successful implementation of technology in restaurant services is strongly influenced by the design of the systems being used. Simple, intuitive, and easy-to-understand systems are more likely to be accepted by customers than complex and confusing ones. Therefore, user experience is an important factor that restaurant managers need to consider. Although technology has the potential to improve efficiency, poorly designed systems may instead cause frustration among users. Restaurants therefore need to ensure that digital menu displays, ordering processes, and payment procedures can be easily accessed by customers from different backgrounds without requiring advanced technical skills. This allows all customers to experience the benefits of technology without unnecessary difficulties. In addition, infrastructure is a crucial element in supporting the use of technology in restaurant services because digital systems depend heavily on stable internet connections and adequate devices. Technical problems, such as slow networks or system errors, can disrupt service processes and negatively affect customer satisfaction. This condition demonstrates that technology implementation involves more than simply providing digital devices; it must also be supported by adequate facilities to ensure optimal performance. Therefore, restaurants need to conduct regular system evaluations and maintenance to ensure that the technology remains in optimal working condition.

The use of technology in restaurant services also provides benefits from a management and operational perspective because data generated through digital systems can be used to analyze customer behavior, menu preferences, and purchasing patterns. Such information can support more accurate business decision-making, allowing restaurants to develop more targeted marketing strategies and improve service quality based on available data. This demonstrates that technology benefits not only customers but also restaurant managers by improving efficiency and competitiveness within the increasingly developing culinary industry. Ultimately, the integration of technology and human service is the key to creating an optimal customer experience. Technology should function as a supporting tool that accelerates and simplifies service processes, while human interaction should be maintained to provide a personal touch that cannot be replaced by digital systems. This ensures that customers continue to feel valued and well served. By maintaining this balance, restaurants can meet the diverse needs of their customers and create a dining experience that is not only

efficient but also enjoyable and memorable. In this way, technology can truly provide added value to restaurant services as a whole (Istiqomah et al., 2024).

The diversity of customer characteristics is an important aspect to consider when implementing technology in restaurant services because individuals have different preferences, habits, and levels of comfort when using digital systems. This condition requires restaurants to provide flexible services that focus not only on efficiency but also on overall customer comfort. Customers who are accustomed to technology may benefit from fast and practical digital systems, whereas customers who are less familiar with technology may feel confused or uncomfortable. Therefore, restaurants need to design adaptive systems and provide various service options so that all customers can enjoy their dining experiences without significant obstacles.

The role of human resources in supporting the successful implementation of technology cannot be separated from the systems being used. Employees interact directly with customers and serve as a bridge between technology and service. Their ability to understand and operate digital systems greatly influences the smoothness of the service process. Continuous training is therefore essential to ensure that employees are not only able to use the technology but can also respond quickly and appropriately to problems that may arise. Service quality must continue to be maintained even when some processes have been transferred to digital systems because, ultimately, customer satisfaction still depends on the overall quality of service they receive.

Information security is a major concern in the use of digital technology in restaurants because the systems generally involve the storage and processing of sensitive customer data. Personal data must be adequately protected to prevent information breaches that could harm both customers and restaurant operators. Customer trust may decline if the security of the system is not guaranteed. Therefore, the implementation of appropriate security standards and transparency in data management are important factors in maintaining the restaurant's reputation and business sustainability amid increasingly intense competition (Ardiansyah & Renaldi, 2025).

The rapid development of technology requires restaurants to continuously innovate and adapt their systems to remain relevant to market needs. Changes in trends and customer expectations require restaurants not only to rely on existing technologies but also to be willing to make regular updates. Such updates require careful planning because they involve considerable financial and human resources. The ability to manage technology investments is therefore one of the key factors in ensuring that technology implementation provides long-term benefits without placing an excessive burden on restaurant operations.

The use of technology in restaurant services also influences the interaction patterns between customers and service providers because digital systems allow customers to perform various activities independently without extensive interaction with employees. This can improve efficiency and reduce waiting times. However, the customer experience is determined not only by service speed but also by the quality of interaction experienced while customers are in the restaurant. Therefore, maintaining a balance between technology use and human touch is essential to ensure that customers continue to feel valued and comfortable throughout the service process.

The management of data generated through digital systems provides significant opportunities for restaurants to improve service quality and develop more targeted business strategies. Collected data can be analyzed to identify customer preferences, purchasing patterns, and emerging trends. The results of these analyses can serve as a basis for more accurate decision-making. The ability to effectively utilize data can provide added value and

enhance restaurant competitiveness amid an increasingly dynamic and competitive culinary industry.

Ultimately, the integration of technology into restaurant services must provide tangible added value for both customers and restaurant operators. The success of technology implementation should not be measured solely by the sophistication of the systems used but also by the extent to which the technology improves efficiency, convenience, and overall customer satisfaction. A holistic and customer-oriented approach is essential for creating a service system that is not only modern but also relevant and sustainable in the long term.

The successful implementation of technology in restaurant services is strongly influenced by managers' ability to understand customers' evolving needs in response to changes in lifestyle and digital advancement. Today's customers tend to expect fast, practical, and efficient services without compromising comfort. This condition encourages restaurants to provide technology-based service systems that can optimally meet these expectations. The use of digital menus, self-ordering systems, and cashless payments has become a common form of adaptation. However, the effectiveness of these technologies still depends on how well the systems are designed to be easy to use for customers from different backgrounds without causing confusion or obstacles during the process.

Infrastructure readiness is a crucial factor determining the smooth implementation of technology in restaurant services because digital systems rely heavily on hardware and stable internet connections. Technical problems, such as slow networks, system errors, or malfunctioning devices, can directly affect service processes and reduce customer satisfaction. This condition requires restaurants not only to focus on technology implementation but also to ensure that all supporting facilities are maintained in optimal condition through regular maintenance and evaluation, allowing the system to operate smoothly without significant disruptions.

Employees' ability to operate technology is another important aspect that cannot be overlooked because employees serve as a link between digital systems and customers. A good understanding of technology enables employees to provide fast and accurate service. Continuous training is necessary to help employees adapt to the systems being used and handle various technical problems that may arise in the field. Service quality must be maintained so that customers not only experience the convenience provided by technology but also receive a pleasant overall service experience.

The utilization of data generated through digital systems provides significant opportunities for restaurants to improve service quality and develop more effective business strategies. Data regarding customer preferences, purchasing patterns, and consumption trends can be analyzed to generate more accurate and targeted decisions. Such information can be used to develop more targeted marketing strategies and improve the quality of products and services offered. The ability to manage and utilize data effectively is therefore one of the competitive advantages that can help restaurants survive and grow amid increasingly intense competition in the culinary industry.

The integration of technology and human service is the key to creating an optimal customer experience because technology functions as a tool for improving efficiency, while human interaction provides a personal touch that cannot be replaced by digital systems. A balance between the two must be maintained so that customers continue to feel valued and well served. The appropriate use of technology can accelerate service processes without compromising the quality of human interaction. A customer-oriented approach will help restaurants create a dining experience that is not only efficient but also memorable and enjoyable.

CONCLUSIONS AND SUGGESTIONS

Customer perceptions of the use of technology in restaurant services indicate that technology plays a crucial role in improving the efficiency, speed, and convenience of the service process, thereby providing customers with a more practical and modern experience, particularly in today's digital era. However, acceptance of technology is not uniform, as it is still influenced by various factors, such as the level of digital literacy, age, and the availability of adequate infrastructure. Therefore, in its implementation, restaurants are not only expected to adopt technology but also to ensure that the systems used are easy to understand, supported by adequate facilities, and continue to maintain human interaction as an essential part of personalized service. Thus, maintaining a balance between the use of technology and direct human interaction is key to creating overall customer satisfaction and maintaining a consumption experience that is not only efficient but also comfortable and memorable.

Based on the research findings, restaurants are recommended to optimize the use of technology by ensuring that their systems are user-friendly, supported by adequate infrastructure, and accompanied by conventional service alternatives to maintain the comfort of all customers. In addition, employee training and improved data security should also be prioritized to ensure that services remain effective and reliable. For future researchers, it is recommended that further studies explore different variables or research methods to obtain more comprehensive findings.

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