

Key Performance Indicators of Cafeteria Services and Customer Satisfaction at Malaysian Public Universities

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Abstract

Leveraging Key Performance Indicators (KPIs) is essential for managing services that resonate with corporate objectives. In a competitive landscape, sustaining customer loyalty hinges on achieving high customer satisfaction. By diligently monitoring KPIs, operational effectiveness in university cafeterias can be significantly enhanced, as the ability to attract and retain students is intricately tied to their dining experience. This study aimed to assess the KPI levels for cafeteria services at Universiti Tun Hussein Onn Malaysia (UTHM) and explore their relationship with user satisfaction. Using a quantitative methodology, a survey was conducted among 101 staff and students at UTHM, with the data analysed using descriptive statistics and correlation analysis. The findings revealed that while most KPIs showed stable performance (averaging 3.32-3.66), a notable gap exists between the highest-performing indicator, employee productivity and satisfaction (3.67), and the lowest, waste reduction (3.23). Furthermore, the study identified significant positive correlations between user satisfaction dimensions—specifically, operational efficiency, food quality, and service speed—and overall cafeteria KPIs. In conclusion, the study highlights that while UTHM cafeterias maintain consistent service quality, strategic improvements in waste management and safety practices are necessary to enhance the dining experience. Implementing targeted recommendations, such as diversifying menus and stabilising pricing, will further strengthen institutional performance and student well-being.

Keywords:

Key Performance Indicator, Consumer Satisfaction, Cafeteria Service, Public Universities

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1. INTRODUCTION

The core services and functions of management are built upon several factors that contribute to organisational effectiveness, including the management of learning and teaching, discipline, leadership, staff development, financial management, organisational environment, and customer relations (Mortimore, 1995; Harris & Bannet, 2001; Campbell & Yong, 2021; Nguyen et al., 2024).

Within the facilities management discipline, the International Facility Management Association (IFMA) emphasises that facility managers are responsible for key functions, including annual operating budget planning, capital expenditure forecasting, and the allocation and optimisation of physical space across buildings. Rahman et al. (2015) further highlight that facility management involves the internal administration of building spaces, providing essential support to organisational operations by ensuring these spaces are effectively managed and aligned with user needs.

The development of Key Performance Indicators (KPIs) increases organisational awareness of critical issues that must be addressed to achieve strategic goals and the long-term vision. Effective performance measurement provides a transparent view of organisational achievements, guiding continuous improvement by focusing on strategic direction, customer priorities, and performance evaluation. The use of KPIs enables organisations to enhance performance consistency, meet stakeholder expectations, and maintain service excellence. Customer satisfaction is widely recognised as a vital success factor for attracting and retaining users, especially in service-based environments—a goal that requires systematic effort and monitoring (Bourne & Bourne, 2012; Linton, 2013; Adam et al., 2020; Alanne & Sierla, 2022; Park & Park, 2024).

In higher education institutions, cafeteria services are an integral part of campus facilities, contributing directly to student well-being, the learning experience, and overall campus life. As universities face growing expectations for quality, safety, hygiene, affordability, and service efficiency, implementing facilities-related KPIs in cafeteria operations has become increasingly essential. Recent studies emphasise that well-managed campus food services positively influence student satisfaction, retention, and institutional reputation (Nguyen et al., 2024; Toscano-Hernández et al., 2024).

Facilities KPIs—such as cleanliness standards, food safety compliance, space utilisation efficiency, maintenance response times, queuing duration, and dining area comfort—allow HEIs to systematically measure and enhance the physical and service aspects of cafeteria operations. These KPIs also help universities ensure regulatory compliance, maintain consistent service quality, and support sustainability goals through monitoring energy use, waste management, and resource efficiency (Sari et al., 2021; IFMA, 2024; Badway et al., 2024; Pan et al., 2024; Haque et al., 2024).

For universities, the cafeteria is not merely a food outlet but a critical facility that shapes students' daily campus experience. Poor cafeteria performance can negatively affect student satisfaction, health, and even academic performance. Thus, facilities-related KPIs are indispensable tools for maintaining efficiency, enhancing user satisfaction, optimising operational costs, and supporting the institution's long-term competitive positioning.

2. LITERATURE REVIEW

2.1 Facilities Management and Key Performance Indicators

Key Performance Indicators (KPIs) play a critical role in identifying accurate and relevant information to support organisational performance. Through systematic analysis and the application of appropriate diagnostic techniques, KPIs enable organisations to monitor progress and achieve high-level performance outcomes (Rathnayaka et al., 2015). KPIs also serve as tools for evaluating effectiveness, efficiency, and service quality, allowing facility managers to compare actual results against expected

targets and identify gaps for improvement. Enshassi and Shorafa (2015) emphasise that organisational success often results from repeated achievements across multiple operational stages, making KPI measurement essential for assessing ongoing activities and determining their success. This reinforces the notion that every organisation can achieve its strategic objectives, provided sufficient time is dedicated to understanding and addressing critical issues using structured KPI frameworks.

Performance measurement is vital for benchmarking organisational outcomes and for developing new strategies to improve cost efficiency and the quality of the physical environment (Lavy et al., 2010). Moreover, monitoring performance over defined timeframes is necessary to identify challenges affecting the organisation and enable facility management (FM) to formulate effective future strategies. This prevents recurring issues and supports organisational growth through proactive problem-solving.

Amos et al. (2019) highlight that facility management encompasses a range of activities aimed at ensuring that all services supporting the organisation's core business operate effectively. FM focuses on maintaining user performance and ensuring that facility-related services enhance the organisation's operational efficiency. Effective FM reduces overhead costs, enhances space and asset management, and increases user satisfaction by ensuring facilities are well maintained and responsive to daily operational needs. The integration of cost efficiency, service quality, and operational productivity is therefore essential for supporting organisational growth.

From a strategic perspective, FM performance is closely linked with core business indicators, reflecting the influence of multiple stakeholders in shaping organisational directions. Stakeholders, including students, staff, vendors, and management, play significant roles in determining expectations and performance outcomes. Among these factors, user satisfaction—particularly in service-oriented facilities—is a critical dimension of performance assessment, as it motivates employees and encourages the delivery of efficient and effective management practices that balance cost control with user satisfaction.

In the context of university cafeteria services, numerous studies have identified the key determinants of service quality. Previous studies have reported that factors such as location, taste, pricing, and waiting time significantly influence students' satisfaction with the cafeteria (Klassen et al., 2005; Kim et al., 2006; Kwun, 2011). Similarly, Kwun, Ellyn, and Choi (2013) found that food quality, menu variety, price fairness, value, and service quality all have meaningful effects on students' perceptions of cafeteria service. Additionally, students appreciated cafeteria-style operations that offered diverse meal options within accessible dining spaces.

Green (1992) and Oh (2001) highlight the Importance–Performance Analysis (IPA) as a method for gathering customer feedback and determining strategic improvements for cafeteria services. Jung (2013) later found that “food taste” and “menu variety” were the most critical attributes requiring intensive management. Meanwhile, Kim, Moreo, and Yeh (2006) suggested increasing cafeteria usage among university students by offering a broader range of international cuisines, including Asian, Mexican, and Italian options.

By 2017, student cafeterias had begun adopting new trends such as customised service delivery, sustainable food management practices, and the inclusion of allergy-friendly meal options. Despite their importance, university food services often receive less attention compared to primary school or commercial food service operations. Therefore, university foodservice managers must respond sensitively to changing student needs and external market trends, implementing stronger marketing strategies and operational improvements. Cha and Yu (2018) found that hedonic motivations for dining had a greater influence on perceived service attributes—such as menu variety, service interaction, and ambience—than purely functional factors, including price, cleanliness, or accessibility.

Customer satisfaction remains a crucial determinant of success in all service sectors. A lack of satisfaction can lead to customer frustration, discomfort, and reduced business sustainability. In food

service operations, satisfaction and dissatisfaction strongly influence customer behaviour, loyalty, and spending habits, ultimately shaping overall organisational performance (Guak et al., 2022; Siddiqi et al., 2024). Customers' perceptions of foodservice quality—including their willingness to spend and dine frequently—serve as key indicators of service outcomes (Maschio et al., 2023). Recent studies highlight five essential practices that university food providers should adopt to ensure high customer satisfaction:

- i. Providing high-quality dining spaces with comfortable seating.
- ii. Actively seeking and responding to student feedback.
- iii. Extending operating hours to suit student schedules.
- iv. Using data-driven decision-making for service improvement.
- v. Offering diverse food options tailored to each campus's cultural and demographic needs

(Source: Alnaim et al., 2023; Hsu & Lin, 2023; Rayuwati et al., 2022; Khanafer et al., 2022; Kubik et al., 2003; Davison et al., 2022).

By applying these practices, university cafeteria providers are better able to meet user preferences and operational needs, thereby enhancing customer satisfaction and improving overall service performance. Table 1 summarises the key elements for enhancing cafeteria Key Performance Indicators (KPIs), as identified in previous studies.

Table 1: Elements for Improving Cafeteria Key Performance Indicator (KPI) Levels

Element	Description	Key References
Facility Cleanliness Level	Ensuring routine and thorough cleaning of food preparation areas, equipment, dining spaces, and restrooms to maintain a hygienic environment.	Pickering et al. (2010)
Equipment Maintenance Level	Scheduled inspections, timely repairs, and continuous monitoring of equipment to ensure operational efficiency and food safety.	Kim-Soon et al. (2020)
Facility Utilisation Level	Efficient use of cafeteria space, including seating layout, preparation areas, self-service stations, and circulation flow to maximise functionality.	Rantala et al. (2022)
Safety Level	Provision of adequate lighting and regular safety inspections to ensure customer and staff well-being and prevent hazards.	Ajmal et al. (2022)
Energy Efficiency Level	Adoption of energy-saving measures such as replacing traditional bulbs with LED lighting to reduce energy consumption and environmental impact.	Lee and Kang (2024)
Accessibility Level	Providing barrier-free pathways, ramps, and other accessibility features for individuals with disabilities.	Badway et al. (2024)
Ergonomic Level	Incorporating comfortable seating, well-designed tables, and user-friendly layouts to promote comfort and efficiency.	Bartmann et al., (2022)
Customer Feedback Level	Collecting and analysing customer feedback, including comments on accessibility, amenities, and service quality, to support continuous improvement.	Sangwan and Yadav (2024)
Waste Reduction Level	Implementing proper waste segregation with clearly labelled recycling bins to minimise environmental impact.	Alnaim et al (2023)
Facility Upgrade & Modification Level	Reorganising seating, adding comfortable or adjustable furniture, and introducing flexible layouts to enhance user experience.	Zhang et al. (2025); Rantala et al. (2022)
Meal Participation Rate Level	Measuring the percentage of potential customers using the cafeteria to assess popularity and usage trends.	Rahman (2024)
Menu Variety Level	Offering diverse menus and rotating food options to enhance satisfaction and meet dietary and cultural preferences.	Hsu and Lin (2023)
Health & Safety Compliance Level	Ensuring compliance with hygiene regulations through regular training and monitoring to prevent foodborne illness.	Ajmal et al. (2022)
Service Speed Level	Improving queue flow and layout efficiency to minimise waiting time and enhance customer experience.	Rantala et al. (2022)

Element	Description	Key References
Employee Productivity & Satisfaction Level	Providing training and professional development to enhance motivation, service quality, and team performance.	Erfan and Bakri (2025)
Environmental Sustainability Level	Implementing recycling, waste reduction, and eco-friendly operations to reduce environmental footprint.	Zeidan and Brasão (2024)
Nutritional Standards Compliance Level	Offering nutrient-dense menu options aligned with nutritional standards, including fruits, vegetables, whole grains, and lean proteins.	Sarwar et al (2024)

2.2 Customer Satisfaction Elements in Food Service

Several interconnected factors influence customer satisfaction in the food service industry. Food quality remains the most critical element, where hygiene, cleanliness, and safe preparation practices ensure customers receive meals that are both safe and appealing. Equally important is reducing food waste, which reflects efficient planning, responsible resource use, and sustainable operations.

Customers also expect a good selection and variety, with diverse and innovative options that cater to different tastes and dietary needs. Efficient operations enhance satisfaction by ensuring fast service, smooth workflows, and minimal waiting times. Additionally, stable pricing builds customer trust, as predictable, well-managed prices prevent dissatisfaction and support long-term business sustainability. Together, these elements contribute to a reliable, efficient, and customer-focused food service environment that consistently meets user expectations (refer to Table 2).

Table 2: Elements Determining Customer Satisfaction in Food Service

Element	Description	Key References
a. Food Quality Level	Food quality depends on proper hygiene practices, clean preparation areas, sanitised utensils, and adherence to food safety standards. Staff must follow strict hygiene routines such as handwashing and maintaining a clean food preparation environment.	Teym et al (2025)
b. Food Waste Reduction Level	Reducing food waste requires strategic menu planning based on customer demand, seasonality, and production capacity. Monitoring portion sizes and preparation volumes helps minimise excess food and supports sustainable food service operations.	Hatta et al (2025)
c. Menu Availability and Variety Level	Customer satisfaction increases when menus are diverse, culturally inclusive, and suitable for various dietary needs. Offering creative, appealing, and innovative menu options attracts more customers and enhances the dining experience.	Sa'adah & Wibawa (2025).
d. Operational Efficiency Level	Efficient food service operations depend on optimised workflows, proper equipment placement, and well-organised spaces. Enhancing layout and process flow reduces waiting times, improves productivity, and enhances customer experience.	Wavinya et al (2022), Kiran et al (2021)
e. Price Stability Level	Maintaining consistent prices supports customer trust and business sustainability. Effective cost management—including control of raw material, labour, and operational costs—helps prevent excessive price fluctuations.	Johnson & Smith (2016)

3. METHODOLOGY

The methodology of this study is divided into three main stages:

3.1 Stage One: Study Background

In the first stage, the problem statement and initial discussion topics were studied to identify key issues. The selection of an appropriate topic, the formulation of a problem statement, the identification of objectives, and the scope of research within the relevant domain are all aspects of information gathering. Therefore, the study proceeded with a literature review to understand the issues that arose. Bibliographies, books, articles, the internet (including electronic journals), journals, and magazines are some examples of literature sources that can be used for research. Additionally, sources might stem from mass communication and media, such as seminars, reports, bulletins, films, newspapers, or previous research.

3.2 Stage Two: Achieving the First Objective: To Identify the Key Performance Indicator (KPI) Level for Cafeteria Services at Universiti Tun Hussein Onn.

This study employs a quantitative approach, administering a questionnaire survey to students and staff who frequently visit UTHM cafeterias. 101 respondents were involved in the study. Online questionnaires were used via WhatsApp and Telegram to collect comprehensive data. The questionnaire is divided into three parts: Part A covers demographics, Part B focuses on key performance indicators, and Part C assesses customer satisfaction. Descriptive analysis was used to identify the Key Performance Indicator (KPI) Level among respondents based on Part B results.

3.3 Stage Three: Achieving the Second Objective: To Analyse the Cafeteria's Key Performance Indicator (KPI) Level Through Customer Satisfaction.

The goal in stage three is to explore the relationship between the Cafeteria's Key Performance Indicator (KPI) Level and customer satisfaction. The data collected in Stage 2 were again analysed (results in Parts B and C) using correlation analysis. Table 3 shows the overall methodology of the study.

Table 3: Overall Methodology

Objectives	Method	Variables	Expected Outcome
To Identify the Key Performance Indicator (KPI) Level for Cafeteria Services at Universiti Tun Hussein Onn.	Quantitative (Descriptive analysis)	• Facility cleanliness, • Equipment maintenance, • Facility utilization, level of safety • Energy efficiency, • Convenience, • Health, • Customer feedback, • Waste reduction, • Facility improvement and modification, • Dish participation rate, • Menu variety, level of health and safety compliance, • Service speed, • Employee productivity and satisfaction, • Environmental sustainability, and • Nutritional standards.	The level of key performance indicators for cafeteria services at Universiti Tun Hussein Onn Malaysia can be identified.
To Analyse the Cafeteria's Key Performance Indicator (KPI) Level Through Customer Satisfaction.	Quantitative (Correlation analysis)	• Food quality, • Food waste reduction, • Operational efficiency, • Menu availability and choice, and • Price stability.	Cafeteria improvements through the key performance indicator level of user satisfaction can be known.

4. RESULTS AND DISCUSSION

The study involved data analysis from a literature review and a review of cafeteria key performance indicators (KPIs) at various stages. Questionnaires were distributed to students and academic staff, and the data were analysed using SPSS. The research aimed to present the results through graphics, descriptive and correlational analyses of the relationship between cafeteria KPI levels and user satisfaction with food services. To ensure the accuracy of the information obtained, selecting the appropriate respondents was crucial. The demographic characteristics considered in the study included age, gender, education level, occupation, faculty, preferred cafeteria, and daily budget.

Key demographic findings showed that 80.20% of respondents were between 21 and 25 years old, primarily students. 55% were female, and 45% were male. 96% held a bachelor's degree, reflecting the student demographic, with 89% identifying as students. The Faculty of FPTP had the largest share of respondents (46.5%), followed by other faculties. 40.60% of respondents chose the HEPA cafeteria, followed by the UTHM cafeteria. Finally, 53.50% of respondents spent between RM5 and RM10 daily.

4.1 Key Performance Indicator Level for Cafeteria Services

The first objective of the study was to identify the level of key performance indicators (KPIs) for cafeteria services at Universiti Tun Hussein Onn Malaysia. Figure 1 below shows the average index obtained from respondents via distributed questionnaires; values greater than 3.5 indicate that the findings are significant and suitable for this study.

Cafeteria services have an extensive average index (3.67) for productivity and employee satisfaction, but a small average index (3.23) for waste reduction. This indicates a gap of 0.44 between them. This gap results from a lack of attention or effort to reduce the waste generated by cafeteria services. Changes in strategy or increased sustainability awareness might be required to improve productivity and employee satisfaction while reducing waste. Examining additional elements, such as operational processes, resource management, and employee involvement, may be more effective in addressing this difference. Jones et al. (2018) stated that enhancing the understanding and implementation of sustainability practices in cafeteria service operations can help reduce waste. Furthermore, according to Smith and Brown (2019), employee satisfaction in the service and food supply industry can be improved by focusing attention. The combination of both components can improve understanding and enhance overall cafeteria services.

Next, there are 15 other key performance indicator stages for cafeteria services. They include service speed, energy efficiency, safety, environmental sustainability, menu diversity, facility improvements and modifications, nutritional standards, health and safety compliance, facility hygiene, convenience, ergonomics, equipment maintenance level, customer feedback, food participation rate, and facility usage level. Adequate performance stability across the various aspects of cafeteria services mentioned above, with an average index of 3.32 to 3.66 for the 15 key performance indicator stages. To ensure optimal customer satisfaction and overall performance, a holistic management strategy that incorporates various elements can support this effectiveness. Additionally, Wong and Kim (2020) found that employee involvement in cafeteria operational improvements can improve key performance indicators, such as facility hygiene and ergonomics. Therefore, the workplace environment may support the implementation of best practices across the given elements, which explains the stability of the average index, which ranges from 3.32 to 3.66. Effective leadership and a deep understanding of customer needs are essential to achieving this goal.

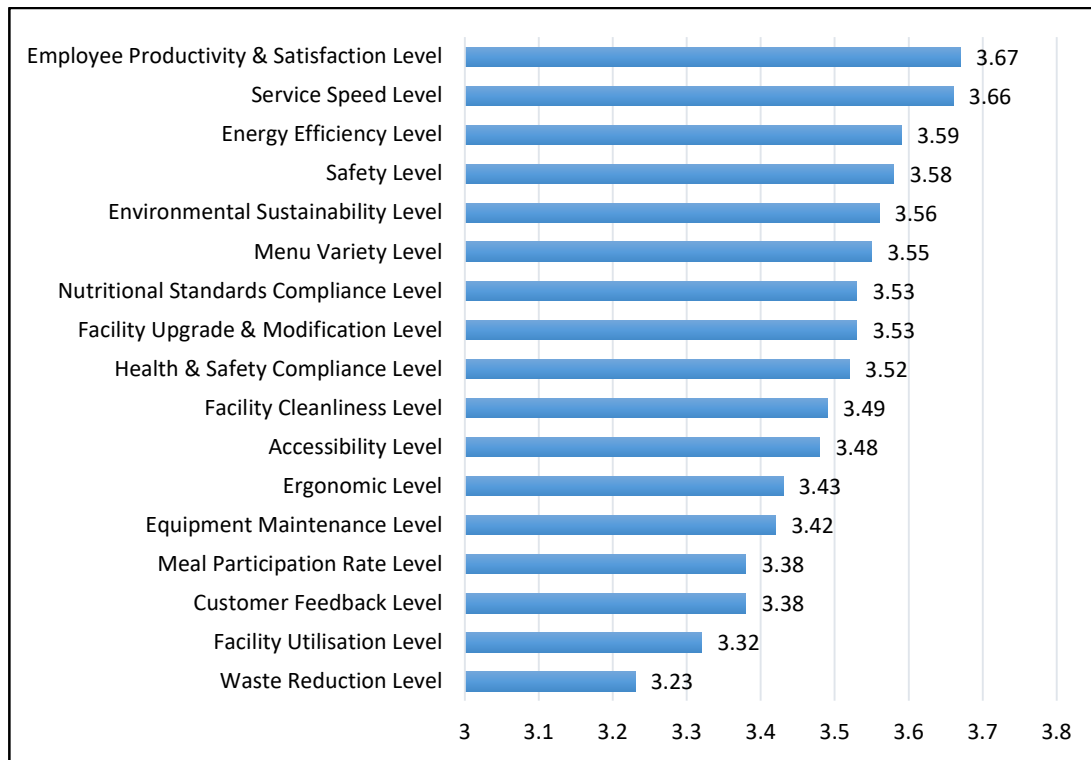


Figure 1: Average Index of Key Performance Indicator Level for Cafeteria Services

4.2 Correlation Result between Key Performance Indicators and Customer Satisfaction

The second objective of this study is to analyse the level of cafeteria Key Performance Indicators (KPIs) using user satisfaction as a metric. Figure 2 presents the mean index values obtained from respondents through the distributed questionnaire. A mean score exceeding 3.5 indicates significant and acceptable findings for this study.

The highest mean index recorded for cafeteria food service is 3.68 for operational efficiency, while the lowest is 3.33 for food waste reduction—a difference of 0.35. Several factors may contribute to this gap, including staff management, inventory control, and daily operational practices. Enhancing operational efficiency and prioritising food waste reduction are, therefore, essential strategies for improving overall performance. Recent studies (Ko & Chiu, 2021) confirm that operational efficiency in institutional food services is strongly influenced by employee competency, demand forecasting, and real-time stock monitoring systems.

Smith and Brown (2019) emphasise that food service practices are strongly associated with operational efficiency and waste reduction. Their findings show that both aspects can be improved through optimised stock management, streamlined food preparation processes, and comprehensive staff training. More recent evidence supports this view: effective food waste reduction strategies such as digital inventory tracking and portion control significantly improve operational outcomes in cafeterias (Papargyropoulou et al., 2014; Strotmann et al., 2022).

User satisfaction is measured across three key dimensions of food service: food quality, price stability, and menu availability and variety. The results show consistently strong performance across these areas, with mean index values ranging from 3.51 to 3.64. These closely aligned scores indicate that performance across the food service dimensions does not vary significantly. This reflects ongoing efforts to ensure consistent food quality, stable pricing, and a diverse, accessible menu. Recent research shows that maintaining consistency across these dimensions significantly strengthens perceived service value and loyalty (Rahman & Arif, 2023).

The ability to maintain these relatively uniform mean values demonstrates a strong institutional commitment to customer satisfaction across all aspects of cafeteria service, thereby supporting a balanced, satisfying overall dining experience. According to Anderson and Sullivan (1993), food quality plays a crucial role in enhancing customer satisfaction in hospitality and foodservice settings. Contemporary literature supports this: for example, menu variety has been shown to influence student satisfaction in university cafeterias significantly (Misiran et al., 2022), and food quality (interpreted as freshness), along with pricing and service quality, are significant determinants of cafeteria customer satisfaction (Syuhirdy Mat Noor et al., 2025; Ahmad Shariff et al., 2023). Zeithaml et al. (1996) similarly highlight that menu selection and pricing significantly influence customer satisfaction. Their conclusions align with the more recent findings that price stability and menu variety directly improve user satisfaction and behavioural intention.

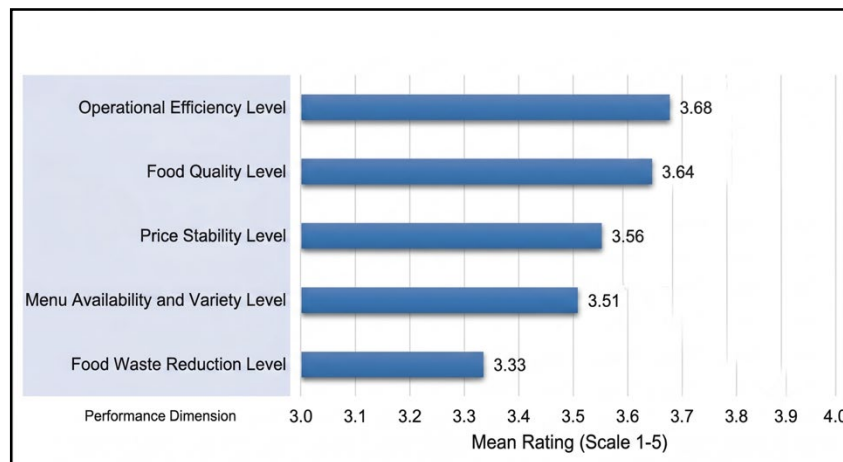


Figure 2: Average User Satisfaction Level Index

The following section presents the relationship between user satisfaction—specifically food service satisfaction—and the key performance indicators (KPIs) for cafeteria services at Universiti Tun Hussein Onn Malaysia. Table 3 shows several correlation coefficients exceeding 0.5, indicating strong, significant relationships that are appropriate and meaningful for this study.

Table 3: Correlation result between Key Performance Indicators and Customer Satisfaction

	Operational Efficiency	Food Quality	Price Stability	Menu Availability and Variety	Food Waste Reduction
Facility Cleanliness	.453**	.411**	.293**	.513**	.404**
Equipment Maintenance	.375**	.351**	.354**	.359**	.298**
Facility Utilisation	.354**	.364**	.356**	.424**	.334**
Safety	.454**	.480**	.403**	.458**	0.18
Energy Efficiency	.496**	.463**	.422**	.415**	.247*
Accessibility	.578**	.498**	.470**	.351**	.295**
Ergonomic	.345**	.435**	.395**	.331**	.413**
Customer Feedback	.452**	.537**	.430**	.404**	.306**
Waste Reduction	.315**	.229*	.441**	.394**	.477**
Facility Upgrade & Modification	.454**	.487**	.307**	.453**	.353**
Meal Participation Rate	.388**	.503**	.372**	.477**	.370**
Menu Variety	.498**	.413**	.367**	.662**	.358**
Health & Safety Compliance	.446**	.545**	.452**	.366**	.436**

	Operational Efficiency	Food Quality	Price Stability	Menu Availability and Variety	Food Waste Reduction
Service Speed	.522**	.593**	.545**	.512**	.502**
Employee Productivity & Satisfaction	.595**	.548**	.565**	.503**	.373**
Environmental Sustainability	.594**	.553**	.426**	.568**	.483**
Level of nutritional standards	.563**	.588**	.430**	.432**	.373**
** Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed)					

4.2.1 Operational Efficiency Level

Among the 17 key performance indicators (KPIs) for cafeteria services, five demonstrate a significant correlation with operational efficiency: employee productivity and satisfaction, environmental sustainability, facility adequacy, nutritional standards, and service speed. These correlations range from 0.522 to 0.595, indicating strong positive relationships. This suggests that higher operational efficiency is associated with better performance across these dimensions.

Several factors may explain these positive correlations. First, improved employee productivity enhances workflow efficiency, enabling faster and more organised service delivery. Second, higher employee satisfaction contributes to greater motivation and performance, which, in turn, directly supports operational effectiveness. An emphasis on environmental sustainability reflects the cafeteria's social responsibility, which can increase customer trust and enhance institutional reputation. Adequate facilities and proper nutritional standards also support smooth operations and improved customer satisfaction.

Van der Voordt and Jensen (2018) highlight that a healthy and well-managed workplace benefits both organisations and employees, particularly in terms of productivity, employee satisfaction, and operational expenditure. Thus, the positive correlations indicate an effective integration of operational efficiency with overall cafeteria performance.

4.2.2 Food Quality Level

Six KPIs demonstrate significant correlations with food quality: service speed, nutritional standards, environmental sustainability, employee productivity and satisfaction, health and safety compliance, customer feedback, and meal participation rate. These correlations range from 0.503 to 0.593, reflecting strong positive relationships. This shows that higher food quality is associated with improved performance in these areas.

Efficient operational processes, effective communication, and a strong service culture contribute to this positive relationship. Sustainable practices enhance ingredient quality and reduce environmental impact, while motivated employees tend to produce higher-quality meals. Health and safety compliance also strengthens consumer confidence in food hygiene and safety.

Previous research highlights a multifaceted approach to food service, emphasising several interconnected factors. Specifically, customer perceptions of meal quality are largely shaped by culinary expertise and service suitability (Brown et al., 2017; Jones & Robinson, 2018). Beyond the delivery of the food itself, environmental sustainability plays a critical operational role by promoting responsible sourcing and reducing waste (Garnett, 2016). Furthermore, these elements are most effective when supported by strong communication between cafeteria operators and customers, which directly contributes to better overall food quality outcomes (Robinson, 2018).

4.2.3 Price Stability Level

Two KPIs show significant correlations with price stability: service speed and employee productivity and satisfaction. The correlation coefficients of 0.545 and 0.565 indicate strong positive relationships. This suggests that greater price stability is associated with improved service efficiency and workforce productivity.

Service suitability and high employee productivity are crucial to maintaining price stability in cafeteria operations. By ensuring food is prepared and served quickly, efficient service reduces operational delays and unnecessary overhead costs (Enjolras et al., 2021). Furthermore, swift service delivery enhances customer perceptions of value and price fairness (Wang et al., 2019). Consequently, optimising service levels and workforce productivity enables cafeterias to control costs, maintain stable prices, and boost overall organisational performance.

4.2.4 Menu Availability and Variety Level

Five KPIs show significant correlations with menu availability and variety: menu diversity, environmental sustainability, facility cleanliness, service speed, and employee productivity and satisfaction. These correlations range from 0.503 to 0.662, indicating strong positive relationships. This suggests that increased menu availability and variety lead to improved performance across these indicators.

A satisfying cafeteria experience relies on a balance of variety, ethics, and speed. Diverse menu choices enhance the overall dining experience, while sustainable sourcing establishes an ethical menu that meets growing consumer expectations for environmental responsibility. Additionally, prompt service delivery drives customer satisfaction and reinforces a positive brand perception (Hamid & Mohd Noor, 2024). Integrating these three elements enables cafeterias to offer robust menu availability and variety without compromising operational consistency.

4.2.5 Food Waste Reduction Level

Only one KPI shows a significant correlation with food waste reduction: service speed, with a correlation coefficient of 0.502, indicating a meaningful positive relationship. This means that greater food waste reduction is associated with faster and more efficient service delivery.

Efficient service plays a vital role in minimising food waste by preventing overproduction and premature food preparation. Beyond preventing waste, faster serving times preserve food freshness and quality (Jones & Comfort, 2018). Recent studies reinforce these benefits; for instance, Ahmad et al. (2022) found that improved workflow systems directly reduce overproduction. Ultimately, streamlining service processes creates a dual benefit—enhancing customer satisfaction while aligning operational practices with broader environmental sustainability and social responsibility goals.

5. CONCLUSION

This study provides a comprehensive understanding of the key performance indicators (KPIs) for cafeteria services at Universiti Tun Hussein Onn Malaysia. The findings reveal that multiple factors influence the effectiveness of food service delivery and overall customer satisfaction. Based on the results, several recommendations and improvement measures can be implemented to enhance overall performance.

First, reducing food waste should be prioritised by optimising stock control and food supply processes. Second, customer safety must be strengthened by improving cafeteria safety practices.

Third, operational efficiency can be enhanced through effective inventory management, streamlined operational processes, and continuous staff training. Fourth, maintaining and further improving food quality is essential to ensure meal consistency and reliability. Fifth, expanding menu variety will enable the cafeteria to meet the diverse preferences and dietary needs of the university community. Sixth, price stability should be maintained to ensure food remains affordable and accessible for all users. Lastly, improving employee satisfaction and motivation is crucial, as a committed and engaged workforce contributes to higher-quality service. Overall, a holistic management strategy that integrates these various elements will strengthen cafeteria performance and improve customer satisfaction. These recommendations are intended to provide practical guidance for enhancing and monitoring cafeteria service performance within the university.

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