

The Relationship between Satisfaction among Residents and the Service Quality in a Mixed-Use Development

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Abstract

To meet the city's expanding population and land scarcity, vertical buildings and mixed-use buildings are being created, rather than single-purpose structures like apartments and businesses. Despite its complexity, this building poses several challenges to property management. Property management firms must understand residents' current requirements and need to maintain the residents' satisfaction and service quality. This research aims to ascertain how well property management firms manage mixed-use buildings and how satisfied the residents are. The researcher seeks to identify the service quality factors that enhance residents' satisfaction with property management. This research explores how service quality impacts the residents' satisfaction in a mixed-use building. Content analysis identifies tangible aspects of service quality, such as reliability, responsiveness, assurance, and empathy. The method used in this research is qualitative, which uses a questionnaire distributed to 100 respondents living in mixed-use buildings and interviews with the property manager in the building. Correlation analysis is used in this research to identify the correlation between satisfaction and service quality. The results of the first objective show that service quality dimensions like assurance and empathy significantly influence the perceived quality of management services in maintenance responses. However, tangible factors and some reliability aspects seem to have less impact. The second objective shows that property management faces several challenges to satisfy the residents, including managing the property, operational and financial management, safety and security, and crisis management.

1. Introduction

Here rapid changes in metropolitan cities have led to growing demand for mixed-use developments, which combine work, housing, retail, and recreation in one place. These developments aim to enhance the quality of life, economic vitality, social inclusivity, and environmental sustainability. They differ from single-use projects by offering a broader scope and a more multifaceted approach to spatial allocation and project

execution. Research on mixed development's impact on service quality and occupant satisfaction is crucial in property management. Understanding occupants' concerns about service quality and its connection to their well-being is essential to enhancing service quality in low to medium-priced high-rise residential mixed-use buildings that meet occupants' needs and expectations, contributing to a more positive living experience and higher resident satisfaction. This research explores the various attributes of mixed-use developments, examines resident satisfaction, and discusses the challenges in property management, emphasizing their crucial role in urban revitalization and sustainability.

1.1 Research Background

Mixed-use development, a concept rooted in modern urbanization, encompasses schemes that integrate multiple uses within a single building, such as combining commercial spaces on the ground floor with residential areas on upper levels. This approach has historically been inherent to urban development and is increasingly prevalent due to rapid population growth in metropolitan areas, leading to the construction of more high-rise buildings. Overall, the evolution of mixed-use development reflects the dynamic nature of urbanization, responding to the challenges posed by population growth and land scarcity. Mixed-use development helps communities and contributes to a sustainable ecosystem. This strategy is commonly used to revitalize towns with limited land area or vacant city centers, increasing density and creating a dynamic environment for residents to enjoy. Generalova et al. (2018) found that well-planned mixed-use high-rise buildings may improve the accessibility and quality of life in cities, the environment, and the economy.

Therefore, selecting the best property management firm to oversee and maintain high-rise structures is essential (Adlene, 2022). The research on service quality and occupant satisfaction has predominantly focused on specific building types, such as commercial buildings, condominiums, and serviced apartments. However, there is a notable gap in research concerning mixed-use buildings, encompassing residential, commercial, and sometimes entertainment facilities on a single property. Existing studies by Abdul Razak et al. (2022), Mmutle & Shonhe (2017), and Yusof et al. (2017) underscore the significance of tangible aspects of service quality in shaping occupant satisfaction. These findings emphasize the need for future research to explore how mixed development can enhance service quality to elevate occupant satisfaction. The research seeks to achieve precisely that, with the ultimate objective of assisting property management businesses in maintaining mixed-use buildings in excellent condition while meeting the requirements and expectations of the inhabitants. This research can help residents have a better living experience by lowering the complaint rates and increasing residents' satisfaction.

1.2 Research Problem

Mixed-use buildings offer the advantage of allowing residents to live and work in the same location. However, the issues that will be discovered and discussed in this research study is about the mixed-use building where this building offers the advantage of allowing residents to live and work in the same location, however there must be dissatisfaction among them due to the environment. This type of development comes with challenges to the property manager on how to maintain and keep residents' satisfaction living in mixed-use building.. There are five significant issues: inadequate public facilities and suboptimal security measures. Maintenance-related concerns and management problems also impact on residents' living experience. Airbnb's presence, communication issues, and building designs contribute to health difficulties and insecurity. Human and management-related factors mainly cause maintenance difficulties. The coexistence of large groups of people in these buildings may lead to challenges due to differences in age groups, cultures, and behavioral habits. Addressing these issues is crucial for creating a safe and comfortable living environment for residents.

1.3 Research Question

- i) What makes the owner choose to stay in a mixed-development building?
- ii) How do property management manage mixed-development buildings?

1.4 Research Objective

- i) To understand the level of satisfaction towards the service of the management in mixed development building
- ii) To investigate the barrier or obstacle in managing mixed-use building

1.5 Scope of Study

This study aims to determine the degree to which occupant satisfaction with a building's services correlates with the quality of services provided by the property management

1.6 Significance of Study

The research aims to determine the occupant's satisfaction with the building's service quality by the property manager. Parties that benefited from this research are the property manager and the occupants.

2. Literature Review

The literature review summarizes scholarly materials on a certain issue. Literature review gives a complete overview of important and significant articles on a certain topic. The purpose is to establish the reviewers' position in the field of reviewing relevant text on the topic, which is about the satisfaction of residents with the service quality provided in a mixed-use development.

2.2 Property Management in Malaysia

Property encompasses all types of estate including real and personal, and any right or interest with a monetary value. It includes physical or intangible assets owned by individuals, groups, or corporations and includes the right to consume, sell, rent, mortgage, transfer, trade, or destroy. The main types of property in Malaysia are residential, commercial, and industrial.

2.2.1 Property Management in Residential

Malaysia's high-rise development property management market is in its infancy, with no clear criteria for competent managers or agents. Most parcel owners do not realize the value of efficient management until building and utilities deteriorate. Property management in high-rise residential properties requires infrastructure management, service life planning, and quality control. Effective management can retain property value and provide substantial returns on investment. However, studies do not analyze the relationship between management systems and Malaysian development patterns.

2.2.2 Property Management in Mixed-Use Building

In managing mixed-use properties, property managers play a critical role in building effective communication channels among stakeholders, such as residents, tenants, owners, vendors, and staff. Open and frequent communication fosters trust, community cohesion, and informed decision-making, ultimately contributing to the overall success and resilience of property. Property managers have multifaceted responsibilities, including lease agreements, tenant vetting, maintenance, financial oversight, and waste management. Relationship-building and conflict resolution skills are crucial for successful property management, and property managers are encouraged to seek professional development opportunities to enhance these competencies.

2.2.3 Differences in Managing Single-Use Properties and Mixed-Use Development

In managing mixed-use properties, property managers play a critical role in building effective communication channels among stakeholders, such as residents, tenants, owners, vendors, and staff. Open and frequent communication fosters trust, community cohesion, and informed decision-making, ultimately contributing to the overall success and resilience of property. Property managers have multifaceted responsibilities, including lease agreements, tenant vetting, maintenance, financial oversight, and waste management. Relationship-building and conflict resolution skills are crucial for successful property management, and property managers are encouraged to seek professional development opportunities to enhance these competencies.

2.3 Mixed-Use Development

Mixed-use development combines many uses, such as residential, commercial, cultural, institutional, or industrial, in a single building, cluster of buildings, or entire neighborhood or development zone (Schmidt Associates, 2016). According to Generalova et al. (2018), multi-functional buildings improve the quality of life in urban areas. The phrase mixed-use might be ambiguous, but despite its increasing use; the concept extends beyond multi-story buildings, with business usage on the first level and residential on the upper floors. It can be confusing sometimes, where many assume it only refers to development that includes commercial space on the first floor. Due to the limited land resources and concerns about town functionality, towns throughout the world have begun to devote floor space to public institutions and services necessary for the citizens' well-being within mixed-use high-rise buildings (Mualam et al., 2019).

2.4 Service Quality

Service quality refers to a service provider's ability to satisfy clients while increasing company success efficiently. Quality is critical to organizational success, even in the service sector. This is owing to the realization of its positive influence, profitability, market share, and customer satisfaction. Although service quality has been examined since the 1980s, there is no widely accepted definition (Priporas et al., 2017). Atiyah (2017) defines service quality as an organization's ability to create and offer desirable and correct services, resulting in increased customer satisfaction. Researchers have often utilized the SERVQUAL model, especially in management (Shafiq et al., 2019). In accordance with Ramya et al. (2019), the following five criteria may be used to evaluate the quality of service: tangibles, assurance, responsiveness, empathy, and reliability.



Figure 1 : SERVQUAL model

2.5 Occupants Satisfaction

Customer satisfaction encompasses a wider array of considerations than merely the quality of service, which zeroes in on the specific aspects of the service provided. This scenario can be understood as a systematic linkage between the quality of service and the client's satisfaction (Al-Karim, 2019). The survey evaluated residents' satisfaction using the four items, which are "I am satisfied with the management services," "The services met my expectations," "I am satisfied with the personnel response," and "Overall service quality provided by the management is excellent." Musa et al. (2020) investigated resident satisfaction in high-density residential in Klang Valley, focusing on medium expenses. The evaluation criteria included amenities and facilities, cleaning services, building maintenance, common area usage, safety and security, management commitment, and overall satisfaction. Understanding the link between residents' satisfaction and service quality in a mixed-use building is crucial.

2.6 Obstacle in Managing Mixed Use Development

There are many issues and limitations to the development of mixed-use. Finding the right property management team for a mixed-use development can be complex and challenging. The diverse and layered nature of mixed-use properties often requires a specialized approach to property management, which may involve dividing responsibilities among multiple partners, each bringing their own unique expertise to the table. For instance, managing residential components of mixed-use development requires different skills and knowledge.

Tenants' unwillingness to recognize each other's requirements might cause management issues in mixed-use development (RICS, 2012). Upkeep and repair are an ongoing concern in mixed-use property management. This entails overseeing the preservation of the common spaces while guaranteeing the peace and quiet of the residential and commercial properties, as well as ensuring that they are maintained and meet current requirements.

3. Research Methodology

Research methodology is a tool or method used to gather related data to achieve the goal of the researcher. This chapter delineates the research methodologies deployed to undertake the investigation. The term "research methodology" denotes a conglomeration of methods utilized in the execution of the research. Furthermore, it entails the examination of a method. Predominantly, research methodologies bifurcate into two categories: qualitative and quantitative. The research will leverage both methodologies during the analysis phase.

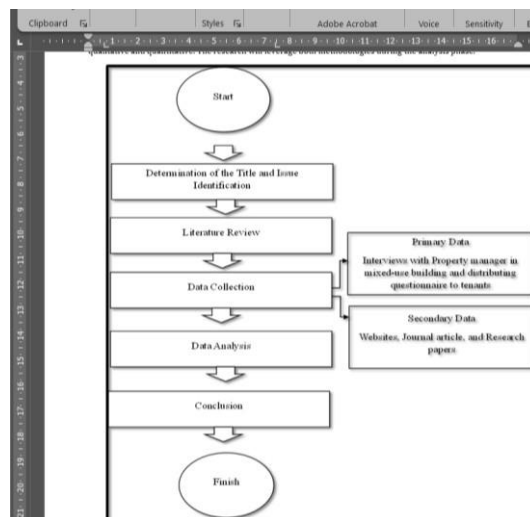


Figure 2 Research flowchart

3.1 Data Collection

Data collection involves systematically gathering and analyzing information on crucial variables to address specific research questions, verify hypotheses, and measure results. It can be conducted through primary and secondary data.

3.1.1 Primary Data

The primary data has more precision and decision-making confidence since a reputable study provides a direct relationship to the occurrence of events. There are several approaches for gathering primary data. This study collected primary data by distributing questionnaires to the tenant and interview with the property manager in mixed-use building in Malaysia.

i) Questionnaire

A questionnaire is designed to comprise a set of inquiries for the interview respondents, offering clear instructions on specific questions and sequences. Questionnaires have diverse applications in survey research and experimental design. They serve four primary functions: facilitating data collection, providing structured interviews, offering standardized methods for recording answers, and raising data processing. The questionnaire consists of three sections: Demographic profile (Section A), occupants' satisfaction (Section B), and service quality for residents (Section C). Occupant satisfaction and service quality are measured using a five- point scale with specific levels. The questionnaire will be distributed to 100 respondents.

Table 1 Likert Scale

5	4	3	2	1
Strongly satisfied	Satisfied	Neutral	Dissatisfied	Strongly dissatisfied

ii) Interview

In this research, the semi-structured interview method allows researchers to prompt and explore topics with the property manager, providing the freedom to delve into new areas. This approach also enables interviewees to express their view in their own words. Preparation involves gathering verbal and written information about the research and content, with a focus on exploring barriers in managing mixed-use buildings.

3.1.2 Secondary Data

Secondary data is obtained by other researchers and used for other purposes (Pederson et al., 2020). According to Johnston (2014), it provides a practical option for researchers with limited time and resources. This data may be easily obtained from online journals or papers relevant to the researcher's subject. Secondary data has limitations such as confidentiality, lack of engagement in data collecting, and lack of knowledge but the original study execution. In this research, the researcher retrieves information from journals, articles, research papers, websites, and other related sources.

3.3 Data Analysis

Data analysis in research is carefully studying and assessing data using analytical and logical reasoning to evaluate each component of the data presented. Descriptive analysis is a technique for presenting quantitative data based on questionnaire replies. The descriptive analysis examines frequency, central tendency, and variance to summarize the sample and measure (Mishra et al., 2019). The analysis is conducted using the SPSS software.

Quantitative data from the surveys were analyzed using the software to perform correlation analysis, examining the strength and nature of the relationship between service quality and residents' satisfaction. Correlation analysis will be used to determine whether the variables are related to each other or not. Qualitative data from the questionnaires and interviews were transcribed and subjected to thematic analysis, identifying key themes and patterns that could explain variations in residents' satisfaction levels.

3.4 Research Framework

The research framework illustrates the link between service quality and occupant satisfaction, with all service dimensions observed and evaluated for property management service quality.

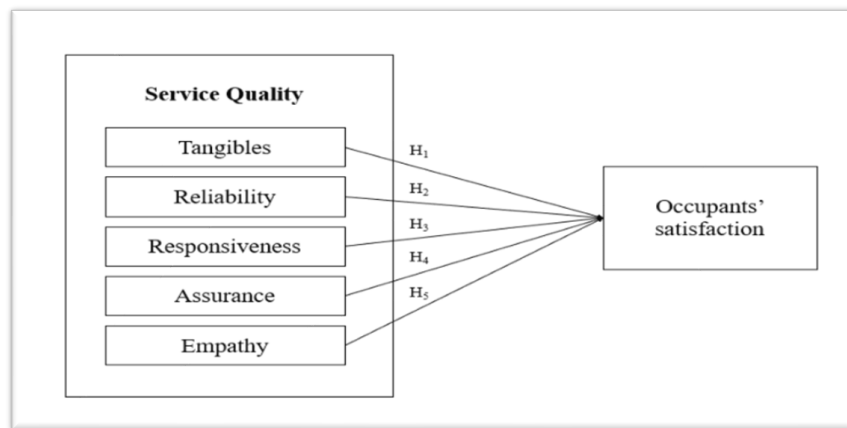


Figure 3 *The link between service quality and occupant satisfaction*

4. Results and Discussion

In this research, a mixed- method is used to analyze the satisfaction among the residents regarding the service quality and the challenges the property management faces to satisfy all the residents.

4.1 Questionnaire Analysis

4.1.1 Demographic

The demographic data reveals a youthful and predominantly female respondent group, with nearly half (49.2%) aged 21–30 and females accounting for 62.3%. Ethnically, the majority are Malay (57.4%), followed by Chinese (29.5%), Indian (8.2%), and others (3.3%), reflecting cultural diversity. Most respondents are single (57.4%), with 41.0% married, suggesting a younger or less committed demographic. Education levels are relatively high, with over half (54.1%) holding degrees, while others have completed primary or secondary education (21.3%), diplomas (18.0%), or master's degrees (4.9%). Occupation data highlights that students (36.1%) and full-time employees (34.4%) form the most prominent groups, alongside smaller segments of part-time workers, self-employed individuals, unemployed individuals, and retirees. Financially, the majority (55.7%) earn below RM 2,000 per month, indicating significant economic constraints, while the rest are distributed across higher income brackets. These findings provide essential context for understanding the respondents' perspectives and experiences.

4.1.2 Correlation Analysis

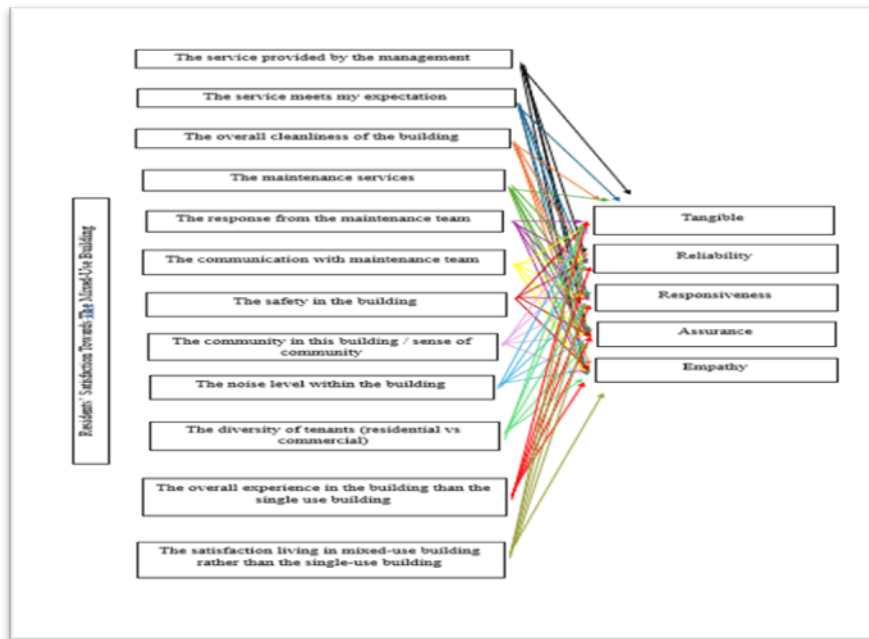


Figure 4 Correlation Analysis

The diagram illustrates how services in mixed-use buildings impact residents' satisfaction. Key factors include the quality of management, service expectations, cleanliness, maintenance, communication, safety, community engagement, noise levels, and tenant diversity. These factors correspond to five dimensions of service quality: Tangible, Reliability, Responsiveness, Assurance, and Empathy. For example, the Tangible dimension encompasses cleanliness and maintenance, while Reliability emphasizes the consistency of services. Responsiveness focuses on how quickly concerns are addressed, Assurance reflects the trust placed in management, and Empathy highlights the importance of personal attention to residents' needs.

This framework underscores how operational factors influence satisfaction. Property managers can leverage this information to pinpoint areas for improvement. For instance, if noise is a prevalent concern, management can enhance soundproofing or improve communication about noise regulations, helping meet residents' expectations and enhance overall satisfaction.

4.1.3 Relationship of Structural Model

The examination of the structural model aids in determining the significance and strength of the relationship between variables. Path coefficients indicate the intensity and direction of these interactions. To assess their significance, the beta value (which indicated the strength of the relationship, the t-value, which indicated statistical significance based on a threshold, and the p-value, which indicated the likelihood that the results occurred by chance, with values less than 0.005, are considered significant. It is all described in the Table 2 below.

Table 2 Relationship of Structural Model

Relationship	Path Coefficient	t-value	p-value	Decision
Tangible > Occupants' Satisfaction	0.248	5.924	0.000	Supported
Reliability > Occupants; Satisfaction	0.206	3.417	0.001	Supported
Responsiveness > Occupants' Satisfaction	0.014	0.195	0.845	Not Supported
Assurance > Occupants' Satisfaction	0.210	3.470	0.001	Supported
Empathy > Occupants' Satisfaction	0.220	3.623	0.000	Supported

The data analysis reveals a strong correlation between tangible elements and occupant satisfaction in mixed-use buildings, featuring a significant p-value of less than 0.005 (0.000) and a t-value of 5.924. This compelling evidence is backed by multiple studies (Ali et al., 2021; Le et al., 2020; Ojekalu et al., 2018), highlighting the crucial role of quality facilities, attentive services, effective communication, and dedicated staff in enhancing occupant satisfaction.

The research further explores the relationship between service quality dimensions and satisfaction, showing reliability as a key driver, with a t-value of 3.417 and p-value of 0.001 (supporting previous findings). Interestingly, responsiveness shows no significant link to satisfaction (t-value 0.195, p-value 0.845), aligning with some studies (Gopi & Samat, 2020; Kadek et al., 2018) but contrasting with others. Assurance and empathy both demonstrate significant positive relationships with satisfaction (t-value 3.470, p-value 0.001), consistent with earlier research. In terms of impact, tangibles are the most influential dimension (beta 0.248), followed by empathy (0.220), assurance (0.210), and reliability (0.206), with responsiveness at a beta value of 0.014.

In summary, prioritizing improvements in facilities and service reliability for property management companies can notably enhance occupant satisfaction.

4.2 Interview Analysis

4.2.1. Thematic Analysis

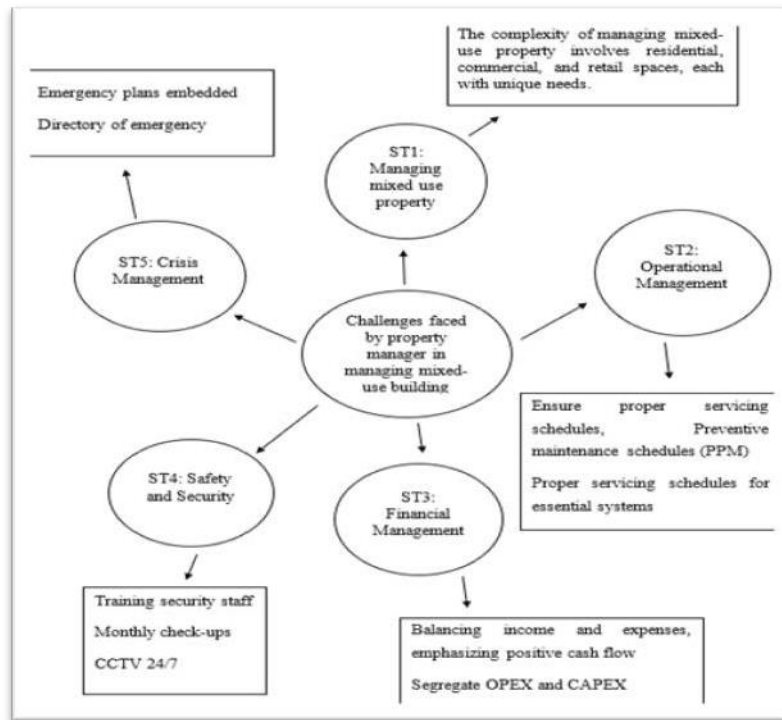


Figure 5 Mapping of the thematic analysis

The map above outlines the challenges faced by property managers in managing mixed-use buildings, categorized into five key themes. Managing Mixed-Use Properties (ST1) emphasizes the complexity of integrating residential, commercial, and retail spaces, each with unique operational requirements.

Operational Management (ST2) ensures proper service and preventive maintenance schedules to keep essential systems functioning smoothly. Financial Management (ST3) highlights the need to balance income and expenses, maintain a positive cash flow, and segregate operational expenses (OPEX) from capital expenditures (CAPEX) for effective financial planning. Safety and Security (ST4) addresses measures such as training security staff, maintaining 24/7 CCTV surveillance, and conducting regular check-ups to ensure a safe environment. Lastly, Crisis Management (ST5) emphasizes the importance of preparedness through embedded emergency plans and a directory of emergency contacts. Together, these themes underscore the multifaceted responsibilities of property managers in ensuring the efficient and secure operation of mixed-use buildings.

5. Conclusion

This research gives an overview of how service quality provided by property management relates to the residents' satisfaction in mixed-use development. This chapter has effectively outlined every structure that must be completed to accomplish the two objectives. Objective 1 is achieved by recognizing assurance and empathy as crucial for residents' satisfaction, while objective 2 identifies challenges for property managers, including system maintenance, financial balance, safety, and crisis management. Addressing these requires strategic planning and communication, highlighting their impact on resident satisfaction. In addition, the findings in this research will have a big impact on the property management sector as they will help businesses become more credible and enhance the tenants' satisfaction. This research not only reinforces the importance of service quality standards in property management but also provides valuable insights on how to enhance the standards despite the challenge faced by the property manager that can contribute to

improved residents' satisfaction within the mixed-use development to keep the satisfaction of residents.

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Conflict of Interest

There is no conflict of interests regarding the publication of the paper

Authors' contribution

The authors confirm their contribution to the paper as follows: **study conception and design:** Raudhahtul Fitri Razali, Zarina Shamsudin, Indera Syahrul Mat Radzuan, Masfaliza Mohsen; **data collection:** Raudhahtul Fitri Razali, Zarina Shamsudin; **analysis and interpretation of results:** Raudhahtul Fitri Razali, Zarina Shamsudin, Indera Syahrul Mat Radzuan; **draft manuscript preparation:** Raudhahtul Fitri Razali, Zarina Shamsudin, Indera Syahrul Mat Radzuan, Masfaliza Mohsen. All authors reviewed the results and approved the final version of the manuscript.

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