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**USING DIGITAL TECHNOLOGY TO IMPROVE THE EXPERIENCE
AND QUALITY OF LIFE IN MALAYSIA'S PEOPLE'S HOUSING
PROGRAMME (PPR) THROUGH A MAQASID SHARIAH APPROACH**

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ABSTRACT

Malaysia's People's Housing Programme (PPR) was introduced to address the critical housing needs of the B40 income group, which comprises the bottom 40% of Malaysian households in

terms of income, typically earning less than RM4,850 per month. This group often faces economic vulnerability, limited access to stable employment, and struggles to meet basic needs such as food, healthcare, and housing. However, many residents continue to face persistent challenges, including environmental hazards, behavioural concerns, and safety issues—all of which affect their overall quality of life (QoL) (Bank Negara Malaysia, 2018). These issues highlight the need for a more holistic approach to public housing that goes beyond infrastructure to also address social and environmental well-being. Anchored in the *Maqasid Shariah* framework—which emphasizes the preservation of life (*nafs*), intellect (*‘aql*), and dignity (*‘ird*)—this study investigates how digital technologies can positively transform PPR living experiences by fostering behavioural change and environmental consciousness. A quantitative survey was conducted with 704 residents across five states, and the data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicate that the housing environment plays a significant role in shaping residents’ attitudes and their overall living experience, both of which influence their QoL. Attitude serves as a strong mediating factor, underscoring how positive perceptions and behaviours can enhance engagement with the environment. Digital tools such as cleanliness-monitoring apps, safety alert platforms, and community engagement applications have the potential to improve not only physical conditions but also behavioural norms and lived experiences. When guided by *Maqasid Shariah* principles, these digital solutions offer a holistic, ethically grounded approach to enhancing dignity, well-being, and sustainable living for low-income urban populations.

Keywords: Digital Technology, *Maqasid Shariah*, PPR, Attitude, Quality of Life

1. INTRODUCTION

With the rapid pace of urbanization in Malaysia, the demand for affordable housing has intensified. This has led to the continued development of the People’s Housing Programme (PPR), a national initiative aimed at supporting the B40 income group. While the government has successfully provided basic shelter and amenities, many PPR communities still grapple with entrenched problems such as poor hygiene, crime, overcrowding, and deteriorating infrastructure (Alias et al., 2025; Mohan et al., 2025; Zailani et al., 2024). These conditions undermine residents’ quality of life (QoL), and much of the existing research has focused

predominantly on physical infrastructure—largely neglecting psychological, behavioural, and ethical dimensions (Ibhrim et al., 2024).

To address this gap, scholars have proposed incorporating the *Maqasid al-Shariah* theory—an Islamic ethical framework that emphasizes the protection of life (*nafs*), intellect (*'aql*), dignity (*'ird*), wealth (*māl*), and faith (*dīn*) (Bouheraoua & Mohamed, 2023). Within this context, digital tools such as cleanliness-monitoring apps, crime alert systems, and online educational platforms can be aligned with *Maqasid* values to foster safer, more inclusive, and ethically conscious living environments (Kasri et al., 2023). Guided by this framework, the present study explores the influence of the PPR environment and digital technologies on residents' attitudes and QoL, based on data from five Malaysian states and analysed through PLS-SEM.

2. LITERATURE REVIEW

2.1 Integrating Digital Technology with *Maqasid Shariah* in PPR Communities

The adoption of digital technology in low-income housing can significantly enhance service delivery, safety, and community engagement. In the Malaysian PPR context, mobile applications and IoT systems are increasingly employed for monitoring cleanliness, managing waste, and improving safety—promoting efficient governance and active resident participation (Mohan et al., 2025). Rashid et al. (2022) emphasize that these tools are essential for improving public service accessibility in B40 areas, empowering residents to take a more active role in their communities.

Maqasid Shariah provides a complementary ethical framework that aligns with these technological innovations. Its core values—the protection of religion (*dīn*), life (*nafs*), intellect (*'aql*), lineage (*nasl*), and wealth (*māl*)—mirror the essential needs of low-income residents (Bouheraoua & Mohamed, 2023). Housing policies rooted in *Maqasid* principles aim not only to ensure material well-being but also to enhance spiritual and social welfare (Kasri et al., 2023).

Emerging research suggests that combining digital tools with *Maqasid* values holds significant promise. For example, digital platforms for healthcare and education support the preservation of life and intellect (Zailani et al., 2024), while cleanliness-reporting apps and crime alert systems support goals related to wealth and security (Ibhrim et al., 2024). However, current housing assessments often focus narrowly on physical infrastructure, overlooking moral and spiritual dimensions. A comprehensive framework—integrating digital innovation with Islamic

ethical principles—can drive holistic improvements in behaviour, dignity, and QoL (Bouheraoua & Mohamed, 2023).

2.2 Quality of Life

The quality of life within PPR communities remains a critical concern, with residents experiencing overcrowding, inadequate sanitation, and poor infrastructure (Alias et al., 2025; Zailani et al., 2024). QoL extends beyond physical conditions to encompass mental health, social relationships, and satisfaction with one's environment. Despite this complexity, most studies have assessed QoL primarily through structural indicators (Mohan et al., 2025).

Social challenges such as youth delinquency and unemployment further diminish perceived well-being (Ibhrim et al., 2024). While national housing policies aim to tackle these issues, a notable gap remains in the application of multidimensional frameworks. Integrating *Maqasid Shariah* into housing and poverty alleviation policies can help fill this gap by upholding values related to life, intellect, and dignity (Bouheraoua & Mohamed, 2023). Digital platforms that facilitate community feedback, issue safety alerts, and improve access to services can significantly enhance QoL, especially when rooted in ethical and spiritual values (Kasri et al., 2023).

2.3 PPR Environment and Quality of Life

Although PPR initiatives provide basic housing, the quality of the physical and social environment profoundly shapes residents' overall well-being. Key environmental factors—such as cleanliness, safety, infrastructure maintenance, and access to communal spaces—are closely linked to QoL (Alias et al., 2025; Mohan et al., 2025). Deficiencies in these areas, such as poor waste disposal and crime, exacerbate health issues and disrupt social cohesion.

QoL encompasses more than material conditions. It includes emotional security, personal dignity, and opportunities for self-development. When facilities like parks or prayer rooms are neglected, community interaction declines (Zailani et al., 2024). Conversely, well-maintained environments foster trust and civic engagement. However, cost-driven policies often overlook these dimensions. Incorporating ethical and environmental considerations into housing design could enhance both structural and psychosocial well-being (Bouheraoua & Mohamed, 2023).

2.4 Environment and Attitude in PPR Communities

A supportive physical environment is essential for shaping residents' behaviours and attitudes, which, in turn, influence QoL. Environmental aspects such as lighting, safety, and facility

upkeep have been shown to affect resident satisfaction (Alias et al., 2025; Mohan et al., 2025). Neglected spaces frequently lead to disengagement, vandalism, and social isolation (Zailani et al., 2024).

Attitude acts as a critical mediating factor between environmental quality and behavioural outcomes. Supportive environments encourage resident participation and accountability (Ibhrim et al., 2024). Interventions that integrate digital tools and ethical values—such as dignity and community harmony—can effectively reshape attitudes and behaviours (Bouheraoua & Mohamed, 2023).

2.5 Attitude and Quality of Life in Low-Income Housing

Attitude significantly influences how individuals perceive and adapt to their housing environments. Even within similar physical settings, residents with more positive attitudes report higher levels of satisfaction and well-being (Alias et al., 2025). Proactive attitudes contribute to cleaner, safer communities and stronger social bonds (Mohan et al., 2025).

In contrast, negative attitudes—often rooted in feelings of disempowerment—are associated with unhygienic conditions and increased crime (Zailani et al., 2024). Research in Malaysia has largely overlooked these psychosocial dynamics. Nevertheless, digital platforms that support community engagement and feedback are demonstrating effectiveness in reshaping resident attitudes. When guided by *Maqasid Shariah* principles such as dignity (*karāmah*) and life (*nafs*), these tools can create sustainable pathways for ethical and high-quality living (Bouheraoua & Mohamed, 2023).

3. RESEARCH METHODOLOGY

This study employed a quantitative, cross-sectional design to examine the impact of the PPR environment on residents' QoL and attitudes. A total of 704 participants from PPR flats in Johor Bahru, Kuala Lumpur, Kuantan, Penang, and Kota Kinabalu were surveyed. These urban centres were selected for their high density of PPR housing.

A purposive sampling method was adopted, with the support of PPR block leaders. Prior approval was obtained from the Ministry of Local Government Development. The questionnaire included validated items adapted from prior studies (Streimikiene, 2015; Arabi et al., 2020; Cozens & Sun, 2019; Olanrewaju & Lee, 2022; Zanna & Rempel, 2008), using a 6-point Likert scale.

The survey was pre-tested and subsequently piloted with 30 respondents. Reliability tests yielded strong Cronbach's alpha scores: 0.852 for QoL, 0.848 for the PPR environment, and 0.901 for Attitude—all exceeding the 0.70 threshold (Hair et al., 2019).

3.1 Measurement of Constructs

A structured questionnaire was designed using validated items from established literature, ensuring alignment with each construct in the proposed research model.

Table 1. summarizes the constructs, number of items, and their original sources.

| Constructs | Items | Source(s) |
|-----------------------|-------|--|
| Quality of Life (QoL) | 13 | Streimikiene, (2015) |
| PPR Environment | 5 | Arabi, Naseri, & Jahdi, (2020), Cozens, & Sun (2019) and Olanrewaju & Lee A ,(2022). |
| Attitude | 8 | Zanna & Rempel, (2008), |

Section A comprises the demographic profile of the respondents. Section B contain items related to QoL construct adapted from Streimikiene, (2015), and followed by PPR residential environment construct in Section C which adapted from Arabi, Naseri, & Jahdi, (2020), Cozens, & Sun (2019), and Olanrewaju & Lee A ,(2022). Finally, Section D is related to attitude construct, adapted from Zanna & Rempel, (2008). The respondents were asked to indicate their perception levels on a 6- point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (6).

A pre-test was carried out by two experts in research methodology, and, after further corrections, the final survey draft was piloted to 30 respondents. A preliminary analysis of the data was performed and a reliability assessment of the constructs was carried out by calculating the values of Cronbach's alpha for each construct separately. The results of Cronbach's alpha were 0.852 for QoL, 0.848 for PPR environment, and 0.901 for Attitude. Hence, the internal

consistencies of all constructs were considered acceptable since each reliability test exceeded the threshold (>0.70) suggested by Hair, et. al., (2019).

3.2 Modelling Approach

The conceptual framework could be explored based on the theoretical perspectives and arguments related to the corresponding relationships above.

Figure 1 below is the graphical view of the conceptual framework in this study.

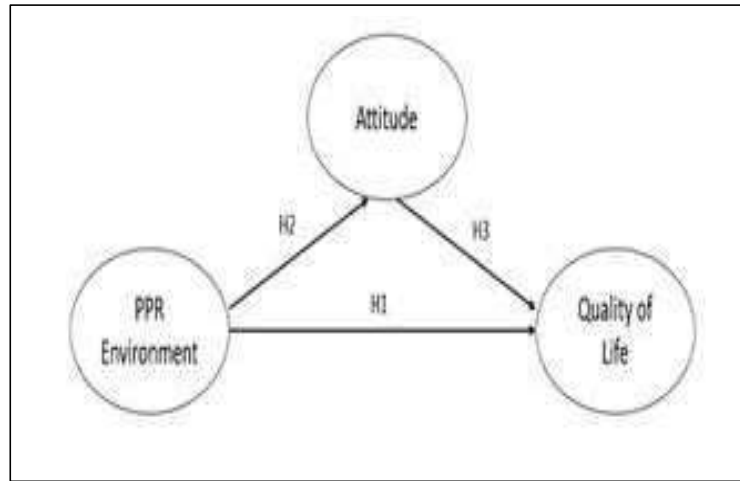


Figure 1. The Conceptual Framework

In this study, PPR Environment (PPRE) of the residents is considered as an independent or exogenous latent construct of the study. Correspondingly, Quality of Life of the PPR residents is considered as the dependent or endogenous latent construct, which is useful in measuring the perception of the residents. Meanwhile, Attitude of the PPR residents is considered as a mediating factor in the relationship between the PPRE and Attitude of the residents with the interrelationships between the three constructs, the following hypotheses are to be tested;

H1: PPRE has a significant influence on Quality of Life of the PPR residents.

H2: PPRE has a significant influence on Attitude of the PPR residents

H3: Attitude of the PPR residents has a significant influence on their Quality of Life

H4: Attitude of the PPR residents mediates significantly in the relationship between PPRE and the residents' Quality of Life PPRE and the residents' Quality of Life

3.3 Data Analysis

Partial Least Squares Structural Equation Modeling (PLS-SEM) (Rigdon et al., 2014) was adopted to analyse the conceptual framework. The model has two parts, i.e., measurement and structural models, and has direct and indirect relationships, which have been hypothesized earlier. PLS-SEM was the most appropriate method for certain data conditions, such as small sample sizes and non-normal data (Hair et al., 2016). The key criteria for the goodness of fit are the size, sign, and significance of path coefficients, the R² values, and the effect size f² (Ali et al., 2018). The procedure developed by Nitzl et al. (2016) was used to test the mediation effects of Human Resources and Technology in the framework.

4. RESULTS AND DISCUSSION

Results of PLS-SEM Analysis
Assessment of the Measurement Model
The research model (Figure 2) was analyzed using SmartPLS 4.0, a PLS structural equation modeling software. The measurement model in PLS is assessed in terms of item loadings and reliability coefficients (composite reliability), as well as convergent and discriminant validity. Individual item loadings greater than 0.7 are considered adequate (Fornell & Larcker, 1981). The average variance extracted (AVE) measures the convergent validity via the variance captured by the indicators relative to measure error, and it should be greater than 0.50 to justify using a construct (Barclay et al., 1995). Table 2 shows the result of the reflective measurement model that presents the values of indicators loadings, composite reliability, Cronbach's alpha, and AVE.

Table 2. Reliability and Discriminant Validity of the Constructs

| Construct and Items | Loadings | CA | CR | AVE | Discriminant Validity |
|---------------------|----------|-------|-------|-------|-----------------------|
| PPRE | | 0.846 | 0.896 | 0.683 | Yes |
| Attitude | | 0.797 | 0.880 | 0.710 | Yes |
| QoL | | 0.904 | 0.922 | 0.567 | Yes |

As shown in Table 2, the CA values of all constructs were between 0.801 and 0.906, which are all above 0.7, as Hair et al. (2016) recommended. While CR values were between 0.866 and 0.922, which are higher than 0.7 and indicate adequate internal consistency (Gefen et al., 2000).

Thus, the constructs are considered reliable. The values of AVE for all the constructs ranged from 0.567 to 0.710, and therefore, all the constructs achieved convergent validity. Discriminant validity assessment must be accepted to evaluate relationships between latent constructs. Traditionally, two discriminant validity measures are commonly used in SEM-PLS: cross-loadings and the Fornell Larcker criterion (1981). Cross-loadings are attained by relating each construct score to the other items (Chin, 1998). If each indicator's loading is higher for its allocated construct than for any of the other constructs, and each of the constructs put in highest with its assigned items, it can be concluded that the dissimilar constructs' indicators are not substitutable. In the case of SEM-PLS, each indicator loading on associated constructs should be greater than all of its cross loadings, as illustrated in Table 3.

Table 3. Heterotrait-Monotrait Ratio (HTMT) for Discriminant Validity

| | PPRE | Attitude | QoL |
|----------|-------|----------|-----|
| Attitude | 0.616 | | |
| QoL | 0.830 | 0.784 | |

4.1 Evaluation of the Structural Model

To assess the structural model, R², beta, and t-values via a bootstrapping procedure with a resample of 5000 and the effect sizes (f²) suggested by Hair et al. (2016) were performed. The results in Figure 2 and Table 6 indicated that the three relationships turned out to be highly significant. The two predictors (PPRE and Attitude) had significant relationships with Quality of Life.

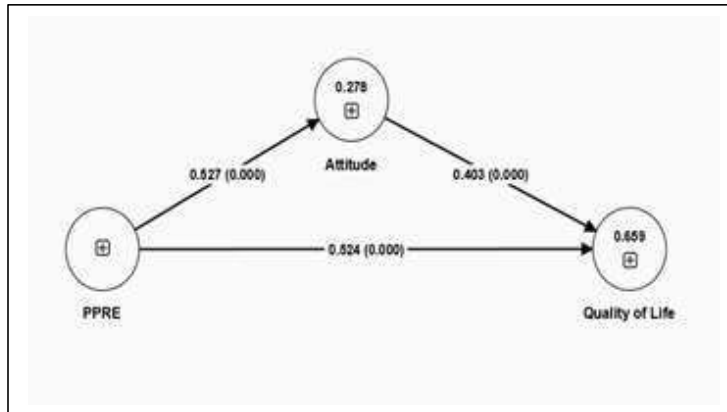


Figure 2. The estimated Structural Model

For the relationship between PPRE and QoL (H1) $\beta = 0.524$ ($p < 0.01$), PPRE and Attitude (H2) $\beta = 0.527$ ($p < 0.01$), and Attitude and QoL (H3) $\beta = 0.403$ ($p < 0.01$) had highly significant positive relationships. Thus, for H1, H2, and H3 were supported.

Table 4. The Structural Model Path Coefficients

| Relationships | Path Coefficients | t-values | p-value | Hypothesis supported by Data? |
|----------------------|-------------------|----------|----------|-------------------------------|
| H1: PPRE -> QoL | 0.524 | 17.074 | 0.000*** | Yes |
| H2: PPRE -> Attitude | 0.527 | 13.936 | 0.000*** | Yes |
| H3 Attitude -> QoL | 0.403 | 12.802 | 0.000*** | Yes |

Note: *** Significant at 0.01 level

The R^2 value for QoL is 0.659 which is above the 0.26 value as suggested by Cohen (1988) indicating a substantial model. Hair et al. (2016) have suggested an extra step by examining the change in the R^2 value through the value of f^2 . The step involves omission of a specific exogenous or independent construct from the model and see the change in R^2 . It can be used to evaluate whether the omitted construct has a substantive impact on the endogenous construct. Table 5-6 show the results of R^2 and adjusted R^2 , respectively.

Table 5. R^2 and Adjusted R^2

| | R^2 | R^2 Adjusted |
|----------|-------|----------------|
| Attitude | 0.278 | 0.277 |
| QoL | 0.659 | 0.658 |

Table 6 show the results of f^2 . Following the Cohen (1988) guideline, the effect size of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects. The results showed that while Attitude has a small effect on QoL, PPRE has a large effect on both Attitude and Quality of Life of the PPR residents.

Table 6. Effect Size (f^2)

| | Attitude | PPRE | QoL |
|----------|----------|------|-------|
| Attitude | | | 0.343 |

| | | | |
|------|-------|--|-------|
| PPRE | 0.385 | | 0.580 |
| QoL | | | |

In this study, the role of Attitude in enhancing Quality of Life of the residents was the main focus and therefore its role as a mediator was examined accordingly. Table 7 illustrates the significance of the mediating factor (via its indirect effect) in the relationship between PPRE and Quality of Life. The results showed that Attitude was a significant mediating factor ($\beta = 0.212$), significant at 0.01 level, and therefore, H4 was supported. This confirmed the significant role of Attitude in enhancing the level of Quality of Life of the PPR residents, as shown by the indirect relationship between PPRE and QoL in Table 7.

Table 7. Mediating Effect

| Indirect Relationship | Indirect Effect | t-Statistic | p-values | Hypothesis Supported by Data? |
|-------------------------------------|-----------------|-------------|----------|-------------------------------|
| H4: PPRE - > Attitude - > QoL | 0.212 | 9.016 | 0.000*** | Yes |

Note: *** Significant at 0.01 level

5. CONCLUSION AND RECOMMENDATIONS

This study investigated the relationship between the **Public Housing (PPR) Environment** and the **Quality of Life (QoL)** of low-income residents in Malaysia, with particular attention to the **mediating role of Attitude**. The findings support the structural model, affirming that both PPR environmental conditions and residents' attitudes significantly influence QoL, a result aligned with prior studies such as Muianga et al. (2021). Notably, residents expressed high satisfaction with indicators such as **QoL5** ("I hang out with my neighbours in this PPR quite often") and **QoL10** ("I am satisfied with legitimate support for my health activity in this PPR").

Among the most prominent attitudinal indicators were **ATT1** (“I am afraid to act silly around PPR residents”), **ATT2** (“I have a positive attitude about my PPR residence”), and **ATT3** (“I care about living in privacy in my PPR residence”). These findings underscore the importance of psychological and social dynamics in shaping residents' lived experiences in urban low-cost housing.

To enhance these outcomes further, **digital technology** can be leveraged to strengthen PPR community well-being. For example, **smart community platforms** could enable residents to report maintenance issues, access health and social services, or participate in neighborhood planning via mobile applications. These digital innovations have been linked to improved social cohesion, security, and resident empowerment in public housing environments (Hosseini et al., 2020; Alawadhi & Scholl, 2016).

Moreover, incorporating the principles of **Maqasid al-Shariah** — particularly the preservation of *life (nafs)*, *intellect ('aql)*, *lineage (nasl)*, *wealth (mal)*, and *faith (din)* — provides an ethical framework for PPR policymaking. For instance, ensuring safe housing and access to clean water fulfills the objective of preserving life, while community health services align with preserving intellect and human dignity. The Maqasid-based urban planning approach encourages holistic well-being, fostering an environment that promotes not only material welfare but also spiritual and moral development (Hassan & Rashid, 2018; Dusuki & Abozaid, 2007).

5.1 Policy Implications

To establish a more holistic and inclusive public housing system, policymakers should:

- Integrate digital technologies to streamline housing services and increase resident engagement.
- Align housing strategies with *Maqasid Shariah* principles to support integrated well-being.
- Foster positive resident attitudes through education, privacy assurance, and community-building initiatives.

By combining modern technological tools with Islamic ethical principles, Malaysia can promote sustainable and dignified living environments for its low-income population.

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