

Content Validation of the Competencies Component of Building Maintenance Management for Waqf-based Islamic Religious Schools

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Abstract

The competency of school administrators in maintaining a school building is paramount in ensuring the safety and comfort of the students and teachers. It also safeguards the functionality of the school facilities towards providing an effective teaching and learning process. Therefore, this research embarked on a quantitative approach to develop and validate building maintenance competency components, focusing on Islamic religious schools using the content validation technique. There are nine components of building maintenance management competencies with forty elements from the literature. Six experts were chosen to evaluate and validate all the items. The result of the study emphasizes the technical and behavioral competencies among the school administrators, which significantly contribute to the effectiveness of Islamic religious schools in Malaysia.

Keywords: Building Maintenance Management Competencies; Waqf; Islamic Ethics; Content Validation

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1.0 Introduction

Waqf-based Islamic educational institutions in Malaysia consist of Sekolah Agama Rakyat (SAR), Sekolah Agama Negeri (SAN), Madrasah, and Pondok. Generally, these schools are administered and governed by Jabatan Agama Islam Negeri and Majlis Agama Islam Negeri (MAIN) (Nor Raudah Hj Siren et al., 2018; Ahmad Zaki et al., 2006). It is according to the Federal Constitution of Malaysia, which clearly states that matters relating to the Administrative Affairs of Islam or Islamic law are placed under the jurisdiction of the State Government (Mohd Afendi Mat Rani & Asmah Abdul Aziz, 2010). In Malaysia, there are 13 states (Negeri) and three (3) federal territories (Wilayah Persekutuan), and each state is responsible for the overall management of the school, including the planning, development, and monitoring of the syllabus, teacher appointment, student enrolment, and maintenance management of the school buildings.

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School building maintenance refers to the tasks and responsibilities of maintaining and repairing school buildings' physical structures and systems. The objectives of school building maintenance include ensuring the safety, comfort, and functionality of the school environment for students, staff, and visitors (Al Shboul, 2018; Asiyai, 2012; Asiabaka, 2008).

However, previous studies highlighted the issues of the competencies of school administrators of these schools (Huraizah Arshad; et al., 2019; Zharif Agil, 2019). Lack of competencies in building maintenance management leads to issues of building defects (Akasah et al., 2008), student accidents (Mydin et al., 2014), and safety issues (Intan, 2017; Hakimie Amrie Hisamudin, 2022).

1.1 Statement of the Problem and Objectives of Study

Several studies have explored competencies in various fields, including hotel and hospitality, education, construction, project management, human resource management, healthcare, and engineering. However, specific competency studies for school building maintenance management are still few and require special attention. Building maintenance combines technical and administrative activities, including structural aspects and building services (López-Campos, 2015). Building maintenance is also a process and procedure that includes three components: service, repair, and replacement, to ensure that the building runs and functions as expected to meet the needs of its occupants (Abdul Lateef et al., 2010). Therefore, managing building maintenance requires specific knowledge, skills, abilities, and behaviors that contribute to individual and organizational performance. Mariah Binti Awang (2014) and Raja Marzyani (2016) have developed the facilities management competencies for an educational institution, focusing only on knowledge and skills. However, beyond the knowledge component, competencies must also address soft skills, traits, attitudes, self-concepts, values, or motives. These components of behavioral competencies were eliminated in several previous studies as it is difficult to assess, even though they are essential for the excellent performance of maintenance works among school administrators. The management practice must comply with the Shariah and Islamic principles in Islamic religious schools. It must be administered with Islamic ethics, responsibility, and trust (Mutalib & Maamor, 2018; Mohd Fadzli et al., 2015; Hailani Bin Muji Tahir, 1998). Thus, this research intends to develop and validate the knowledge and technical components of competencies for religious school buildings with embedded behavioral components into the existing model.

2.0 Literature Review

2.1 Definition and Objectives of Building Maintenance Management

According to BS 3811:1984, maintenance is a collection of all technical and administrative procedures, including supervisory actions, intended to keep or repair an item in a state that enables it to fulfill a needed function. Maintenance is a combination of activities that would lead to the retaining or restoring the buildings to an acceptable condition. These activities include inspection, cleaning, rectification, replacement, and renovation tasks required to keep a building efficient and extend its lifespan (Ojedokun et al., 2012; Chanter & Swallow, 2007). Building maintenance also involves the process of management: planning, organizing, evaluation, and controlling (Ogunoh, Peter, et al., 2018). These variables are shown in Figure 1.

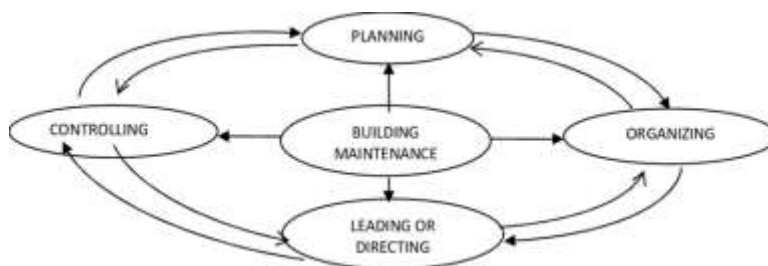


Figure 1 Maintenance Management Process
Source: Ogunoh, Peter, et al., 2018

In the development of maintenance management competencies components, two (2) professional bodies need to be referred to, namely the International Facility Management Association (IFMA) and the Institute of Workplace and Facilities Management (IWFM). The competency standards models developed by these organizations were perceived as the most comprehensive ever developed as they consistently revised the competencies list.

2.2 Competencies Components for Building Maintenance Management of Religious School Buildings: A Conceptual Framework

Competency is often associated with the Iceberg Theory introduced by Spencer and Spencer (1993). In the Iceberg Theory, competencies are divided into two (2) parts: the knowledge and skills are represented by the visibility of the iceberg, and the hidden parts include the behavior, which is interpersonal, motive, trait, concept, and value or morale as shown in Figure 2.

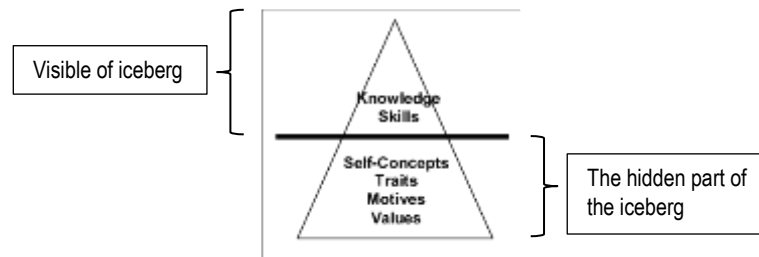


Figure 2 The Iceberg Theory by Spencer (1993)

In addition, focusing on behavioral competencies is crucial for an organization aiming to achieve superior performance and maintain long-term competitiveness (Emtseva et al., 2020 & Sarpin, 2016). In Islamic religious school buildings, management should consider religious behavior and work ethics based on Islamic values (Hamsani et al., 2018). Thus, Islamic managerial skills, ethics, and values are embedded in the developed components of this research, as shown in Figure 3.

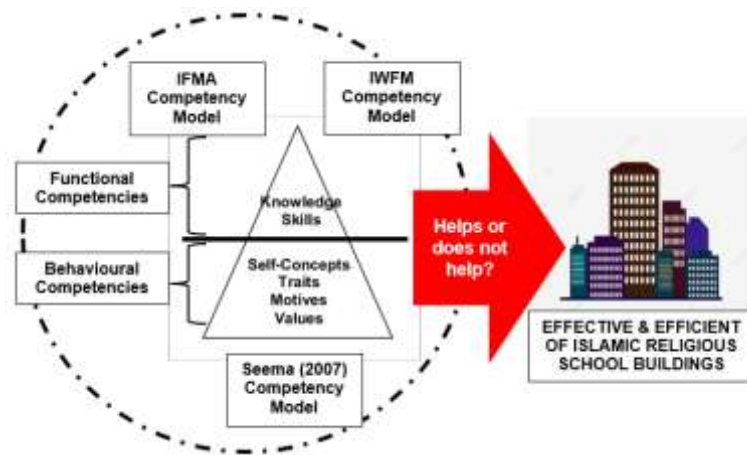


Figure 3 Conceptual Framework of Building Maintenance Management Competencies Components for Islamic Religious Schools in Malaysia
Source: Authors (2023)

Building maintenance competencies refer to the skills, knowledge, and abilities required to maintain and repair buildings and their systems effectively—some examples of specific competencies in building maintenance, as tabulated in Table 1.

Table 1 The Output of the Building Maintenance Management Competencies Components

Building Maintenance Management Competencies Components	Building Maintenance Management Competencies Elements
Knowledge of Shariah	Knowledge of the objectives of Shariah Knowledge of Shariah provision in the workplace Knowledge of Tauhid (servant of Allah)
Knowledge of Maintenance Planning	Building maintenance policy and program Building maintenance procurement Building maintenance budget and financial Building maintenance approach Statutory provision on building maintenance works
Knowledge of Maintenance Evaluation	Customer satisfaction in building maintenance Continuous improvement in building maintenance Monitor building maintenance activities Monitor building maintenance workforce
Knowledge of Risk Management Knowledge	Hazard identification Risk assessment and control
Communication Skills	Presentation skills Negotiation skills Computer skills
Technical Skills	Building inspection Building repair, replacement, renovation, and upgrading

Islamic Managerial Skills	Landscaping and ground maintenance
	Tools and equipment handling
	Report writing and documentation
	Building maintenance software
	Decision-making based on Shariah
Islamic Ethics and Values	Responsibility and accountability (<i>musuliyah</i>)
	Justice and equal
	Strategic management
	Consultation (<i>shura</i>)
	Reflection
Physical State	Intention and <i>niyah</i>
	Honesty in performing the task (<i>Vicegerent of Allah</i>)
	Behavior following Shariah (<i>Akhlaq</i>)
	Motivation to practice Shariah
	Time management
Physical State	Concerned about others and <i>insaniyyah</i>
	Knowledge management
	Fit for handling heavy equipment
	Fit for handling long-hour job
	Fit for a challenging job
Physical State	Tidy attire and physical appearance

3.0 Content Validity

There are five bases of validity evidence: the content, the response process, the internal structure, the relation to other variables, and the consequences. Wynd et al. (2003) define content validity as the extent to which an assessment instrument adequately samples the research domain of interest when measuring phenomena. Polit & Beck (2004) highlighted content validity as the degree to which an instrument has an appropriate sample of items for the measured construct. Content validity is the degree to which elements of an assessment instrument are relevant and represent the targeted construct for a specific assessment purpose (Cook et al., 2006; Yusoff et al., 2019). It is necessary to validate the new construct's reliability in research and ensure that the research construct is relevant to the field of study (Rubio et al., 2003). Numerous studies, including Zamanzadeh et al. (2015), Paul et al. (2016), Mohajan et al. (2017), and Vasli et al. (2018) have incorporated content validity studies into the development of their research instruments.

The instrument and panel of experts determine content validity (Lynn, 1986). Thus, a comprehensive literature review identified content domains related to the phenomenon of interest to generate instrument items (Lynn, 1986). Finally, an expert panel assessed the developed instrument (Lynn, 1986). A panel of experts will then evaluate the instrument to determine its robustness in the study (Wynd et al., 2003). The evaluation usually follows the creation of study instrument items (Gilbert & Prion, 2016). This entire process is an item pretest. Thus, content validity studies reveal item clarity and representativeness.

Content validity investigations should implement proper procedures. The expert panel evaluates the instrument items and calculates the Content Validity Index (CVI) score. Items with low CVI values cannot describe the primary construct due to insufficient construct specifications or judging expertise (Lynn, 1986). Items deemed conceptually unreliable will be excluded (Hinkin, 1998).

Each item in the research instrument was quantified using the CVI. The content validity score is determined using the item-level (I-CVI) and scale-level (S-CVI) scores. I-CVI stands for item content validity. It denotes the proportion of the expert panel with a rating of 3 or 4 to indicate agreement with the items. The panel of experts needs to rate each scale item regarding its relevance to the underlying construct. A 4-point scale was used to avoid a neutral point. The four points used along the item rating continuum were 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant. Meanwhile, S-CVI refers to the overall content validity of the instrument (Lynn, 1986; Polit et al., 2007). The S-CVI is determined not to focus on each item's level score (I-CVI) but to identify the overall scale's content validity index. The proportion of agreement on each item's relevance (I-CVI) ranges from 0 to 1 (Lynn, 1986), and an acceptable S-CVI value is 0.8 or higher (Polit & Beck, 2004).

4.0 METHODOLOGY

4.1 The Content Validation Procedure

There are five steps of content validity used in this research (Figure 4). The first step is to develop the instruments and items by conducting a thorough literature review. Questionnaires are developed, and experts begin to evaluate and rate the research tool. A content validation analysis is done to figure out if the research tool that was built is useful.

4.1.1 Questionnaire Preparation

The questionnaire for content validity was designed to validate the items obtained from the literature review, where questions were divided into a few categories to clearly represent this study's objective. The questionnaire includes three sections. The first section is regarding the respondent's background. The second section is the respondent's opinion on the relevance of the components and elements of competencies, respectively. The last section of the questionnaire is the respondent's comments and suggestions. This content validity questionnaire was developed using a four-point Likert scale to prevent a neutral and ambivalent midpoint (Lynn, 1986).

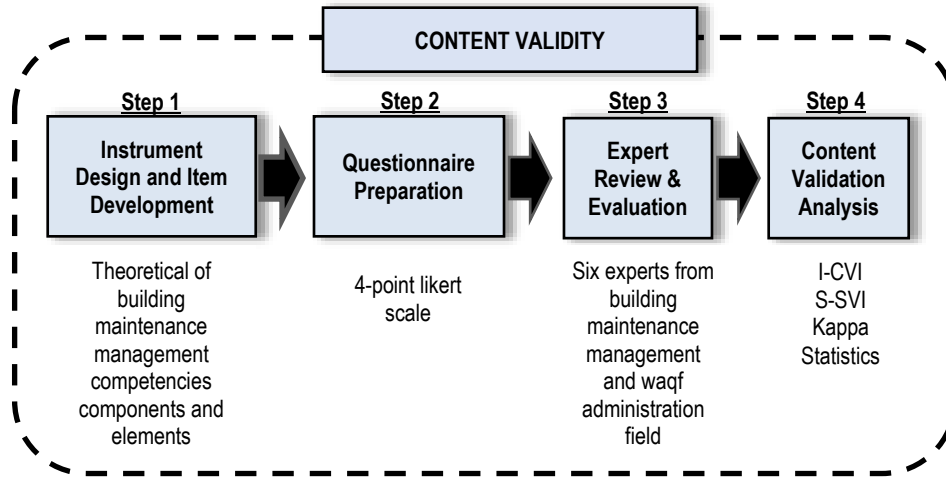


Figure 4 The steps of content validation

Source. Zamanzadeh et al. (2014); Mohammad et. Al (2020).

Note. CVR = content validity ratio; I-CVI = item content validity index; S-CVI = scale content validity index.

4.1.2 Expert Review and Evaluation

The selection of the panel to review and critique the questionnaire depends on the availability and willingness of experts to participate. The detail of the experts is stated in Table 2. Table 3 summarises the recommended number of experts with its implication on the acceptable cut-off score of CVI. Content validation requires at least two experts, but most recommendations suggest six. Based on recommendations (5–8) and the author's experience, content validation experts should number between 6 and 10.

Table 2 Background of Experts

No.	Initial Name	Expert Profile	Experience	Willingness
1	R1	- Assistant Mufti - Expert in Shariah and Islamic rule.	✓	✓
2	R2	- Head of Seksyen Pengurusan Sekolah, Jabatan Agama Islam Negeri - Expert in religious school building management and administration.	✓	✓
3	R3	- Head of Department of Waqf, Majlis Agama Islam Negeri - Expert in waqf development and administration	✓	✓
4	R4	- Registered valuer with Board of Valuer, Appraiser, Estate Agent and Property Manager, Malaysia - Own a company of valuation and property management - Vast experience in property and building maintenance	✓	✓
5	R5	- Registered Engineer with the Board of Engineers Malaysia (BEM) - Facility Manager - Vast experience in building maintenance management process, procurement tender, and contract of building maintenance	✓	✓
6	R6	- A senior lecturer with a passion for research relating to the topic of waqf - Lead a waqf-based NGO - Own Pusat Tahfiz in Malaysia and Indonesia.	✓	✓

Table 3 The number of experts and its implication on the acceptable cut-off score of CVI

Number of experts	Acceptable CVI values	Source of Recommendation
Two experts	At least 0.80	Davis (1992)
Three to five experts	Should be 1	Polit & Beck (2006), Polit et al., (2007)
At least six experts	At least 0.83	Polit & Beck (2006), Polit et al., (2007)
Six to eight experts	At least 0.83	Lynn (1986)
At least nine experts	At least 0.78	Lynn (1986)

4.1.3 Content Validation Analysis

4.1.3.1 I-CVI Computation

The experts must assess each component of competencies pertinence in the Malaysian context. The relevancy scales were 1 for not relevant, 2 for least relevant, 3 for relevant, and 4 for highly relevant. Based on the techniques outlined in the study by Polit et al. (2007), the I-CVI is quantified. The item-level CVIs were averaged to create the S-CVI. Many academics have noted that an S-CVI score of 0.8 or higher is acceptable (Polit et al., 2007; Lynn, 1986).

$$I - CVI = \frac{\text{number of raters scoring an item with a 3 or 4}}{\text{Total expert}}$$

$$pc = \left[\frac{[N!]}{[A! (N-A)!]} \right] \times 0,5^N \quad k = \frac{I - CVI - pc}{1 - pc}$$

k = Modified Kappa coefficient

pc = probability of random correlation coefficient

N = Number of experts

A = Number of very important scores (3 or 4)

4.1.3.2 Modified of Kappa Statistics

Researchers extensively use CVI for determining content validity. However, it does not consider the inflated values that may occur because of the possibility of chance agreement. Therefore, the computation of the Kappa coefficient ensures a better understanding of content validity as it removes any random chance agreement. I-CVI scores above 0.78 to 1.0 are acceptable (Polit et al., 2007). Scores are converted to modified kappa values to account for expert agreement. A modest kappa value of less than 0 indicates no agreement, 0.01–0.20 indicates slight agreement, 0.21–0.40 indicates fair agreement, 0.41–0.60 indicates moderate agreement, 0.61–0.80 indicates substantial agreement and 0.81–0.99 indicates almost perfect agreement (Lynn, 1986). Banerjee (1999) found that values above 0.75 indicate excellent agreement, values between 0.40 and 0.75 are fair and reasonable, and values below 0.40 are poor. A value greater than 0.74 is excellent, 0.60 to 0.73 is good, 0.40 to 0.59 is moderate or weak, and less than 0.39 is poor.

5.0 Result And Discussion Bincangkan Lagi On Findings

A comprehensive literature review found nine (9) competencies components and forty (40) elements for building maintenance management suitable for waqf-based Islamic religious schools. Table 1 shows the literature's output of the competency's components and elements for building maintenance management. The developed components are based on the existing maintenance management competencies model by IFMA and IWFM and the additional components of Islamic ethics and value appropriate for Islamic religious school building. The expert panel then validated all these components. The panel selected is an expert in building and facilities management, and the waqf administration validated the content. The result of the validation is shown in Table 4. Most experts rated each factor relevant to the study, with 17 out of 40 elements receiving high I-CVI scores (I-CVI= 1). However, two elements (computer skills and strategic management) were reported with a low level of I-CVI 0.50, showing that these items had no significant relevance as competencies elements to be considered in building maintenance management of waqf-based Islamic religious schools.

Additionally, in Table 5, the modified Kappa statistical scores demonstrated the instrument's ability to be free of response bias on the likelihood of agreement (Wynd et al., 2003). Only two factors (computer skills and strategic management) were considered weak, and the rest scored excellently. The items with low I-CVI and modified statistic kappa scores below 0.78 and 0.6, respectively, were subject to removal.

Table 4 I-CVI Score

Building Maintenance Management Competencies Components and Elements	Expert Agreement						Total Agreement	i-CVI
	R1	R2	R3	R4	R5	R6		

Knowledge of Shariah								
Knowledge of the objectives of Shariah	X	/	/	/	/	/	5	0.833
Knowledge of Shariah provision in the workplace	X	/	/	/	/	/	5	0.833
Knowledge ofTauhididq (servant of Allah)	/	/	/	/	/	/	6	1.000
Knowledge of Maintenance Planning								
Building maintenance policy and program	/	/	/	X	/	/	5	0.833
Building maintenance procurement	/	/	/	X	/	/	5	0.833
Building maintenance budget and financial	/	/	X	/	/	/	5	0.833
Building maintenance approach	/	/	/	/	/	/	6	1.000
Statutory provision on building maintenance works	/	/	/	/	/	/	6	1.000
Knowledge of Maintenance Evaluation								
Customer satisfaction in building maintenance	X	/	/	/	/	/	5	0.833
Continuous improvement in building maintenance	/	/	/	/	/	/	6	1.000
Monitor building maintenance activities	/	/	/	/	/	/	6	1.000
Monitor building maintenance workforce	/	/	/	/	/	X	5	0.833
Communication Skills								
Presentation skills	/	/	/	/	/	/	6	1.000
Negotiation skills	/	/	/	/	/	/	6	1.000
Computer skills	/	X	X	/	X	/	3	0.500
Knowledge of Risk Management								
Hazard identification	/	/	/	/	/	/	6	1.000
Risk assessment and control	/	/	/	/	X	X	4	0.667
Technical Skills								
Building inspection	/	/	/	/	/	/	6	1.000
Building repair, replacement, renovation, and upgrading	/	/	/	/	/	X	5	0.833
Landscaping and ground maintenance	/	/	/	/	/	X	5	0.833
Tools and equipment handling	/	/	/	/	/	/	6	1.000
Report writing and documentation	/	/	/	/	/	/	6	1.000
Building maintenance software	/	/	X	/	/	/	5	0.833
Islamic Ethics and Values								
Intention and niyah	/	/	/	/	/	/	6	1.000
Honesty in performing the task (Vicegerent of Allah)	/	X	/	/	/	/	5	0.833
Behavior following Shariah (Akhlak)	/	/	/	/	X	/	5	0.833
Motivation to practice Shariah	/	/	/	/	/	/	6	1.000
Time management	/	/	/	X	X	/	4	0.667
Concerned about others and <i>insaniyyah</i>	/	/	/	/	/	/	6	1.000
Knowledge management	/	/	/	/	/	/	6	1.000
Islamic Managerial Skills								
Decision-making based on Shariah	/	/	X	/	/	/	5	0.833
Responsibility and accountability (<i>musuliyah</i>)	/	X	X	/	/	/	4	0.667
Justice and equal	/	/	/	/	X	/	5	0.833
Strategic management	/	X	X	/	X	/	3	0.500
Consultation (shura)	/	/	/	/	X	/	5	0.833
Reflection	/	/	/	/	/	/	6	1.000
Physical State								
Fit for handling heavy equipment	/	/	X	/	/	/	5	0.833
Fit for handling long-hour job	/	X	/	/	/	/	5	0.833
Fit for a challenging job	/	/	X	/	/	/	5	0.833
Tidy attire and physical appearance	/	/	/	/	/	/	6	1.000
S-CVI							0.8749	

Table 5 Modified Kappa Statistic

Building Maintenance Management Competencies Components and Elements	Total Agreement	i-CVI	Pc	k	Evaluation
Knowledge of Shariah					
Knowledge of the objectives of Shariah	5	0.833	0.0117	0.831360	Excellent
Knowledge of Shariah provision in the workplace	5	0.833	0.0117	0.831360	Excellent

Knowledge of Tauhid (servant of Allah)	6	1.000	0.0020	1.000000	Excellent
Knowledge of Maintenance Planning					
Building maintenance policy and program	5	0.833	0.0117	0.831360	Excellent
Building maintenance procurement	5	0.833	0.0117	0.831360	Excellent
Building maintenance budget and financial	5	0.833	0.0117	0.831360	Excellent
Building maintenance approach	6	1.000	0.0020	1.000000	Excellent
Statutory provision on building maintenance works	6	1.000	0.0020	1.000000	Excellent
Knowledge of Maintenance Evaluation					
Customer satisfaction in building maintenance	5	0.833	0.0117	0.831360	Excellent
Continuous improvement in building maintenance	6	1.000	0.0020	1.000000	Excellent
Monitor building maintenance activities	6	1.000	0.0020	1.000000	Excellent
Monitor building maintenance workforce	5	0.833	0.0117	0.831360	Excellent
Communication Skills					
Presentation skills	6	1.000	0.0020	1.000000	Excellent
Negotiation skills	6	1.000	0.0020	1.000000	Excellent
Computer skills	3	0.500	0.0391	0.479654	Weak
Knowledge of Risk Management					
Hazard identification	6	1.000	0.0020	1.000000	Excellent
Risk assessment and control	4	0.667	0.0293	0.656605	Good
Technical Skills					
Building inspection	6	1.000	0.0020	1.000000	Excellent
Building repair, replacement, renovation, and upgrading	5	0.833	0.0117	0.831360	Excellent
Landscaping and ground maintenance	5	0.833	0.0117	0.831360	Excellent
Tools and equipment handling	6	1.000	0.0020	1.000000	Excellent
Report writing and documentation	6	1.000	0.0020	1.000000	Excellent
Building maintenance software	5	0.833	0.0117	0.831360	Excellent
Islamic Ethics and Values					
Intention and niyah	6	1.000	0.0020	1.000000	Excellent
Honesty in performing the task (Vicegerent of Allah)	5	0.833	0.0117	0.831360	Excellent
Behavior following Shariah (Akhlaq)	5	0.833	0.0117	0.831360	Excellent
Motivation to practice Shariah	6	1.000	0.0020	1.000000	Excellent
Time management	5	0.833	0.0117	0.831360	Excellent
Concerned about others and <i>insaniyyah</i>	6	1.000	0.0020	1.000000	Excellent
Knowledge management	6	1.000	0.0020	1.000000	Excellent
Islamic Managerial Skills					
Decision-making based on Shariah	5	0.833	0.0117	0.831360	Excellent
Responsibility and accountability (<i>musuliyah</i>)	4	0.667	0.0293	0.656605	Good
Justice and equal	5	0.833	0.0117	0.831360	Excellent
Strategic management	3	0.500	0.0391	0.479654	Weak
Consultation (shura)	5	0.833	0.0117	0.831360	Excellent
Reflection	6	1.000	0.0020	1.000000	Excellent
Physical State					
Fit for handling heavy equipment	5	0.833	0.0117	0.831360	Excellent
Fit for handling long-hour job	5	0.833	0.0117	0.831360	Excellent
Fit for a tough job	5	0.833	0.0117	0.831360	Excellent
Tidy attire and physical appearance	6	1.000	0.0020	1.000000	Excellent

6.0 Conclusion

This study demonstrates the assessment of content validity to clarify the relevance of items through the quantitative review of an expert panel. The initial phase identifies building maintenance management competence components for waqf-based Islamic religious schools by adapting and applying previous research. The competency component was developed based on the existing maintenance management process model by IFMA and IWFM and included the behavioral competency component, Islamic values, Islamic work ethics, and knowledge of Shariah. All of these components are appropriate to the context of the religious school building. It is based on the evaluation of content validity by experts. All nine (9) components of competence are accepted, while two (2) elements are rejected. Measuring the validity of competency components for building maintenance management provides an opportunity for further research in developing a competency model for the maintenance of waqf-based Islamic religious school buildings in Malaysia. The development of this model is essential to be a reference for professional development and improvement programs among waqf administrators in Malaysia. It is also an educational and teaching tool for learning, training, and continuous development.

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