

The Roles of Quantity Surveyor in Sustainable Development within the context of Maqasid Shariah and the Concept of Khalifa

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DOI: <https://doi.org/10.30880/rmtb.2024.05.02.040>

Article Info

Received: 30 September 2024

Accepted: 1 November 2024

Available online: 1 December 2024

Keywords

Sustainable development, *Maqasid Shariah*, *khalifa*, roles, quantity surveyors.

Abstract

Maqasid Shariah and the concept of *khalifa* can direct sustainable practices because it is a holistic way of life. *Maqasid Shariah* provides a comprehensive framework for Islamic values and objectives while the concept of *khalifa* sees human as the representative in managing the earth. Sustainable development is the development that meets present needs without compromising future generations therefore, in line with the concept of *Maqasid Shariah* and *khalifa*. Professionals play a vital role in sustainable development, and among them, quantity surveyors are especially important. Existing literature on the roles of quantity surveyors in sustainable development primarily focuses on environmental and economic aspects, limited attention may be given to the integration of Islamic concepts. Understanding the role of quantity surveyors in sustainable development within the context of *Maqasid Shariah* and *khalifa* is paramount. This paper seeks to answer the question of whether the roles and responsibilities of quantity surveyors in sustainable development are in line with the concept of *Maqasid Shariah* and *khalifa*. Methodology for the study involves reviews of relevant literature and structured interviews with experts. The findings indicate that quantity surveyors have the opportunity to implement the concept of *Maqasid Shariah* and *khalifa* into their roles in sustainable development.

1. Introduction

Sustainable development aims to fulfil current needs without jeopardizing the ability of future generations to meet theirs (Fischer *et al.*, 2023). In the construction sector, professionals are essential for incorporating sustainable practices into project execution. According to Nur Syamsina (2023), quantity surveyors are particularly crucial because of their critical roles in procurement, project planning, cost and contract management, and other related areas.

In 2015, the United Nations launched the 2030 Agenda for Sustainable Development as a significant move towards societal and economic advancement. This agenda addresses global issues like poverty, inequality, climate change, environmental degradation, peace, and justice (Fei *et al.*, 2021). The agenda includes 17 Sustainable Development Goals (SDGs) with specific targets and indicators to measure progress.

Quantity surveyors are essential in advancing sustainable development by adopting sustainable methods in construction, procurement, and evaluating optimal building materials. Consequently, their roles are vital for ensuring construction projects are environmentally sustainable, resource-efficient, and have a minimized economic footprint.

From an Islamic perspective, sustainable development entails humans acting as Allah's stewards (*khalifa*), responsibly utilizing resources for mutual benefit and avoiding selfish exploitation (Ahmadi, 2016). Shariah within the Islamic framework promotes a sustainable lifestyle through five fundamental components: faith, self, intellect, lineage, and property, as outlined in *Maqasid Shariah*. Ahmad Sarkawi *et al.* (2016) emphasized that these five components are crucial for understanding and achieving sustainable development.

Maqasid Shariah refers to the objectives and goals of Islamic law, which serve as a comprehensive framework for understanding the principles and values that underpin Islamic teachings (Afridi, 2016). The primary objective is to enhance welfare and social justice for both the Muslim community and society as a whole, which aligns with sustainability principles focused on well-being and fair resource distribution. Consequently, quantity surveyors can utilize the concepts of *Maqasid Shariah* and *khalifa* to create a solid basis for sustainable development within an Islamic context.

Despite the growing focus on sustainable construction, there may be a limited understanding of the role of quantity surveyors in integrating Islamic principles into sustainable construction practices. According to Koigi (2017), this is due to skill gaps, a lack of awareness about eco-friendly products, and high costs. This highlights a significant gap in their understanding of their responsibilities in sustainable development, particularly within an Islamic framework, i.e; the context of *Maqasid Shariah* and *khalifa*.

Other than that, limited attention may be given to the integration of Islamic principles because existing literature on the roles of quantity surveyors in sustainable development primarily focuses on environmental and economic aspects. This research seeks to address this knowledge gap by exploring the specific opportunities faced by quantity surveyors in integrating sustainable development principles based on the concept of *Maqasid Shariah* and *khalifa* into their roles.

Thus, this paper examines and synthesizes theories and literature concerning the opportunities for quantity surveyors in implementing the concept of *Maqasid Shariah* and *khalifa* into their professional roles and responsibilities in sustainable development. It aims to answer the question of whether the roles and responsibilities of quantity surveyors in sustainable development are in line with the concept of *Maqasid Shariah* and *khalifa*. The initial outcomes are in the forms of 3 tables, i.e; (i) the roles of quantity surveyor in sustainable development, (ii) the sustainable development approach within the context of *Maqasid Shariah* and *khalifa*, and (iii) the roles of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa*. This is followed by soliciting expert views for verifications.

The paper is structured as follows. Section 1 starts with the introduction. In Section 2, the roles of quantity surveyor in sustainable development, the sustainable development approach within the context of *Maqasid Shariah* and *khalifa* and the roles of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa* are reviewed. This will be followed by Section 3 highlighting the methodology used. The discussion on the roles of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa* are emphasized in Section 4. Finally, Section 5 presents a brief concluding remark.

2. Literature Review

2.1 The Roles of Quantity Surveyor in Sustainable Development

Professionals in the construction industry play a key role in developing and implementing sustainable practices within project delivery processes. Quantity surveyors, in particular, are vital to sustainable development due to their responsibilities in procurement, project planning, cost and contract management, among other areas. In the context of this paper, the roles are divided into 6 main aspects which are bill of quantities (BQ), energy efficiency, cost management, material selection, dealings with client and sustainable procurement.

Nur Syamsina (2023) suggest that quantity surveyors can advance sustainable development by incorporating sustainable materials, energy-efficient systems, and environmentally responsible construction practices into the Bill of Quantities (BQ), which is a traditional role and services in their profession. These efforts align with Sustainable Development Goal (SDG) 9, which seeks to develop resilient infrastructure, promote inclusive and sustainable industrialization, and encourage innovation.

Additionally, quantity surveyors are crucial in managing project costs to attain energy efficiency in buildings. This involves conducting life cycle cost analyses to determine the most cost-effective and sustainable energy solutions and evaluating energy-efficient systems and materials by using BIM (Song *et al.*, 2015). Hence, the practices are aligned closely with SDG 7 which aims to ensure access to affordable, reliable, sustainable, and modern energy for all.

Next, cost management for sustainable practices entails balancing economic and environmental considerations throughout the lifecycle of construction projects. As noted by Omotayo *et al.* (2022), quantity surveyors play a pivotal role in promoting sustainable construction practices through cost estimation and analysing sustainable choices in cost management. This includes estimating costs associated with energy-efficient technologies, eco-friendly materials, and other environmentally friendly aspects. Thus, the role of

quantity surveyors in cost management for sustainable practices aligns with SDG 12, which aims to ensure sustainable consumption and production patterns.

Quantity surveyors also play a critical role in the initial stage of construction as they are involved in selection of sustainable materials during the materials procurement process. This entails implementing green materials for the quality of building (Govindan *et al.*, 2016). SDG 11 focuses on making cities and human settlements inclusive, safe, resilient, and sustainable.

Other than that, quantity surveyors are crucial in educating their clients about sustainable development approaches applicable to construction projects. As highlighted by Lop *et al.* (2019), their proficiency in cost management, procurement, and project execution makes them pivotal in guiding decision-making processes. This role is aligned with SDG 4 where it contributes to raising awareness and understanding of sustainable development.

Finally, according to Sarkis *et al.* (2012), quantity surveyors are critical to create a sustainable assessment framework that uses a thorough decision-making technique to evaluate potential sustainable approaches and choosing contractors that have sustainable criteria which can actively contribute to sustainable procurement. Thus, these practices can be linked to SDG 9 and SDG 17 as it contributes to the advancement of sustainable practices within the industry and infrastructure sector and emphasizes the importance of partnerships for effective implementation of sustainable development goals. Table 1 below summarizes the roles of quantity surveyors in sustainable development.

Table 1 The Roles of Quantity Surveyor in Sustainable Development

Aspect	Roles of Quantity Surveyor in Sustainable Development	Sustainable Development Goals	Author (s)
Bill of Quantities (BQ)	Selecting and incorporating for sustainable materials	SDG 9: Industry, innovation and infrastructure	Nur Syamsina (2023)
	Implementing energy-efficient systems and environmentally responsible construction practices		Razali <i>et al.</i> (2016)
	Estimating cost related to sustainable practice		Olanrewajua & Anahve (2015)
Energy Efficiency	Conducting life cycle cost analyses to determine the most cost-effective and sustainable energy solutions	SDG 7: Affordable and clean energy	Song <i>et al.</i> (2019)
	Evaluating energy-efficient systems and materials by using BIM		Lim <i>et al.</i> (2015)
	Conducting value management analysis to evaluate the benefits derived from incorporating energy-efficient measures		Yassin <i>et al.</i> (2022)
Cost Management	Providing cost estimates and analysis of sustainable choices	SDG 12: Responsible consumption and production	Omotayo, Tan, and Ekundayo (2022)
	Providing a comprehensive evaluation of design alternatives through life cycle cost		Rahim <i>et al.</i> (2020)
Material Selection	Implementing of green materials for the quality of building	SDG 11: Sustainable cities and communities	Govindan, Shankar and Kannan (2016)

	Collaborating with others to ensure that sustainable material choices are integrated into the design phase		Ozmen & Unay (2011)
Dealings with client	Educating their clients about sustainable development approaches Communicating and collaborating with client for the successful implementation of green building	SDG 4: Quality education & SDG 17: Partnership for the goals	Lop <i>et al.</i> (2019)
Sustainable Procurement	Creating a sustainable assessment framework for the decision-making technique Evaluating potential sustainable approaches Having good ethical conduct in the process of construction procurement	SDG 9: Industry, innovation and infrastructure & SDG 17: Partnership for the goals	Ruparathna & Hewage (2014) Sarkis <i>et al.</i> (2012) Hassim <i>et al.</i> (2010)

2.2 Sustainable Development Approach Within the Context of *Maqasid Shariah* and *Khalifa*

The concept of *khalifa* entails that man is servitude to God (Lim, 2007 as cited in Aliff, 2024). Human as *khalifa*, have the responsibility to carry out the task of God’s command and follow His guidance. In addition, responsible stewardship is related to the concept of *khalifa* as man has an obligation to preserve and care for the environment. Furthermore, the concept of *khalifa* emphasized man to have good ethical conduct and social justice. This is because, Islam directs human acts to be within the bounds of ethical conduct, moral righteousness, and social justice. According to Lim (2007) as cited in Aliff, (2024), the concept of *khalifa* also encompasses the responsible use of resources. Humans should utilize natural resources to meet their needs without abuse or exploitation. This underscores the importance of responsible and sustainable resource management, balancing conservation with human use. Finally, the concept of *khalifa* emphasize the responsibility in the relationship of man with mankind.

Maqasid Shariah seeks to promote welfare and social justice for both the Muslim community and society by emphasizing five essential elements: religion (*al-Din*), life (*al-Nafs*), intellect (*al-Aql*), lineage (*al-Nasl*), and wealth (*al-Mal*). These elements form the foundation for sustainable development. Every Muslim is obligated to safeguard these five elements to ensure a better life in present and in the future.

Preserving faith involves acknowledging Allah’s existence, maintaining a strong and continuous relationship with Him, and making decisions and actions aligned with Islamic teachings (Abdul Rasool *et al.*, 2020). This concept of sustainable development connects to the idea that faith preservation can enhance the well-being of individuals, communities, and the environment. According to Aliff & Sharina (2024), Islamic teachings advocate for kindness, generosity, and ethical behavior, which support broader values like justice, compassion, and stewardship. Individuals who prioritize virtuous actions can foster social responsibility and promote harmonious coexistence with the Earth. These positive actions not only address societal injustices but also encourage sustainable practices that focus on environmental conservation. Therefore, preserving faith is a vital aspect of sustainable development in the Islamic framework, promoting a comprehensive approach that benefits both present and future generations.

Furthermore, Noh (2022) as cited in Aliff (2024) explains that within *Maqasid Shariah*, the concept of preserving life is multifaceted, encompassing social justice, physical well-being, safety, and the sanctity of human life, among other aspects. This comprehensive approach aligns with the primary objectives of Islamic law, ensuring that individuals can live dignified lives within a safe and equitable community. Consequently, this principle has significant implications for sustainable development, supporting the broader goals of promoting human welfare and social justice. In this context, it involves securing necessities such as food, clean water, healthcare, and education to improve quality of life (Aliff & Sharina, 2024). Additionally, sustainable development aims to address social inequities, reduce poverty, and raise the overall living standards for all societal segments, thus aligning with the principles of *Maqasid Shariah*.

The preservation of intellect within the *Maqasid Shariah* framework highlights the importance of mental health, education, and knowledge in Islam (Zailani *et al.*, 2022). This principle focuses on safeguarding and enhancing intellectual abilities, along with the continuous pursuit of knowledge and wisdom. As emphasized by

Aliff & Sharina (2024), this aligns with the broader goal of developing human capital, fostering innovation, and encouraging lifelong learning within sustainable development. Efforts in sustainable development that prioritize education, skill enhancement, and intellectual growth are in line with the core principles of *Maqasid Shariah*, thereby aiding societal progress by cultivating intellectually active and informed communities.

Additionally, Aliff & Sharina (2024) stated that, the preservation of lineage in *Maqasid Shariah* underscores the importance of protecting family structures, fostering healthy relationships, and ensuring generational continuity within the Islamic ethical framework. Rosidi *et al.* (2022) noted that this concept highlights maintaining family ties and bonds. It also relates to promoting societal unity, stability, and the well-being of future generations in the context of sustainable development. Efforts to preserve lineage include strategies to strengthen family units, enhance familial relationships, and create environments conducive to the growth of children and future generations. By recognizing the crucial role of family structures in societal development, this principle in *Maqasid Shariah* contributes to the long-term stability and prosperity of communities (Aliff, 2024).

Finally, the preservation of wealth emphasizes the importance of economic stability, fair wealth distribution, and responsible financial management within the Islamic ethical framework (Muhammad, 2017 as cited in Aliff & Sharina, 2024). This principle focuses on the ethical acquisition and use of wealth while avoiding exploitation and unjust economic practices. In sustainable development, this aligns with the goals of building economic resilience, reducing poverty, and ensuring equitable resource access (Aliff, 2024). Consequently, this alignment supports long-term economic sustainability and community prosperity by acknowledging the ethical aspects of wealth creation and distribution. Table 2 shows the sustainable development approaches within the context of *Maqasid Shariah* and *khalifa*.

Table 2 Sustainable Development Approaches Within the Context of *Maqasid Shariah* and *Khalifa*

<i>Maqasid Shariah</i> Elements	Concept of <i>khalifa</i> Within <i>Maqasid Shariah</i>	Sustainable Development Approaches	Author (s)
Preservation of faith Involves making decisions and actions that are consistent with Islamic law	Servitude to God Have the obligation to carry out the duty of God's command and follow His guidance	Addressing justice in society Promoting sustainable development approach Prioritizing environmental preservation	Abdul Rasool <i>et al.</i> (2020)
Preservation of life Refers to making sure that people's lives are protected compliance with the goals and concepts of Islamic law	Responsibility in the relationship with mankind Ensure a harmonious and secure life as well as to avoid the enmity, disunity and abominable actions of fellow human beings	Advancing human welfare and social justice Enhancing quality of life by securing the necessities Rectifying social inequities Reducing poverty	Noh (2022)
Preservation of intellect Involves preventing activities or conditions that may harm mental well-being	Good ethical conduct and social justice Act with integrity, fairness, and compassion, while striving for justice and equality in their interactions with others	Nurturing human capital Stimulating innovation Promoting lifelong learning in education	Zailani <i>et al.</i> (2022)
Preservation of lineage Stresses safeguarding family structures and ensuring generational continuity under Islamic law.	Responsible stewardship Act as guardians or custodians of the Earth rather than causing harm or destruction to it	Promoting family units Improving familial ties Creating environment that foster the growth of children and future generation	Rosidi <i>et al.</i> (2022)
Preservation of	Responsible utilization	Utilization of wealth	Muhammad

wealth	of resources	(2017)
Entails protecting and managing financial resources in line with Islamic law	Use natural resources for needs but not to abuse or exploit them	Avoiding exploitation in economic practices Reducing poverty Ensuring equitable access to resource

2.3 The Roles of Quantity Surveyor in Sustainable Development Within the Context of *Maqasid Shariah* and *Khalifa*

One of the primary objectives of *Maqasid Shariah* is to ensure well-being and social justice for both the Muslim community and society at large. Quantity surveyors as *khalifa*, through their vital roles in managing contracts, resources, and costs in development and construction projects, can apply the principles of *Maqasid Shariah* and *khalifa* within the realm of sustainable construction.

The preservation of life, as outlined in *Maqasid Shariah*, extends beyond the physical to include social equality, justice, security of life and property, dignity, good governance, and poverty reduction. In the context of sustainable development, prioritizing the well-being of construction workers and future occupants is essential. Quantity surveyors, acting as *khalifa*, can enhance societal well-being by selecting and incorporating sustainable materials, which improve health, workplace environments, and reduce environmental impact. According to Aliff & Sharina (2024), by fulfilling these tasks, quantity surveyors' roles align with the *Maqasid Shariah* framework, ensuring that lives are preserved according to Islamic law's purposes and ideals. This also aligns with SDG 9, which aims to build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

In Islam, it is considered a duty to acquire knowledge because it is essential for individual personal and professional growth. In the context of sustainable development, preserving intellect involves engaging communities in decision-making processes. As noted by Aliff & Sharina (2024), quantity surveyors as *khalifa* are responsible for educating clients about sustainable practices by leveraging their expertise in construction project management and advice, especially within the context of *Maqasid Shariah*. This includes communicating and collaborating with clients to implement green building initiatives. Consequently, quantity surveyors can inspire clients to commit to environmental preservation, aligning with the *Maqasid Shariah* principle of intellect preservation. This effort also supports SDG 4 and 17 by raising awareness about sustainable development and emphasizing the importance of partnerships for effectively achieving sustainable development goals.

Regarding the *Maqasid Shariah* framework, which includes the preservation of wealth, quantity surveyors as *khalifa* are pivotal in effectively managing costs, ensuring efficient resource utilization, and ensuring the long-term financial viability of projects. In the context of sustainable development, their role is crucial as they advocate for environmentally responsible construction practices. This involves leveraging their expertise in cost estimation and analysing sustainable options within cost management (Aliff & Sharina, 2024). Thus, this aligns with the principles of *Maqasid Shariah*, highlighting the essential role of quantity surveyors in cost management for sustainable development and is in harmony with SDG 12, which promotes sustainable consumption and production patterns.

Sustainable development is closely associated with faith preservation, as Islamic teachings advocate for acts of kindness, generosity, and ethical behavior that uphold values like justice, compassion, and stewardship. According to Aliff & Sharina (2024), within the *Maqasid Shariah* framework, which emphasizes faith preservation, quantity surveyors as *khalifa* are critical in ensuring good ethical conduct during construction procurement. They achieve this by developing a sustainable assessment framework that incorporates a thorough decision-making process. As a result, this approach promotes sustainable practices that prioritize environmental preservation, aligning with the principles of *Maqasid Shariah* and supporting SDG 16, which aims to foster peaceful, inclusive societies, ensure access to justice for all, and strengthen accountable and inclusive institutions globally.

In the realm of sustainable development, preserving lineage involves promoting societal unity, stability, and the well-being of future generations (Aliff & Sharina, 2024). As *khalifa*, quantity surveyors play a crucial role in this context by advocating for the use of green materials in construction. This approach enhances building quality, prolongs structural lifespan, minimizes environmental impact, and increases energy efficiency. Consequently, it strengthens familial bonds and creates environments that support the development of children and future generations. This practice aligns with the *Maqasid Shariah* principle of lineage preservation and is in harmony with SDG 11, which aims to create inclusive, safe, resilient, and sustainable cities and human settlements.

Table 3 *The Roles of Quantity Surveyor in Sustainable Development Within the Context of Maqasid Shariah and Khalifa*

<i>Maqasid Shariah</i> Elements	Concept of <i>khalifa</i> Within <i>Maqasid Shariah</i>	Roles of Quantity Surveyor in Sustainable Development Within the Context of <i>Maqasid Shariah</i> and <i>Khalifa</i>	Sustainable Development Goals
Preservation of life (<i>al-Nafs</i>)	Responsibility in the relationship with mankind Ensure a harmonious and secure life as well as to avoid the enmity, disunity and abominable actions of fellow human beings	Conducting value management analysis to evaluate the benefits derived from incorporating energy-efficient measures Selecting and incorporating for sustainable materials Estimating cost related to sustainable practices Evaluating energy-efficient systems and materials by using BIM	SDG 7, SDG 9 & SDG 17
Preservation of intellect (<i>al-Aql</i>)	Good ethical conduct and social justice Act with integrity, fairness, and compassion, while striving for justice and equality in their interactions with others	Educating clients about sustainable development approaches Communicating and collaborating with client for the successful implementation of green building	SDG 4 & SDG 17
Preservation of wealth (<i>al-Mal</i>)	Responsible utilization of resources Use natural resources for needs but not to abuse or exploit them	Providing cost estimates and analysis for sustainable choices Providing a comprehensive evaluation of design alternatives through life cycle cost Conducting life cycle cost analyses to determine the most cost-effective and sustainable energy solutions	SDG 7 & SDG 12
Preservation of faith (<i>al-Din</i>)	Servitude to God Have the obligation to carry out the duty of God's command and follow His guidance	Having good ethical conduct in the process of construction procurement Creating a sustainable assessment framework for the decision-making technique Evaluating potential sustainable approaches	SDG 9 & SDG 16
Preservation of lineage (<i>al-Nasl</i>)	Responsible stewardship Act as guardians or custodians of the Earth rather than causing harm or destruction to it	Implementing energy-efficient systems and environmentally responsible construction practices Implementing of green materials for the quality of building Collaborating with others to ensure that sustainable material choices are integrated into the design phase	SDG 9 & SDG 11

3. Methodology

The systematic literature review was conducted as it is a method to synthesize research findings to have a better understanding of the topic of the roles of quantity surveyors in sustainable development within the context of *Maqasid Shariah* and *khalifa*. This includes assessing, selecting, and extracting all the relevant information from reliable academic journal articles, conference papers, books, etc. which provides an all-encompassing idea on the roles of quantity surveyors in sustainable development and the concept of *Maqasid Shariah* and *khalifa* related to sustainable development approaches. The findings are presented in two tables: Table 1 outlines the roles of quantity surveyors in sustainable development, while Table 2 summarizes sustainable development approaches within the context of *Maqasid Shariah* and *khalifa*. Furthermore, analysis is being done to see the synchronization of the information gathered from the systematic literature review. All the results from the systematic literature review and data analysis are presented in the table format: Table 3 outlines the roles of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa*. Figure 1 below shows the research procedure carried out for the study.

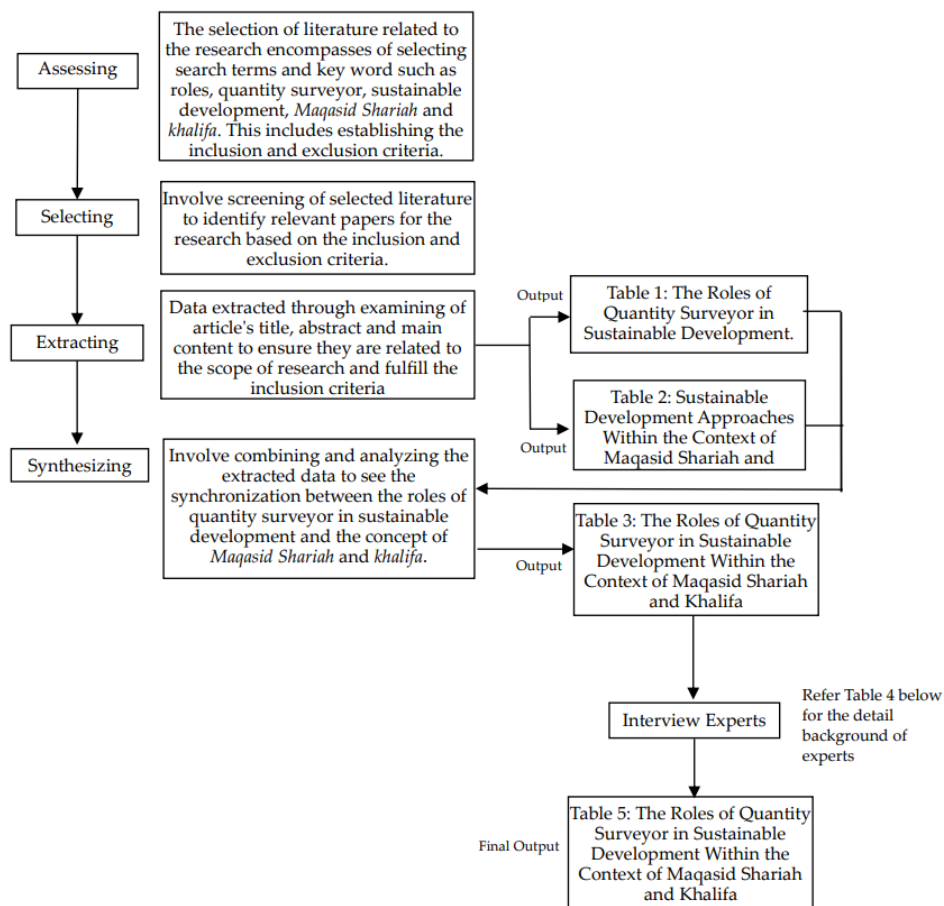


Fig. 1 Framework of the procedure to carry out the study

Furthermore, structured interviews were conducted which employed the questionnaire as the tool to gather more in-depth data and to verify data gathered from reviews of literatures. Five experts with quantity surveying and Shariah background were involved in the data collection process. In addition, the selected respondents must have knowledge in Shariah, quantity surveying and sustainable development. This is to ensure that the experts are able to provide insights regarding the scope of research which is roles of quantity surveyor in sustainable development and the concept of *Maqasid Shariah* and *khalifa* related to sustainable development. Data was analysed using frequencies and simple percentage. The results from the structured interviews and data analysis are presented in the table format to allow discussion and explanation on the research findings. Table 4 shows the background of experts who participated in the structured interview.

Table 4 The Background of Experts Who Participated in the Structured Interview

Background	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Knowledge in Shariah	✓	✓	✓	✓	✓
Knowledge in construction practice	✓	✓	✓	✓	✓
Knowledge in sustainable development	✓		✓	✓	✓
Knowledge in quantity surveying	✓	✓	✓	✓	✓
Academic qualification	✓	✓	✓	✓	✓

4. Result and Analysis

Overall, the results indicate that the roles of quantity surveyor in sustainable development are in line with the concept of *Maqasid Shariah* and *khalifa*. This is based on the verification of Table 3 by the experts. The variables received more than 50% agreements are included in the final output for the study (presented in Table 5). The following are discussions of the results:

Preservation of Life

Preservation of life extends beyond the physical realm, encompassing aspects such as social equality, justice, and the security of life and property. As a *khalifa*, man is responsible for ensuring a harmonious and secure life as well as to avoid the enmity, disunity, and abominable actions of fellow human beings, which are related with preservation of life. In the context of sustainable development, the well-being of construction workers and the future occupants of built structures takes centre stage.

The roles of quantity surveyors in sustainable development that aligns with the concept of *Maqasid Shariah* and *khalifa* is conducting value management analysis to evaluate the benefits derived from incorporating energy-efficient measures. This finding is consistent with Yassin *et al.* (2022), who emphasized the importance of quantity surveyors in conducting value management analyses. Their role is indispensable for contributing to sustainable development projects by prioritizing value over cost and examining functional requirements to establish an integrated system in the construction process that attains an optimal balance between time, cost, and quality.

Furthermore, majority of the experts agreed that estimating cost related to sustainable practices is also align with the concept of *Maqasid Shariah* and *khalifa*. According to Olanrewajua & Anahve (2015), quantity surveyors are crucial in developing detailed estimates to ensure that the cost adequately covers each construction stage. This is because accurate cost estimates can ensure that appropriate resources are allocated to critical safety measures in construction projects such as quality materials and safety equipment. Hence, this practice is closely aligned with the concept of *Maqasid Shariah* and *khalifa* as it prevents any accidents and structural failures.

Hence, quantity surveyors as *khalifa* play an important role in the protection of life and the well-being of the community in the field of sustainable development under the Islamic framework. As a result of fulfilling these tasks, their roles are consistent with the concept of *Maqasid Shariah* and *khalifa*, where preservation of life refers to ensuring that people's lives are preserved in accordance with the purposes and ideals of Islamic law and quantity surveyor as *khalifa* have the responsibility in the relationship with mankind.

Preservation of Intellect

The concept of *khalifa* suggests that man should exhibit good ethical conduct and social justice. This implies a call for individuals to act with integrity, fairness, and compassion while striving for justice and equality in their interactions with others. This ethical framework aligns with the preservation of intellect under *Maqasid Shariah*, as it promotes a nurturing environment for intellectual growth and the pursuit of knowledge. By creating a culture of social justice and ethical behavior, individuals are motivated to pursue and share knowledge.

There are two roles of quantity surveyor in sustainable development within the aspect. Firstly, majority of experts agree with 'educating clients about sustainable development approaches. This includes explaining the advantages of adopting certain sustainable green materials and disadvantages of using conventional materials in

buildings. Secondly, communicating and collaborating with clients for the successful implementation of green building'. This result is consistent with Bohari *et al.*, 2022, where the authors mentioned that Islam emphasizes the unity of knowledge and encourages the pursuit of knowledge in various fields. Additionally, Abdul Rasool *et al.* (2020) also state that Islam emphasizes the duty of every Muslim to seek knowledge, spanning from personal responsibilities (*fardhu ain*) focusing on individual character development to communal obligations (*fardhu kifayah*) that address individual roles within a community.

Thus, quantity surveyors can encourage clients towards an obligation to environmental preservation by educating and communicating with them about sustainable development approaches. This is consistent with the concept of *Maqasid Shariah* and *khalifa*, where quantity surveyors, as *khalifa*, are crucial in maintaining good ethical conduct and social justice, which promotes the enhancement of intellectual abilities and benefits the community.

Preservation of Wealth

Within the framework of *Maqasid Shariah*, the preservation of wealth involves safeguarding and managing financial resources in accordance with Islamic principles. As *khalifa*, man is responsible for the utilization of resources where the natural resources should not be abused or exploited, and humans should use them for their needs. Therefore, this practice is closely linked with preservation of wealth under *Maqasid Shariah*. In the context of sustainable development, this entails sustainable utilization of natural resources, waste reduction, and avoidance of practices that lead to the depletion of wealth over time.

The roles of quantity surveyor within the context of *Maqasid Shariah* and *khalifa* are providing cost estimates and analysis for sustainable choices, providing a comprehensive evaluation of design alternatives through life cycle cost and conducting life cycle cost analysis to determine the most cost-effective and sustainable energy solutions. These roles aligned with the findings by Rosidi *et al.* (2022), who stress that preserving property entails guarding the wealth of society against destruction and unlawful transfer of property to other people. By applying the concept of *Maqasid Shariah* and *khalifa*, quantity surveyors have the potential to generate cost savings by reducing waste, improving energy efficiency, and lowering maintenance costs throughout a building's lifespan (Nur Syamsina, 2023).

Consequently, these practices aligned with the concept of *Maqasid Shariah* and *khalifa*, emphasizing the indispensable role of quantity surveyors as *khalifa* in utilizing the resources for sustainable development. In addition, their adept handling of expenses not only ensures efficiency but also contributes to minimizing the environmental impact associated with construction practices (Al Breiki & Nobanee, 2019).

Preservation of Faith

Preservation of faith involves making decisions and actions that are consistent with Islamic law. The concept of *khalifa* entails that man is servitude to God (Lim, 2007). As a *khalifa*, human beings have the obligation to carry out the duty of God's command and follow His guidance in which it is consistent with *Maqasid Shariah* under preservation of faith.

The roles of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa*, which are having good ethical conduct in the process of construction procurement, creating a sustainable assessment framework for decision-making technique, and evaluating potential sustainable approaches. This result is consistent with the research conducted by Noh (2022), which suggests that Islam encourages its followers to exhibit virtuous behavior, fostering a sense of dedication and loyalty to Allah. By prioritizing virtuous deeds, individuals can cultivate a sense of social responsibility and promote harmony with the environment.

Thus, the roles of quantity surveyors in sustainable development align with the concept of *Maqasid Shariah* and *khalifa*. As *khalifa*, quantity surveyors have the obligation to carry out their responsibilities ethically and in accordance with God's command. By prioritizing virtuous deeds, they can cultivate a sense of social responsibility, ensuring that construction projects are both financially feasible and environmentally responsible. This approach promotes overall development and enhances the welfare of society based on Islamic values.

Preservation of Lineage

The preservation of lineage within the *Maqasid Shariah* emphasizes the significance of protecting family structures, cultivating good relationships, and guaranteeing generation continuity within the Islamic ethical framework. Responsible stewardship is closely linked with the concept of *khalifa* as man has a responsibility to protect and care for the environment. This implies that humans should act as guardians or custodians of the Earth rather than causing harm or destruction to it. This responsibility also encompasses the preservation of lineage under *Maqasid Shariah*, as maintaining a healthy and sustainable environment is essential for the future well-being and prosperity of upcoming generations. Within the sustainable development context, by safeguarding natural resources and encouraging sustainable practices, it ensures a high quality of life for future generations, thereby fulfilling the obligation to preserve lineage.

The roles of quantity surveyor within the context of *Maqasid Shariah* and *khalifa* are implementing energy-efficient systems and environmentally responsible construction practices, implementing green materials for the quality of building, and collaborating with others to ensure that sustainable material choices are integrated into the design phase. These practices are aligned with the Islamic framework as it can improve familial ties and create environments that foster the growth of children and future generations. This result is consistent with Nooraiman Zailani *et al.* (2022), where the authors mentioned that preservation of lineage in the context of sustainable development entails supporting unity in society, stability, and the well-being of future generations.

Hence, quantity surveyors, as *khalifa*, play a crucial role in improving familial ties and creating environments that foster the growth of children and future generations by ensuring that construction projects prioritize their long-term well-being. As a result, it is evident that their roles align with the concept of *Maqasid Shariah* and *khalifa*, where the preservation of lineage emphasizes safeguarding and ensuring generational continuity under Islamic law and quantity surveyors, as responsible stewards, act as custodians of the Earth.

In summary, the above discussion highlights the various role of quantity surveyor in sustainable development within the context of *Maqasid Shariah* and *khalifa*. These practices underscore the opportunities for quantity surveyors to implement the concept of *khalifa* and *Maqasid Shariah* framework into their roles and responsibilities in sustainable development. In addition, it is evident that the roles in sustainable development are in line with the concept of *Maqasid Shariah* and *khalifa* except for two, which are selecting and incorporating for sustainable materials and evaluating energy-efficient systems and materials by using BIM. This is because, as emphasized by experts, quantity surveyors in sustainable development have limited control over project execution. The job scope of the quantity surveying profession is confined to costing only. For instance, evaluating energy-efficient systems and materials using BIM is not the role of quantity surveyors but rather that of engineers. Table 5 illustrates the final results of the roles of quantity surveyors in sustainable development within *Maqasid Shariah* and *khalifa*.

Table 5 *The Roles of Quantity Surveyor in Sustainable Development Within the Context of Maqasid Shariah and Khalifa*

<i>Maqasid Shariah</i> Elements	Concept of <i>Khalifa</i> Within <i>Maqasid Shariah</i>	Roles of Quantity Surveyor in Sustainable Development Within the Context of <i>Maqasid Shariah</i> and <i>Khalifa</i>	Sustainable Development Goals
Preservation of life (<i>al-Nafs</i>)	Responsibility in the relationship with mankind Ensure a harmonious and secure life as well as to avoid the enmity, disunity and abominable actions of fellow human beings	Conducting value management analysis to evaluate the benefits derived from incorporating energy-efficient measures Estimating cost related to sustainable practices	SDG 7, SDG 9 & SDG 17
Preservation of intellect (<i>al-Aql</i>)	Good ethical conduct and social justice Act with integrity, fairness, and compassion, while striving for justice and equality in their interactions with others	Educating clients about sustainable development approaches Communicating and collaborating with client for the successful implementation of green building	SDG 4 & SDG 17
Preservation of wealth (<i>al-Mal</i>)	Responsible utilization of resources Use natural resources for needs but not to abuse or exploit them	Providing cost estimates and analysis for sustainable choices Providing a comprehensive evaluation of design alternatives through life cycle cost Conducting life cycle cost analyses to determine the most cost-effective and sustainable energy solutions	SDG 7 & SDG 12
Preservation of faith (<i>al-Din</i>)	Servitude to God Have the obligation to carry out the duty of God's command and	Having good ethical conduct in the process of construction procurement Creating a sustainable assessment	SDG 9 & SDG 16

	follow His guidance	framework for the decision-making technique	
		Evaluating potential sustainable approaches	
Preservation of lineage (<i>al-Nasl</i>)	Responsible stewardship Act as guardians or custodians of the Earth rather than causing harm or destruction to it	Implementing energy-efficient systems and environmentally responsible construction practices Implementing of green materials for the quality of building Collaborating with others to ensure that sustainable material choices are integrated into the design phase	SDG 9 & SDG 11

5. Conclusion and Recommendations

Sustainability is a critical and emerging concept in the construction industry that seeks to address the environmental, social, and economic implications of construction activities. Quantity surveyors are among the professionals that are crucial for sustainable development because of their roles in procurement, project planning, cost and contract management, and other areas. Additionally, quantity surveyors also have the opportunities to implement the concept of Maqasid Shariah and khalifa into their roles in sustainable development. Moreover, it is evident that the roles of quantity surveyor in sustainable development are in line with the concept of Maqasid Shariah and khalifa. Furthermore, Maqasid Shariah provides a comprehensive framework for understanding the principles and values that underpin Islamic teachings in which its highest objectives is to achieve social and welfare for the community as a whole. By incorporating the key elements of Maqasid Shariah into their works, quantity surveyors as khalifa can contribute to sustainable development within an Islamic context. Despite the limitation of literature where the literature on the role of quantity surveyors in sustainable development primarily focuses on environmental and economic aspects, limited attention may be given to the integration of Islamic context, this study suggests that there should be more future research conducted to produce extensive reference towards the knowledge of Islamic framework within the professionals in construction industry.

Acknowledgement

The study reported herein is part of an unpublished undergraduate dissertation entitled *The Roles of Quantity Surveyor in Sustainable Development Within Islamic Framework*, submitted by the first author, Ahmad Aliff, N., and supervised by the second author, Sharina Farihah, H., as partial fulfillment of the requirement for Bachelor of Quantity Surveying, Department of Quantity Surveying, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia. This paper is a revised version of the paper entitled “The Roles of Quantity Surveyor in Sustainable Development Within Islamic Framework” presented at the 16th International Surveying Conference for Undergraduates (ISCU 2024), dated 19 – 20 April 2024. The paper won the Bronze Award.

Conflict of Interest

Authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Aliff, N; Sharina Farihah, H; **data collection:** Aliff, N; **analysis and interpretation of results:** Aliff, N; Sharina Farihah, H; **draft manuscript preparation:** Aliff, N; Sharina Farihah, H. All authors reviewed the results and approved the final version of the manuscript.

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