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# ISCU 2025

# 17TH RISM INTERNATIONAL SURVEYING CONFERENCE FOR UNDERGRADUATES

## Embracing Construction Revolution 4.0 (CR4.0): Transforming Malaysia's Built Environment

16th - 17th May 2025 | Friday - Saturday

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## WELCOME SPEECH FROM THE CHAIRMAN

*RISM 17th International Surveying Conference for Undergraduates (ISCU 2025)*

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ السَّلَام

عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Greetings to all,

It is with great pleasure that I welcome you to the 17th RISM International Surveying Conference for Undergraduates (ISCU 2025), themed “*Embracing Construction Revolution 4.0: Transforming Malaysia’s Built Environment.*” On behalf of the Royal Institution of Surveyors Malaysia (RISM), I also wish to express our sincere appreciation to Universiti Teknologi MARA (UiTM), Perak Campus, for graciously hosting this significant event.

As we navigate the era of the Fourth Industrial Revolution (IR4.0)—or in our context, Construction Revolution 4.0 (CR4.0)—we are witnessing transformative advancements across the global construction sector. Technologies such as Building Information Modelling (BIM), the Internet of Things (IoT), artificial intelligence (AI), robotics, big data analytics, and cloud computing are redefining the way we build, manage, and interact with our built environment. For Malaysia, embracing CR4.0 is a strategic imperative to achieve our socio-economic and environmental goals.

This conference serves as a vital platform to unite surveying undergraduates from various disciplines, fostering critical dialogue on industry challenges, enhancing professional networking, and preparing a new generation of talent for the rapidly evolving construction landscape. It is also an opportunity for employers to engage with and inspire our future professionals.

I would like to extend my heartfelt thanks to all industry speakers, paper presenters, judges, and participants for their time, contributions, and support in making ISCU 2025 a success. I also commend the organising committee for curating a meaningful and dynamic conference experience.

May the knowledge gained, connections formed, and ideas exchanged during this event inspire all participants to lead and innovate in their future endeavours.

Wishing everyone a productive and memorable conference.

**Prof. Ts Sr Dr. Adi Irfan Bin Che Ani'**

Chairman, Universities' Partnering Committee

RISM Session 2024/2025

May 2025

## **WELCOME SPEECH FROM CO-CHAIRMAN**

*RISM 17th International Surveying Conference for Undergraduates (ISCU 2025)*

Bismillahirrahmanirrahim.

السلام عليكم ورحمة الله وبركاته and greetings to all.

It is my great pleasure to welcome everyone to the 17th International Surveyor Conference for Undergraduates (ISCU 2025), proudly hosted by Universiti Teknologi MARA (UiTM) Perak Branch in collaboration with the Royal Institution of Surveyors Malaysia (RISM). This event is a meaningful platform for students in the built environment to share ideas, showcase innovations, and build professional networks. We are honoured by your presence and enthusiastic participation, with 135 accepted papers and 78 poster presentations this year.

UiTM Perak, home to the College of Built Environment, has long been a hub for academic excellence in architecture, planning, and surveying. Our commitment remains strong in nurturing competent graduates who meet industry demands and contribute to nation-building.

While you're here, we invite you to experience the heritage and culture of Perak Tengah from the architectural richness of Rumah Kutai to the historical towns of Pasir Salak, Bota, and Kampung Gajah.

To all presenters and winners, congratulations on your achievements. Let your work today be a catalyst for future success and academic growth. We hope this conference will inspire you to explore new ideas, foster collaboration, and make lasting memories.

My deepest thanks to the Royal Institution of Surveyors Malaysia (RISM) and the organising committee for making this event a success.

We hope your experience here will be rewarding and unforgettable.

Thank you. Selamat datang dan selamat berjaya.

**Associates Professor Dr. Nur Hisham Ibrahim, *PMP***

Co-Chairman, Universities' Partnering Committee

RISM Session 2024/2025

May 2025

## **WELCOME SPEECH FROM THE PROJECT DIRECTOR**

*RISM 17th International Surveying Conference for Undergraduates 2025*

Alhamdulillah, all praise to Allah S.W.T. for His guidance and blessings in making the RISM 17th International Surveying Conference for Undergraduates (ISCU) 2025 a reality.

It is with great honour and gratitude that I welcome all participants, guests, academicians, and industry professionals to this prestigious event, proudly organized under the Royal Institution of Surveyors Malaysia (RISM). This 17th edition of ISCU stands as a proud testament to our collective dedication toward academic excellence, professional collaboration, and youth empowerment in the field of surveying.

I extend my heartfelt appreciation to RISM for its unwavering support, to the hardworking ISCU 2025 Organising Committee, and to all 16 partnering universities across Malaysia for their commitment and contributions. Your efforts have shaped this conference into a dynamic platform for knowledge exchange, innovation, and professional growth.

To the academicians and practitioners present, your insights are invaluable in bridging the gap between academic theory and real-world practice. To our undergraduate participants, your passion, curiosity, and commitment are the very foundation of our future. May this conference not only deepen your academic journey but also ignite a spirit of leadership, integrity, and sustainable thinking.

Let this gathering serve as more than an academic milestone. May it foster lifelong networks, inspire transformative ideas, and chart new directions in our shared professional journey.

Wishing everyone a rewarding and inspiring conference experience.

**Sr Dr. Nurul Fadzila Zahari**

*Project Director*

*RISM 17th ISCU 2025*

# THE ROLE OF QUANTITY SURVEYORS IN ADVANCING ESG PRACTICES IN THE CONSTRUCTION INDUSTRY

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## ABSTRACT

The growing emphasis on sustainability in the Malaysian construction industry has underscored the significance of advancing Environmental, Social and Governance (ESG) practices. ESG served as an excellent sustainable evaluation tool, providing a set of standards to guide company's behaviour in the aspects of environmental protection, social dynamics and corporate governance. Companies with strong ESG practices have demonstrated higher returns on equity and lower volatility, attracting investors committed to sustainable development. Quantity Surveyors (Qs), whose work practices inherently align with ESG principles, are well positioned to drive impactful ESG outcomes. However, research on the extent of Qs' involvement in ESG implementation remains limited. This study aims to explore the evolving role of Qs in advancing ESG practices in the Malaysian construction industry, identify implementation barriers and propose initiatives to address the challenges. To gain a deeper understanding of ESG practice, a comprehensive literature review was conducted, exploring various contexts relevant to the research gist. Empirically, a qualitative study will be conducted using semi-structured interviews to gather insights from construction professionals, targeting on Qs and middle and top-level management. As sustainability becomes a fundamental value in construction, this research is expected to be a reference for the stakeholders, policymakers, and regulatory bodies, fostering the integration of Qs' expertise into ESG-driven development for a more sustainable built environment.

**Keywords:** ESG practices, construction, quantity surveyors (Qs), sustainability, long-term value

## I. INTRODUCTION

In conjunction with the launching of Industrial Revolution 5.0, it involves integration of human and machinery, merging with the themes of technology, human, society, environment, sustainability, etc (Sekaran et al., 2023). Serving as one of the significant contributors to the country's GDP, Environmental, Social, and Governance (ESG) policies have gained prominence as a framework for evaluating sustainability, responsible practices and long-term value creation across the construction industry (Wang & Xue, 2024).

ESG reporting refers to a set of standards in monitoring a company's performance in the aspects of environmental protection, corporate governance and financial capability (Gong et al., 2023). The findings from study done by Wang and Xue (2024) proved that construction issues arose while using the conventional industry practices such as environmental concerns, social dynamics and governance practices can be effectively improved by the ESG policies. In Malaysia, ESG policies have been extensively discussed and draw project stakeholders' attention due to its butterfly effects. With its long-run benefits, many domestic and even foreign investors began making investments in those firms focused on the ESG implementation. A study conducted by Morgan Stanley Capital International found that stakeholders with strong ESG practices had higher returns on equity and lower volatility than those with weaker ESG practices (Giese et al., 2019).

In this context, the traditional roles of Qs no longer fossilized and kept reforming over the years, and the Qs now are being called upon to play diversified roles to cater to the market trends or policies advocated by government, including ESG policies (Chandramohan et al., 2022). This paper highlights research that explores the role of Qs in advancing ESG practices within the Malaysian construction industry. Specifically, the research objectives are to (1) identify the roles of Qs in enhancing ESG performance, (2) examine key challenges in implementing ESG practices in construction projects, and (3) propose strategies to address these challenges and improve overall Qs' contribution in achieving comprehensive ESG goals.

## II. LITERATURE REVIEW

The concept of "sustainability," first defined by the United Nations World Commission on Environment and Development has become a central focus of numerous studies and practices (Yılmaz & Bakış, 2015). Many efforts, schemes and policies had been introduced to achieve sustainability goals including introduction of Sustainable Development Goals (SDGs) (World Health Organization, 2022). However, Chien (2023) highlights that most of the SDGs concentrate on social and environmental practices. With the absence of corporate governance to support financial development, it may hinder the achievement of social and environmental performance. It was further proved by Baran (2022) that strong governance practices served to improve the overall ESG performance and simultaneously increase stakeholders' trust. Hence, to achieve sustainability goals, ESG is significant where the three pillars in ESG practices are dispensable for better realization of sustainable construction.

An assessment of ESG exposure and performance data was conducted using the FTSE Russell Rating Model, focusing on 55 Malaysian public listed construction companies on Bursa Malaysia, starting from 2021 until 2022. The evaluation covered three ESG pillars and were evaluated through the sustainability statement report published by the companies, according to the 14 themes scores stated as shown in Figure 1.0. The result showed that among the three pillars, the governance pillar recorded the lowest percentage of ESG with 55% followed by environmental pillar with 57.45% and social pillar with 64% (Sulaiman et al., 2024). In the governance practices, tax transparency shows the lowest prominence with a score of as low as 6%. According to Sulaiman et al. (2024), it is due to the broad discretion allowed in defining the scope of tax-related disclosures. Such practices create a reporting environment which is vulnerable to manipulation where companies can exploit ambiguities to present a more favourable tax position.

Moving to the environmental pillar, the supply chain scored the lowest with only 6%. In this context, the absence of partnerships within the supply chain, particularly concerning the provision of green materials, serves as a significant barrier to the ESG adoption. According to Ratnasingam et al. (2023), a study was conducted on the wood products and furniture industry in Malaysia. A key issue identified was the low level of awareness and non-compliance among supply chain partners as many of whom are small and medium enterprises (SMEs) which lack the sufficient financial resources to effectively integrate ESG practices into their operations. While in social pillar, customer responsibility and supply chain are the lowest themes, with a score of 13% respectively. In Sulaiman's opinion, Malaysia's construction industry emphasizes on cost and time efficiency, driven by intense competition among the competitors (Sulaiman et al., 2024). While this approach ensures affordability and timely delivery, it may inadvertently encourage cost-cutting practices that compromise worker welfare, sustainable resource use and adherence to ESG principles. Thus, highlighting the underlying reasons stem from the poor implementation of ESG practices, it is crucial to take action to strengthen ESG practices in order to foster a more sustainable industry.

ESG		
Environmental	Social	Governance
<ul style="list-style-type: none"> <li>• Biodiversity</li> <li>• Climate change</li> <li>• Pollution and Resources</li> <li>• Water Use</li> <li>• Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>• Customer Responsibility</li> <li>• Health and Safety</li> <li>• Human Right and Community</li> <li>• Labor Standard</li> <li>• Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-corruption</li> <li>• Corporate Governance</li> <li>• Risk Management</li> <li>• Tax Transparency</li> </ul>

**Figure 1.0** FTSE Russell Rating Model (Source: Sulaiman et al., 2024)

According to Hashim et al. (2021), 74.2 percent of construction industry participants agree that unethical behaviour is prevalent in the Malaysian construction industry particularly in the public projects. The underlying factors may be due to the negative encouragement such as induced corruption, nature of the construction industry and flawed regulatory systems (Yap et al., 2022). According to Adnan et al. (2012), the construction industry can only thrive and perform prosperously when good ethical practices are put in place. By looking into the ESG practices where the governance pillar emphasizes on the corporate culture and professional's ethics, ESG acts as a guideline for addressing these issues.

In this context, quantity surveyors (Qs), one of the construction professionals who are qualified in advising on cost management, procurement, risk management and contractual administration play pivotal roles to holistically enhance the ESG performance (RISM, 2021). Due to their work practices, Qs often acts as intermediaries between the project stakeholders such as the clients, suppliers, contractors, construction professional bodies, regulatory and statutory bodies. Aligning with the principles of Industry Revolution 5.0, the construction industry is shifting from a focus on economic value to a focus on societal value and well-being (Kraaijenbrink, 2022). In this evolving landscape, the role of Qs undergo a transformation, with sustainability

emerging as a core value in their professional responsibilities (Khan et al., 2024).

Discussing the integration of QSs' role in environmental pillar, Ma and Luu (2013) highlights that QSs play a crucial role in measuring sustainable construction performance through life cycle costing (LCC) appraisal. Meanwhile, with the emphasis on carbon emission issues in construction activity (Zainordin & Zahra, 2020), QSs are the one who should shoulder this obligation and responsibility. Waniko (2022) highlights that to cope with carbon pollution, evolution of the quantity surveying profession is a must. By integrating their expertise in traditional roles such as cost planning and project fiscal management with sustainable practices, they are uniquely positioned to lead in carbon management and accounting.

Additionally, given the unethical behaviours in Malaysian construction industry as shown in studies done by Sulaiman et al. (2024) and Hashim et al. (2021), QSs should adopt a more effective approach in their roles as their work practices are closely tied to the governance indicators such as transparency in cost-related operations, reporting accuracy, effective risk management and mitigation and ethical decision-making (EDM), etc. In Malaysia, a total of 32,674 occupational accidents were recorded in 2020, including 312 fatal cases, with the construction sector having the highest occupational fatality rate (Department of Statistic Malaysia, 2021). In this context, Anugwo and Okorie (2021) highlight that QSs, as project consultants and contract administrators, have the responsibility to ensure that there is a well-equipped occupational health and safety (OHS) in place on site.

Moreover, QSs' involvement in the social aspects of ESG is established through their role in enhancing community engagement and stakeholder participation during project cycles. Their ability to manage contracts equitably ensures that social equity is considered in procurement processes, impacting local communities positively (Kamaruddeen & Wahi, 2020). Additionally, QSs are expected to uphold ethical standards which are vital for good governance practices, ensuring compliance and promoting transparency in all project dealings, thus reinforcing the governance element of ESG (Oladotun & Edosa, 2016). The role of quantity surveyors in promoting ESG practices within the Malaysian construction industry transcends traditional cost management. Their expertise is pivotal in aligning financial sustainability with environmental responsibility and social equity, making them indispensable in achieving comprehensive ESG goals.

### III. METHODOLOGY

Given the limited data regarding the role of QSs in ESG practices, an exploratory design proves instrumental for mapping their contributions effectively. To explore the role of QSs in enhancing ESG performance, a comprehensive qualitative research methodology is proposed. This approach aims to provide in-depth insights into how QSs contribute to ESG integration within the construction industry, the challenges they face, and the strategies they employ. By leveraging qualitative methods such as semi-structured interviews and thematic analysis, the study seeks to capture diverse perspectives from industry professionals and generate meaningful findings that can guide future ESG advancements.

#### A. Data Collection Method

A qualitative research approach is employed, primarily through semi-structured interviews with construction professionals. Qualitative methods, like interviews, are paramount in gathering nuanced insights that quantitative data may overlook (Burr et al., 2012). The semi-structured format ensures that while predefined questions guide the conversation, there remains flexibility to explore emerging themes pertinent to ESG integration (Bezerra et al., 2024). This method allows for flexibility while ensuring that key topics are covered through a set of predefined open-ended questions. The semi-structured format encourages participants to elaborate on their experiences, providing an insightful understanding on the challenges and strategies as well as roles of QSs in advancing ESG practices. This adaptability aligns with the assertion that qualitative approaches can capture the complexity of ESG-related experiences and perceptions, as noted in existing literature (Bezerra et al., 2024).

#### B. Sampling Strategy and Target Group

A purposive sampling technique is used to refine the scope of the study, focusing on contractor firms operating in Kuala Lumpur and Selangor. To further enhance the relevance and credibility of the data, only contractor firms registered with Bursa Malaysia are included in the sample. Moreover, purposive sampling, focusing on firms listed on Bursa Malaysia, narrows the context to those actively engaged with ESG regulations, thus yielding a more focused analysis of practices around ESG (Li et al., 2024). In this context, company stocks serve as metric for evaluating the performance of these companies, focusing on those lucrative firms. Below is the list of companies with highly attractive for investment,

Interviewees are selected among key construction stakeholders, with QSs as the primary respondents, as they directly contribute to cost management, sustainability integration, and ESG implementation. Additionally,

secondary respondents include professionals from top and middle management levels. The focus on top and middle management levels, including directors and project managers, is vital as these roles directly influence strategic decisions regarding sustainability practices (Wu & Tham, 2023). The interviewees are expected to share their perspectives on the role of QSs in ESG implementation at the project level, discuss practical challenges in executing ESG-related initiatives, and provide insights into the organizational integration of ESG practices. A list of criteria is established to filter the potential interviewees, including years of experience, degree of involvement in construction projects, willingness to adapt to trends and those who have knowledge or involved in ESG practices.

**Table 1.0** List of Registered Construction Companies' Stocks (Source: iSaham, 2024)

1.	GAMUDA	21.	JAKS	41.	SENDAI-WA	61.	ZELAN
2.	IJM	22.	NESTCON	42.	WIDAD	62.	VIZIONE
3.	SUNCON	23.	INTA	43.	AZRB	63.	TSRCAP
4.	KERJAYA	24.	FAJAR	44.	ADVCON(NS)	64.	FIHB
5.	WCEHB(NS)	25.	GADANG	45.	BENALEC	65.	SCBUILD
6.	WCT	26.	MITRA	46.	OCR	66.	IHB
7.	SSBB	27.	PTARAS	47.	CRESBLD	67.	FAJAR-WC
8.	AME	28.	MUDAJYA	48.	HAILY	68.	AGES
9.	EKOVEST	29.	WCEHB-WF(NS)	49.	ANEKA	69.	AME-WA
10.	ECONBHD	30.	GKENT	50.	PUNCAK	70.	INTA-WA
11.	MNHLDG	31.	NABIBHD	51.	LEBTECH	71.	GDB-WA
12.	AZAMJAYA	32.	PESONA	52.	IREKA	72.	BPURI-WB
13.	MUHIBAH	33.	BPURI	53.	SYCAL(NS)	73.	TAFI-WA
14.	VLB	34.	TAFI	54.	TCS	74.	JAKS-WC
15.	SENDAI	35.	MNHLDG-WA	55.	TJSETIA	75.	ANEKA-WA
16.	MGB	36.	PRTASCO	56.	HOHUP	76.	TOPBLDS
17.	KIMLUN	37.	TAGHILL	57.	ZECON		
18.	KITACON	38.	TRC(NS)	58.	MELATI		
19.	GDB	39.	GBGAQRS	59.	PEB		
20.	VARIA	40.	DKLS	60.	MERCURY		

According to Braun and Clarke (2013), at least 12 respondents will be interviewed until data saturation is achieved. Hence, the sample size was determined to be 12 respondents or until data saturation is achieved, aligning with a similar research study that utilized the same sample size (Khan et al., 2024). This approach ensures consistency with established research methodologies while providing a manageable scope for data collection and analysis.

### C. Data Analysis

The qualitative data collected for this study is analyzed using thematic analysis, which serves as a structured method to code and categorize the data systematically. Thematic analysis is a widely recognized technique in qualitative research, enabling researchers to discover, identify, analyze, and report patterns (themes) within data, forming a robust framework for understanding participants' experiences and perspectives (Shweiki et al., 2021; Paužuolienė & Derkach, 2024). By reviewing interview transcripts, the study aims to identify recurring themes related to the role of QSs in ESG performance, the challenges they confront during implementation, and potential strategies for improvement. The thematic analysis, as applied in this research, safeguards the richness of the qualitative data while contributing to a structured interpretation of the complexities surrounding QSs' contributions to ESG practices in the Malaysian construction sector.

## CONCLUSION

In summary, Quantity Surveyors (QSs) play a pivotal role in the construction industry, particularly in promoting Environmental, Social, and Governance (ESG) practices. Their responsibilities extend beyond traditional cost management to encompass a comprehensive approach that integrates financial sustainability with environmental responsibility and social equity. This expanded role is crucial for achieving the holistic objectives laid out in various ESG frameworks, especially within the rapidly evolving Malaysian construction industry. The evolving responsibilities of QSs in the Malaysian construction industry illustrate their critical role in advancing ESG

principles. By merging traditional cost management with sustainable practices, they are not only ensuring financial viability but also championing environmental stewardship and social equity, thereby positioning themselves as essential contributors to comprehensive ESG objectives. As sustainability becomes increasingly significant and a core value in future construction projects, this research can serve as a reference for stakeholders, the government, and relevant construction organizations, such as the Construction Industry Development Board (CIDB) and the Royal Institution of Surveyors Malaysia (RISM), to enhance the realization of sustainable construction development by leveraging the strengths and roles of quantity surveyors.

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