



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Perak

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

E-ISBN PROCEEDING VOLUME I



©Royal Institution of Surveyors Malaysia

Published by
Royal Institution of Surveyors Malaysia
3rd Floor, Bangunan Juurukur
64 & 66, Jalan 52/4
46200 Petaling Jaya
Selangor

E- PROCEEDING 17th RISM ISCU 2025 Volume 1

Editors: Lizawati Abdullah, Nor Suzila Lop, Nor Nazihah Chuweni, Suriani Ngah Abdul Wahab,
Hasnan Hashim

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law.

eISBN 978-629-94789-0-4



(online)

WELCOME SPEECH FROM THE CHAIRMAN

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

بسم الله الرحمن الرحيم السلام

عليكم ورحمة الله وبركاته

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

LEVERAGING ALUMNI NETWORKS TO ELEVATE EXCELLENCE IN QUANTITY SURVEYING EDUCATION

Ting Zhi Bo¹, Nurshikin Mohamad Shukery^{2*}

¹ Faculty Built Environment and Surveying, Universiti Teknologi Malaysia, Johor, Malaysia.
Email: bo-01@graduate.utm.my

^{2*} Faculty Built Environment and Surveying, Universiti Teknologi Malaysia, Johor, Malaysia.
Email: b-nurshikin@utm.my

*Corresponding Author

ABSTRACT

The evolving landscape of Quantity Surveying (QS) education requires stronger academic-industry collaboration to ensure graduates are equipped with relevant skills, particularly in adopting advanced technologies such as Building Information Modelling (BIM), sustainable practices, and Industry 4.0 innovations. QS alumni play a critical role in bridging this gap through various contributions, yet their engagement and motivations remain underexplored. This research examines the contributions and motivations of Board of Quantity Surveyors Malaysia (BQSM) registered professionals in Malaysia in supporting QS education. The target populations consist of 4,548 BQSM registered QS professionals and the sample size was determined to be 354 based on Krejcie and Morgan sampling table. A quantitative research approach is employed, with data collected through a structured survey distributed to QS alumni. Descriptive statistical analysis using SPSS, focusing on frequency and mean scores, will be conducted to identify patterns in alumni contributions and motivations. Alumni contributions are categorized into four key engagement types: (1) volunteer engagement, including mentorship and career talks; (2) experiential engagement, such as advocacy and reunion activities; (3) philanthropic engagement, including financial support and scholarships; and (4) communication engagement, involving curriculum input and constructive feedback. The expected finding to reveal the motivation factors that contribute to QS education such as positive student experiences, institutional reputation, government policies (e.g., tax incentives for donations), and valuable networking opportunities that keep them connected to their alma mater and the industry. Understanding these motivations and engagement patterns can help institutions develop strategic initiatives to enhance alumni participation in QS education. This research contributes to strengthening academic-industry linkages by fostering more active alumni engagement. The findings will provide valuable insights for QS programs to modernize their curriculum, enhance graduate employability, and support Malaysia's construction industry in adapting to technological advancements.

Keywords: Quantity Surveying, Alumni engagement, Motivation, Quantity Surveying Education

1. INTRODUCTION

The construction industry is contributing RM56.7 billion in 2023, continues to demand highly skilled professionals, including the Quantity Surveyors (QS) to support its growth (Department of Statistics Malaysia, 2024). In response, universities have expanded their QS programs to ensure the graduates acquire both technical expertise and industry-relevant skills. Despite the increasing number of QS graduates, industry indicates a skills mismatch which the graduates struggle to meet evolving professional demands (Sheikh Ilmi et al., 2021). Hence, Board of Quantity Surveyors Malaysia (BQSM) ensures QS programs remain aligned with professional standards. It's covering essential areas such as cost planning, measurement, contract administration, and project management. Other subject such as Sustainability, Building Information Modelling (BIM), Information Technology, Facilities Management are the additional syllabus for QS to align with the industry evolutions (BQSM, 2023). Despite these advancements, challenges still exist. It includes outdated curricula, limited industry exposure, and insufficient collaboration between universities and the construction sector (Faizah et al., 2023).

One potential solution is the active involvement of alumni. Alumni who can serve as industry mentors, curriculum advisors and financial contributors. Their contributions to curriculum development are also significant as they provide insights into critical industry competencies such as BIM and advanced cost management approaches, which are becoming increasingly important in the QS profession (Saka & Chan, 2020). In another hand, their practical experience and perspectives serve to bridge the gap between academic learning and industry practice. It prepares

graduates for professional positions (W. Johnson & T. Johnson, 2019). These benefits gain from alumni engagement are proving their essential roles in QS educations.

This study explores the contributions of QS alumni and the motivations driving their engagement with higher education institutions. This research examining the alumni involvement through volunteerism, experiential, philanthropy and communication and identify the motivations for fostering stronger alumni participation in QS education influence by student experiences, external environment and networking opportunities. Strengthening the alumni networks can enhance the employability of QS graduates and modernize curricula of the QS educations. It ensures that Malaysia's QS education system remains competitive in a rapidly evolving construction industry.

II. PROBLEM STATEMENT

Despite the recognition of alumni as key stakeholders in higher education is growing, but Malaysia QS programs still facing the difficulties in fostering meaningful and sustained alumni engagement (Faizah et al., 2023). The lack of a structured framework to facilitate alumni contributions in Malaysia's Higher Education has resulted in missed opportunities to enhance the quality of QS educations. According to Naeimah Saraeh et al. (2018), the factors guiding alumni engagement in Malaysia remained unexplored. It causes additional research to understand and solve the underlying concerns. It further proving the recognition of alumni is growing but not enough in Malaysia. Many institutions struggle to maintain the consistent communication with their alumni. It may lead to weak institutional ties and low participation rates in academic and professional development initiatives.

Another significant issue is the gap between QS curricula and industry expectations. While QS programs provide theoretical knowledge, graduates often lack sufficient integration of modern industry practices such as BIM, sustainable construction, and digital cost management (Ebekoziem & Aigbavboa, 2024). As a result, QS graduates frequently require additional training to meet employer expectations because it contributes to inefficiencies in workforce readiness (Sheikh Ilmi et al., 2021). Employers have expressed their concern about skill mismatches that both impact the employability of fresh graduates and delay their career progression (Kibwami et al., 2021).

The integration of information technology and computer literacy into QS education remains a critical challenge. This is because graduates often lack advanced skills needed for Industry Revolution 4.0 even acquired with foundational training (Sheikh Ilmi et al., 2021). The Construction 4.0 Strategic Plan highlights misalignment between existing QS curricula and industrial demands. The misalignment may impact by financial barriers because adopting tools like BIM that required investment funds. While BIM promises enhanced efficiency and cost management in QS practices (Zainon et al., 2018), institutional priorities often deprioritize such investments. BIM researchers argue for curriculum modernization such as BIM integration to ensure graduates remain competitive in construction industry (Nita Ali et al., 2016).

Additionally, weak alumni engagement in Malaysian universities influence QS education reform. Alumni could bridge the academia-industry gaps by sharing industry trends, mentoring students and promote use of digital technologies. Therefore, alumni engagement can improve the graduate's employability and curriculum relevance. Besides that, collaborative efforts such as workshops and research partnerships are important too. This effort could align QS programs with Construction 4.0 needs. This supported by Sium et al. (2023) research, strong connections between students and alumni are important because they facilitate networking, mentorship and career development that directly improve educational outcomes and job readiness. Together, these factors underscore the importance of modernizing QS education through strategic alumni involvement.

II. LITERATURE REVIEW

Introduction

A globally recognized professional body, Royal Institutions of Chartered Surveyors (RICS) mentioned QS professionals' experts in art of accurately estimating the cost of a building throughout all stages of project (RICS, 2024). Experienced QS are also expected to carry out the life cycle costing, cost planning, procurement, tendering, contract administration and overall commercial management, highlighting their importance in the project success (RICS, 2024). In Malaysia, QS education is governed by the BQSM. BQSM ensuring graduates meet the industry standards and professional competencies (BQSM, 2023). While the efforts to modernize QS education are ongoing, there are several challenges hinder its effectiveness. The primary concerns include outdated teaching methodologies, limited industry exposure, and an insufficient practical learning component (Faizah et al., 2023).

The term "alumni" is commonly used to describe people who have graduated from an educational institution, such as a college or university. It originated from the Latin word *alumnus* (singular) or *alumna* for female graduates. Alumni engagement presents an essential solution to these challenges by strengthening the bridge between academia and industry. Alumni engagement refers to the activities that develop mutually beneficial connections between alumni and their alma mater that encourage loyalty and support, enhance institutional reputation and promote the institution's mission (CASE, 2018).

Alumni's Engagement

CASE's Alumni Engagement Metric highlighted four key categories of alumni engagement: volunteer, experiential, philanthropic, and communication (CASE, 2018).

Volunteer

Volunteer alumni engagement involves donating time and skills through roles like mentoring, event organizing, or board service (CASE, 2024). It is including career guidance and internships (Hongmei & Bey-Ling, 2020). Mentorship boosts student employability and institutional ties (Cownie & Gallo, 2020; Weerts & Cabrera, 2017). Activities like tutoring or work experience foster mutual growth (Partridge & Hayman, 2017).

Experiential

Experiential alumni engagement fosters the institutional loyalty through activities like reunions, sport activities and advocacy. These activities are aligning alumni with institutional goals (CASE, 2024; McDougale et al., 2017). Examples include alumni supporting student orientation (Partridge & Hayman, 2017), influencing policies (Weerts & Cabrera, 2017) and enhancing reputation and fulfilment in extracurricular activities (Lemchi et al., 2023).

Philanthropic

Philanthropic alumni engagement involves monetary or in-kind donations, such as annual gifts, endowments, or scholarships, to support institutional needs like infrastructure and academics (CASE, 2024; Weerts & Cabrera, 2017). Contributions include crowdfunding (McDougale et al., 2017), in-kind resources (Lemchi et al., 2023), and scholarships for students (Drezner & Pizmony-Levy, 2020). These contributions are aligning alumni interests with institutional priorities.

Communication

Communication engagement involves interactive dialogue between alumni and institutions, such as feedback on programs, curriculum input and content contributions (CASE, 2024; Hongmei & Bey-Ling, 2020). Alumni enhance education by aligning syllabus with industry trends (Cownie & Gallo, 2020) and sharing expertise through articles or testimonials (McDougale et al., 2017). Proactive outreach via newsletters, social media and alumni associations fosters sustained connections (Lemchi et al., 2023; Putri et al., 2023). Action like seeking feedback strengthens involvement and institutional partnerships (Pedro et al., 2020).

Table 1.0 Frequency of alumni engagement introduced by various authors

Aspects	Type of Engagement	Authors
Volunteer	Alumni mentor students in career development and industry trends.	CASE (2024); Hongmei & Bey-Ling (2020); Partridge & Hayman (2017); Cownie & Gallo (2020); Weerts & Cabrera (2017)
	Alumni assist in student recruitment and connections.	CASE (2024); Cownie & Gallo (2020); Weerts & Cabrera (2017)
	Alumni support internships and career-focused events.	CASE (2024); Hongmei & Bey-Ling (2020); Weerts & Cabrera (2017)
Experiential	Alumni engage in reunions and networking events.	CASE (2024); Partridge & Hayman (2017); McDougale et al. (2017)
	Alumni join sports and extracurricular activities.	CASE (2024); Lemchi et al. (2023)
	Alumni advocate for institutional goals and policies.	Weerts & Cabrera (2017)

Philanthropic	Alumni provide scholarships and financial aid.	CASE (2024); Lemchi et al. (2023); Weerts & Cabrera (2017); Drezner & Pizmony-Levy (2020)
	Alumni contribute through crowdfunding campaigns.	CASE (2024); Lemchi et al. (2023); McDougale et al. (2017); Weerts & Cabrera (2017)
	Alumni donate monetary and in-kind contributions.	CASE (2024); Lemchi et al. (2023); Weerts & Cabrera (2017)
Communication	Alumni offer feedback on academic programs.	CASE (2024); Hongmei & Bey-Ling (2020); Cownie & Gallo (2020); McDougale et al. (2017)
	Alumni engage via social media and newsletters.	CASE (2024); Lemchi et al. (2023); Putri et al. (2023)
	Alumni associations facilitate networking and collaborations.	Lemchi et al. (2023); Pedro et al. (2020)

The table 1.0 above outlines the frequency of alumni engagement introduced by various authors by categorizing activities into four types, volunteer, experiential, philanthropy, and communication.

Alumni's Motivations Factor

According Sium et al. (2023), factors of alumni engagement in Malaysia is categorized into student experiences, external environment and networking opportunities as these factors have a positive influence alumni engagement in higher education.

Student Experience

Student experiences are shaped by the academic quality and supportive staff that might foster the alumni loyalty and engagement through positive memories of campus life (Cownie & Gallo, 2020; Naeimah Saraeh et al. 2018). Alumni contributions such as funding scholarships, facilities, or mentorship are enhancing student environments, strengthening institutional ties (Snijders et al., 2019). Staff training and empathetic interactions further deepen alumni connections (Carranz & Wiecheteck, 2016). Prioritizing these areas ensures alumni loyalty and sustained institutional growth.

External Environment

Alumni engagement is shaped by economic, societal, and institutional factors. Prestigious institutions with strong reputations attract more contributions, especially in the philanthropy-driven cultures (Iskhakova et al., 2017; Pedro et al., 2020). Government policies, such as tax exemptions (LHDN, n.d.) and upskilling initiatives (Ministry of Education Malaysia, 2015) are further encouraging the alumni engagement. Effective communication and recognition from the institutions strengthen alumni connections (Pedro, 2012; Hongmei & Bey-Ling, 2020). Furthermore, alumni whom holding high position may leverage Corporate Social Responsibility (CSR) initiatives to enhance the personal and corporate reputations (Hizam et al., 2019). Sustained engagement relies on the institutional quality, structured interaction and aligning alumni pride with the institutional goals.

Networking Opportunities

Networking opportunities such as alumni associations and social media platforms are sustaining professional and social ties through mentorship, internships and industry insights (Sium et al., 2023). Structured organizations and annual events bridge academia-industry gaps, ensuring curriculum relevance and fostering volunteerism (Snijders et al., 2019; Putri et al., 2023; Jamison & Madden, 2021). Social media (e.g., LinkedIn) enhances engagement, community-building, and institutional reputation (Putri et al., 2023; Pedro et al., 2020). Besides that, the alumni are provided with career opportunities such as like job referrals, collaborations and partnerships. Through actively participations, it able to strengthen alumni's professional networks (Sium et al., 2023).

Table 2.0 Frequency of motivations drivers for alumni engagement introduced by various authors

Aspects	Motivations factor	Authors
Student Experience	Positive academic and extracurricular experiences build loyalty.	Cownie & Gallo (2020); Naeimah Saraeh et al. (2018); Pedro et al. (2020)
	Supportive faculty and staff strengthen alumni attachment.	Carranz & Wiecheteck (2016); Pedro et al. (2020)

	Positive campus memories encourage engagement.	Pedro et al. (2020)
	Alumni donations improve facilities and resources.	Snijders et al. (2019); Pedro et al. (2020)
External Environment	Alumni contribute to enhance institutional reputation.	Pedro et al. (2020); Iskhakova et al. (2017)
	Communication and recognition foster engagement.	Pedro et al. (2020); Hongmei & Bey-Ling (2020)
	Government policies encourage alumni contributions.	LHDN (n.d.); Ministry of Education Malaysia (2015)
	CSR enhances corporate and personal reputation.	Hizam et al. (2019)
Networking Opportunities	Strong alumni associations boost contributions.	Purti et al. (2023); Snijders et al. (2019)
	Reunions increase satisfaction and volunteerism.	Carranz & Wiecheteck (2016); Jamison & Madden (2021); Putri et al. (2023)
	Social media maintains alumni connections.	Putri et al. (2023); Pedro et al. (2020)
	Career support motivates alumni contributions.	Sium et al. (2023)

The table 2.0 above provides an overview of the motivational driver for alumni engagement, grouped into three categories: Student Experience, External Environment, and Networking Opportunities.

III. RESEARCH METHODOLOGY

This study employs a quantitative research methodology to analyse alumni contributions and factor motivated alumni in contribution to QS education. A structured questionnaire including serves as the primary data collection instrument, targeting registered QS professionals from Board of Quantity Surveyors Malaysia (BQSM) in Malaysia. The questionnaire design will apply closed-ended question and 5 Point Likert Scale. Closed-ended question is used for gathering demographic data, preference and behavioural trends (Mazhar, 2021). 5 Point-Likert scale will simplify complex construct into measurable categories to access the respondent's level of agreement on alumni contributions and motivations (Awang et al., 2016). In this case, total population 4,548 BQSM registered professionals including Quantity Surveying Technologists, Provisional Quantity Surveyors, Professional Quantity Surveyors, and Consultant Quantity Surveyors are utilized. The sample size of 354 respondent is determined by using Krejcie and Morgan's (1970) sampling table provide statistical durability and maintain methodological validity of the study in the context of population diversity and sampling error. The survey is distributed online to reach a broad range of alumni participants through mix of purposive and snowball sampling. Data collected is analyzed using the Statistical Package for the Social Sciences (SPSS) software. The SPSS software allowing descriptive analysis in focusing on frequency and mean scores, will be conducted to identify patterns in alumni contributions and motivations. The findings are expected to provide valuable insights into how universities can enhance alumni involvement to improve QS education outcomes.

IV. EXPECTED FINDING

The research is expected to highlight the significant role of alumni engagement in enhancing QS education by strengthening academic-industry linkages. The findings will provide valuable insights into how alumni contribute through volunteer engagement, including mentorship and career talks; experiential engagement, such as advocacy and reunion activities; philanthropic engagement, including financial support and scholarships; and communication engagement, involving curriculum input and constructive feedback. Additionally, the study anticipates identifying key motivations that drive alumni engagement, including professional networking opportunities, student satisfaction, and external environment (e.g. institutional loyalty or government policies). These insights will help universities to develop the targeted strategies to foster stronger alumni participation, modernize QS curricula, and improve graduate employability. Ultimately, the findings will support Malaysia's construction industry in adapting to technological advancements by ensuring QS graduates are all equipped with relevant skills that align with construction industry.

V. CONCLUSION

Further research should explore at the long-term effects of alumni engagement on educational results especially in cross-regional comparisons to establish scalable frameworks. QS programmes which foster strong alumni-institution connections can not only align with global standards but also boost Malaysia's construction sector towards innovation and competitiveness. It will be ensuring graduates are well-equipped to handle dynamic industry landscapes. There is limitation in the study's sampling method. The study's sampling method creates potential biases that may risk the validity of its findings. Purposive and snowball sampling mixed with online distribution may causing the potential of over-representing alumni who are more digitally connected or already involved with their institutions. Then, it may leave out others with the limited internet access or weaker institutional links. This technique may over-represent alumni in urban areas or at specific career stages, while under-representing graduates in rural areas or who are less active in professional networks. Furthermore, the focus on registered QS professionals in BQSM limits the relevancy of the findings to global or multicultural contexts where alumni interaction behaviours may change.

ACKNOWLEDGMENT

The main author would like to express his gratitude to Quantity Surveying Department of UTM Johor branch, especially the supervisor, TS Dr. Nurshikin Mohamad Shukery for assisting in completing this research paper.

REFERENCES

- Awang, Z., Afthanorhan, A., & Mamat, M. (2016). The Likert scale analysis using parametric based Structural Equation Modeling (SEM). <https://api.semanticscholar.org/CorpusID:67839674>
- Board of Quantity Surveyor Malaysia. (2023). Guideline To Two-Tier Registration Of Quantity Surveyors. <https://www.bqsm.gov.my/wp-content/uploads/2021/12/GUIDELINES-TIER-I-PQS-REVISION-2.4-14.04.2023.pdf>
- Carranz, G. A., & Wiecheteck, G. K. (2016). Developing engaged alumni of the future. *Terra Plural*, 10(1), 139–148. <https://doi.org/10.5212/terraplural.v.10i1.0010>
- CASE. (2018). Alumni Engagement Metrics. www.case.org
- CASE. (2024). CASE Insights on Alumni Engagement. https://www.case.org/system/files/media/file/CASEWhitePaper_AlumniMetrics%20AUG18.pdf
- Cownie, F., & Gallo, M. (2020). Alumni gratitude and academics: Implications for engagement. *Journal of Further and Higher Education*, 45(6), 788–802. <https://doi.org/https://doi.org/10.1080/0309877X.2020.1820457>
- Department of Statistics Malaysia. (2024b). [2023] Gross Domestic Product. OpenDOSM. https://open.dosm.gov.my/publications/gdp_2023
- Drezner, N. D., & Pizmony-Levy, O. (2020). I Belong, Therefore, I Give? The Impact of Sense of Belonging on Graduate Student Alumni Engagement. *Nonprofit and Voluntary Sector Quarterly*, 50, 753–777. <https://api.semanticscholar.org/CorpusID:230535521>
- Ebekozien, A., & Aigbavboa, C. O. (2024). Improving quantity surveying education through continually updating curriculum digitalisation to meet industry requirements. *Journal of Engineering, Design and Technology*, 22(5), 1523–1543. <https://doi.org/10.1108/JEDT-01-2022-0043>
- Faizah, S. N., Malek, A., Nur, F., Zamri, S., Ali, S., & Jenuwa, N. (2023). The Challenges Among Quantity Surveying Students Towards the Evolution of Quantity Surveyor's Roles and Services. *International Journal of Business and Technology Management*, 5(S3), 282–291. <https://doi.org/10.55057/ijbtm.2023.5.S3.28>
- Hizam, S. M., Othman, Z. I. S. binti, Amin, M. M., Zainudin, Z., & Fattah, M. F. A. (2019). Corporate Social Responsibility in Malaysia. *International Journal of Financial Research*, 10(5), 381. <https://doi.org/10.5430/ijfr.v10n5p381>
- Hongmei, S., & Bey-Ling, S. (2020). Conceptualizing and operationalizing alumni engagement: When conversational voice matters more than openness and assurances of legitimacy. *Public Relation Review*, 46(5). <https://doi.org/https://doi.org/10.1016/j.pubrev.2020.101974>
- Iskhakova, L., Hoffmann, S., & Hilbert, A. (2017). Alumni Loyalty: Systematic Literature Review. *Journal of Nonprofit and Public Sector Marketing*, 29(3), 274–316. <https://doi.org/10.1080/10495142.2017.1326352>
- Jamison, A., & Madden, M. (2021). Developing capacities for meeting the SDGs: exploring the role of a public land-grant institution in the civic engagement of its African alumni. *Higher Education*, 81(1), 145–162. <https://doi.org/10.1007/s10734-020-00638-8>
- Kibwami, N., Wesonga, R., Manga, M., & Mukasa, T. (2021). Strategies for Improving Quantity Surveyors' Education Training in Uganda. *International Education Studies*, 14(2), 33. <https://doi.org/10.5539/ies.v14n2p33>

- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Lemchi, Ngozi S, Ihugba, & Okezie A. (2023). The Role of Alumni Associations in Colleges of Education Development. *International Journal of Engineering Applied Sciences and Technology*, 7(5), 218–244. <https://www.researchgate.net/publication/373134942>
- LHDN. (n.d.). Clarification Of Activities Which Are Eligible.
- Mazhar, S. A. (2021). Methods of Data Collection: A Fundamental Tool of Research. *Journal of Integrated Community Health*, 10(01), 6–10. <https://doi.org/10.24321/2319.9113.202101>
- McDougle, L., McDonald, D., Li, H., McIntyre Miller, W., & Xu, C. (2017). Can Philanthropy Be Taught? *Nonprofit and Voluntary Sector Quarterly*, 46(2), 330–351. <https://doi.org/10.1177/0899764016662355>
- Ministry of Education Malaysia. (2015). *Malaysia Education Blueprint 2015 - 2025 (Higher Education)*. Kementerian Pendidikan Malaysia.
- Naeimah Saraeh, U., Abdul Rahman, N. I., Noordin, N., Ramlan, S. N., Ahmad, R., & Sakdan, M. F. A. (2018). The Influence of Students' Experience on Alumni Giving in Malaysian Public Educational Institution. *MATEC Web of Conferences*, 150. <https://doi.org/10.1051/mateconf/201815005030>
- Nita Ali, K., Emma Mustaffa, N., Imoudou Enegbuma, W., Ali, K. N., Mustaffa, N. E., Keat, Q. J., & Enegbuma, W. I. (2016). Building information modelling (BIM) educational framework for quantity surveying students: The Malaysian perspective. In *Journal of Information Technology in Construction (ITcon)* (Vol. 21). <http://www.itcon.org/2016/9>
- Partridge, L., & Hayman, J. (2017). Every school a community: the role of alumni in supporting the transition from school to work. <https://www.researchgate.net/publication/320585005>
- Pedro, I. M., da Costa Mendes, J., & Pereira, L. N. (2020). Identifying patterns of alumni commitment in key strategic relationship programmes. *International Review on Public and Nonprofit Marketing*, 17(4), 445–468. <https://doi.org/10.1007/s12208-020-00256-1>
- Putri, S., Ridzuan, A., Nanda, H., Puspaningtyas, M., Makhzun, A., & Sabila, R. (2023, November 28). Conceptualizing Alumni Engagement: Exploring The Attributes and Practices of Alumni Associations to Help Student Success. <https://doi.org/10.4108/eai.9-8-2022.2338671>
- RICS. (2024). Quantity surveying: Your guide to becoming a quantity surveyor. RICS. <https://www.rics.org/surveyor-careers/surveying/what-surveyors-do/what-is-a-quantity-surveyor>
- Saka, A. B., & Chan, D. W. M. (2020). Knowledge, skills and functionalities requirements for quantity surveyors in building information modelling (BIM) work environment: an international Delphi study. *Architectural Engineering and Design Management*, 16(3), 227–246. <https://doi.org/10.1080/17452007.2019.1651247>
- Sheikh Ilmi, H., Tatt, S., Tan, D., Kamarazaly, M., & Shirley, C. (2021). EXPLORING THE QUANTITY SURVEYING SERVICES FROM THE EMPLOYERS' AND GRADUATES' PERSPECTIVE. *Malaysian Construction Research Journal*, Volume 12, 246–257.
- Sium, M., Prabhakaran, S., Iqbal, A., & Ramachandran, S. (2023). Why Alumni Stay Engaged with their Alma Mater? Understanding the Factors in Malaysian Context. *International Journal of Academic Research in Business and Social Sciences*, 13(12). <https://doi.org/10.6007/ijarbss/v13-i12/20051>
- Snijders, I., Wijnia, L., Rikers, R. M. J. P., & Loyens, S. M. M. (2019). Alumni loyalty drivers in higher education. *Social Psychology of Education*, 22(3), 607–627. <https://doi.org/10.1007/s11218-019-09488-4>
- W. Johnson, D., & T. Johnson, R. (2019). Cooperative Learning: The Foundation for Active Learning. In *Active Learning - Beyond the Future*. IntechOpen. <https://doi.org/10.5772/intechopen.81086>
- Weerts, D. J., & Cabrera, A. F. (2017). Segmenting university alumni using a person-centered methodology. *International Journal of Nonprofit and Voluntary Sector Marketing*, 22(3). <https://doi.org/10.1002/nvsm.1577>
- Zainon, N., Mohd-Rahim, F. A., Aziz, N. M., Kamaruzzaman, S. N., & Puidin, S. (2018). Catching Up With Building Information Modeling: Challenges And Opportunities For Quantity Surveyors. *Journal of Surveying, Construction & Property*, 9(1), 19–31. <https://doi.org/10.22452/jscp.vol9no1.3>



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Perak

eISBN 978-629-94789-0-4



(online)