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Soft Skills Development Using BIM Software among Quantity Surveyors in the Malaysian Construction Industry

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ABSTRACT

The implementation of Building Information Modelling (BIM) in the construction sector has significantly contributed to the cultivation of soft skills in quantity surveying professions. Nonetheless, challenges persist in developing these skills, necessitating focused advancements. This study explores the soft skills cultivated by BIM, examines related obstacles, and establishes strategies for enhancement. A quantitative approach was utilized through a questionnaire survey targeting Quantity Surveyors within the Malaysian construction sector, with data analysed using the Relative Importance Index (RII) method. Findings indicate that communication is the most substantially enhanced soft skill through BIM, followed by leadership and teamwork. BIM improves Quantity Surveyors' capacity to communicate intricate information, oversee integrated project teams, and cooperate efficiently across several disciplines. Nevertheless, challenges remain, particularly insufficient leadership knowledge within organizations and communication hurdles encountered by introverted individuals, which can impede collaboration and project efficacy. The study advocates for the integration of soft skills training within BIM technical programs, the promotion of leadership involvement, the encouragement of transparent communication, and the cultivation of individual accountability within team environments to address these barriers. Self-directed social contact is recognized as an excellent method for enhancing interpersonal skills. This study emphasizes the essential importance of soft skills—specifically communication, leadership, and teamwork—in optimizing the advantages of BIM adoption. By overcoming identified challenges and executing focused initiatives, organizations may strengthen collaborative performance, leadership capabilities, and communication efficacy among Quantity Surveyors, thus enhancing project delivery outcomes in the Malaysian construction industry.

Keywords: Soft skills; building information modelling; quantity surveyors; construction industry

INTRODUCTION

Soft skills such as communication, entrepreneurship, problem-solving, creativity, and teamwork are becoming increasingly essential in the construction sector. These competencies facilitate both personal and professional growth and can be fostered through education and training (Deep et al. 2020). Their importance encompasses improved collaboration among partner organizations, improved design resolution, and increased standardization of documentation, all contributing to enhanced on-site efficiency and precision in construction results.

Notwithstanding its significance in the BIM process, a prevalent misperception persists that BIM education needs to concentrate exclusively on cultivating technical expertise using software platforms (Wu & Issa, 2014). This limited viewpoint has led to inadequate focus on the cultivation of non-technical skills, despite their essential significance in BIM workflows. As a result, numerous academic programs find it challenging to fulfill industrial

requirements (Valinejadshoubi et al. 2021). To fully use BIM's potential, it is essential to focus not only on technical proficiency but also on the assessment and improvement of non-technical skills.

The quantity surveying profession is evolving in tandem with the swift changes occurring in the Architecture, Engineering, and Construction (AEC) business. This change has resulted in the emergence of new fields of expertise, such as data management, and the growing significance of soft skills, including emotional intelligence (Valinejadshoubi et al. 2021). As Quantity Surveyors confront these transformations, ongoing education and adaptability are essential to maintain relevance. Although Architects and Engineers have historically performed numerous quantity surveying functions, professionals in this domain have to acquire a blend of technical and interpersonal abilities to remain competitive in the current job market. Collaboration, good communication, and adaptability to changing work practices are crucial for sustained success.

Despite the growing importance of soft skills in BIM contexts, existing educational and training programs predominantly prioritise technical competencies (Wu & Issa, 2014; Nikolic et al. 2021; Kim, 2024; Sanz-Angulo et al. 2025). This disparity results in a continual skills shortage, especially for Quantity Surveyors who are anticipated to engage in interdisciplinary collaboration and assume leadership positions in BIM-centric projects (Davies et al. 2015; Uhm et al. 2017; Zainordin & Khoo, 2025). This study seeks to bridge the gap by identifying the soft skills developed by BIM, assessing the related challenges, and suggesting effective strategies for improvement.

LITERATURE REVIEW

The concept of soft skills in the construction industry, particularly concerning Building Information Modelling (BIM) and Quantity Surveying, remains rather unclear. Previous reports, such as the Built Environment 2050 report (CIC BIM 2050 Group, 2014), highlighted inefficiencies within the sector stemming from insufficient soft skills and inadequate integration of educational frameworks with abilities like emotional intelligence and interdisciplinary teamwork. Nonetheless, the lack of a broadly recognized definition is evident in both academic and professional literature. Sumner and Slattery (2010) classified soft skills to encompass time management, conflict resolution, and relationship building, whereas Hurrell et al. (2012) characterized them as 'non-technical skills that do not depend on abstract reasoning but involve interpersonal and intrapersonal competencies to enhance performance in specific contexts'.

Recent studies have highlighted the significance of context-specific soft skills, especially in BIM-enabled projects, to rectify this definitional gap. Succi and Canovi (2020) emphasized that communication, teamwork, and adaptation are fundamental to graduate employment in technology-driven sectors. In the BIM field, van Heerden et al. (2023) conducted a comprehensive industry evaluation, pinpointing communication,

teamwork, and leadership as essential interpersonal characteristics necessary for proficient BIM coordination. Damek et al. (2022) characterized these competences as "meta-skills" essential for managing digital workflows, including BIM modelling and integration.

In the context of BIM, early studies by Zerjav et al. (2014) highlighted the influence of leadership and collaborative design in AEC projects, which are shaped by interpersonal behaviours such as framing, negotiation, and mutual interpretation. These competencies, although not conventionally classified as soft skills, signify the initial acknowledgement of non-technical factors impacting BIM collaboration. As BIM maturity has advanced, current studies have shifted towards a more explicit classification of soft skills into commonly recognized interpersonal categories.

This study developed the categorization of communication, teamwork, and leadership, which are continually emphasized in contemporary studies as core non-technical qualities in digital construction environments (Succi & Canovi, 2020; van Heerden et al. 2023; Omer et al. 2022). These categories are substantiated by a benchmarking analysis (refer to Table 1) and correspond with the study's objective of assessing soft skills pertinent to Quantity Surveyors in BIM-based projects. Technical competencies, such as modelling competency and IT tool utilization, are recognized but are not within the overall scope of this study's focus on soft skills.

TABLE 1. Benchmarking Soft Skills Categories in BIM and Quantity Surveying

Soft Skill Category	Definition / Focus in BIM Context	Supporting Literature
Communication	The ability to convey and interpret project information across BIM platforms through verbal, written, and visual means. Essential for fostering trust, resolving conflicts, and ensuring coordination in multidisciplinary environments	Lee et al. (2022); Cao & Shao (2024); Damek et al. (2022); Succi & Canovi (2020); Davies et al. (2015); Zerjav et al. (2014)
Teamwork	The ability to collaborate effectively with stakeholders from various disciplines. Critical in BIM processes such as model coordination, clash detection, and integrated design development	Rosly et al. (2025); Pouryaghoubi & Mohammadi (2023); van Heerden et al. (2023); Wang et al. (2021); Nikolic et al. (2021)
Leadership	The capacity to guide project teams, drive BIM adoption, foster innovation, and align digital practices with strategic goals at the project or organizational level. Leadership in BIM contexts also includes the ability to influence team interactions, frame discussions, and establish shared understanding.	McDonough (2025);Soomro et al. (2024); Ibrahim (2023); Omer et al. (2022); Peng et al. (2022); Papadonikolaki & Aibinu (2017); Zerjav et al. (2014);

COMMUNICATION

Communication is a crucial soft skill in BIM settings, facilitating clarity across complex, multi-stakeholder teams. Lee et al. (2022) discovered that trust in communication technologies significantly affects inter-organizational collaboration in BIM-enabled projects. Cao and Shao (2024) further demonstrated how communication and advisory networks influence BIM implementation outcomes. Succi and Canovi (2020) recognized communication as an important soft skill demanded by employers, due to its role in integrating human interaction with digital tools. Damek et al. (2022) assert that communication is a fundamental meta-competence in digital workflows, especially within model-based coordination systems.

TEAMWORK

Teamwork is vital, as BIM projects necessitate input from Architects, Engineers, Quantity Surveyors, and other experts. Wang et al. (2021) indicated that mutual trust, well-defined roles, and shared goals enhance collaboration in BIM-based design. Rosly et al. (2025) underlined that the clash detection and resolution activities are highly reliant on teamwork among disciplines. Pouryaghoubi and Mohammadi (2023) associate BIM adoption with enhanced collaboration, especially in the context of smart building development, where team integration is a critical performance determinant.

LEADERSHIP

Leadership assists in the strategic incorporation of BIM within organizational structures. Omer et al. (2022) emphasize that constructive leadership behaviours positively affect team interactions in BIM-based projects. Peng et al. (2022) emphasize the necessity for flexible, technologically proficient leaders in digital construction. A recent study by Soomro et al. (2024) demonstrates that shared leadership and norms of open-mindedness greatly promote innovation in construction teams by fostering knowledge-sharing and psychological safety. McDonough (2025) claims that robust executive leadership is crucial for steering digital transformation, whereas Ibrahim (2023) suggests that transformational leadership encourages proactive conduct throughout BIM transformations.

The categorization of soft skills into communication, teamwork, and leadership is broadly supported in current literature (Succi & Canovi, 2020; van Heerden et al. 2023; Damek et al. 2022). These three categories exemplify the essential interpersonal competencies that empower Quantity Surveyors to excel in digitally integrated BIM projects. Elalwani and Çalışkan (2024) believe that BIM-based knowledge management procedures are much improved when complemented by proficient soft skills in these domains.

METHODOLOGY

This study employed a quantitative research design to examine the soft skills developed by Quantity Surveyors through the use of Building Information Modelling (BIM) software within the Malaysian construction industry. The objectives were to (i) identify the key soft skills associated with BIM usage, (ii) investigate the challenges in developing these skills, and.(iii) propose strategic improvements.

SAMPLING AND DATA COLLECTION

Data were collected through a structured online questionnaire created with Google Forms. The target population consisted of Quantity Surveyors currently utilizing BIM software in their professional practice. The questionnaire was disseminated by a random sampling technique on social media platforms such as LinkedIn, Facebook, Instagram, and Telegram, targeting participants in the Klang Valley region of Malaysia.

INSTRUMENT DESIGN

The questionnaire was designed following a literature review that classified soft skills into three primary themes: communication, teamwork, and leadership. The survey instrument comprised five sections: Section A: Demographic information of respondents; Section B: Soft skills developed using BIM software; Section C: Challenges in developing soft skills using BIM software; Section D: Strategies to improve soft skills using BIM software; and Section E: Open-ended questions soliciting respondents' recommendations and reflections. Closed-ended items were assessed using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), but open-ended answers enabled qualitative elaboration.

DATA ANALYSIS

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics (mean, standard deviation, frequency) were employed to encapsulate responses. The Relative Importance Index (RII) method was applied to prioritize and rank the significance of each soft skill indicator. The RII was determined using the following formula: $RII = \Sigma W / (A \times N)$, where W is the weight allocated to each response (on a 5-point Likert scale), A signifies the maximum possible weight (5 in this case), and N represents the total number of respondents. The RII values enable the rating of each soft skill item within the categories of communication, teamwork, and leadership, thereby offering a systematic explanation of their perceived importance in BIM practice.

RESULTS AND DISCUSSION

DEMOGRAPHIC INFORMATION

A total of 116 responses were obtained from the questionnaire survey. Table 2 delineates the demographic data of the respondents, including their age, type of organization, level of BIM knowledge, the BIM software used, and their years of experience with the software. The predominant age group among the respondents was 36 to 40 years, with 31.9%. Most (81%) were engaged in organizations specializing in Quantity Surveying consultancy. The majority (45.7%) of respondents claimed to be very knowledgeable regarding BIM. Revit has become the predominant BIM software, utilized by 59.3% of respondents, while the majority (37.1%) stated having 6 to 10 years of experience with BIM software.

TABLE 2. Respondents' demographic information

		Frequency (No.)	Percentage (%)
Age	26 – 30 years old	14	12.1
	31 – 35 years old	31	26.7
	36 – 40 years old	37	31.9
	41 – 45 years old	28	24.1
	46 and above	6	5.2
	Total	116	100
Organization	QS Consultant firm	94	81
	Contractor's firm	19	16.4
	Architectural firm	2	1.7
	Engineering firm	1	0.9
	Total	116	100
Knowledge of BIM technology	Least Knowledgeable	0	0
	Somewhat Knowledgeable	6	5.2
	Moderate Knowledgeable	26	22.4
	Quite Knowledgeable	31	26.7
	Very Knowledgeable	53	45.7
	Total	116	100
Type of BIM software used	Revit	96	59.3
	Cubit	10	6.2
	Navisworks	13	8
	Cost X	21	13
	Vico	9	5.6
	ArchiCAD	13	8
	Total	162 (by cases)	100 (139.7% by cases)

SOFT SKILLS DEVELOPMENT USING BIM SOFTWARE

The soft skills acquired by respondents utilizing BIM software are classified into three categories: communication, teamwork, and leadership (see Table 3). These categories signify the essential interpersonal skills complemented by BIM software, demonstrating its influence on the professional competencies of the respondents.

TABLE 3. Soft skills developed by respondents using BIM software

Soft Skills	RII	Ranks
Communication		
The skill to communicate effectively for the quality of a successful BIM professional	0.982	1
The skill as a professional to not only know how to do the job technically and use BIM tools but also to be good at communicating	0.944	5
The skill as a professional communicator when dealing with BIM projects	0.946	4
The skill of conveying information while collaborating towards having a more in-depth discussion	0.950	3
The skill of integrating all communication networks and what they indicate	0.962	2
Teamwork		
The skill of promoting BIM in the sustainable development of society	0.950	4
The skill of using BIM tools and technical skills in working with people from other fields	0.952	3
The skill of gathering people to work together	0.958	1
The skill of using more ideas for more creative solutions leads to better results	0.954	2
The skill of working together with people and using their different kinds of knowledge to easily analyze problems and come up with complex solutions	0.946	5
Leadership		
The skill of implementing BIM towards leadership responsibilities	0.966	1
The skill of creating an environment where employees are motivated and work more efficiently	0.960	2
The skill in leadership required for organizational BIM transformation	0.956	3
The skill in the BIM transformation of construction organizations aims to evolve people, work processes, digital tools, and individual skills	0.950	4

According to Table 3, communication was identified as the most advanced soft skill among Quantity Surveyors adopting BIM software, with the highest Relative Importance Index (RII = 0.982). This highlights the critical role of communication in fostering collaboration among project stakeholders and ensuring clarity in design, cost, and scheduling decisions. BIM environments necessitate continuous coordination among multiple disciplines, and effective communication mitigates errors, aligns expectations, and optimizes workflows. Succi and Canovi (2020) and Lee et al. (2022) point out that effective communication in digital environments transcends mere data sharing; it encompasses interpretative clarity, trust cultivation, and responsiveness. For Quantity Surveyors, these competencies are essential for conveying complex model information to both technical and non-technical stakeholders, as emphasized by Davies et al. (2015).

The second-highest scored category of soft skills is leadership, with the leading item ("The skill of implementing BIM in leadership responsibilities") receiving a RII of 0.966. This reflects the transforming position of Quantity Surveyors as not merely cost managers but also as digital leaders and coordinators within BIM environments. Effective leadership in BIM entails directing integrated teams, overseeing the cultural transition from traditional to digital workflows, and fostering creativity through collective accountability. Omer et al. (2022) and Soomro et al. (2024) observe collaborative and open-minded leadership as key enablers of creativity in BIM projects. Uhm et al. (2017) and Papadonikolaki and Aibinu (2017) proclaim that effective BIM adoption is contingent upon leadership that integrates digital tools with organizational strategy, people, and process management.

Teamwork was positioned third, with its highest-rated component ("The ability to assemble individuals for collaborative efforts") attaining a Relative Importance Index (RII) of 0.958. Regardless of its lower relative ranking, teamwork continues to be a fundamental element of BIM collaboration. The interdisciplinary nature of BIM necessitates Quantity Surveyors to collaborate closely with Architects, Engineers, and contractors across shared digital environments. Efficient collaboration enables conflict identification, cohesive modelling, and collective resolution of issues. Wang et al. (2021) and van Heerden et al. (2023) assert that mutual trust, role clarity, and agreed objectives are essential for the efficacy of BIM teams. Rosly et al. (2025) emphasize that BIM improves QS collaboration through real-time model updates and synchronized cost planning. The findings align with the standpoint of Zerjav et al. (2014), who contend that effective leadership in design workshops relies on interactional framing and a shared understanding within disciplines.

The findings collectively confirm that communication, leadership, and teamwork are synergistic soft skills that augment the efficacy of BIM-enabled Quantity Surveyors. These skills facilitate interdisciplinary collaboration, drive digital transformations, and sustain effective communication within project teams. BIM tools inherently promote the cultivation of these competencies by emphasizing model-based collaboration, real-time feedback, and transparency. With the growing prevalence of BIM adoption, the ability to amalgamate technical proficiency with interpersonal skills will be paramount for Quantity Surveyors seeking to excel and make significant contributions in digital construction environments (Damek et al. 2022; Ibrahim, 2023).

CHALLENGES IN DEVELOPING SOFT SKILLS USING BIM SOFTWARE

The challenges encountered by respondents in developing soft skills through BIM software can be divided into organizational and individual challenges, as shown in Table 4. Organizational challenges relate to workplace issues, such as inadequate assistance or restricted training opportunities, whereas individual challenges reflect personal aspects, such as insufficient technical knowledge or reluctance to embrace new technologies. Table 4 describes these challenges and their impact on the development of soft skills.

TABLE 4. Challenges faced by respondents in developing soft skills using BIM software

Challenges	RII	Ranks
Organization		
Lack of leadership skills in an organization since leaders need to be aware of all key parts of their team	0.980	1
The leader or supervisors do not provide clear and accurate instructions can cause the use of BIM quite challenging	0.940	3
The organisation did not provide any training related to soft skills but instead more to technical skills	0.958	2
Individual		
Lack of communication when interacting with others can create a spreading of misinformation	0.944	3
Introvert people are especially hard to make conversation thus can lead to making bad teamwork	0.968	1
Avoid helping out team members when collaborating in adopting BIM technology	0.954	2

Based on Table 4, the top organizational challenge in developing soft skills through BIM (RII = 0.980) is the lack of leadership qualities within organizations. This finding highlights the critical role of leadership in facilitating desirable collaboration and communication in BIM-based projects. Leaders must possess the ability to comprehend team dynamics and promote interdisciplinary information exchange. Omer et al. (2022) argue that BIM leaders must exhibit accountability, adaptability, and interpersonal engagement to effectively lead project teams. In the absence of this, Quantity Surveyors may find it challenging to cultivate soft skills such as teamwork and communication, which are crucial for functioning within integrated BIM systems (Mirhosseini et al. 2020; Uhm et al. 2017).

At the individual level, the foremost challenge (RII = 0.968) pertains to introversion and the difficulty in participating in team interactions. Although introverted persons may excel in technical BIM tasks, they frequently encounter difficulties in collaborative environments that demand open communication, assertiveness, and group involvement. Davies et al. (2015) stressed that robust interpersonal skills are necessary for managing the client-consultant-contractor engagement. While introversion is not fundamentally detrimental, it may impede the cultivation of crucial soft skills in highly collaborative settings such as BIM, unless mitigated by focused support or training (Shalevska, 2021).

These findings reiterate the necessity of integrating organizational leadership formation with individual support approaches to empower Quantity Surveyors to maximize the use of BIM technologies and enhance their interpersonal competencies.

STRATEGIES IN IMPROVING SOFT SKILLS USING BIM SOFTWARE

Table 5 displays the RII scores and rankings for various strategies aimed at improving soft skills through the utilization of BIM software among respondents. The most prevalent strategy, with a Relative Importance Index (RII) score of 4.91, is the incorporation of soft skills training with technical BIM training for organizations. The second

highest, with a Relative Importance Index score of 4.84, underlines the significance of enhancing communication and comprehension abilities in the use of BIM technology. The strategy with the lowest ranking, exhibiting an RII score of 4.74, is linked to frequent self-training in soft skills, including social interaction with friends, colleagues, and other team members.

TABLE 5. Strategies to improve soft skills using BIM software by respondents

Strategies	RII	Ranks
The organization should also include soft skills part when training on the technical skills of BIM	0.982	1
Everyone must show responsibility in their job and be willing to help others as teamwork in BIM projects	0.952	4
All key parts of the team need to be aware of by the leader	0.954	3
Frequent self-training of one's soft skills in socializing with friends, colleagues, and other members of the team	0.948	5
Improving communication and comprehension skills are needed when using BIM technology	0.968	2

Table 5 indicates that the strategy with the highest Relative Importance Index (RII = 0.982) is the suggestion for organizations to integrate soft skills training with technical BIM training. This signifies a strong consensus among Quantity Surveyors that technical proficiency alone is inadequate for successful BIM deployment. Integrated training programs that concurrently nurture soft and technical skills have demonstrated the ability to improve BIM team performance by establishing holistic competence in digital collaboration (Nikolic et al. 2021). This approach allows Quantity Surveyors to enhance their skills in modelling and coordination, as well as in leadership, communication, and interpersonal capabilities that are increasingly required in complex BIM projects (van Heerden et al. 2023; Mirhosseini et al. 2020).

The second most significant strategy (RII = 0.968) accentuates the necessity of enhancing communication and comprehension skills in the application of BIM. This finding highlights the fundamental value of communication, the most esteemed soft skill, in BIM practice. BIM systems facilitate the visual depiction of complex design and cost information; nonetheless, effective communication remains reliant upon users' interpersonal skills. Hoff (2019) insists that intercultural and cross-disciplinary collaboration strengthens understanding and clarity, crucial in teams with diverse professional backgrounds. Zhang et al. (2021) emphasize that BIM can mitigate technological barriers in communication, subject to users possessing the requisite verbal and cognitive abilities to interact effectively with digital data. Quantity Surveyors must articulate, convey, and negotiate BIM output with both technical and non-technical stakeholders.

The third-ranked strategy (RII = 0.954) further demonstrates the significance of awareness as well as engagement by team leaders. In a BIM setting, leadership involves not just the management of workflows but also the acknowledgement and adaptation to team dynamics. Omer et al. (2022) contend that constructive leadership—anchored in communication, empathy, and active engagement—improves team collaboration and diminishes resistance to change. Leaders who are perceptive to their teams can promote transparent communication, alleviate tension, and build trust, which are vital prerequisites for the development of soft skills and the successful implementation of BIM. Mirhosseini et al. (2020) note the significance of visionary leadership in stimulating a learning culture that promotes individual growth through technical innovation and interpersonal reflection.

The fourth and fifth ranked strategies (RII = 0.952 and 0.948, respectively) represent accountability for teamwork and the self-development of interpersonal skills. These demonstrate the importance of both organizational culture and individual initiative. Promoting mutual support among team members and taking responsibility for collective results encourages a collaborative atmosphere needed for BIM-based collaboration. Furthermore, frequent self-training, such as engaging in social interactions and growing empathy in both professional and casual contexts, facilitates the internalization of soft skills, enabling individuals to use them instinctively in digital project environments. This corresponds with the findings of Damek et al. (2022), who recognize self-awareness and peer-based learning as essential drivers of soft skill development in BIM-related roles.

The findings confirm that enhancing soft skills in BIM environments necessitates a multi-tiered strategy, encompassing formal training, leadership dedication, and individual accountability. Organizations that integrate soft skills development into their BIM strategy will be more adept at crafting high-performing, collaborative teams of Quantity Surveyors in the digital construction era.

CONCLUSION

This study explored the development, challenges, and strategies concerning soft skills among Quantity Surveyors utilizing Building Information Modelling (BIM) software within the Malaysian construction sector. The outcomes offer valuable insights into the interpersonal skills that facilitate efficient digital collaboration and project delivery in BIM environments.

The findings reveal that communication is the most developed and vital soft skill, allowing Quantity Surveyors to articulate complex project information precisely and promote unity across multidisciplinary teams. Leadership received a high ranking, reflecting an increasing need for Quantity Surveyors to direct BIM implementation, coordinate teams, and impact organizational change. Teamwork, although rated marginally lower, is an essential competency for collaborative model development and problem-solving within integrated project teams.

Nonetheless, the cultivation of these soft skills presents certain challenges. The primary organizational challenge highlighted is insufficient leadership competencies, which hampers team collaboration and diminishes the incorporation of soft skills into BIM processes. At the individual level, introversion and communication obstacles hinder participation and collaboration, especially in interactive BIM environments. These challenges point to a gap between the technical and interpersonal demands of BIM-enabled QS roles.

Respondents suggested various strategies for improvement to address these challenges. Primarily, organizations must integrate soft skills training with technical BIM programs to ensure a balanced development of digital and interpersonal competencies. Improving communication as well as comprehension skills has been highlighted as crucial, as these directly affect information flow and decision-making in BIM settings. Moreover, nurturing proactive leadership involvement and encouraging self-driven soft skill development were acknowledged as successful strategies to address both organizational and individual constraints.

In conclusion, the integration of soft skills, specifically communication, leadership, and teamwork, into BIM training and practice is essential for Quantity Surveyors to thrive in the constantly evolving demands of digital construction. Implementing focused strategies to address the identified issues could improve individual performance and reinforce overall project collaboration, innovation, and success in BIM-enabled contexts. Future initiatives by industry and educational institutions should prioritize the establishment of comprehensive training frameworks that promote both technical skills and interpersonal competencies in the QS profession.

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DECLARATION OF COMPETING INTEREST

None.

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