

Exploring Information and Decision Quality as a Risk-Mitigation Capability in Construction Projects of Bauchi Metropolis, Nigeria

John Dawomdah, I. Y. Muhammad & Jamilu Yau

Department of Building Technology,
Faculty of Environmental Technology,
Abubakar Tafawa Balewa University,
Bauchi, PMB 0248, Nigeria

<https://doi.org/10.56201/ijemt.vol.12.no9.2026.pg192.202>

Abstract

Construction risk management depends not only on the availability of project information but also on its accuracy, timeliness, relevance and manageability. In digitally connected project environments, excessive, incomplete or misleading information may distort risk identification and delay mitigation decisions. This study examines information and decision quality as a risk-mitigation capability in construction projects in Bauchi Metropolis, Nigeria. The analysis draws on a cross-sectional survey of construction professionals in Bauchi Metropolis and focuses specifically on ten risk-management items measured on a five-point Likert scale. Descriptive statistics, combined agreement rates and mean-score ranking were used, while a post-hoc thematic grouping distinguished information-quality enablers from information-risk amplifiers. The results show a consistently high information dependency in risk management (overall mean of item means = 4.39; average agreement = 89.91%). Accurate information was ranked highest as a prerequisite for effective risk management (M = 4.51), closely followed by reliance on accurate and timely data for mitigation decisions (M = 4.50). Information mismanagement, misinformation, incomplete data, poor information flow and information overload were also strongly associated with incorrect risk identification, increased uncertainty and weak prioritisation. The study concludes that information and decision quality should be treated as an explicit risk-control capability rather than a routine communication issue. A governance pathway based on source authority, verification, filtering, structured information environments and risk-linked information protocols is proposed for construction organisations in emerging markets.

Keywords: *information quality; construction risk management; information overload; misinformation; risk prioritisation; Bauchi Metropolis*

1. Introduction

Construction projects are information-intensive systems in which risk decisions are made continuously across design, procurement, planning, execution and control. Project teams require credible information about specifications, resources, cost movements, programme changes, safety conditions, contractual obligations and emerging site events. As projects become more digitally connected, the central challenge is no longer limited to information scarcity. Project professionals increasingly face a simultaneous problem of volume and veracity: substantial quantities of information are available, yet the information may be duplicated, inconsistent, incomplete, late or difficult to validate. This distinction is important because the risk-management process depends on the ability to recognise relevant signals before they become project disruptions. Adekunle et al. (2022) argue that systematic

construction information management improves the collection, sharing and storage of project information, whereas Tanga et al. (2022) demonstrate that weaknesses in data management can themselves become project risks. Accordingly, information quality can be regarded as part of the project's risk-control infrastructure rather than merely an administrative support function. The notion of an infodemic provides a useful lens for this problem. Cinelli et al. (2020) used the term to describe high-volume information environments in which reliable and unreliable information circulate rapidly. Although the concept gained prominence in public-health communication, its underlying logic can be transferred cautiously to construction, where project participants also operate within dense networks of formal and informal communication. In the present article, an infodemic is therefore used operationally to describe a construction information environment characterised by excessive information combined with misinformation, incomplete information and difficulty distinguishing decision-relevant evidence from noise. This usage does not imply that the term is already standardised in construction management. Rather, it highlights the interaction between information quantity and information reliability. Ke et al. (2023) provide direct construction evidence that increasing information load on visualised dashboards can raise cognitive load, indicating that more information does not automatically improve decision quality.

Risk management is particularly sensitive to this information problem because risk identification and prioritisation are knowledge-intensive activities. Isah and Kim (2023) note that construction risk management requires effective mechanisms for capturing, storing, retrieving and reusing risk knowledge, while Winarno and Kusumadewi (2024) emphasise that construction decisions frequently involve uncertainty and ambiguous information. Where project data are inaccurate or poorly coordinated, teams may identify the wrong risks, underestimate emerging threats, overreact to unreliable signals or allocate attention to low-priority issues. Conversely, accurate and timely information can improve the quality of risk judgements and strengthen preventive action. This relationship is increasingly important as digital technologies expand the scale and speed of information exchange. The challenge for project organisations is therefore to develop information environments that support risk intelligence rather than simply generate more data. Existing research has examined information management, Building Information Modelling (BIM), project management information systems (PMIS), common data environments and digital risk tools. For example, Al Ya'qoubi Hamood and Thiruchelvam (2023) show that PMIS can support managerial decision-making in information-intensive construction settings. Jaskula et al. (2024) identify accountability, transparency and reliability challenges when multiple common data environments are used simultaneously, while Celoza (2024) highlights information requirements, exchange processes and team interaction as important processes in digital asset delivery. These studies demonstrate that digitalisation can improve access and coordination but can also create new information-management burdens. However, comparatively less empirical attention has been directed to the specific role of information quality in construction risk identification, prioritisation and mitigation in regional Nigerian construction markets. The Nigerian context strengthens the relevance of this gap. Bamgbose et al. (2024) identify skills, resources, functionality, compatibility and collaboration barriers affecting BIM adoption among Nigerian construction small and medium-sized enterprises, suggesting that technological solutions cannot be separated from organisational capability. Within Bauchi State, construction project performance has also been associated with the quality of management processes and change control (Musa et al., 2021). These conditions imply that formal digital tools may coexist with informal communication, uneven technology access and variable information-management maturity. Such a setting is particularly useful for examining whether construction professionals perceive information quality as a practical risk-

mitigation capability. Against this background, the article asks how information accuracy, timeliness, overload, misinformation and information flow shape construction risk-management capability in Bauchi Metropolis. The specific objectives are to (i) rank the information-related conditions affecting risk management; (ii) distinguish information-quality enablers from information-risk amplifiers; and (iii) translate the empirical pattern into practical information-governance priorities for construction organisations. The resulting contribution centres on risk intelligence and information governance by treating information conditions as integral to risk identification, prioritisation and mitigation.

2. Literature Review and Conceptual Framing

2.1 Information quality and construction risk management

Information quality is multidimensional. Accuracy is fundamental, but useful project information must also be timely, complete, relevant, accessible and appropriately structured. Chang et al. (2022), in a review of asset information quality, caution that accuracy alone is insufficient to support different management functions because decision usefulness depends on several quality dimensions. In construction delivery, this observation is consequential because risk decisions are time-dependent. Accurate information that arrives after a procurement commitment, design release or site event may have limited preventive value. Similarly, complete information that is inaccessible to the relevant decision-maker cannot support mitigation. Thus, information quality should be considered in relation to the decision task for which the information is needed. The link between information management and organisational performance is reinforced in construction research. Adekunle et al. (2022) identify systematic information management as a significant part of successful construction processes, while Tanga et al. (2022) show that poor information quality, mistrust of project data and interruption of project timelines are among the consequences associated with data-management risks. The implication is that information is simultaneously an operational resource and a potential risk source. From a risk-management perspective, this duality means that project teams must manage not only external project risks but also the reliability of the information through which those risks are interpreted.

2.2 Information overload and risk prioritisation

Information overload occurs when the volume, complexity or frequency of available information exceeds the decision-maker's capacity to process it efficiently. Construction professionals are especially exposed because multiple stakeholders produce drawings, schedules, requests for information, cost reports, correspondence, site records and regulatory updates. Ke et al. (2023) empirically demonstrate that information load in construction dashboards affects cognitive load and user efficiency. This finding challenges the assumption that increasing data visibility automatically improves managerial performance. When risk registers, dashboards and project platforms present large quantities of undifferentiated information, high-priority threats may compete for attention with routine data. The practical problem is therefore one of prioritisation rather than simple access. PMIS can support decision-making when information is organised around managerial needs (Al Ya'qoubi Hamood & Thiruchelvam, 2023), but information systems may also intensify overload when project data are poorly filtered. A risk-sensitive information architecture should consequently distinguish critical, time-bound risk signals from lower-priority background information. This distinction is consistent with the wider movement towards structured common data environments, where a single source of truth is intended to improve collaboration and reduce fragmentation (Jaskula et al., 2024).

2.3 Misinformation, incomplete data and project uncertainty

Misinformation differs from overload because the principal problem is not quantity but reliability. Inaccurate, outdated or incomplete data can distort the probability and impact judgements that underpin risk assessment. The effect can be direct, such as an incorrect report of material availability, or indirect, such as conflicting instructions that reduce confidence in the information environment. Under these conditions, project teams may delay decisions while seeking verification, or they may act quickly on unreliable information. Both responses can increase uncertainty. Digitalisation does not remove this problem. Jaskula et al. (2024) report that the use of multiple common data environments can create accountability, transparency and reliability challenges, and Celoza (2024) identifies information-exchange processes and collaboration as key elements of digital asset delivery. Similarly, BIM-based research shows that information quality and integration remain important determinants of the usefulness of digital models (Asim et al., 2021). The relevant lesson is that technology must be accompanied by governance rules that establish who is authorised to create, approve, update and distribute information.

2.4 Information flow as a mitigation mechanism

Effective information flow converts information quality into risk action. Risk data must move from the source of an emerging issue to the person with authority to assess and respond. Poor information flow can therefore create latent risks even when accurate information exists somewhere within the project system. Isah and Kim (2023) show how a risk knowledge graph and dashboard can improve retrieval and reuse of risk-related information, illustrating the value of linking risk knowledge to structured digital tools. Aladayleh and Aladaileh (2024) similarly demonstrate the potential of BIM-supported approaches to improve risk identification, assessment and mitigation across several risk dimensions. Nevertheless, digital tools should be treated as enabling mechanisms rather than substitutes for professional judgement. Bamgbose et al. (2024) show that skills gaps, resource limitations and collaboration problems constrain BIM adoption in Nigeria. Consequently, a workable information-governance response in regional construction markets should combine technology with source verification, information literacy, clear escalation pathways and defined communication responsibilities. This combined perspective provides the conceptual basis for interpreting the Bauchi findings.

2.5 Research gap

The reviewed literature establishes that information quality, information load, digital platforms and risk knowledge management are individually important. However, limited empirical evidence explains how construction professionals in an emerging regional market collectively perceive the information conditions that enable or undermine risk mitigation. The present article addresses this gap using the risk-management component of a Bauchi Metropolis survey. The analytical focus is deliberately descriptive: the purpose is to establish the hierarchy of information-risk concerns and derive governance priorities without claiming causal relationships that the cross-sectional design cannot demonstrate.

3. Methodology

3.1 Research design and study context

A quantitative cross-sectional survey design was used. The study was conducted in Bauchi Metropolis, north-eastern Nigeria, and targeted construction professionals directly involved in project implementation and information-dependent decisions. The estimated study population was 500 professionals, comprising project managers, engineers, architects,

contractors and other construction professionals. Stratified random sampling was adopted to secure representation across the professional categories. The analytical distributions reported for the study comprise 22 project managers, 66 engineers, 44 architects, 44 contractors and 44 other construction professionals, giving an analytical base of 220 cases for the demographic and risk-management item statistics presented in this article.

3.2 Instrument, validity and reliability

Data were obtained using a structured questionnaire organised around information overload, misinformation, decision-making, project performance and risk management. Responses were recorded on a five-point Likert scale ranging from strongly agree to strongly disagree. Before the main survey, the instrument was pre-tested with 30 construction professionals in a comparable setting. Feedback was used to improve clarity and remove ambiguous items. Content validity was established through expert review, while the reported Cronbach's alpha coefficient of 0.87 indicated satisfactory internal consistency for the questionnaire. The present analysis concentrates on the ten questionnaire items that address information conditions and construction risk management.

3.3 Analytical procedure

Frequencies, percentages, mean scores and standard deviations were used to summarise the responses. The ten risk-management items were then re-organised into a ranked information-risk profile using their mean scores. Combined agreement was calculated as the sum of the percentages selecting strongly agree and agree. A descriptive thematic grouping distinguished information-quality enabler from information-risk amplifiers. The group values are averages of item means and agreement percentages; they are descriptive summaries rather than validated latent scales. Because the objective is to establish the hierarchy and pattern of risk-information concerns, no additional causal or predictive claim is inferred from these descriptive groupings.

4. Results

4.1 Respondent profile

The respondents represented a range of professional backgrounds and experience levels. Engineers formed the largest professional group (30.00%), while architects, contractors and other professionals each accounted for 20.00%; project managers represented 10.00%. More than half of the respondents had at least six years of construction experience, providing a professionally experienced basis for assessing information-related risk practices. Table 1 summarises the main profile characteristics.

Table 1. Respondent profile

Characteristic	Category	Frequency	Percentage (%)
Age	18–25	15	6.82
	26–35	70	31.82
	36–45	80	36.36
	46–55	45	20.45
	56 and above	10	4.55
Qualification	OND/NCE	30	13.64
	HND/B.Sc.	120	54.55
	M.Sc.	50	22.73
	PhD	20	9.09

Characteristic	Category	Frequency	Percentage (%)
Professional role	Project manager	22	10.00
	Engineer	66	30.00
	Architect	44	20.00
	Contractor	44	20.00
	Other (e.g., quantity surveyor)	44	20.00
Experience	1–5 years	50	22.73
	6–10 years	60	27.27
	11–15 years	55	25.00
	16–20 years	35	15.91
	21+ years	20	9.09

4.2 Ranking of information-related risk-management conditions

Table 2 shows a uniformly high level of agreement that information quality and information disturbance affect construction risk management. The mean scores range from 4.30 to 4.51, while combined agreement ranges from 87.27% to 93.63%. This narrow range is analytically important: no item was rated as a marginal concern. Instead, respondents perceived the entire information environment as closely connected to the ability to identify, assess, prioritise and mitigate project risks.

Table 2. Ranked information-risk conditions affecting construction risk management

Rank	Information-risk statement	Agreement (%)	Mean	SD
1	Accurate information is critical for effective risk management in construction projects.	92.73	4.51	0.85
2	Accurate and timely data support informed decisions that mitigate potential project risks.	93.63	4.50	0.83
3	Information mismanagement or overload leads to identification of incorrect risks, affecting project outcomes.	91.82	4.42	0.87
4	Effective decision-making based on accurate data has helped reduce risks in past projects.	89.54	4.42	0.87
5	Misinformation often leads to poor risk assessment and increased project uncertainty.	90.00	4.38	0.88
6	Inaccurate or incomplete information heightens the likelihood of unforeseen risks in construction projects.	90.00	4.38	0.86
7	Information overload makes it harder to prioritise risks effectively during project execution.	89.09	4.34	0.87
8	Poor information flow makes risk management more challenging.	87.28	4.34	0.86
9	Information overload makes it difficult to identify and mitigate risks during the project lifecycle.	87.27	4.33	0.87
10	Risk-management decisions are often influenced by misinformation or incomplete data.	87.73	4.30	0.91

The first-ranked item confirms that risk management is perceived to depend fundamentally on accurate information ($M = 4.51$, $SD = 0.85$). The second-ranked item adds the time dimension: 93.63% agreed that accurate and timely data support decisions that mitigate potential risks ($M = 4.50$, $SD = 0.83$). Together, these two items indicate that respondents did not treat information quality as a passive record-keeping issue. Information was viewed as an active input into risk-control decisions. The next group of findings shows how information disturbance can distort the risk process. Respondents strongly agreed that information mismanagement or overload can lead to the identification of incorrect risks ($M = 4.42$), while misinformation and incomplete information increase uncertainty and unforeseen risk exposure (both $M = 4.38$). Information overload was also associated with difficulty prioritising risks ($M = 4.34$) and difficulty identifying and mitigating risks across the project lifecycle ($M = 4.33$). Even the lowest-ranked item—misinformation or incomplete data influencing risk decisions—recorded a high mean of 4.30 and 87.73% agreement. The practical interpretation is that information problems can enter the risk cycle at several points: signal recognition, assessment, prioritisation and response.

4.3 Information-quality enablers and information-risk amplifiers

To sharpen interpretation, the items were grouped descriptively into information-quality enablers and information-risk amplifiers. The three enabling items accuracy as a requirement for risk management, accurate data supporting effective decisions, and reliance on accurate and timely data produced an average item mean of 4.48 and average agreement of 91.97%. The seven risk-amplifying items misinformation, incomplete data, overload, poor flow and mismanagement produced an average item mean of 4.36 and average agreement of 89.03%. The overall average of the ten-item means was 4.39, with average agreement of 89.91%. These figures are descriptive summaries rather than psychometric composite scores, but they provide a clear pattern: respondents simultaneously recognised strong benefits from high-quality information and substantial risk from weak information environments.

Table 3. Descriptive thematic summary of the risk-information profile

Theme	No. of items	Average item mean	Average agreement (%)
Information-quality enablers	3	4.48	91.97
Information-risk amplifiers	7	4.36	89.03
Overall information-risk profile	10	4.39	89.91

5. Discussion

5.1 Accuracy and timeliness as foundational risk-control capabilities

The strongest finding is the near-unanimous recognition that accurate and timely information underpins effective risk management. This result extends the construction information-management literature by showing that information quality is not merely associated with general efficiency; it is directly embedded in how professionals understand risk control. Chang et al. (2022) similarly argue that information quality is central to management decision-making, although they emphasise that accuracy alone is insufficient. The Bauchi findings support this broader position because the highest-ranked items combine accuracy with timeliness and decision usefulness. In practical terms, project information becomes valuable when it is both trustworthy and available before a risk response window close. This finding also complements Isah and Kim's (2023) view of construction risk management as a

knowledge-intensive process. Their work demonstrates that structured risk knowledge can support rapid retrieval and reuse. The Bauchi evidence suggests a corresponding organisational requirement: risk knowledge systems should not only store information but should protect its provenance, currency and decision relevance. A risk register populated with outdated or unverified information may create a false impression of control while weakening actual risk preparedness.

5.2 Information overload as a risk-prioritisation problem

The results show that information overload affects both risk identification and prioritisation. This distinction matters because a project team may possess large quantities of data and still fail to recognise the most consequential threats. Ke et al. (2023) provide experimental evidence that information load can increase cognitive load in construction dashboard use. The present findings translate that cognitive mechanism into a project-risk context: professionals reported difficulty distinguishing and prioritising risk-relevant information when information becomes excessive. The problem is therefore not simply that teams receive too much information, but that the information environment may not distinguish urgency, authority and consequence. The finding provides a useful counterpoint to technological solutionism. PMIS and common data environments can improve access and coordination, but they do not automatically solve overload. Al Ya'qoubi Hamood and Thiruchelvam (2023) show that PMIS can support managerial decision-making, while Jaskula et al. (2024) identify reliability and accountability challenges where multiple common data environments coexist. The combined implication is that digital platforms require filtering rules, role-based views and escalation logic. Without such design, digitalisation may transfer information fragmentation from paper-based channels into faster electronic channels rather than remove it.

5.3 Misinformation, incomplete information and uncertainty amplification

Misinformation and incomplete information were strongly linked to poor risk assessment, unforeseen risks and increased uncertainty. This supports the argument that information problems can act as risk multipliers. An inaccurate cost update, unverified material-availability report or incomplete design instruction may not remain an isolated communication error; it can alter procurement, scheduling, contingency planning and site decisions. Tanga et al. (2022) similarly show that poor information quality and mistrust of project data form part of the broader risk landscape of construction data management. The Bauchi results extend this reasoning by locating the effect within the risk-assessment process itself. The result also illustrates why the construction application of the infodemic concept should include both quantity and veracity. A high-volume but reliable information environment creates processing pressure, whereas a low-volume but misleading environment creates assessment error. The most difficult condition is their combination: decision-makers must determine what matters while simultaneously determining what can be trusted. This interpretation is consistent with Cinelli et al.'s (2020) wider demonstration that digital information environments can accelerate the circulation of mixed-quality information, even though the original application was outside construction.

5.4 Information flow and governance in an emerging construction market

Poor information flow also received a high mean score, indicating that information quality cannot be separated from communication architecture. A project may contain accurate information, but if it remains isolated within one stakeholder group, the relevant risk owner may not receive it in time to respond. This finding reinforces Celozza's (2024) emphasis on information requirements and exchange processes and aligns with Adekunle et al. (2022),

who associate structured information management with improved construction operations. In Bauchi, where formal digital platforms can coexist with informal communication practices, the governance of information handovers may be as important as the technology used to transmit the information. The Nigerian technology-adoption literature also suggests that this governance response must remain realistic. Bamgbose et al. (2024) identify skills, resources and collaboration as barriers to BIM adoption in Nigerian SMEs. Consequently, recommendations that depend exclusively on advanced digital systems may be difficult to implement uniformly. A more robust approach is layered: establish authoritative information sources and verification rules first, then use PMIS, BIM, common data environments, dashboards or AI-assisted tools to strengthen those rules. Technology should institutionalise good information governance rather than compensate for the absence of it.

6. Practical Information-Governance Implications

The findings support a risk-oriented information-governance pathway for construction organisations. The pathway is not presented as a statistically validated framework; rather, it is a practice model derived from the empirical ranking and supported by current literature. Its purpose is to translate the strongest information-risk concerns into implementable controls.

Table 4. Risk-oriented information-governance pathway for construction projects

Governance priority	Core action	Risk-management purpose	Illustrative mechanism
1. Source authority	Define who may originate, approve and revise critical project information.	Reduce ambiguity over which information can be trusted.	Approved source register; document ownership; revision responsibility.
2. Verification gates	Verify high-impact information before it becomes the basis of risk decisions.	Reduce misinformation and incomplete-data effects.	Cross-checking; approval workflow; evidence attachment; version control.
3. Risk-sensitive filtering	Separate risk-critical information from routine project traffic.	Reduce overload and improve prioritisation.	Priority tags; risk dashboards; role-based notifications; exception reporting.
4. Structured information environment	Maintain a controlled location for current project information.	Improve accessibility, consistency and traceability.	PMIS, CDE, BIM-linked records or controlled cloud repository.
5. Risk-information linkage	Connect risk-register entries to the information supporting each assessment.	Improve transparency of probability, impact and response decisions.	Source-linked risk register; knowledge graph; audit trail.
6. Communication and escalation protocol	Specify who communicates what, to whom, when and through which channel.	Prevent accurate information from being delayed or trapped in stakeholder silos.	Escalation matrix; response deadlines; formal change communication.

Governance priority	Core action	Risk-management purpose	Illustrative mechanism
7. Information literacy and human oversight	Build capacity to judge credibility, relevance and urgency.	Reduce uncritical reliance on digital output and informal claims.	Training; verification checklists; human review of AI/analytics outputs.

The first three priorities respond directly to the highest-ranked findings. Source authority and verification strengthen accuracy, while risk-sensitive filtering addresses overload and prioritisation. The next two priorities convert information into a traceable risk-management resource through controlled digital environments and evidence-linked risk registers. The final priorities recognise the organisational dimension: information must move through clear escalation channels, and professionals require sufficient information literacy to challenge questionable inputs. Emerging technologies can support classification, anomaly detection and retrieval, but their outputs should remain subject to professional review, particularly where project consequences are material (Aladayleh & Aladaileh, 2024; Isah & Kim, 2023).

7. Conclusion

This article examined information quality as a risk-mitigation capability in construction projects in Bauchi Metropolis. Across all ten risk-management items, respondents expressed strong agreement that risk-management effectiveness depends on the quality and manageability of project information. Accurate information and accurate, timely data were the two highest-ranked conditions, while misinformation, incomplete information, overload, poor information flow and mismanagement were consistently associated with weaker risk identification, prioritisation and mitigation. The findings therefore position information quality as a substantive component of construction risk practice rather than a peripheral communication concern. The central contribution is the reframing of construction information quality as a risk-control capability. In this view, information governance is not secondary to risk management; it is one of the mechanisms through which risk management becomes possible. Reliable risk decisions require authoritative sources, verification, filtering, traceability and timely communication. Digital tools such as PMIS, BIM, common data environments, dashboards and AI-supported analytics can strengthen these functions, but only when they operate within clear governance arrangements and are supported by competent users. For construction organisations in Bauchi and comparable emerging markets, the practical priority is therefore not simply to increase the quantity of available information. The more defensible strategy is to improve information fitness for risk decisions: ensure that critical information is accurate, current, traceable, prioritised and delivered to the responsible decision-maker. Such an approach can reduce the likelihood that project teams act on misinformation, overlook emerging threats or expend attention on low-value information.

References

- Adekunle, P., Aigbavboa, C., Akinradewo, O., Oke, A., & Aghimien, D. (2022). Construction information management: Benefits to the construction industry. *Sustainability*, 14(18), 11366. <https://doi.org/10.3390/su141811366>
- Al Ya'qoubi Hamood, B. E., & Thiruchelvam, S. (2023). Project information overload & role of PMIS in managerial decision-making: A study in construction companies of Oman. *International Journal of Management Thinking*, 1(2), 1–19. <https://doi.org/10.56868/ijmt.v1i2.19>
- Aladayleh, K. J., & Aladaileh, M. J. (2024). Applying analytical hierarchy process (AHP) to BIM-based risk management for optimal performance in construction projects. *Buildings*, 14(11), 3632. <https://doi.org/10.3390/buildings14113632>
- Asim, J., Ahmed, R. R., Streimikiene, D., Rasheed, S., & Streimikis, J. (2021). Assessing design information quality in the construction industry: Evidence from building information modeling. *Acta Montanistica Slovaca*, 26(2), 235–251. <https://doi.org/10.46544/AMS.v26i2.05>
- Bamgbose, O. A., Ogunbayo, B. F., & Aigbavboa, C. O. (2024). Barriers to building information modelling adoption in small and medium enterprises: Nigerian construction industry perspectives. *Buildings*, 14(2), 538. <https://doi.org/10.3390/buildings14020538>
- Celoza, A. (2024). Information management for digital asset development and delivery. *Automation in Construction*, 165, 105518. <https://doi.org/10.1016/j.autcon.2024.105518>
- Chang, J. Y., Merino Garcia, J., Xie, X., Moretti, N., & Parlikad, A. K. (2022). Information quality for effective asset management: A literature review. *IFAC-PapersOnLine*, 55(19), 235–240. <https://doi.org/10.1016/j.ifacol.2022.09.213>
- Cinelli, M., Quattrocioni, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L., Zola, P., Zollo, F., & Scala, A. (2020). The COVID-19 social media infodemic. *Scientific Reports*, 10, 16598. <https://doi.org/10.1038/s41598-020-73510-5>
- Isah, M. A., & Kim, B. S. (2023). Development of knowledge graph based on risk register to support risk management of construction projects. *KSCE Journal of Civil Engineering*, 27(7), 2733–2744. <https://doi.org/10.1007/s12205-023-2886-7>
- Jaskula, K., Kifokeris, D., Papadonikolaki, E., & Rovas, D. (2024). Common data environments in construction: State-of-the-art and challenges for practical implementation. *Construction Innovation*, 25(5), 1522–1541. <https://doi.org/10.1108/CI-04-2023-0088>
- Ke, J., Liao, P., Li, J., & Luo, X. (2023). Effect of information load and cognitive style on cognitive load of visualized dashboards for construction-related activities. *Automation in Construction*, 154, 105029. <https://doi.org/10.1016/j.autcon.2023.105029>
- Musa, M. M., Birma, A. I., & Ibrahim, I. I. (2021). Impacts of change management practices on construction project performance in Bauchi State, Nigeria. *Journal of Construction Project Management and Innovation*, 11(2), 36–48. <https://doi.org/10.36615/jcpmi.v11i2.437>
- Tanga, O., Akinradewo, O., Aigbavboa, C., Oke, A., & Adekunle, S. (2022). Data management risks: A bane of construction project performance. *Sustainability*, 14(19), 12793. <https://doi.org/10.3390/su141912793>
- Winarno, S., & Kusumadewi, S. (2024). Application of soft computing to address uncertainty in construction project management: A systematic literature review. *Civil Engineering Journal*, 10(6), 2040–2065. <https://doi.org/10.28991/CEJ-2024-010-06-020>