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**RESEARCH ARTICLE**

# Digital Transparency and Trust: Perspective of Stakeholder Social Media Behaviour on Public Perception of Construction Projects in Ghana

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**ABSTRACT**

In the construction industry, social media has been transforming stakeholder-public communication, especially in developing contexts where trust and transparency are paramount. However, there is limited empirical data on how stakeholder social media behaviour influences public perception on construction projects in Ghana. This study focuses on how digital stakeholder communication influences public trust and perception of construction projects. The study adopted a quantitative cross-sectional study design, targeting adult social media users in urban and peri-urban Ghana exposed to construction works. Data were obtained through a structured online questionnaire and analysed through Multiple Linear Regression. The study evaluated the impact of five stakeholder social media behaviours, namely frequency of updates, transparency, responsiveness, engagement, and tone of messaging. The findings indicate that stakeholders' social media behaviour explains about 67% of the variation in public perception. Transparency, responsiveness and tone of messaging show strong and statistically significant positive impacts on public perception, while frequency of updates and engagement metrics do not significantly predict perception. The study concludes that the quality and credibility of stakeholder communication, rather than posting frequently, is more critical in building public trust in construction projects. The results will help are useful in to advance digital communication approaches in Ghana and other developing settings.

**Keywords:** Construction project, Digital stakeholder behaviour, Public perception, Social media communication

## 1.0 Introduction

The widespread use of social media in today's global environment has changed traditional models of communication, drastically impacting several industries, including the construction industry (Al-Quran, 2022; Karimi et al., 2025). Globally, construction stakeholders, including government agencies and private developers, use social media to share information and engage the public on ongoing projects (Ebekozien et al., 2025; Oke et al., 2025). This practice enhances transparency and participation while improving project outcomes. Simultaneously, it also introduces challenges such as rapid spread of misinformation, heightened stakeholder tensions and adverse public responses in events of mismanaged and poorly timed communication (Oguntona et al., 2024).

This type of communication is no exception in construction projects across Africa, where social media is gradually being integrated into construction project management (Ebekozien et al., 2025; Oguntona et al., 2024). However, the levels of adoption and its overall effect are still disproportionate because of technological access, digital literacy and sociocultural background.

Urbanization and the growing demand for infrastructure are rapidly expanding the construction industry in West African countries (El-Bouayady & Radoine, 2023; Ofoezie et al., 2022). This growth necessitates real-time updates, feedback cycles and broader stakeholder participation, hence the increasing use of social media, which serve as a significant tool of communicating with various stakeholders. However, poor Internet access, uneven digital literacy and weak regulatory frameworks serve as significant barriers (James, 2021; Obiakor, 2024).

In Ghana, the construction industry is essential to national development, as it promotes urban infrastructure and rural development (Frimpong et al., 2020; Williams et al., 2020). However, factors such as poor communication strategies, limited stakeholder participation and persistent reduction of public trust have contributed to delays in construction projects, cost overruns and resistance to construction projects by local communities (Bimpong & David, 2024; Dick-Sagoe et al., 2023). These challenges necessitate a more profound and evidence-based insight into how stakeholders' behaviour on digital platforms shapes public sentiment and project outcomes.

Currently, there is limited empirical literature examining the relationship between stakeholder behaviour on social media and public perception of construction projects. Few studies have analysed how the use of social media influences public attitude, trust or participation. This gap hinders the development of effective communication strategies and prevents stakeholders from fully utilizing social media to encourage transparency and collaboration. In addition, the absence of standardized digital communication guidelines in the construction industry risks miscommunication, misunderstanding and reputational damage, which may significantly derail project schedule and stakeholder relationships.

Some empirical studies in Ghana emphasise the relevance of effective communication and engagement in shaping the success of construction projects. For instance, Bimpong and David (2024) show that although stakeholders acknowledge the essence of communication, they often fail to implement strategies that facilitate effective public communication. Similarly, Dick-Sagoe et al. (2023) cited poor stakeholder engagement as a significant cause of project failure. Despite the growing use of social media by construction stakeholders in Ghana, how public perceptions are formed through digital communication behaviours remains unknown. The gap in understanding opens the construction sector to reputational, relational and economic damage when handled poorly.

The study therefore seeks to investigate the impact of stakeholder social media behaviour on public perception of construction projects in Ghana, specifically by analysing digital communication trends, assessing their effect on public trust and recommending effective social media engagement strategies. The study therefore provides actionable insights for promoting digital engagement. Furthermore, this study contributes to the development of evidence-based guidelines, ensuring transparent, inclusive and context-appropriate stakeholder communication.

## 2.0 Literature Review

### 2.1 Stakeholder Theory

Stakeholder Theory (Freeman, 1984) posits that an organisation should be interested in the concerns and interests of all stakeholders who are affected by its decisions and actions, including the organisations' shareholders. In the context of construction management, the theory offers a relevant framework for understanding the importance of stakeholder communication and its impact when poorly managed. This is because, at every stage of a construction project, there are several actors whose interests are shaped by the project outcomes. These include developers, contractors, government agencies and the host community. These stakeholders' interactions are increasingly mediated by digital communication

platforms, hence the extension of Stakeholder Theory to the digital domain.

Digital communication tools have introduced new dimensions such as real-time interaction and broader participation to stakeholder management. Among these tools, social media has become a dominant platform through which construction firms fulfil their obligations to various stakeholders. When effectively integrated into project management, it enhances collaboration between project managers and stakeholders (Prebanić & Vukomanović, 2022). This enhanced collaboration offers the opportunity to increase trust, enhance transparency and effectively respond to public concerns. Despite the advantages of digital communication, its integration into construction project management remains understudied. Collinge (2020) emphasises the sensitive and ethically charged nature of stakeholder engagement, which is mostly influenced by corporate social responsibility and ethical decision-making. Social media further adds complexity by demanding authenticity, responsiveness and strategic transparency elements that may be difficult to uphold consistently on digital platforms.

Additionally, limited empirical work explores the application of Stakeholder Theory principles in the context of digital communication (Tumpa & Naeni, 2025; Collinge, 2020) in order to ensure effective and ethical social media strategies within the management of construction projects.

These limitations necessitate complementary theoretical perspectives such as the Legitimacy Theory and Trust Theory. Legitimacy Theory (Suchman, 1995) argues that firms ensure their activities are perceived as appropriate within socially constructed systems of norms and values. In the context of digital communication, this means that stakeholders' social media behaviour is not merely informational but also a strategy to maintain legitimacy by aligning the organisational identity with public expectations. Also, Trust Theory (Mayer et al. 1995) complements this by distinguishing between institutional and relational trust. This distinction is relevant in Ghana, where institutional trust in construction stakeholders is often fragile, hence the importance of building relational trust through credible digital engagement.

Stakeholder Theory therefore offers a robust framework for examining the influence of social media behaviour on public perception, since organisations are expected to engage with stakeholders affected by construction activities. The affordances of social media make it a principal channel for such engagement. Furthermore, behaviours such as transparency, responsiveness, tone of messaging, engagement, and frequency of updates can be understood as the digital operationalisation of stakeholder management obligations. Finally, public perception serves as a measurable indicator in determining whether the obligations are meaningfully fulfilled.

### 2.2 Social Media as a Tool for Public Engagement and Perception Shaping in Building Construction

Social media use by stakeholders has become quite crucial in shaping social interaction and community narratives in the building construction industry. Compared to large-scale civil infrastructure projects that are usually based on a national or government discourse, building constructions usually have localized impact, including noise, displacement or land-use controversies (Awuah et al., 2024; Ihuoma et al., 2021; Ebenezer, 2020). Stakeholders such as developers, project managers and municipal authorities face a unique opportunity to address public concerns, communicate the benefits of projects and highlight major milestones via social media platforms.

Digital presence must be supported by active communication to foster greater public trust (Bello et al., 2025). Transparency, particularly when stakeholders can evidently articulate both the benefits and temporary disturbances linked with a project, fosters positive perceptions. However, the specific social media behaviour that contributes to this effect, such as forms of updates, responsiveness to comments by the public or the tone of messaging, has not been well explored. This necessitates the need for digital strategies that consider community values and concerns due to the impact of building projects on hyper-local communities. The lack of empirical studies in this field demonstrates a critical gap in the literature, that is, understanding how

subtle online behaviours contribute to public acceptance of building construction projects.

### 2.3 Digital Communication and Stakeholder Collaboration in Building Construction Teams

Building construction projects involve multiple parties, including architects, engineers, contractors and government agencies, with project performance heavily relying on successful collaborations among these parties (Faris et al., 2022; Jackson, 2020). The emergence of online communication platforms such as social media and project specific applications has influenced how professionals coordinate their efforts. Due to these platforms, construction stakeholders enjoy real-time updates, streamlining problem-solving and enhancing transparency of workflow.

Karimi et al. (2025) reveals that social media allows internal feedback loops and significantly enhances project efficiency, particularly for geographically dispersed teams. However, the effects on external stakeholders are not clearly known. Dissemination of internal communications to the public, such as progress reports or delay notices, serves as an important connection between project teams and community stakeholders.

The behaviour of internal actors on public-facing platforms may have a twofold purpose: aiding operational coordination while simultaneously developing community trust and perceptions. However, limited studies have focused on the degree to which enhanced internal communication is translated into better external relationships. This gap implies the necessity of conducting more specific studies on the impact of internal stakeholder practices on public perception in the context of construction buildings.

### 2.4 Strategic Social Media Use in Developing Contexts for Transparency and Trust

Most building construction projects in developing areas tend to experience delicate social and environmental concerns such as displacement, urban gentrification and disruption of heritage sites. Within such environments, the effective use of social media becomes a powerful a tool for communicating and building trust with the population. Bimpong and David (2024) found that efficient utilization of social media can improve crisis communication as well as stakeholder confidence, particularly in high-impact urban housing and public infrastructure development.

Despite this potential, many projects underutilize social media due to institutional reluctance or limited understanding of the constituents of effective digital interaction. Demmers et al. (2020) provide a finer touch by demonstrating that only specific forms of content, i.e., informative and entertaining posts, generate meaningful audience engagement. Efforts to seek social media feedback or encourage participatory design through social media are less likely to succeed, especially in politically sensitive or resource-constrained contexts.

This prompts a significant contextual issue for building construction projects in urban, high-density environments. How can stakeholders create social media strategies that are both transparent as well as participatory and trust-building? According to the literature, the use of particular behaviours in different project phases is most beneficial in maintaining public interest and support, making it necessary to identify the behaviours that are most successful in project renewal (Volden & Welde, 2022). This remains an unexplored issue especially in developing contexts where public buy-in is critical in defining project success.

### 2.5 Empirical Review of Social Media, Stakeholder Communication and Public Perception

Emerging global empirical studies emphasise the relevance of social media as a communication tool for construction stakeholders. For instance, Prebanić and Vukomanović (2022) demonstrated that strategic usage of social media enhances communication between project teams and external stakeholders. This implies that transparent and timely digital communication influences stakeholder satisfaction and project acceptance. Similarly, Karimi et al. (2025) show that effective communication improves team performance and stakeholder coordination. Although the study focused on internal team dynamics, it extends such relationships to the domain of public perception.

In African construction, Oke et al. (2025) identified transparency and responsiveness as the most valued communication behaviours Nigeria's architecture, engineering, construction and operations (AECO) sector. Oguntona et al. (2024) further found that organisational resistance and digital literacy constraints limit effective stakeholder engagement in South Africa.

These findings resonate strongly with the Ghanaian context, where empirical studies highlight the importance of communication and the gaps in its implementation. For example, Bimpong and David (2024) found that although stakeholders acknowledge the importance of communication, the digital strategies for building public trust are underdeveloped. Also, Dick-Sagoe et al. (2023) identified poor stakeholder communication as a leading factor of project failure in Ghana. These studies highlight the essence of communication and imply that structural and capacity-related challenges may hinder the effective use of digital tools.

Furthermore, cross-sectoral studies offer additional insights. For example, Demmers et al. (2020), a quantitative analysis of social media posts, found that informative and value-driven posts tend to generate meaningful engagement. However, they cautioned against interpreting high engagement volumes as implying positive sentiment. Uddin et al. (2023) further noted that the reliability and nature of information shared digitally have more influence on audience perceptions than volume alone. This reinforces the argument that communication quality outweighs quantity.

The empirical literature consistently identifies transparency, responsiveness and tone of communication as the most consequential dimensions of digital stakeholder engagement, even as it questions the predictive relevance of frequency and engagement metrics. This study assesses how different dimensions of social media communication influence public perception.

## 3.0 Methodology

### 3.1 Research Design

This study adopted a quantitative cross-sectional research design to investigate how stakeholder's social media behaviour affects public perception of construction projects in Ghana. The quantitative design was most suitable to the study's objective because it aids in the collection of measurable data and also helps in statistical analysis to identify patterns and relationships among the variables specified in Table 2 (Creswell, 2014). The cross-sectional design captures perceptions at one point in time, i.e., public perceptions of current digital communication practices within a particular sociocultural setting (Bryman, 2016).

### 3.2 Population and Sampling of the study

The study targeted adult social media users who were resident in urban and peri-urban areas of Ghana and reported having knowledge of at least one ongoing or recently completed construction project. The urban and peri-urban areas were chosen because of their higher access to Internet service, social media penetration and exposure to construction activities, all of which increased the possibility of respondents making meaningful evaluation of stakeholder communication (Aruleba & Jere, 2022; Obiakor, 2024).

With the absence of a defined sampling frame for the targeted population, stratified random sampling was employed to ensure a proportionate demographic representation. The strata were defined by factors such as age, educational background and residential location. Within each stratum, respondents were recruited through social media platforms and community-based digital networks, where the questionnaire link was shared and individuals self-selected to participate. Stratified random sampling was deemed most suitable for the study due to the heterogeneous nature of the target population. The method also helped in reducing sampling biases (Creswell, 2014; Saunders et al., 2009).

The final sample size was determined using Cochran's (1977) formula for calculating sample size when the population is infinite.

Equation 1: Cochran's (1977) formular

$$n = \frac{Z^2 * p * q}{e^2}$$

Based on the formula, at a 95% confidence level and a 5% desired margin of error, the sample size

adopted for the study was 384 respondents. A total of 402 valid responses was obtained, which was above the required minimum. This compensated for anticipated incomplete responses and non-response bias.

### 3.3 Data Collection Instrument and Procedure

A structured self-administered questionnaire was used to collect data and was distributed electronically across six social media platforms from 2nd June to 26th, September 2025. The social media platforms adopted for the study were WhatsApp, Facebook, LinkedIn, Instagram, X (Twitter) and TikTok.

A preliminary questionnaire containing screening questions such as "Are you 18 years or older?", "Do you live in an urban or peri-urban area of Ghana?" and "Are you aware of an ongoing or recently completed construction project in your locality?" was used to ensure eligibility. Respondents who satisfied all three criteria proceeded to the main questionnaire, while those who did not were excluded.

WhatsApp was utilised as the primary channel due to its popularity as a communication tool in Ghana (Anson-Boateng & Buatsi, 2023). The questionnaire link was shared in community-based WhatsApp groups such as neighbourhood associations and church groups. Members of these platforms were voluntarily invited to participate, with the link to the questionnaires reshared monthly to maximise the response rates.

Due to Facebook's potential to reach a broader urban audience through targeted posting (Schnieder & Harknett, 2022), the questionnaire link was shared on Facebook pages such as real estate and property development groups, as well as urban community forums. To encourage participation, a brief description of the study, as well as its intended purpose, was added to the post. LinkedIn was selected to engage active professionals in the construction industry (Sauer et al., 2025). The link to the questionnaire was shared with construction managers, property developers, urban planners and architects through direct messages. This was particularly useful in reaching respondents with direct and informed knowledge of communications in construction projects. X was used to reach respondents actively engaged in public discourse on urban development, infrastructure and construction.

Using relevant hashtags, such as #GhanaRealEstate and #GhanaConstruction, the link to the questionnaire was posted with a brief description. On Instagram, a younger urban audience (Anter & Kümpel, 2025) was reached through story posts with a call to action and also via direct messages to followers engaged with real estate, urban lifestyle and construction-related content. Further, a short video describing the study and its purpose was uploaded on TikTok, with the link to the questionnaire included in the caption and also the profile bio for easy accessibility.

Online questionnaires are commonly recognized as an efficient method for accessing digitally active populations and making data collection convenient in perception-based studies (Bryman, 2016; Saunders et al., 2009). The main questionnaire was in three sections: demographic factors and habits of using social media, Indicators of social media behaviours, and public opinion indicators of construction projects.

**Table 1:** Distribution of Responses by social media platform

| Platform | Valid Responses | Percentage (%) |
|---|---|---|
| WhatsApp | 126 | 31.34 |
| Facebook | 109 | 27.11 |
| LinkedIn | 70 | 17.41 |
| Instagram | 43 | 10.70 |
| X | 31 | 7.7 |
| TikTok | 23 | 5.72 |
| **Total** | **402** | **100** |

### 3.4 Variable Definition and Measurement

All constructs were assessed using a five-point Likert-scale, with 1 (Strongly Disagree) being the lowest point and 5 (Strongly Agree) being the highest. Likert scales are suitable in assessing attitudes, perceptions and evaluative judgments and are common in studies related to stakeholder engagement and communication (Hair et al., 2019). The operationalization of variables was performed as shown in Table 2.

**Table 2:** Operationalisation of Variables

| Variable Category | Variable Name | Definition | Measurement Items (Sample) |
|---|---|---|---|
| Independent | Frequency of Updates | How often stakeholders share information about construction projects | "Stakeholders provide timely updates on project progress" |
| Independent | Transparency | Clarity and openness in stakeholder communication | "Information provided is complete and truthful" |
| Independent | Responsiveness | Speed and adequacy of replies to public inquiries | "Stakeholders respond promptly to questions or concerns" |
| Independent | Engagement | Interaction level with the public through social media | "Stakeholders encourage public feedback and discussion" |
| Independent | Tone of Messaging | Sentiment and style used in communication | "Messages are professional and respectful" |
| Dependent | Public Perception | Public opinion and trust toward construction projects | "I trust the information provided about the project" |

Measurement items (as shown in Table 2) were adapted from the literature on digital transparency, stakeholder responsiveness and tone of communication (Prebanić and Vukomanović, 2022), and customized to reflect the sociocultural context of Ghana and realities of the construction sector. To ensure clarity and contextual relevance, a pilot study was carried out as observed in best practices survey research (Saunders et al., 2009).

From Table 2, Public perception, which is the dependent variable, was operationalized as a composite measure involving stakeholders' trust of project, satisfaction with communication, and expressed support for construction projects. These dimensions are consistent with previous literature that frames the concept of public perception as a multidimensional attitudinal response to the quality of communication and the behaviour of stakeholders (Bimpong and David, 2024; Dick-Sagoe et al., 2023).

Measures of all variables were perceptual in nature, which is in line with the focus of Stakeholder Theory on stakeholder interpretations as opposed to objective organizational intent (Freeman, 1984).

Internal consistency reliability was evaluated using Cronbach's alpha, with all constructs reaching the recommended Cronbach alpha of 0.70, which demonstrates acceptable reliability (Nunnally & Bernstein, 1994).

### 3.5 Data Analysis Techniques

The analysis of data was performed in STATA. First, descriptive statistics were generated to describe respondents' demographics and evaluate the distributions of the variables. Then, the hypothesis of the study was tested using the Multiple Linear Regression (MLR) model (Equation 2). The regression model for this study was adapted from established studies such as Hair et al. (2019) and Nathans et al. (2012).

*Equation 2*

$$Y = \beta_0 + \beta_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + \varepsilon$$

From Equation 2, $Y$ represents the dependent variable, Public Perception. $\beta_0$ is the intercept of the model, while $\beta_1$ to $\beta_5$ are the regression coefficients. $X_1$ to $X_5$ are the independent variables adopted for the study, where $X_1$ = Frequency of updates, $X_2$ = Transparency, $X_3$ = Responsiveness, $X_4$ = Engagement, and $X_5$ = Tone of Messaging, with $\varepsilon$ as the error term.

The MLR is well suited for this study because of the multiple independent variables and single continuous dependent variable adopted. This makes it appropriate for simultaneously examining the influence of stakeholders' social media behaviours on public perception. In addition, MLR allows the assessment of each predictor's unique contribution while statistically controlling for the effects of other predictors. This aided in producing more precise and reliable estimates. Furthermore, MLR generates beta coefficients that quantify the strength and direction of each relationship, with an adjusted $R^2$ statistic that measures the overall explanatory power of the regression model (Equation 2). These make MLR appropriate for identifying the specific digital behaviours that significantly predict public perception. Also, this approach is consistent with empirical studies on digital communication and stakeholder perceptions in the construction industry (Karimi et al., 2025; Oke et al., 2025).

Diagnostic tests were performed to ensure that conditions of linear regression were fulfilled, before the final regression analysis was run. These were linearity tests, homoscedasticity tests, residual independence tests and normality tests. The values of Variance Inflation Factor (VIF) were less than 5, which means that there was no concern with multicollinearity (Hair et al., 2019). Statistical significance was determined at a 5% level ($p < 0.05$) and model explanatory power was measured based on the adjusted $R^2$ statistic.

### 3.6 Ethical Considerations

Strict ethical principles were adhered to in social research. The involvement was voluntary, informed consent was taken and the respondents were guaranteed anonymity and confidentiality. No personal identifiable data were gathered. As such, the procedure was in line with existing ethical principles of human-subject research (Bryman, 2016; Saunders et al., 2009).

## 4.0 Findings

This section presents the findings of the MLR analysis performed to investigate how stakeholder behaviour on social media impact public perception of construction projects in Ghana. The statistical results are interpreted through the wider perspective of the sociocultural and online communication context of the nation.

### 4.1 Descriptive Statistics

Table 3 presents the descriptive statistics for the variables included in the regression analysis. The results show that Transparency had the highest mean score (MS = 3.89, SD = 0.74), implying that respondents perceived stakeholder communication as relatively open and honest. The mean score for Responsiveness (MS = 3.76, SD = 0.82) and Tone of messaging (MS = 3.71, SD = 0.79) were moderately high. Frequency of updates (M = 3.54, SD = 0.91) and Engagement (M = 3.48, SD = 0.94) had the lowest means and highest standard deviations, indicating a greater variability in respondents' perceptions of these behaviours. The mean of public perception (MS = 3.68, SD = 0.83) reflects a moderate positive overall assessment of construction project stakeholders among the sampled population

**Table 3:** Descriptive Statistics

| Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| Frequency of Updates | 3.54 | 0.91 | 1 | 5 |
| Transparency | 3.89 | 0.74 | 1 | 5 |
| Responsiveness | 3.76 | 0.82 | 1 | 5 |
| Engagement | 3.48 | 0.94 | 1 | 5 |
| Tone of messaging | 3.71 | 0.79 | 1 | 5 |
| Public Perception | 3.68 | 0.83 | 1 | 5 |

***Source:*** Field data, 2025

### 4.2 Fitness and Variance Explained

As can be seen in Table 4, the outcome of the regression analysis shows a good fit of the model. The adjusted $R^2$ value implies that 68 percent of the variation in the public perception can be attributed to the overall effect of the five stakeholder social media behaviours under study. Such explanatory ability reflects a strong model and shows the importance of digital communication strategies in defining Ghanaian public perception regarding construction projects. The implication of this finding is obvious: That a significant effect is exerted on people's attitudes by how stakeholders communicate via social media, the frequency of their posts, the clarity and transparency of their messages, how responsive they are to public comments, the tone they use, and the degree of engagement they establish. These results confirm the hypothesis that stakeholder behaviour in the digital realm is a key defining factor of public trust, satisfaction and support in communication about construction projects in the Ghanaian context, where social media is becoming a key part of the discourse.

**Table 4:** Model Summary

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error of Estimate |
|---|---|---|---|---|
| 1 | 0.83 | 0.69 | 0.68 | 0.431 |

***Source:*** Field data, 2025

### 4.2. Significance of the Regression Model

The Analysis of Variance (ANOVA) test was performed to evaluate the statistical significance of the regression model. The F-test outcomes shown in Table 5 prove that the model is statistically significant, which means that the set of independent variables of the frequency of updates, transparency, responsiveness, tone of messaging, and engagement significantly contributes to the variations in public perceptions of construction projects. The results indicate that stakeholders' social media behaviours have a statistically significant effect on public perceptions. The overall model is significant ($F = 173.18$, $p<0.01$), suggesting that frequency of updates, transparency, responsiveness, engagement, and tone of messaging jointly explain variation in public perception. This means that stakeholders' social media activities play a meaningful role in shaping public reaction and assessment of construction projects posted online.

In the rapidly evolving digital communication landscape of Ghana, this observation supports the significance of strategic, responsive and transparent social media communication as a tool for managing stakeholders and public relations in the construction industry.

**Table 5:** Analysis of Variance

| Model | Sum of Squares | Df | Mean Square | F-Test | Sig. |
|---|---|---|---|---|---|
| Regression | 161.15 | 5 | 32.23 | 173.18 | .000 |
| Residual | 73.49 | 396 | 0.186 | | |
| **Total** | **234.64** | **401** | | | |

***Source:*** Field data, 2025

### 4.3 Regression Coefficients and Predictor Analysis

This part presents the contribution of each independent variable to the regression model. The p-values and beta coefficients (β) provide understandings of specific stakeholder social media behaviour that significantly influence how people perceive construction projects in Ghana.

From Table 6, the strongest predictor of public perception was Transparency ($\beta = 0.342$, $p<0.001$). This emphasises the importance of openness and honesty of construction stakeholders in shaping public opinion. This aligns with Bimpong and David (2024), who found transparency to be a critical factor in building public trust in Ghana. Similarly, Bello et al. (2025) demonstrated that open digital communication minimises public opposition to construction projects in Nigeria.

The next significant predictor was Responsiveness (β=0.268, p<0.000), suggesting that stakeholders who are quick and adequately address public concerns generate meaningful public perception. Such a real-time interaction fosters a sense of inclusion and strengthens the bond between project teams and community members. This finding aligns with Prebanić and Vukomanović (2022), who found that real-time responsiveness on digital platforms increases stakeholder satisfaction in construction project communication.

Another important predictor was the tone of messaging (β = 0.214, p< 0.000), indicating that the style, sentiment and cultural appropriateness of stakeholder communications improve public perception. This implies that the tone in which stakeholders communicate matters as much as what they communicate. This is particularly true in Ghana, where society values polite language and etiquette. This reinforces the findings of Demmers et al. (2020), which suggests that emotionally sensitive and audience-appropriate messaging produces stronger engagement.

Engagement, indicated by the number of likes, shares and comments, had a positive non-significant impact on public perception (β = 0.118, p = 0.063). While interactive digital behaviours are typically welcomed, they seem to have no effect on the development of public attitudes without substantive content. This diverges from Demmers et al. (2020), who suggest that higher engagement levels indicate stronger audience-brand relationships. This divergence may be an indicator of unequal digital literacy rates of the demographic populations, where passive consumption of the content is prevalent compared to active engagement. In addition, interaction devoid of transparency or accountability can be seen as a mere facade instead of engaged interactions.

Interestingly, frequency of updates did not play an important role as a predictor (β = 0.081, p = 0.101). This implies that posting regularly does not in itself tend to enhance the opinion of people; in fact, too many updates devoid of relevant and credible information may be considered as clutter or even as a tactic to avoid problems. This diverges from Karimi et al. (2025) and Prebanić and Vukomanović (2022), who suggest that regular communication promotes stakeholder interest and reduces information gaps. However, it aligns with Uddin et al. (2023), who demonstrate the importance of quality communication, especially in building trust and support for construction projects.

**Table 6:** Coefficients of Regression Model

| Predictor Variable | Unstandardized Coeff. (B) | Std. Error | Standardized Coeff. (Beta) | T | Sig. (p-value) |
|---|---|---|---|---|---|
| (Constant) | 1.012 | 0.109 | — | 9.28 | 0.000 |
| Frequency of Updates | 0.076 | 0.029 | 0.081 | 2.59 | 0.101 |
| Transparency | 0.312 | 0.031 | 0.342 | 9.94 | 0.000** |
| Responsiveness | 0.266 | 0.043 | 0.268 | 6.19 | 0.000** |
| Engagement | 0.104 | 0.029 | 0.118 | 3.59 | 0.063 |
| Tone of Messaging | 0.192 | 0.039 | 0.214 | 4.92 | 0.000** |

Significant at p<0.05 = * at p<0.01 = **
***Source:*** field data, 2025

## 5.0 Discussion

The findings of this study both align with and diverge from existing literature on digital communication tools in construction project management. While the results support established theoretical approaches, they also emphasise the need to adapt certain frameworks to the Ghanaian context. These patterns of convergences and divergences are not merely theoretical but reflect the deeper sociocultural, infrastructural and communicative realities within Ghana.

The study found a higher positive association between transparency and public perception, as has been observed in prior studies in which transparency was placed as a pillar of trust in stakeholder interactions. Bello et al. (2025) highlighted the importance of open digital

communication in reducing opposition to construction efforts, whereas Collinge (2020) demonstrated how transparent communications can impact project acceptance. This study supports such studies, especially in the Ghanaian context, where transparency is not only a matter of clarity or completeness but also of emotional authenticity and cultural relevance. The public is particularly sensitive to indications of neglect or exploitation and therefore transparency has to appeal not merely to reason but also to the heart of the public, taking into account lived conditions and societal concerns.

In the same manner, the findings on responsiveness are consistent with the existing literature. Prebanić and Vukomanović (2022) explain that the immediacy provided through social media enhance stakeholders' responsiveness and public engagement. Simultaneously, Oke et al. (2024) found that providing timely responses to public concerns tends to enhance trust, especially in controversial projects. In the Ghanaian setting the concept of responsiveness seems to perform both practical and symbolic roles. While it is crucial to respond to particular questions or complaints, even small compliments on public contributions can dramatically increase the level of legitimacy. This is a sign of communal values in the Ghanaian society, where recognition or hearing is a social virtue. Therefore, responsiveness does not have to be elaborate to be effective but should show attentiveness and respect.

The importance of tone to the formation of societal perception is in line with the global results but also adds culturally entrenched aspects. Demmers et al (2020) observed that emotionally sensitive messages enhance receptivity. In this study, the argument is furthered by demonstrating that in Ghana tone is not merely a stylistic device but a cultural code. In a culture that values respectful communication, humility and social harmony, the style of a message will be an important indicator of stakeholder authenticity and credibility. Unnecessarily bureaucratic or dismissive, emotionally coloured communications have the potential to turn audiences away. However, culturally aware messages put across in a humble and relationship-oriented manner would increase involvement and trust.

It bears stating that the observation that frequency of updates did not significantly affect public perception diverges from findings in the existing literature. For example, Karimi et al. (2025) and Prebanić and Vukomanović (2022) reported that frequent communication maintains the interest of the people and closes information gaps that could otherwise give way to misinformation. However, this study concludes that in Ghana, people seem to separate volume and value. Constant empty or insincere posts can be considered noise or even as a manipulative distraction. This divergence can be explained by insufficient access to data or a cultural aversion towards meaningful as opposed to routine communication. In an environment where the level of trust among the people is usually low, the quality and perceived integrity of communication is a much bigger concern than its frequency.

The insignificance of the effects of engagement metrics, such as likes, shares and comments on public perceptions, also contradicts much of the literature, which tends to view digital engagement as a reflection of community support. Demmers et al (2020) believe that increased levels of engagement are usually indicators of good stakeholder-public relations. This premise is not the case in Ghana, however. The measures of engagement fail to reflect the sentiment as there are different levels of digital literacy or familiarity with platforms. A large number of users are observers and not contributors, while others may be sceptical of superficial performances of interactivity that lack substantive dialogue. This result poses important questions concerning excessive dependence on the use of engagement measures in the study of perceptions and highlights the need for more qualitative and culturally responsive methods to evaluate popular opinion in a situation where digital expression is limited.

In addition, although stakeholder theory usually presupposes that egalitarian and dialogic communication is preferable, this study recommends that in Ghana hierarchical yet respectful communication may be helpful as well. In contrast to Western models, which focus on bottom-up participation, Ghana audiences can react positively to top-down messages as long as they are presented in a transparent, responsive and culturally sensitive manner. This subtlety questions the

applicability of stakeholder theory and demands adaptive models which can accommodate local expectations concerning authority, communication and social order.

Finally, it is notable that the adjusted $R^2$ of the study is 0.67, compared to previous quantitative studies that reported lower explanatory power. This implies that in Ghana, the variables under study, particularly transparency and responsiveness, are quite salient in influencing public opinion. The model might be strong due to the fact that Ghanaian communities are very sensitive to infrastructure and development stories where trust in project stakeholders is usually established and easily lost. However, this large explanatory power might not be applicable to other settings with new media systems or patterns of more disaggregated public attention.

### 5.1 Theoretical Implications

The research adds value to the dynamic stakeholder communication and public perception of construction project management by extending Stakeholder Theory application to the field of digital communication, specifically in a developing country context. Conventionally, Stakeholder Theory explains that it is always important to consider and respond to the needs and interests of all individuals or groups impacted by organizational decisions (Freeman, 1984). This study operationalizes that principle by defining digital behaviours such as transparency, responsiveness and tone of messaging, which contribute meaningfully to public perception in the contemporary social media arena.

The results prove that digital transparency and responsiveness have become fundamental and not subsidiary aspects of trust-building in stakeholder engagement. It alters the theoretical context of Stakeholder Theory to include online behavioural aspects as part of legitimacy and influence in contemporary social discourse. The study offers a more behaviourally-based and specific interpretation of stakeholder influence because it demonstrates that these practices are not just communicative strategies but also statistically significant predictors of how the public perceives them.

Besides, the study opposes the universalist inclinations of current stakeholder communication models, most of which assume that communicative actions are similar within geographic and cultural settings. The Ghanaian example highlights the significance of contextual factors, including cultural norms, digital literacy levels and historical trust in institutions. These factors were observed to have significant influence in the interpretation of, as well as the response to, messages from stakeholders. The results therefore affirm the context-sensitive application of Stakeholder Theory, that is, not only appreciating but also prioritising the mediating role of local sociocultural and infrastructural dynamics. This theoretical improvement enriches the framework and enables it to be more explanatory of the various public expectations in emerging economies.

The analysis also offers valuable information about the widely held belief on the effectiveness of digital communication. The statistically insignificant effect of the engagement metrics and the frequency of updates necessitates a theoretical re-evaluation of conventional proxies of digital communication success. Although existing studies tend to associate volume of interaction with impact, the findings indicate that substance, relevance and relational intent are more important. This creates a significant distinction between performative digital presence and meaningful engagement, thus requiring the provision of a more sensitive interpretation of what constitutes influence and connection in digital stakeholder relations.

### 5.2 Practical Implications

The study provides context-specific recommendations for stakeholders in the construction industry, seeking to improve their reputation and relationship with the public via social media.

First, transparency must be one of the foundations of any digital communication strategy. It is recommended that stakeholders actively share not only the milestones and the accomplishments of the project but also the possible challenges and delays and setbacks along with clear explanations and solutions. Communication should always be transparent, honest and regular, including both good and bad, as this will

create long-term credibility and trust in the community.

The element of responsiveness also proved to be an important aspect of good digital engagement. Stakeholders must be keen to put in place mechanisms that will support prompt responses to public queries and feedback. Even short-term recognition will significantly help in raising public sentiment as it demonstrates attentiveness and accountability. This should ideally involve having specific staff to keep track of public comments and respond accordingly in case of a critical project that might interfere with daily activities such as closing a road or causing power interruptions.

The tone of messaging is also important as culture demands humility and mutual regard in the communication process. Practically, this means using language that is easy to understand and free of emotional overtones instead of being overly bureaucratic or emotional. It is also necessary to use storytelling, localized metaphors and statements that show empathy in order to ensure that messages align with community values and enhance the relationship between stakeholders and the public.

Although it is always tempting to focus on frequent posting in the drive for likes and shares, this study demonstrates that these metrics alone are not very important. Instead, stakeholders ought to concentrate on the fact that every communication, irrespective of the frequency of updates, must be meaningful, relevant and based on the true value of information. The quality of feedback and its impact should determine the strategies to adopt and not just numerical performance indicators.

Suitable communication channels should be considered for the various audience segments. The use of Twitter and Facebook can be impactful in urban settings. In peri-urban communities, the use of local WhatsApp groups or partnerships with community radio stations is a better inclusive outreach method. By modifying the use of platforms and delivering content based on individual digital practices and accessibility of target populations, the digital divide can be reduced and equitable engagement guaranteed.

The modules on social media mechanics, strategic content creation, ethical messaging and cultural competence should be included in training programmes on construction professionals and communicators in the public sector. Equipping professionals with such skills will help the industry to collectively manage the dynamic digital communication environment in a more responsible and competent manner.

Lastly, the results provide useful information to policymakers and regulators. They indicate that there is a definite logic in coming up with standardized rules concerning the use of social media in infrastructure projects. Such structures ought to outline minimum standards in terms of transparency, responsiveness and respectful communication, especially when it comes to government-funded projects. By integrating these behaviours in institutional policy, construction organizations can promote more coherent, responsible and culturally sensitive communication practices across the sector.

## 6.0 Conclusion

This study aimed to investigate the impact of stakeholder social media behaviour on public perception about construction projects in Ghana. A quantitative approach grounded in Stakeholder Theory was utilized. The findings reveal that while digital practices such as transparency, responsiveness and tone of message significantly influence public attitude, other factors, such as frequency of updates and engagement metrics (likes, shares and comments) exert a lesser influence. This underscores a fundamental principle in digital communication strategy: the quality of interaction outweighs its quantity, especially in contexts characterised by diverse cultural expectations and varying levels of institutional trust.

This study extends Stakeholder Theory into the domain of digital communication within the context of developing countries. It shows that stakeholder actions in social media are not viewed from a universal perspective but greatly determined by the local cultural, digital literacy and wider sociopolitical environment. Transparency proved to be the strongest factor of trust-building in Ghana, where general distrust of infrastructure projects is usually motivated by doubt. This was further reinforced by timely responsiveness and use of a culturally respectful tone, implying more inclusion and relational interactions.

Furthermore, the findings challenge existing assumptions within the global stakeholder communication literature. High rates of posting and digital activity, which are often regarded as evidence of good communication, do not have a profound impact on perception unless accompanied by meaningful content and good intentions. This raises questions about overreliance on quantitative engagement metrics and suggests the need to reconsider the definition of communicative success, especially in digitally mediated public spaces.

From a practical perspective, the study offers several actionable implications for construction stakeholders in Ghana. These include focusing on transparent and respectful communication, investing in prompt feedback systems and adjusting communication strategies to the cultural and technological realities of targeted communities. It is important to note that negative public perception can lead to community resistance, project delays and cost overruns. This has a direct economic consequence for public and private investments in construction, hence the need to establish standardized social media guidelines and training initiatives that will provide stakeholders with the instruments to communicate in a more ethical, strategic and effective way.

It should be noted, however, that the study treated social media as a single channel without differentiating between the various platforms. In practice, communication dynamics and audience behaviour may vary across platforms such as Facebook, WhatsApp, Twitter and other platforms commonly used in Ghana. Future research could therefore adopt a platform-specific approach to better capture these variations.

In conclusion, the study confirms that stakeholder behaviour on social media is an important factor that influences public perception. As digital platforms increasingly shape how projects are communicated and understood, stakeholders need to go beyond performative engagement to adopt genuine, context-sensitive forms of communication. This will not only improve public trust and minimize resistance but also establish the basis for more participative, open and fruitful construction project outcomes in Ghana and comparable settings.

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