

Digital Public Relations Communication in Higher Education: Associations with University Image and Student Loyalty

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Abstract

The rapid expansion of digital communication technologies has transformed how universities engage with stakeholders and manage institutional reputation. Within this context, digital public relations (PR) communication has become a strategic tool for maintaining stakeholder relationships and institutional visibility in higher education environments. Despite its growing importance, empirical research examining the multidimensional nature of digital PR communication and its association with key relational outcomes in higher education remains limited. This study examines the relationships among digital PR communication, university image, and student loyalty in the university context. Data were collected through a structured survey administered to university students, and the proposed relationships were analyzed using exploratory factor analysis, Pearson correlation analysis, and multiple regression analysis. The results indicate that digital PR communication represents a multidimensional construct encompassing informational, interactive, and behavioral communication dimensions. The findings demonstrate that dimensions of digital public relations communication are associated with university image and student loyalty. Word–action consistency, information usefulness, and interactivity emerged as variables significantly associated with university image, while word–action consistency and interactivity demonstrated significant associations with student loyalty. The findings offer practical implications for university communication managers and administrators seeking to strengthen student engagement and institutional competitiveness through digital communication strategies.

Keywords: *Digital public relations, higher education communication, university image, student loyalty, digital communication strategy, university branding.*

Introduction

The rapid digitalization of higher education has transformed how universities communicate with students and other stakeholders. Institutional communication is no longer limited to disseminating administrative information through static websites or formal announcements. Instead, universities

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increasingly rely on digital public relations (PR) communication through social media, institutional platforms, and interactive online environments to shape institutional image, maintain stakeholder relationships, and strengthen organizational competitiveness. In highly competitive higher education markets, digital communication has become a strategic institutional resource that influences how prospective and current students perceive universities (Dyanty & Mkabile-Masebe, 2025; Mutongoza & Hendricks, 2025).

The growing importance of digital communication is particularly significant because stakeholder perceptions increasingly influence institutional sustainability, student recruitment, and long-term organizational legitimacy (Bokayev et al., 2025; Chang et al., 2015; Troise & Camilleri, 2021). Universities are now evaluated not only on academic quality but also on the credibility, transparency, responsiveness, and consistency of their communication practices. Digital communication environments, therefore, create new expectations regarding institutional openness and stakeholder engagement. At the same time, the interactive nature of digital platforms enables students to evaluate whether institutional communication reflects actual organizational behavior continuously. Negative online experiences, delayed responses, inconsistent messaging, or communication perceived as insincere may rapidly weaken institutional credibility and reduce stakeholder trust (Lee & Li, 2021; Rustan, 2021; Ki & Kim, 2019).

Within higher education contexts, institutional image represents an important intangible asset that shapes students' attitudes and behavioral intentions toward universities. Previous studies demonstrate that positive institutional image contributes to student trust, satisfaction, and loyalty (Sultan & Wong, 2019; Mourad et al., 2020). Similarly, research on higher education communication indicates that digital platforms strengthen stakeholder engagement and institutional visibility when communication is perceived as useful, interactive, and responsive (Peruta & Shields, 2017; Salido et al., 2025; Waters et al., 2009). However, the increasing complexity of digital communication environments has also raised concerns regarding the coherence and authenticity of institutional communication practices. Universities may present attractive institutional narratives online while stakeholders simultaneously observe inconsistencies between institutional promises and actual practices. Such inconsistencies can weaken perceptions of credibility and institutional reliability.

Despite growing scholarly attention to digital communication in higher education, existing research remains fragmented in several important ways. First, previous studies (Capriotti & Zeler,

2023) frequently examine individual communication characteristics separately, such as social media engagement, information quality, trust, or online interaction, without integrating these dimensions into a unified explanatory framework. Second, studies often treat concepts such as trust, authenticity, word–action consistency, and information usefulness as interchangeable communication qualities, despite important theoretical differences among them. For example, information usefulness refers to the practical relevance and clarity of institutional communication, whereas word–action consistency reflects the alignment between institutional messages and observable organizational practices. Authenticity concerns perceptions of sincerity and genuineness in communication, while trust reflects stakeholders’ confidence in institutional credibility and reliability. Although these dimensions are conceptually related, they represent different communication mechanisms operating at informational, behavioral, and relational levels. Examining these dimensions separately creates important analytical limitations because students do not experience digital communication as a set of isolated characteristics. Instead, they interpret digital communication holistically by combining informational quality, institutional responsiveness, communication consistency, and perceived sincerity. For instance, a university may provide highly useful information through digital platforms. However, if students perceive a contradiction between institutional promises and actual practices, perceptions of authenticity and trust may decline. Similarly, interactive communication may increase engagement, but without consistent institutional behavior, communication may still be perceived as unreliable. Previous studies rarely illustrate how these dimensions collectively shape institutional image and student loyalty within a single integrated model. Consequently, the mechanisms through which digital PR communication influences student perceptions and behavioral outcomes remain insufficiently understood.

This gap is particularly important in higher education contexts because universities increasingly depend on digital communication to maintain competitive institutional positioning and long-term student relationships. Existing research, therefore, provides a limited explanation of how multiple dimensions of digital PR communication interact to influence both institutional image and student loyalty simultaneously. Moreover, empirical evidence examining these relationships within emerging higher education systems remains relatively limited.

To address these limitations, the present study examines digital public relations communication in higher education and its associations with university image and student loyalty. The study

conceptualizes digital PR communication as a multidimensional process through which universities communicate institutional values, engage stakeholders, and shape organizational credibility in digital environments. Drawing on relationship management theory, signaling theory, dialogic communication theory, information systems theory, and social exchange theory, the study examines how dimensions of digital communication are associated with university image and student loyalty. By integrating these theoretical perspectives, the study seeks to provide a more comprehensive understanding of how digital communication relates to stakeholder perceptions and relational outcomes in higher education.

Literature Review

The increasing digitalization of higher education has transformed communication into a central mechanism through which universities construct institutional image, engage stakeholders, and maintain long-term organizational relationships. Digital communication platforms now serve not only as channels for information dissemination but also as environments where stakeholders continuously evaluate institutional credibility, transparency, responsiveness, and authenticity. Universities increasingly rely on institutional websites, social media platforms, and interactive online communication to promote educational opportunities, communicate institutional values, and strengthen stakeholder engagement (Capriotti & Zeler, 2023; Constantinides & Zinck Stagno, 2011; Soltovets et al., 2020; Tarman et al., 2026). Recent research further demonstrates that social media communication and institutional brand image are closely associated with international students' enrollment intentions and perceptions of higher education institutions (Li et al., 2025). Consequently, understanding how digital public relations communication influences stakeholder perceptions requires a theoretical framework that can simultaneously explain informational, relational, behavioral, and evaluative communication processes.

The present study integrates several complementary theoretical perspectives to explain how digital communication is associated with university image and student loyalty. First, the information systems success model explains the functional dimension of communication by emphasizing the importance of information usefulness, clarity, and accessibility in shaping users' evaluations of digital systems (DeLone & McLean, 2003). In higher education settings, students rely on institutional digital platforms to access information about academic programs, institutional policies, and educational opportunities. Useful and accessible communication, therefore, reduces

uncertainty and contributes to more positive institutional evaluations. Studies examining digital learning and communication environments demonstrate that students' engagement with digital systems is strongly influenced by the perceived usefulness and accessibility of institutional information (Almaiah et al., 2020; Kalymova et al., 2026; Kilinc et al., 2023).

Second, dialogic communication theory explains the interactive dimension of digital communication. According to this perspective, organizations strengthen stakeholder relationships through reciprocal communication, responsiveness, participation, and dialogue (Grunig & Grunig, 2000; Rattanapun et al., 2025). In digital environments, universities that maintain interactive communication practices may therefore be perceived as more accessible, responsive, and stakeholder-oriented. Previous studies indicate that social media communication enhances stakeholder engagement and strengthens institutional relationships in higher education environments (Chigisheva et al., 2021; Enwereji et al., 2024; Peruta & Shields, 2017; Pushpanadham et al., 2023; Waters et al., 2009). Similarly, online interaction and digital communities have been shown to contribute to stronger trust and loyalty toward universities (Zhang & Luo, 2016).

Third, signaling theory explains how stakeholders interpret institutional communication under conditions of informational asymmetry. Because students often lack complete knowledge about institutional quality and organizational performance, they rely on communication signals when evaluating universities (Spence, 1973). Within digital communication environments, consistency between institutional communication and observable organizational behavior functions as a particularly important signal of organizational credibility and reliability. When institutional actions align with communicated messages, stakeholders are more likely to perceive communication as trustworthy and authentic. Conversely, inconsistencies between communication and institutional behavior may weaken perceptions of credibility and transparency. Research on organizational communication demonstrates that transparency and consistency in communication significantly influence organizational trust and stakeholder evaluations (Lee & Li, 2021).

Fourth, relationship management theory explains how repeated communication interactions contribute to the development of organization–stakeholder relationships. According to this perspective, communication functions as a mechanism through which organizations establish trust, commitment, and mutual understanding with stakeholders (Ledingham & Bruning, 1998). Trust, therefore, develops through stakeholders' ongoing evaluations of communication transparency,

responsiveness, and consistency rather than through isolated communication messages alone. Public relations scholarship further identifies trust, commitment, and relationship quality as central dimensions of successful organization–stakeholder relationships (Hon & Grunig, 1999). Within higher education contexts, effective digital communication may therefore strengthen institutional relationships by reinforcing perceptions of credibility and responsiveness.

Finally, social exchange theory explains how these communication evaluations influence long-term stakeholder behavior. According to social exchange theory, individuals develop supportive and loyal relationships with organizations when they perceive interactions as valuable, credible, and beneficial (Blau, 1964). In higher education contexts, positive evaluations of universities are often associated with stronger loyalty, institutional advocacy, and continued engagement. Previous studies indicate that positive institutional image significantly contributes to students' behavioral intentions, trust, and long-term commitment toward universities (Sultan & Wong, 2019; Mourad et al., 2020). Similarly, stakeholder engagement and participatory communication practices strengthen emotional attachment and positive word-of-mouth communication (Park & Kim, 2021). Taken together, these theoretical perspectives form a coherent explanatory framework that links digital communication practices to stakeholder outcomes in higher education. Information systems theory and dialogic communication theory explain how universities provide useful and interactive communication environments. Signaling theory explains how stakeholders interpret the consistency of communication and institutional credibility. Relationship management theory explains how these communication evaluations contribute to trust and organization–stakeholder relationships, while social exchange theory explains how positive institutional evaluations ultimately translate into student loyalty. Collectively, these theories explain how digital PR communication is associated with university image and long-term stakeholder relationships within contemporary higher education environments.

Despite growing scholarly attention to digital communication in higher education, existing research remains fragmented both theoretically and empirically. Previous studies frequently examine communication characteristics such as information quality, trust, stakeholder engagement, authenticity, and social media interaction in isolation rather than as interconnected dimensions of digital public relations communication (Capriotti & Zeler, 2023; Peruta & Shields, 2017; Waters et al., 2009). As a result, there remains a limited understanding of how multiple communication dimensions collectively shape university image and student loyalty.

This limitation is particularly important because information usefulness, interactivity, authenticity, trust, and word–action consistency represent conceptually distinct communication mechanisms. Information usefulness reflects the functional value and clarity of communication content, whereas interactivity concerns responsiveness and dialogic engagement between institutions and stakeholders. Authenticity refers to perceptions of sincerity and genuineness in institutional communication, while trust reflects confidence in institutional credibility and reliability. In contrast, word–action consistency refers to the alignment between institutional communication and observable organizational practices. Although these dimensions are interrelated, they operate through different informational, relational, and behavioral processes. For example, universities may provide useful, interactive communication through digital platforms, yet students may still perceive it as unreliable if institutional actions contradict publicly communicated messages. Similarly, trust may emerge gradually through repeated experiences of transparent, consistent communication practices rather than through communication content alone. Examining these dimensions separately, therefore, limits understanding of how students holistically evaluate institutional communication in digital higher education environments.

Despite growing attention to digital communication in higher education, relatively few studies have simultaneously examined multiple dimensions of digital public relations communication as predictors of both university image and student loyalty. Most studies focus on isolated communication characteristics or single outcome variables, limiting understanding of how communication practices collectively shape institutional evaluations and stakeholder commitment (Capriotti & Zeler, 2023).

To overcome these limitations, this study examines digital public relations communication within higher education and its associations with university image and student loyalty. Specifically, the study examines whether dimensions of digital PR communication significantly predict university image and student loyalty.

Accordingly, the study addresses the following research questions:

RQ1. To what extent do participants perceive the dimensions of digital public relations communication, university image, and student loyalty?

RQ2. Is there a significant relationship between the dimensions of digital public relations communication, university image, and student loyalty?

RQ3. Do the dimensions of digital public relations communication significantly predict perceptions of university image?

RQ4. Do the dimensions of digital public relations communication significantly predict student loyalty?

Methodology

Research Design

The present study employed a quantitative cross-sectional survey design to examine the relationships among the dimensions of digital public relations communication, university image, and student loyalty in higher education settings. Cross-sectional survey designs are widely used in communication, public relations, and higher education research to investigate associations among perceptual, attitudinal, and behavioral constructs at a single point in time.

The study conceptualized digital PR communication as a multidimensional construct comprising information usefulness, trust, authenticity, interactivity, and word–action consistency. The study examined the extent to which these communication dimensions predicted two institutional outcomes: university image and student loyalty. The conceptual model therefore included digital PR communication dimensions as predictor variables and university image and student loyalty as outcome variables.

Participants and Sampling

The study was conducted among undergraduate students enrolled at universities in the Aktobe region of Kazakhstan. Students were selected because they represent the primary stakeholder group directly exposed to institutional digital communication through university websites, social media platforms, and online communication systems.

A convenience sampling strategy was employed because participation was voluntary and access to institutional student databases was restricted. Convenience sampling is frequently used in higher education communication research when examining perceptual and behavioral constructs within institutional contexts. The target population consisted of undergraduate students enrolled at several higher education institutions in the Aktobe region, estimated at 9,000–11,000 based on publicly available university enrollment statistics.

The final sample included 132 valid responses. The sample demonstrated relative homogeneity in educational status because all participants were undergraduate university students actively engaged in institutional digital communication environments. The sample consisted of 72 female students (54.5%) and 60 male students (45.5%). Regarding academic level, 31.1% were first-year students, 27.3% were second-year students, 23.5% were third-year students, and 18.1% were fourth-year students. Most participants reported regular engagement with university digital communication platforms, including institutional websites and social media channels.

Research Instrument

Data were collected using a structured, self-administered questionnaire developed based on established theoretical frameworks and previous research in public relations, digital communication, and higher education branding. The instrument was designed to measure students' perceptions of digital PR communication, university image, and student loyalty.

The questionnaire consisted of two sections. The first section collected demographic information, including gender, academic year, and frequency of engagement with university digital communication platforms. The second section included 29 measurement items assessing seven theoretical constructs.

Digital PR communication was operationalized through five dimensions: information usefulness (4 items), trust (4 items), authenticity (3 items), interactivity (4 items), and word–action consistency (4 items). In addition, university image was measured using 5 items, and student loyalty using 4 items. The measurement items were adapted from established scales in the literature on public relations, organizational communication, digital communication, and higher education branding and modified to fit the university communication context.

Information usefulness was measured by students' perceptions regarding the clarity, relevance, and practical value of institutional communication. Interactivity assessed responsiveness, stakeholder engagement, and opportunities for participation in communication. Trust measured perceptions of institutional credibility and reliability, while authenticity assessed the perceived sincerity and genuineness of institutional communication. Word–action consistency measured the extent to which institutional communication aligned with the university's actual practices. University image assessed students' overall evaluations of institutional reputation and

attractiveness, whereas student loyalty measured long-term behavioral intentions, including institutional advocacy and continued affiliation.

All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Likert-scale measurement is widely used in communication and behavioral research because it enables the assessment of latent perceptual constructs with acceptable reliability and sensitivity. Content validity was established through expert review by scholars specializing in communication and higher education research. Minor wording revisions were introduced to improve item clarity and contextual relevance. Construct validity was subsequently assessed through exploratory factor analysis. The adequacy of the data for factor analysis was evaluated using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett’s test of sphericity. Reliability was assessed using Cronbach’s alpha coefficients.

Data Collection

Data collection was conducted between March and April 2025 using an online questionnaire distributed through university communication channels and student social media groups. Participation was voluntary and anonymous. Prior to participation, respondents were informed of the study's academic purpose and provided electronic informed consent.

Several procedural measures were implemented to minimize common method bias and social desirability effects. Respondents were assured of confidentiality and anonymity, questionnaire instructions emphasized that there were no correct or incorrect responses, and the measurement items were arranged to reduce response pattern effects.

Data Analysis

The data were analyzed using IBM SPSS Statistics in accordance with the study objectives and research questions. Descriptive statistics were first calculated to examine the demographic characteristics of the sample and summarize the central tendencies and variability of the study variables. Means, standard deviations, frequencies, and percentages were calculated to describe participant characteristics and construct distributions.

Prior to inferential analysis, several assumption-testing procedures were conducted. Normality was assessed using skewness and kurtosis values, histograms, and normal probability plots.

Multicollinearity was assessed using variance inflation factor (VIF) and tolerance statistics, while homoscedasticity and linearity assumptions were examined using residual scatterplots.

Reliability and validity analyses were subsequently performed to evaluate the measurement instrument. Internal consistency reliability was assessed using Cronbach's alpha coefficients. Construct validity was examined through exploratory factor analysis using principal axis factoring with Promax rotation to identify the dimensional structure of the instrument and confirm construct representation. Pearson correlation analysis was then conducted to examine the strength and direction of relationships among the study variables prior to regression analysis.

Because the study relied on self-reported cross-sectional data collected from a single source, Harman's single-factor test was additionally conducted to assess the potential presence of common method variance. The results indicated that no single factor accounted for the majority of total variance, suggesting that common method bias did not substantially threaten the validity of the findings.

To address the research questions and test the proposed hypotheses, regression-based statistical procedures were employed. Multiple regression analysis was conducted to examine the relationships between dimensions of digital public relations communication and university image. Information usefulness, trust, authenticity, interactivity, and word–action consistency were entered as predictor variables in the regression model. This procedure enabled the assessment of the relative contribution of each communication dimension while controlling for the effects of the remaining predictors.

Simple linear regression analysis was subsequently conducted to examine the relationship between university image and student loyalty. Finally, mediation analysis using hierarchical regression procedures was performed to examine whether university image mediated the relationship between word–action consistency and student loyalty. Together, these analyses enabled the examination of both direct and indirect relationships among the study variables in accordance with the proposed conceptual framework.

Results

Descriptive statistics were calculated to examine students' perceptions of digital PR communication, university image, and student loyalty. As presented in Table 1, all constructs demonstrated relatively high mean scores, indicating generally positive evaluations of institutional

digital communication and institutional outcomes. University image demonstrated the highest mean score ($M = 4.07$, $SD = 0.57$), followed by information usefulness ($M = 4.02$, $SD = 0.47$) and student loyalty ($M = 4.01$, $SD = 0.57$). Word–action consistency also showed a relatively high mean score ($M = 4.00$, $SD = 0.51$), indicating that students generally perceived an alignment between institutional communication and university practices. Trust ($M = 3.88$, $SD = 0.46$) and interactivity ($M = 3.87$, $SD = 0.53$) were rated positively, whereas authenticity had the lowest mean score ($M = 3.80$, $SD = 0.53$). Overall, the descriptive findings indicate generally favorable student evaluations of university digital communication across informational, relational, and behavioral dimensions.

Table 1*Descriptive Statistics for the Study Variables*

Construct	N	M	SD
Information Usefulness	132	4.015	0.469
Trust	132	3.881	0.463
Authenticity	132	3.796	0.533
Interactivity	132	3.869	0.534
Word–Action Consistency	132	3.998	0.509
University Image	132	4.068	0.566
Student Loyalty	132	4.006	0.571

Note. N = sample size; M = mean; SD = standard deviation.

Reliability analysis demonstrated acceptable-to-excellent internal consistency across the study constructs (Table 2). Cronbach's alpha coefficients ranged from .665 to .940, indicating acceptable-to-excellent reliability, with authenticity demonstrating slightly lower but still acceptable reliability for exploratory research.

Table 2*Reliability Analysis of the Constructs*

Construct	Number of Items	Cronbach's α	Interpretation
Information Usefulness	4	0.841	Good
Trust	4	0.849	Good
Authenticity	3	0.665	Acceptable
Interactivity	4	0.863	Good
Word–Action Consistency	4	0.849	Good
University Image	5	0.940	Excellent
Student Loyalty	4	0.849	Good

Construct validity was examined through exploratory factor analysis using principal axis factoring with Promax rotation. The Kaiser–Meyer–Olkin measure (.936) and Bartlett's test of sphericity,

$\chi^2(406) = 3513.324, p < .001$, confirmed the suitability of the data for factor analysis. The analysis produced a seven-factor solution explaining 72.96% of the total variance, with all retained items demonstrating factor loadings above .50. These findings provide support for the multidimensional structure of digital PR communication and indicate acceptable construct validity of the instrument. Pearson correlation analysis was conducted to examine the relationships among the study variables. As presented in Table 3, all study variables were positively and significantly correlated ($p < .01$). University image demonstrated relatively strong positive correlations with word–action consistency ($r = .820$), interactivity ($r = .771$), and information usefulness ($r = .755$). Student loyalty also demonstrated a strong positive relationship with university image ($r = .894$). Although university image and student loyalty were strongly correlated, exploratory factor analysis supported their treatment as distinct constructs through separate factor loadings and acceptable reliability estimates.

Table 3*Correlation Matrix of the Main Constructs*

Variable	1	2	3	4	5	6	7
1. Information Usefulness	—						
2. Trust	.714**	—					
3. Authenticity	.625**	.734**	—				
4. Interactivity	.720**	.758**	.757**	—			
5. Word-Action Consistency	.723**	.737**	.688**	.793**	—		
6. University Image	.755**	.725**	.632**	.771**	.820**	—	
7. Student Loyalty	.696**	.680**	.604**	.772**	.792**	.894**	—

Note. N = 132. Pearson correlation coefficients are reported. $p < .01$ (two-tailed).

Multiple regression analysis examined the effects of dimensions of digital PR communication on university image. The regression model was statistically significant, $F(5,126) = 74.699, p < .001$, explaining 74.8% of the variance in university image ($R^2 = .748$; Adjusted $R^2 = .738$).

Among the examined predictors, word–action consistency demonstrated the strongest positive association with university image ($\beta = .432, p < .001$). Information usefulness also showed a statistically significant positive relationship with university image ($\beta = .249, p = .001$), whereas interactivity showed a smaller but statistically significant positive relationship ($\beta = .209, p = .020$). In contrast, trust and authenticity did not demonstrate statistically significant independent effects after controlling for the remaining communication dimensions.

Table 4*Multiple Regression Analysis Predicting University Image*

Predictor	B	SE	β	<i>t</i>	<i>p</i>	VIF
Information Usefulness	0.300	0.087	.249	3.451	.001	2.596
Trust	0.146	0.098	.120	1.496	.137	3.208
Authenticity	-0.070	0.079	-.066	-0.892	.374	2.758
Interactivity	0.218	0.093	.209	2.360	.020	3.899
Word-Action Consistency	0.480	0.090	.432	5.305	< .001	3.311

Note. $N = 132$. $R^2 = .748$, Adjusted $R^2 = .738$. $F(5, 126) = 74.699$, $p < .001$.

A multiple regression analysis examined the effects of dimensions of digital public relations communication on student loyalty. The results are presented in Table 5.

Table 5*Multiple Regression Analysis Predicting Student Loyalty*

Predictor	B	SE	β	<i>t</i>	<i>p</i>	VIF
Information Usefulness	0.184	0.096	.151	1.916	.058	2.594
Trust	0.078	0.108	.063	0.722	.472	3.207
Authenticity	-0.099	0.087	-.093	-1.139	.257	2.759
Interactivity	0.376	0.104	.351	3.627	< .001	3.901
Word-Action Consistency	0.472	0.100	.421	4.717	< .001	3.316

Note. $N = 132$. $R^2 = .697$, Adjusted $R^2 = .685$. $F(5, 126) = 58.000$, $p < .001$.

The regression model was statistically significant, $F(5, 126) = 58.000$, $p < .001$, explaining 69.7% of the variance in student loyalty ($R^2 = .697$; Adjusted $R^2 = .685$).

Among the examined predictors, word–action consistency demonstrated the strongest positive association with student loyalty ($\beta = .421$, $p < .001$). Interactivity also showed a statistically significant positive relationship with student loyalty ($\beta = .351$, $p < .001$). In contrast, information usefulness, trust, and authenticity did not demonstrate statistically significant independent effects after controlling for the remaining communication dimensions.

The relatively high explained variance observed in the regression models should be interpreted with caution. Because all variables were measured using self-reported perceptions collected from the same respondents at a single point in time, the observed relationships may reflect shared method variance and conceptual overlap among the constructs. In addition, students' evaluations of digital communication, university image, and student loyalty are likely to be closely interconnected within the higher education context. Future studies employing longitudinal designs, multiple stakeholder groups, and alternative data sources may provide more conservative estimates of these relationships. Overall, the findings indicate that communication characterized by

consistency between institutional messages and organizational actions, as well as interactive engagement with students, is associated with stronger student loyalty perceptions.

Discussion

The findings of this study provide important insights into the role of digital public relations communication within higher education environments. By examining several dimensions of digital communication simultaneously, the study contributes to a more comprehensive understanding of how communication practices are associated with students' perceptions of universities and their intentions to remain loyal to educational institutions.

The results indicate that digital PR communication is a multidimensional construct that integrates informational, relational, and behavioral communication characteristics. The exploratory factor analysis supported the multidimensional structure of the communication variables, suggesting that students evaluate universities not only based on informational content but also on perceived responsiveness, transparency, and consistency in institutional communication practices. This finding aligns with dialogic communication theory, which emphasizes that effective public relations communication involves continuous interaction between organizations and stakeholders (Grunig & Grunig, 2000).

Among the examined communication dimensions, word–action consistency demonstrated the strongest positive relationship with university image. Students who perceived a stronger alignment between institutional communication and observable organizational practices also reported more positive evaluations of the university's image. In digital environments where institutional information is highly accessible and rapidly disseminated, consistency between communication messages and organizational behavior may therefore represent an important dimension of institutional credibility. The findings suggest that students may evaluate universities more positively when communication practices correspond with institutional actions and policies.

Information usefulness also demonstrated a statistically significant positive relationship with university image. Students rely extensively on digital communication platforms to obtain information regarding academic programs, university policies, and institutional activities. Communication perceived as useful, relevant, and understandable was associated with more favorable institutional evaluations. This finding corresponds with previous studies suggesting that accessible and informative digital communication is closely related to stakeholder engagement and

positive institutional perceptions in higher education environments (Peruta & Shields, 2017; Waters et al., 2009).

Similarly, interactivity demonstrated a statistically significant positive relationship with university image. Students who perceived university communication as more interactive and responsive also tended to report more positive institutional evaluations. Interactive communication practices may reduce perceived institutional distance and support stronger stakeholder engagement by facilitating dialogue, participation, and responsiveness within digital communication environments. These findings are consistent with previous research emphasizing the importance of two-way communication processes in digital stakeholder relationships (Peruta & Shields, 2017; Waters et al., 2009).

In contrast, trust and authenticity did not demonstrate statistically significant independent relationships with university image after controlling for the remaining communication dimensions. This finding suggests that trust and authenticity may operate less as direct predictors and more as perceptions that emerge from broader evaluations of communication quality, consistency, and responsiveness. Students may therefore evaluate institutional trustworthiness indirectly through observable communication practices rather than as isolated communication characteristics. Similar interpretations have been proposed in studies indicating that trust in digital environments develops gradually through repeated communication experiences and consistent organizational behavior (Lee & Li, 2021; Ki & Kim, 2019).

The findings further indicate that word–action consistency and interactivity were variables significantly associated with student loyalty. Students who perceived stronger alignment between institutional communication and organizational practices, as well as greater opportunities for interaction and engagement, reported stronger loyalty intentions toward their universities. These findings suggest that student loyalty is associated not only with the informational quality of communication but also with communication practices that demonstrate responsiveness and consistency over time.

The strong positive correlation between university image and student loyalty is also consistent with previous research on higher education branding, suggesting that favorable institutional evaluations are associated with students' long-term attachment, institutional advocacy, and positive word-of-mouth behavior (Mourad et al., 2020; Sultan & Wong, 2019). Nevertheless, this

relationship should be interpreted cautiously because both constructs represent closely related evaluative perceptions measured through self-reported cross-sectional survey data.

At the same time, several methodological considerations should be acknowledged when interpreting the findings. First, the study relied on a relatively modest sample size drawn from a single regional context in Kazakhstan, which may limit the broader generalizability of the results. Second, the relatively strong correlations among several communication dimensions suggest potential conceptual overlap among communication-related perceptions. Although multicollinearity diagnostics remained within acceptable thresholds, the communication constructs may nevertheless reflect closely interconnected stakeholder evaluations within digital higher education environments. Third, the study relied exclusively on self-reported cross-sectional survey data collected from a single source at one point in time. Consequently, the findings should be interpreted as relational rather than causal, and the study design does not permit conclusions about the direction of causality among the variables examined.

Despite these limitations, the study contributes to the literature by integrating communication theory and higher education branding research within a unified analytical framework. Previous studies frequently examine communication characteristics independently, limiting understanding of how multiple communication dimensions are simultaneously associated with institutional image and loyalty. By examining informational, relational, and behavioral dimensions together, the present study provides a more comprehensive explanation of digital communication processes in higher education environments.

From a practical perspective, the findings suggest that universities may benefit from focusing not only on increasing communication activity but also on improving the consistency, usefulness, and responsiveness of their digital communication practices. Communication perceived as informative, interactive, and aligned with institutional actions was associated with more positive evaluations of university image and stronger loyalty intentions among students. As digital communication environments continue to expand within higher education, the strategic management of institutional communication practices may therefore represent an increasingly important component of stakeholder relationship management.

Conclusion

The increasing importance of digital communication has transformed the way universities interact with stakeholders and manage institutional reputation. Digital platforms now serve as central communication environments through which universities share information, engage with students, and build institutional visibility in higher education.

The findings of this study indicate that dimensions of digital PR communication are significantly associated with university image and student loyalty. In particular, communication characterized by word–action consistency, information usefulness, and interactivity was associated with more positive institutional evaluations and stronger loyalty intentions among students. These findings highlight the importance of consistent communication and responsiveness in contemporary higher education environments.

At the same time, the findings should be interpreted cautiously due to the cross-sectional design, the relatively modest sample size, and reliance on self-reported survey data collected within a single regional context. The study, therefore, identifies relational associations among perceptions of communication, university image, and loyalty rather than causal effects. Future research employing larger and more diverse samples, longitudinal designs, and confirmatory analytical approaches may provide further insight into the relationships among digital communication practices and stakeholder perceptions in higher education.

Overall, the study contributes to a better understanding of how multidimensional digital communication is associated with institutional image and student loyalty in contemporary higher education environments. The findings further underscore the potential importance of consistent, informative, and interactive communication practices in maintaining positive stakeholder relationships in increasingly digital university settings.

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