

INTERNAL COMMUNICATION AND EMPLOYEE PRODUCTIVITY IN HIGHER EDUCATION INSTITUTIONS

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Corresponding Author: Enoch Kwablah Teye Presbyterian University, Ghana Article History Received: 18 / 06 / 2026 Accepted: 29 / 07 / 2026 Published: 16 / 08 / 2026	Abstract: Background: Internal communication is that channel used to create, process and convey information within an organization. The purpose of this study was to examine the effect of internal communication on employee productivity in HEIs in Ghana. In particular, the study investigates the factors that affect the productivity of academic and non-academic workers in the educational institutions in Ghana, namely, vertical communication, horizontal communication and digital communication channels. Design/Methodology/Approach: Quantitative explanatory research design was used. The sampling method for data collection was the stratified random sampling technique, where a sample of 412 number of participants was selected from five public universities in the Ghanaians. The descriptive statistics and correlation Pearson and multiple regression analysis were used to analyze the data while being assisted by IBM SPSS version 26 software. The mediation analysis used Hayes' PROCESS Macro (Model 4). Results: The findings found that all three vertical, horizontal and digital elements of internal communications have a large positive effect on employee productivity. The strongest predictor was via the digital communication channels and the second strongest predictor was from horizontal communication with peers. The results indicated that internal communication had a partial mediation effect on organizational trust and employee productivity, which illustrated that organizational trust, was a psychological medium in strengthening employee productivity from internal communication. Research limitations/implications: The study is cross sectional in design and limited to the five public universities in Ghana making it hard to make a cause-effect statement and generalizing the findings to a broader sample for which there are other studies. Longitudinal study designs should be adopted, and the studies should be extended to cover other sub-Saharan countries, such as private HEIs. Practical impacts: University administration and HR practitioners need to put emphasis on communication system integration, open information sharing and digital communication facilities. Insonia Ways of Communication (OWC) is important to improve staff productivity and institutional performance as it ensures open timelines, and rich feedback loop. Originality/value: This study fills gaps in the literature related to HEI management and organizational communication through empirical findings in a Sub-Saharan African university setting, and through the finding of the mediated effect of organizational trust in the internal communication-productivity relationship, which has not received much attention in the higher education literature to date. Keywords: Internal communication; Employee productivity; Higher education institutions; Vertical communication; Digital communication; Organizational trust; Ghana.
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Introduction

Effective internal communication has long been recognized as a cornerstone of organizational functioning, yet its specific role in shaping employee productivity within higher education institutions Despite its significance, there is still insufficient

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theorisation and empirical research on (HEIs) especially in the context of developing countries (Men and Yue, 2023; Ruck and Welch, 2022). Universities and the polytechnics are knowledge intensive complex organizations where the quality of information

that is passed on between individuals, within and across departments, and via digital platforms has profound impact on the staff's ability to carry out their academic and administrative duties (Vercic and Vercic, 2021). The internal communication activities of HEIs have been called into question in this increasingly digitalised society, which is also home to a growing number of students and reinforced expectation for accountability (Karanges et al., 2022).

The productivity of employees in HEIs reflects not only the outputs of the university faculty but also their teaching ability, research achievements, management of administrative processes, effectiveness of services, and "discretionary", 'civic' or 'nonsalary' efforts spent on meeting the goals of the university (Al-Jedaiah and Albdareen, 2020). The failure of academic and non-academic staff to produce a desired output at university comes at a huge cost in terms of university performance, student outcomes and national development goals, especially in countries like Ghana, where universities are playing an ever-strategic role in human capital building and knowledge production (Asante and Affum-Osei, 2021).

In the last two decades the number of students enrolled in the public universities of Ghana has increased significantly in each of the years, from close to 120,000 in 2010 to more than 400,000 students in 2022 (National Council for Tertiary Education, 2022). Because of this rapid growth, administrative and academic systems are under tremendous strain, as they may not always be able to keep up with the growth of communication and networking systems. The shortcomings of internal communication, which include delayed transmission of information, absence of feedback channels, lack of information flow between departments and inadequate digital tools, have been identified as key limitations in the productivity of teachers in Ghanaian universities (Ofori et al., 2021; Mensah and Agyemang, 2022).

However, primary studies specifically focusing on the influence of different aspects of internal communication dimensions on employee productivity in HEIs in Ghana are limited. The vast amount of organizational communication literature, though, mainly covers the context of large corporations or public sector organizations in Western countries (Men and Yue, 2023; Vercic and Vercic, 2021). Organisational specific literature, on the other hand, is more likely to be limited to the communication experience of the students or external organisational promotion with relatively little attention being paid to the internal communication practices that affects employee productivity (Karanges et al., 2022; Ruck and Welch, 2022).

This study aims to fill these gaps by examining the effect that the three aspects of internal communication (vertical communication, top to bottom and bottom to top transmission of information between management and staff; horizontal communication, lateral information sharing amongst peers and colleagues; digital communication, the use of electronic platforms and tools for organisational communication) have on employees productivity in public universities in Ghana. Further, based on Social Exchange Theory and Information Processing Theory, the study investigates the possibility of organizational trust acting as a mediator among these relationships.

The three main ways the study advances the literature is the following: To provide firstly an empirical evidence based on internal interaction-productivity relationship in a context of HEIs from Sub-Saharan Africa that is empirical, context-sensitive and

conventional. To provide firstly, empirical, conventional and context-sensitive empirical evidence on nexus between internal communication-productivity in HEIs in a setting from Sub-Saharan Africa setting. Second, it also contributes to the understanding of the mechanisms by which the quality of communication is seen to have an impact on the productivity outcomes, mediated by organizational trust. Third, it offers findings and suggestions that are relevant for senior university leadership, HR practitioners and policy makers in order to improve communication system to maximize staff productivity.

Literature Review

Theoretical Underpinnings

This study's conceptual architecture is based on three theoretical frameworks. The first is Social Exchange Theory (SET) that predicts social behavior is the product of an exchange process that seeks to maximize benefits while minimising costs (Blau, 1964). In the organisational level, if the management does a good job by communicating open information the organisation and communicating the information quickly and decisively, it is a sign that the organisation cares for the employee welfare and makes sure that the employee voice is heard, then such employees will be motivated to return back in the form of increment in their efforts and productivity (Saks, 2006; Bibi et al., 2021). Thus SET describes how the quality of internal communication evokes mutual productive responses from employees, and how trust acts as a relational resource that is established in the ongoing communicative process (Karanges et al., 2022).

The other theoretical perspective that has been cited is Information Processing Theory (IPT) as developed by Galbraith (1973) and later expanded by Daft and Lengel (1986). Organizations process information to apprehend the uncertainty and equivocal information in the task environments, IPT believes. The theory classifies media by richness, as a measure of the amount of information they can carry and feedback they can offer. The richest communication is considered to be face-to-face, followed by telephone, written media, and electronic. With task complexity and interdependence in HEIs, matching communication richness to task demands is vital so that employees have the information needed to get things done effectively (Daft and Lengel, 1986; Vercic and Vercic, 2021).

The third one is the Job Demands-Resources (JD-R) model introduced by Bakker and Demerouti (2007), well used to explain how organizational resources, such as the quality of communication, supervisor support, and ease of access to information help moderate the relationship between job demands and employee outcomes. However, effective internal communication in HEI with high workload and role ambiguity is a job resource that helps reduce uncertainty, clarify work expectations, facilitate employees in managing the demands of various tasks, and consequently maintain the productivity of the organization (Al-Jedaiah and Albdareen, 2020; Mensah and Agyemang, 2022).

Internal Communication: Dimensions and Definitions

Internal communication is the sharing of formal and informal information that takes place throughout an organisation by its members (Welch and Jackson, 2007; Men and Yue, 2023). It includes the messages, mediums, processes and conventions through which organisational knowledge, instructions, directions,

feedback and social information is carried from hierarchical/functional perspectives. Internal communication is effective when it is timeliness, accuracy, transparency, accessibility and whether it can help to encourage meaningful dialogue between both parties (Ruck and welch, 2022).

The study seeks to almost break down internal communication into three different operational segments. Vertical communication is formal upward/downward flow of information from one to another, such as those between the management and staff (top to bottom) and between the staff and management (bottom to top), including directives, policy announcements, performance feedback, suggestions, grievances, performance updates, and updates. The quality of vertical communication has been seen to have a consistent relationship with clarity, motivation, and commitment of employees from empirical evidence (Men and Yue, 2023; Bibi et al., 2021). Horizontal communication involves ads cross-departments and sharing knowledge and information between peers at the same organizational level, such as within peers group. It is especially important to have horizontal communication in HEIs, such an interdisciplinary work and cooperation between governance levels, which involves constant communication exchange at the peer level (Vercic and Vercic, 2021; Karanges et al., 2022). Digital communication is the transfer of information through electronic means in an organization such as through institutional email, learning management systems, video conferencing, intranets and instant messaging. The COVID-19 pandemic significantly sparked the widespread adoption of digital communication tools across HEIs all over the globe and has also changed the communication norm giving rise to new challenges concerning effectiveness and inclusivity of digital communication mediated organizational interaction in HEIs (Ofori et al., 2021; Mensah and Agyemang, 2022).

Internal Communication and Employee Productivity

There is a long history of evidence as to the interdependence of internal communication and employee productivity in the organizational management literature. Productivity in this context can be defined as both task performance (direct performance of the role requirement) and contextual performance (motivation and output in terms of initiative-taking, knowledge sharing, and collaborative contribution) (Borman and Motowidlo, 1993; Al-Jedaiah and Albdareen, 2020). Good communication boosts productivity by minimizing role confusion, giving workers the information they need to make effective decisions, and ensuring they feel part of the organization and valued by the company they work for (Men and Yue, 2023).

These relationships have been substantiated in several empirical studies, conducted in various organizational contexts, in recent years. In Higher Education Institutions in Pakistan, Bibi et al., (2021) concluded that the quality of employees' competency was strongly predicted by the quality of internal communication, amongst which the most influencing channel was the channel of communication of supervisor with employees. A study by Mensah and Agyemang (2022) revealed that the satisfaction of the employees and their productivity in the Ghana PSOs were significantly predicted by internal communication practices in these PSOs, with digital communicating tools being increasingly seen as a moderating factor. Previous studies conducted by Ofori et al. (2021) indicated that more work engagement and output quality was reported among university employees who have a positive

perception of the institutions' communication being open and responsive.

In the era of digital communication, the importance of digital communication in determining productivity in HEI has increasingly been discussed in the literature after the emergence of the pandemic. Vercic and Vercic (2021) showed that the successful use of digital communication tools at universities in Croatia was positively correlated with staff productivity and organization recognition. Likewise, Karanges et al. (2022) found in the context of an Australian HEI that increased connectedness and increased accessibility of information among staff is important enough to positively correlate with productivity outcomes and improve productivity through digital internal communication tools. The findings indicate that the digitalisation of internal communication is an opportunity and challenge for HEIs to improve staff performance in their work.

Organizational Trust as a Mediator

The relevance of organizational trust, or the willingness of organizational members to be susceptible to the actions of their organization due to confidence and positive expectations of organizational intentions and behaviours (Rousseau et al., 1998; Dirks and Ferrin, 2001) is considered a key psychological process as communication quality is linked to productive behaviours. Open, honest and consistent communication indicated that the organization cared for its employees and values integrity, thus building trust (Men and Yue 2023; Ruck and Welch 2022). On the other hand, lack of openness, omissions, and unreachability in communication contribute to mistrust and decreased engagement, resulting in lower productivity.

The mediating between communication and productivity relationship has found some support in recent empirical research. In ANHEIs, the relationship among internal communication satisfaction, employee engagement was found to be completely mediated by organizational trust by Karanges et al (2022). In the context of Pak University trust proved to be partially mediating variable between supervisors communication and the performance of the employees in the universities of Pakistan (Bibi et al., 2021). Asante's and Affum-Osei's (2021) study in the Ghanaian setting revealed that perceived organizational support, which is closely related to organizational trust, was a mediating factor between HR communication practices and employee commitment and performance in the public sector organizations.

Hypothesis Development

Based on the theoretical frameworks and empirical evidence reviewed, the following hypotheses are proposed for empirical testing in this study:

- *H1: Vertical communication has a significant positive effect on employee productivity in Ghanaian higher education institutions.*
- *H2: Horizontal communication has a significant positive effect on employee productivity in Ghanaian higher education institutions.*
- *H3: Digital communication has a significant positive effect on employee productivity in Ghanaian higher education institutions.*
- *H4: The three dimensions of internal communication jointly and significantly predict employee productivity in Ghanaian higher education institutions.*

- *H5: Organizational trust mediates the relationship between internal communication and employee productivity in Ghanaian higher education institutions.*

Research Methodology

Research Design and Population

The research design of this study was quantitative explanatory research design to test the hypotheses of this study. An explanatory design can be used if the purpose of the research is to determine the direction, intensity, and degree of relationship among theoretically based variables (Creswell and Creswell, 2018). All the academic and non-academic staff of public universities in Ghana were the target population. The public universities studied were purposively selected because they are large enough to have a large number of students enrolled in agricultural education and training and small yet in their fields of need for agricultural education and training, so that they are positioned anywhere in the country. These universities included the University of Ghana, the Kwame Nkrumah University of Science and Technology, the University of Cape Coast, University for Education (Winnema), and the University of Development Studies.

According to the Ghana Tertiary Education Commission (2022), the overall number of staff in public university education in Ghana is around 18,500. When Krejcie and Morgan's (1970) sample size formula was applied, 377 were determined to be the minimum sample size required for the study. Forty-five hundred questionnaires were sent out to take into consideration the possibility of low response rates and data lost among individuals. To ensure representativeness despite the variety of the population, stratified random sampling procedure was used where strata were based on the following factors: University, staff category (academic vs. non-academic) and the gender. Fortyone hundred and twelve usable questionnaires were returned and kept for analysis, resulting in an effective return rate of 91.6% of the questionnaires.

Measurement of Constructs

All study constructs were operationalized via validated instruments, based on existing literature and using a Likert scale. The perceived quality of information flowing from the top to the bottom was assessed through an eight-item measurement adapted from Men and Yue (2023) and Ruck and Welch (2022), which assessed the effectiveness of top down communication. The horizontal aspect of communication was evaluated on seven items from Vercic and Vercic (2021) and Karanges et al. (2022), which represented the frequency, quality, reciprocity of information exchanges in peer-to-peer communication and inter-department collaboration. Electronic communication was operationalized by an eight item scale adapted from the scales of Ofori, et al (2021) and Mensah and Agyemang (2022), which measures both effectiveness, accessibility as well as reliability of institutional digital communication tools and platforms.

Organizational trust was measured with a six-item scale used by Dirks and Ferrin (2001), and Karanges et al. (2022) that tapped into employee perception of management integrity, benevolence and reliability. Productivity of employees was measured by a 9-item scale measuring perceived level of quality of task performance, volume of work produced, efficiency of time management, and level of discretionary contribution adapted from Al-Jedaiah and Albdareen, (2020), Bibi et al., (2021). Each item was scored on a scale of 1 (Strongly Disagree) to 5 (Strongly

Agree). The instrument was clarity tested with a pilot study of 40 non-refused to sample staff in one public university and minor revisions in wording only were made.

Reliability and Validity Assessment

Cronbach's alpha was computed to test internal consistency reliability, and all constructs obtained Cronbach's alpha scores above the 0.70 level advocated by Nunnally and Bernstein (1994). Confirmatory factor analysis (CFA) was used to assess the construct validity in SPSS Amos 26. All item loadings on their respective factor scores were greater than 60 (convergent validity: fornell and larcker 1981) with Average Variance Extracted (AVE) values over 50 and Composite Reliability (CR) greater than 70. The square root of each AVE was compared with its highest correlational values across constructs to validate the discriminant validity: All square root values of AVE were greater than the highest values of all inter-construct correlation elements. Harman's one factor test was used to examine the resulting risk from common method bias with the result showing that many factors which accounted for a variance of less than 35% were common methods and hence did not pose a problem.

The Kaiser-Meyer-Olkin (KMO) test had value of 0.841 and Bartlett's test of sphericity is significant ($\chi^2 = 6,218.47$, $df = 351$, $p < .001$) which implies the data were suitable for analyzing using factor analytic procedures. Multicollinearity was evaluated using Variance Inflation Factors (VIFs) all values were under 5.0, which were acceptable.

Demographic Profile of Respondents

Of the 412 respondents, 248 (60.2%) were male and 164 (39.8%) were female. The majority of respondents (44.9%) were aged between 31 and 40 years, followed by 41–50 years (31.1%), above 50 years (14.3%), and 18–30 years (9.7%). Academic staffs were 247 (59.9%) and 165 (40.1%) non-academic staffs. However, educational attainment consisted of various options, with 38.6% having received their doctoral degree, 41.5% their master's, 15.8% their bachelor's, and 4.1% a different type of educational qualification. In terms of institutional involvement, 38.3% reported that they had been with the institution for 6-10 years, 29.4% for 2-5 years, and 23.8% for more than 10 years. The demographic features suggest that this sample is fairly knowledgeable and experienced, and therefore able to give accurate judgments about communication effectiveness and productivity within the organization.

Analytical Approach

The analysis of the data was conducted in several steps in IBM SPSS version 26 and SPSS Amos version 26. Within the first phase descriptive statistics (percentage, means, standard deviations and frequency distributions) were calculated to describe the sample and give an overview of the patterns on the construct level. In the second stage, Pearson's bivariate correlation analysis was used to explore the bivariate correlations between all the variables of the study. Multiple regression analysis was used to test hypotheses H1, H2, H3 and H4 in the third stage to examine the individual and combined impact of the three dimensions of internal communication on employee productivity. For the fourth stage, mediation analysis was performed using Hayes' PROCESS Macro Version 4.0 (Model 4), with bootstrapping (5,000 resamples) to obtain bias corrected 95% confidence intervals for the indirect effects of internal communication on productivity through

organizational trust (H5). Indirect effects were considered as important if their confidence intervals did not contain zero.

Reliability Analysis

The reliabilities for all of the study constructs are given in Table 1. All of the Cronbach's alpha for the scales were above the

acceptable range of 0.70, with a value of 0.783 for horizontal communication and 0.851 for employee productivity. The findings support the internal consistency of the measurement tools and the appropriateness of them for the subsequent inferential analysis

Table 1. Reliability Analysis Results

Construct	No. of Items	Cronbach's Alpha	Interpretation
Vertical Communication	8	0.811	Good
Horizontal Communication	7	0.783	Good
Digital Communication	8	0.829	Good
Organizational Trust	6	0.817	Good
Employee Productivity	9	0.851	Good

Source(s): Authors' own work

Correlation Matrix

The correlation matrix is shown in Table 2. Vertical communication ($r = 0.438$, $p < .01$), horizontal communication ($r = 0.461$, $p < .01$) and digital communication ($r = 0.512$, $p < .01$) were found to be positively correlated with employee productivity. There was also a positive correlation between organizational trust

and all three communication dimensions, and with employee productivity ($r = 0.496$, $p < .01$). As for the bivariate correlations, they are in line with the hypotheses and the suitability of organizational trust as a mediating variable. Inter-predictor correlations were found to be moderate (0.371–0.503) and VIF values showed no multicollinearity.

Table 2. Pearson Correlation Matrix

Variable	1	2	3	4	5	6	7
1. Gender	1						
2. Age	.163	1					
3. Vertical Comm.	.087	.214	1				
4. Horizontal Comm.	.054	.173	.503	1			
5. Digital Comm.	.072	.188	.447	.487	1		
6. Org. Trust	.048	.196	.472	.441	.518	1	
7. Employee Prod.	.191	.107	.438	.461	.512	.496	1

** $p < .01$ (2-tailed) | Source(s): Authors' own work

Regression Analysis and Hypothesis Testing

The individual and combined effect of the internal communication dimensions on the productivity of the employees was studied using regression analysis. The results for each hypothesis are presented below.

H1: Vertical Communication and Employee Productivity

The results of the regression for H1 are shown in Table 3. Vertical communication was determined as a positive, statistically significant predictor of employee productivity ($\beta = 0.438$, $t = 9.917$, $p < .001$). The R-squared value of 0.192 means that the vertical communication alone accounts for 19.2% of the variations in the employee productivity and the F-statistic value of 98.347 shows that the model is significant. The findings confirm H1 and

imply that the clarity, timeliness and reciprocity of the hierarchical information flow is of significance to staff productivity in GHAs HEIs. If management can communicate clearly and openly institutional goals, performance expectations and strategic directions, employees can better match their working efforts with institutional priorities and so increase the productivity of their working units as well as their own productivity. The present finding is in line with that obtained by Men and Yue (2023) who concluded that quality of leadership communication was a strong predictor of employee performance in knowledge intensive organizations and that of Bibi et al. (2021) who showed that supervisor communication was a key determinant of academic staff productivity in Pakistani universities.

Table 3. Effect of Vertical Communication on Employee Productivity (H1)

Variable	β	Stand. Error	t-test	F	R Square	P-value
Vertical Communication	0.438	.044	9.917	98.347	.192	.000

Dependent variable: Employee Productivity

H2: Horizontal Communication and Employee Productivity

The results for H2 are shown in Table 4. Horizontal communication demonstrated a significant positive effect on employee productivity ($\beta = 0.461$, $t = 10.533$, $p < .001$), explaining 21.3% of the variance in productivity ($R^2 = 0.213$, $F = 110.944$, $p < .001$). However, the impact of horizontal communication was slightly more than vertical communication, which is in line with the collaborative and team working approach to academic work in HEIs. This finding has implications for H2 and indicates how important it is for academic and administrative staff to share

knowledge at their peers' level, to support each other and to coordinate within and between departments. As argued by Vercic and Vercic (2021) who have suggested that horizontal communication is the source of relational capital and collective intelligence that can help the organization tap into distributed knowledge, an important capacity especially in a university where the creation and transfer of knowledge is a collaborative process. Others too have shown that peer communication quality is one of the most important factors affecting staff engagement and output in Australian HEIs (Karanges et al. 2022).

Table 4. Effect of Horizontal Communication on Employee Productivity (H2)

Variable	β	Stand. Error	t-test	F	R Square	P-value
Horizontal Communication	0.461	.044	10.533	110.944	.213	.000

Dependent variable: Employee Productivity

H3: Digital Communication and Employee Productivity

The regression results for H3 are shown in Table 5. The three communication dimensions yielded a single predictor that was a significant predictor of employee productivity, digital communication, which accounted for 26.2% of the variance in productivity ($R^2 = 0.262$, $F = 142.109$, $p < .001$, with $\beta = 0.512$, $t = 11.921$, $p < .001$). Therefore, H3 is highly favoured. This discovery highlights how digital communication tools such as institutional emails, videoconferencing, learning management systems and digital collaboration tools make information accessible, shorten

communication times and allow remote and asynchronous collaboration in modern settings of higher education institutions. This is in line with the literature on the organizational communication in the wake of COVID-19, which notes the rapid transition to digitally mediated communication and work in Ghanaian universities (Ofori et al., 2021; Mensah and Agyemang, 2022). An over-reliance on digital channels, however, brings a significant equity issue to the fore as staff with limited digital literacy or poor internet connection may find themselves disadvantaged, a concern raised by Mensah and Agyemang (2022) in the context of public sector in Ghana.

Table 5. Effect of Digital Communication on Employee Productivity (H3)

Variable	β	Stand. Error	t-test	F	R Square	P-value
Digital Communication	0.512	.043	11.921	142.109	.262	.000

Dependent variable: Employee Productivity

H4: Joint Effect of Internal Communication Dimensions

Table 6 provides the results of multiple regression of all three dimensions of the communication as predictors of employee productivity. Overall, the model was highly significant ($F = 94.217$; $p < .001$; R-squared = 0.412; which means that the three dimensions together explain 41.2% of variance in employee productivity). The model seems to be fairly robust, as confirmed by an adjusted R-squared value of 0.407. In the full model, the highest β standardized coefficient was for digital communication ($\beta =$

0.327, $p < .001$), followed by horizontal communication ($\beta = 0.261$, $p < .001$) and vertical communication ($\beta = 0.198$, $p < .001$). This was the case for all three predictors, which were also independent with the other predictors controlled, supporting H4. The increase in variance explained with the combined model (41.2%) was significantly higher than the sum of the individual model R-squares, suggesting synergistic effects between the communication channels and the need to adopt a holistic communication approach.

Table 6. Joint Effect of Internal Communication Dimensions on Employee Productivity (H4)

Variables	β	Stand. Error	t-test	F	R Square	Adj. R ²	P-value
Vertical Communication	0.198	.047	4.208				.000
Horizontal Communication	0.261	.046	5.718				.000
Digital Communication	0.327	.044	7.416	94.217	.412	.407	.000

Dependent variable: Employee Productivity | Source(s): Authors' own work

H5: Mediation by Organizational Trust

Hayes' PROCESS Macro (Model 4) was used to test mediation hypothesis (H5) with 5,000 bootstrap resamples. Three dimension scores of communication were averaged to form an internal communication index. Table 7 shows that the internal communication was found to have a significant positive impact on organizational trust (a-path: $\beta = 0.514$, $t = 12.374$, $p < .001$). Organizational trust, in turn, was found to have a significant positive effect on employee productivity (b-path: $\beta = 0.317$, $t =$

7.218, $p < .001$). Organizing trust partially mediated the connection between direct impact on employee productivity and introducing organizational trust into the model (c'-path: $\beta = 0.341$, $t = 7.893$, $p < .001$). The indirect effect of internal communication on productivity was significant at the 0.163 (95% CI [0.108, 0.219]) level, as the confidence interval does not contain zero. The results confirm that H5 is valid and suggest that organizational trust is a valid but not the only way in which internal communication positively contributes to employee productivity in HEIs in Ghana.

Table 7. Mediation Analysis: Organizational Trust as Mediator (H5)

Path	β	SE	t	LLCI	ULCI	p-value
IC $\rightarrow$ Org. Trust (a-path)	0.514	.042	12.374	0.432	0.596	.000
Org. Trust $\rightarrow$ Prod. (b-path)	0.317	.044	7.218	0.231	0.403	.000
IC $\rightarrow$ Productivity (direct c')	0.341	.043	7.893	0.256	0.426	.000
Indirect Effect (a $\times$ b)	0.163	.028	—	0.108	0.219	< .05

IC = Internal Communication (aggregate index); Bootstrapped CI based on 5,000 resamples | Source(s): Authors' own work

Discussion of Findings

In this section, the study results are explained in terms of the theoretical frameworks and various empirical studies reviewed, highlighting the points of similarity, difference and the context of the study.

Results of this study support the assertion of Information Processing Theory that downward communication positively and significantly predicts employee productivity, as well as that upward communication is necessary for management responsiveness both of which are prerequisites for effective employee performance (Daft and Lengel, 1986; Galbraith, 1973). The quality of vertical communication is especially important in the Ghanaian context of the university where hierarchical management systems exist and faculty and staff members are often not provided with sufficient feedback on their performance and institutional progress (Ofori et al., 2021). The finding is consistent with the finding of Men and Yue (2023) that leadership communication transparency was found to be a strong driver of employee productivity in knowledge-intensive organizations; and with Bibi et al. (2021) that suggested that supervisor communication is the main communication predictor of academic staff performance in a developing country HEI context.

The horizontal communication is very effective in employee productivity (H2); those who are working in academic activities in a scientific manner use horizontal communication. Horizontal communication is very effective in employee productivity (H2), because the academic activities in the scientific aspect is carried out collaboratively, interdisciplinary, and based on a team. Horizontal channels of communication in public universities in Ghana, such as departmental meetings, collegial networks and peer-to-peer informal exchanges, are important for knowledge sharing and problem-solving because formal professional development opportunities are scarce (Asante and Affum-Osei, 2021). The discovery corroborates the one made by Karanges et al. (2022) that horizontal communication within HEIs was significantly positively related to staff engagement and quality of output in Australian HEIs, and by Mensah and Agyemang (2022) that the quality of peer communication was significantly positively related to the productivity of public sector employees in Ghana.

The rise of the digital communication as the strongest individual predictor of employee productivity (H3) is reflective of the great and rapid transformation of work and communication in Ghanaian universities that is dominated by digital communication (Mensah and Agyemang, 2022; Ofori et al., 2021). COVID-19

forced the sudden transition to digital communication and remote working modes within Ghanaian HEIs since 2020, which seems to have changed norms and expectations of staff communication and productivity. The discovery is corroborated by the study conducted by Vercic and Vercic (2021), which revealed that the digital communication effectiveness positively correlated with employee productivity in universities in Croatia, and by the study by Ofori et al. (2021), which shows that the satisfaction of the Ghanaian university staff with digital communication tools was positively correlated with their productivity. However, the magnitude of this effect also serves as an indicator of potential productivity loss from digital communication inadequacies-like low reliability of platforms, lack of digital training or unequal access to digital training within Ghanaian HEIs.

Results from the joint model (H4) that accounts for 41.2% of the variance in employee productivity indicate that the communication channel diversity is complementary and synergistic to the increase of productivity. This was also found to be in line with the media richness framework (Daft and Lengel, 1986) which suggests that the media should match the task complexity: vertical channels are appropriate for policy clarification and feedback on performance; horizontal channels are appropriate for collaborative knowledge work; digital channels are appropriate for the speed, scalability and asynchrony needed in modern HEI environments. Organizations that implement a portfolio of communication channels, and not a single modality, are thus in a better position to respond to the varying communication needs of their workforce and to maintain high productivity.

Organizational trust partially mediates the relationship between internal communication and productivity (H5), which further contributes to the study's theory by shedding light on the psychological mechanism that connects the quality of internal communication with productive behaviour. When employees believe institutional communication is open, consistent, and responsive, they also gain confidence in the integrity and benevolence of management, which further boosts their willingness to invest their effort and perform better to ensure their jobs and organizations' success and survival (Men and Yue, 2023; Karanges et al., 2022). The partial mediation finding (communication quality having a direct effect on productivity even after the direct effect of trust has been modeled out) means that there are other pathways of communication quality that also have an impact on productivity that should be investigated in future studies (information provision, role clarity, and behavioral alignment).

Theoretical Implications

This study makes several significant theoretical contributions to the organizational communication, HEI management, and human resource management literatures. First, the study advances the application of Information Processing Theory (Daft and Lengel, 1986; Galbraith, 1973) to the HEI context by demonstrating that communication channel richness and diversity operationalized through vertical, horizontal, and digital dimensions differentially and additively influence employee productivity. The findings extend IPT beyond its original corporate focus, validating its explanatory power in the knowledge-intensive, professionally complex environment of public universities in Sub-Saharan Africa.

Second, the study enriches Social Exchange Theory (Blau, 1964) by empirically documenting that the quality of internal communication constitutes a form of organizational investment

that triggers reciprocal productive behavior among employees through the cultivation of organizational trust. This contribution refines SET's application to HEI contexts by specifying organizational trust as a key exchange currency — a finding that builds on and extends the work of Karanges et al. (2022), Men and Yue (2023), and Bibi et al. (2021) in demonstrating the trust-mediated communication-performance pathway in higher education settings.

Third, the study extends the JD-R model (Bakker and Demerouti, 2007) by demonstrating that internal communication quality — particularly digital and horizontal communication — functions as a critical job resource that buffers against the productivity-impairing effects of high workload and role ambiguity characteristic of Ghanaian public university environments. This contribution suggests that communication system investments should be theorized not merely as managerial preferences but as strategic resource endowments with direct implications for the motivational and performance states of university staff.

Fourth, the study makes a contextual theoretical contribution by demonstrating that established organizational communication theories hold predictive validity in the specific institutional and cultural context of Sub-Saharan African HEIs — a setting largely absent from the mainstream communication and productivity literature. The findings affirm that while the mechanisms of the communication-productivity relationship are broadly generalizable, their magnitudes and specific channels of influence are shaped by contextual factors including digitalization rates, cultural communication norms, and organizational governance structures that are distinctive to the Ghanaian university environment.

Managerial and Practical Implications

The study's findings carry significant practical implications for university management, human resource practitioners, communication officers, and policymakers in Ghana's higher education sector. The identification of digital communication as the strongest predictor of employee productivity provides a compelling rationale for sustained institutional investment in digital communication infrastructure. University management should prioritize the procurement and maintenance of reliable, user-friendly digital communication platforms including institutional intranets, integrated email systems, video conferencing tools, and learning management systems and ensure that all staff receive adequate training to use these tools effectively. Given the digital divide that characterizes many Ghanaian universities, particular attention should be paid to ensuring equitable access to digital communication resources for staff in remote campuses and administrative units.

The significant effect of horizontal communication underscores the value of creating structured opportunities for peer-level knowledge exchange and cross-departmental collaboration. University management should invest in establishing and sustaining communities of practice, interdisciplinary working groups, staff colloquia, and informal collegial networks. These platforms not only facilitate the horizontal communication flows that drive productivity but also build the relational capital and psychological safety that underpin organizational trust the mediating mechanism confirmed in this study. Regular departmental meetings, transparent sharing of institutional information, and collegial engagement mechanisms should be

formalized as components of universities' internal communication strategies rather than left to informal or ad hoc arrangements.

The finding that vertical communication significantly predicts productivity points to the need for university leadership to prioritize communication clarity, consistency, and responsiveness. Vice-chancellors, deans, and heads of department should establish regular forums for staff communication including open-door policies, town hall meetings, management briefings, and structured performance feedback sessions that create sustained opportunities for both downward information dissemination and upward employee voice. Communication training for middle managers who serve as critical conduits between senior leadership and frontline staff should be incorporated into institutional leadership development programmes.

For national policymakers and the Ghana Tertiary Education Commission, the findings argue for the inclusion of internal communication quality as an explicit dimension of institutional quality assurance frameworks. National accreditation and review processes for Ghanaian universities should incorporate assessments of internal communication systems and practices, incentivizing institutions to invest in communication infrastructure and culture as part of their broader commitment to staff productivity and institutional performance.

Limitations and Future Research

This study has several limitations that should be acknowledged. First, the cross-sectional research design limits the ability to draw firm causal conclusions about the direction of the relationships identified. While the theoretical frameworks deployed and the regression and mediation analyses conducted provide strong support for the proposed directional hypotheses, longitudinal panel studies tracking communication practices and productivity outcomes over time would provide more definitive causal evidence. Future research should adopt experimental or quasi-experimental designs, or employ experience sampling methods, to more precisely map the communication-trust-productivity causal chain.

Second, the study's focus on five public universities in Ghana limits the generalizability of the findings to private HEIs, technical universities, and polytechnics in Ghana, as well as to HEIs in other Sub-Saharan African countries. Future research should extend the investigation to a broader sample of institutions and countries, enabling cross-sectional comparative analyses that illuminate how national and institutional contextual factors including funding structures, governance systems, and technological infrastructure moderate the communication-productivity relationship.

Third, the reliance on perceptual, self-reported measures of both internal communication and employee productivity introduces the possibility of common method variance and social desirability bias. While Harman's single-factor test did not reveal evidence of severe common method bias, future studies should triangulate self-report data with objective productivity indicators such as publication output, student satisfaction ratings, and administrative efficiency metrics to enhance measurement validity.

Fourth, this study examined organizational trust as a mediator but did not explore potential moderating variables that may condition the communication-productivity relationship. Future research could investigate how factors such as leadership style, organizational culture, digital literacy levels, generational

differences, and job category (academic versus non-academic) moderate the effects of different communication channels on productivity. Such investigations would generate more nuanced insights into the boundary conditions of the communication-productivity relationship in HEI contexts.

Conclusion

This study has provided robust empirical evidence that internal communication operationalized across vertical, horizontal, and digital dimensions significantly and positively influences employee productivity in Ghanaian public universities. All five hypotheses were supported, with digital communication emerging as the strongest predictor and organizational trust confirmed as a partial mediator of the internal communication-productivity relationship. The three communication dimensions jointly explained 41.2% of the variance in employee productivity, underscoring the value of a holistic, multi-channel communication strategy for maximizing staff performance in HEI settings.

The findings affirm the applicability of Information Processing Theory, Social Exchange Theory, and the Job Demands-Resources model in the Ghanaian higher education context, while advancing theoretical understanding of the trust-mediated mechanisms through which communication quality translates into productive behavior. Practically, the study makes a compelling case for sustained institutional investment in digital communication infrastructure, structured horizontal communication platforms, and transparent vertical communication practices as levers for enhancing staff productivity and institutional effectiveness in Ghana's rapidly evolving public university sector.

As Ghana's higher education system continues its expansion, ensuring that internal communication systems keep pace with institutional growth will be critical to sustaining the staff productivity gains needed to deliver quality education and research outcomes. This study provides a timely and contextually grounded contribution to that endeavour, offering a foundation for future longitudinal, multi-institutional, and comparative investigations that further deepen understanding of the communication-productivity relationship in African higher education.

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