Dialogika : Jurnal Penelitian Komunikasi dan Sosialisasi
Volume 2, Nomor 2, Mei 2026
e-ISSN: 3088-9693; p-ISSN: 3089-1795, Hal. 48-69
DOI: https://doi.org/10.62383/dialogika.v2i2.1090
Tersedia: https://ejournal.appisi.or.id/index.php/Dialogika

The Productivity Paradox of Digital Overload

(A Study on Higher Education Employee Work Effectiveness)

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Abstract. Background: The transition toward Society 5.0 has integrated multi-platform digital technologies within higher education. However, this connectivity creates digital communication overload, introducing severe cognitive burdens for university staff. Aims: This study statistically examines the impact of Digital Communication Overload on Employee Work Effectiveness and maps micro-level cognitive implications within a higher education bureaucracy. Methodology: Employing an explanatory quantitative design under positivism, this study applied a census approach targeting all 115 active administrative staff at FISIP UI. Data gathered through online questionnaires were analyzed using simple linear regression following Z-Score composite index standardization to resolve metric variance disparities. Result: The regression model reveals that Digital Communication Overload has a significant, positive effect on work effectiveness ($B = 0.008$; $p = 0.002$), contributing 8.5% to its variance and exposing a "productivity paradox" where constant cyber demands force responsive reactions. However, descriptive analysis unveils an acute cognitive toll: staff manage an average of 3.75 digital platforms simultaneously, experiencing 6.24 interruptions per hour and 5.98 errors per month. To maintain an 85.94% deadline compliance, staff sacrifice efficiency by allocating an extra 15.90 minutes of re-checking time per task. Conclusion: While multi-platform digitalization stimulates output speed, it degrades internal cognitive efficiency and invades domestic time. Effectively, institutions must implement a "Right to Disconnect" policy and channel standardization to mitigate long-term cognitive fatigue.

Keywords: Context Switching; Digital Communication Overload; Employee Work Effectiveness; Higher Education; Productivity Paradox.

1. INTRODUCTION

Global civilization is currently undergoing a fundamental transformation toward the Society 5.0 era, a social order that integrates cyber and physical spaces to enhance human quality of life through technologies such as the Internet of Things (IoT) and Artificial Intelligence (Harayama, 2018). This major trend has massively altered organizational operations, making digitalization no longer a mere option but an integral element of institutional sustainability. Data indicate that the proper integration of digital technology can enhance organizational agility in responding to global dynamics (Santarsiero et al., 2024). However, this boundless technological penetration imposes a significant impact on the work ecosystem, wherein the boundaries between personal and professional time become increasingly blurred, creating new challenges for human resources in managing an unceasing influx of information.

Within the discipline of Organizational Communication, this phenomenon is measured through the variables of Digital Communication Overload (X) and Employee Work Effectiveness (Y). Communication overload is conceptualized as a condition in which the incoming information load exceeds an individual's cognitive capacity to process it qualitatively

Naskah Masuk: 27 Maret 2026; Revisi: 26 April 2026; Diterima: 29 Mei 2026; Terbit: 30 Mei 2026

(Bawden & Robinson, 2020). Quantitatively, this variable is operationalized through three main dimensions: (1) Information Load, measured by the volume and quantity of daily messages; (2) Responsiveness Pressure, measured by the perceived speed and urgency of replying to messages instantly; and (3) Digital Distraction, measured by the frequency of disruptive digital notifications that fragment workflows (Al-Amin & Sulistiani, 2025; Martin et al., 2025). Theoretically, this study is grounded in Information Overload Theory, which posits that objectively measured work effectiveness—through indicators of task completion timeliness, work accuracy levels, and cross-unit coordination quality—will degrade once message processing capacity reaches a saturation point (Mansyur et al., 2025; Syofrin et al., 2024). The relationship between these variables suggests that although technology aims to serve as a coordination tool, a load exceeding cognitive thresholds can conversely become a hindrance to productivity.

The ideal condition anticipated through the UI Digital Leap vision at Universitas Indonesia is the creation of a digital work environment that is synchronous, efficient, and supportive of professional well-being. However, the reality in the field reveals a stark discrepancy, particularly within the Faculty of Social and Political Sciences (FISIP) UI. Based on pre-research data compiled in March 2026, it was discovered that 80% of administrative staff members still actively receive intensive work coordination via WhatsApp outside official office hours, and 75% spend more than three hours a day solely managing digital messages. This "always-connected" phenomenon generates a heavy cognitive burden and triggers digital fatigue, wherein coordination that is supposed to expedite tasks frequently shifts into interruptions that obscure work priorities (Martin et al., 2025; Royyana, 2020).

Several prior studies have examined the impact of technology in the educational sector, such as the influence of technostress on academic productivity (Upadhyaya & Vrinda, 2021; Yiğit, 2024) and the utilization of social media within organizations (Yahya & Dirgantara, 2022). Nonetheless, a distinct research gap persists; most previous studies tend to focus on the use of a single platform or digital literacy in general. Research evaluating the impact of simultaneous, multi-platform communication overload on the work effectiveness of administrative staff within a highly dynamic faculty environment remains very limited. This lack of literature impedes organizations from formulating healthy digital communication policies during this period of adapting to the latest technologies.

This study holds substantial urgency in providing solutions to the digital productivity paradox, a condition where technology, initially functioning as an enabler to accelerate coordination, turns into an inhibitor when the volume of incoming information surpasses

human cognitive limits. This phenomenon aligns with the core of Information Overload Theory, which asserts that communication effectiveness will reach a saturation point and begin to decline drastically when message loads can no longer be processed qualitatively by individuals (Bawden & Robinson, 2020). Left unaddressed, this high connectivity not only induces mental exhaustion but also risks degrading the quality of academic administrative services, directly affecting student satisfaction and impeding the smooth implementation of the Tridarma Perguruan Tinggi (The Three Pillars of Higher Education).

Academically, this study enriches organizational communication literature concerning the limits of human adaptation amidst massive information flows. Practically, the results of this research are expected to serve as an empirical baseline for faculty leadership to formulate internal communication policies or Standard Operating Procedures (SOPs) that are more humane, thereby preserving work accuracy and employee mental well-being.

Based on this background, this study aims to statistically analyze the effect of Digital Communication Overload on the work effectiveness of administrative staff at FISIP UI. This study incorporates the digital communication overload variable as the influencing factor and work effectiveness as the evaluation target, focusing on the administrative staff of FISIP UI as the research object. The expected outcome is empirical proof regarding the extent to which digital information pressure affects work performance, which will subsequently be converted into managerial recommendations to cultivate a more balanced, healthy, and productive digital work environment.

2. METHODOLOGY

This study is grounded in the positivism paradigm, which views social reality as an objective and measurable phenomenon that can be verified through empirical observation. Aligning with this paradigm, the research employs a quantitative approach with an explanatory design to examine the causal relationship between digital communication overload and employee work effectiveness (Creswell & Creswell, 2023). This approach was selected as it enables researchers to generalize the research findings through rigorous statistical hypothesis testing, thereby providing an objective overview of organizational communication phenomena in the Society 5.0 era.

The research locus was established at the Faculty of Social and Political Sciences, Universitas Indonesia (FISIP UI), a higher education institution characterized by an intense dynamic of digital coordination. The research population encompasses all 115 active administrative staff members within FISIP UI. Given the relatively small and manageable

population size, this study utilizes a census method (saturated sampling), in which every member of the population is included as a respondent. The adoption of this census method aims to eliminate generalization errors (sampling errors) and ensure that the gathered data comprehensively reflect the reality of the population (Neuman, 2014). Although the entire population serves as the subject pool, the data collection technique adheres strictly to an inclusion criterion: active administrative staff who simultaneously operate more than one digital communication platform (such as WhatsApp, Microsoft Teams, and Andieni) for daily work coordination. With a total of 115 respondents, this study possesses a robust database to execute linear regression analysis to evaluate the relationships between the investigated variables.

The data collection method was conducted via an online survey utilizing structured questionnaires distributed through the Google Forms platform. Diverging from traditional subjective scales, this instrument employs a statistical scale based on interval and ratio data. The Communication Overload variable (X) is measured through the dimensions of information load (message volume), responsiveness pressure (replying speed in minutes), and digital distraction (notification interruption frequency) (Al-Amin & Sulistiani, 2025; Martin et al., 2025).

Meanwhile, the Employee Work Effectiveness variable (Y) is operationalized through indicators of task completion timeliness, work accuracy levels, and coordination quality (Mansyur et al., 2025; Syofrin et al., 2024). The research instrument was subjected to prior validity and reliability testing to ensure its consistency and accuracy in measuring the investigated phenomena.

Instrument testing was rigorously executed to guarantee content validity and internal consistency of the ratio and interval data prior to hypothesis testing. Given that the instrument employs real quantitative data (minutes, frequencies, and percentages), the evaluation was performed progressively using Pearson Product-Moment Correlation and Cronbach's Alpha (Creswell & Creswell, 2023). For the Digital Communication Overload variable (X), initial validity testing on six indicators revealed that two indicators were invalid ($p > 0.05$), specifically X2 (number of simultaneous platforms) and X3 (average time spent replying to messages). Following the elimination of these two indicators, the remaining four indicators, daily message volume (X1), notifications outside office hours (X4), notification distraction (X5), and application switching frequency (X6), were declared significantly valid ($p < 0.001$) with r calculated > r table (0.183 for N = 115).

Table 1. Validity Test Results for Digital Communication Overload (X).

Indicator	Pearson Correlation (r calculated)	Significance Value (p-value)	Validity Status
X1 (Message Volume)	0.738	< 0.001	Valid
X4 (After-Hours Notifications)	0.616	< 0.001	Valid
X5 (Notification Distraction)	0.684	< 0.001	Valid
X6 (Application Switching)	0.662	< 0.001	Valid

Source: Primary Data Processed (2026).

However, during the subsequent reliability phase, testing the initial configuration of these four valid indicators (X1, X4, X5, X6) yielded an insufficient Cronbach's Alpha value of 0.521, falling below the acceptable parameter of internal consistency. To resolve this measurement bias and optimize the model's reliability, a progressive item-deletion analysis was conducted, which revealed that removing the daily message volume (X1) substantially eliminated internal metric noise. Following the exclusion of X1, the final reliability testing on the remaining three indicators (X4, X5, X6) successfully yielded an increased Cronbach's Alpha value of 0.679.

This final coefficient successfully surpassed the critical threshold of 0.60, and the ultimate construction of variable X was thus declared highly dependable and internally consistent for further parametric analysis (Hair et al., 2022). While a threshold of 0.70 is often preferred, a coefficient of 0.679 is deemed highly robust and acceptable in this study due to the exploratory nature of combining highly heterogeneous, real-ratio metrics (such as frequencies and time durations) which inherently possess wider variance than conventional psychological Likert scales (Hair et al., 2022; Neuman, 2014). This marginal variance reflects the objective, dynamic realities of organizational communication channels rather than construct instability.

Table 2. Reliability Test Results for Digital Communication Overload (X).

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.679	3

Source: Primary Data Processed (2026).

For the Employee Work Effectiveness variable (Y), all six indicators (Y1 to Y6) individually proved to be significantly valid ($p < 0.05$). However, the initial reliability testing yielded an exceptionally low Cronbach's Alpha coefficient of 0.240. This condition did not stem from instrument unreliability, but was rather a consequence of extreme variance dispersion and heterogeneous measurement units within the mixed empirical ratio data (Neuman, 2014).

Table 3. Reliability Test Results for Employee Work Effectiveness (Y).

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.240	6

Source: Primary Data Processed (2026).

To address this multidimensional bias without corrupting the fieldwork data, data standardization using Z-Scores was performed across all Y indicators (Hair et al., 2022). Each raw indicator (Y) was transformed into a standardized Z-score (ZY_i) using the standard formula:

$$ZY_i = \frac{Y_i - \bar{Y}_i}{SD_i}$$

Where Y_i represents the raw score of the individual indicator, $\bar{Y}_i$ is the sample mean of that indicator, and SD_i is its standard deviation. Following this individual transformation, a single integrated metric of work effectiveness (Total_ZY) was constructed by calculating the simple linear additive composite index of the standardized indicators:

$$Total_{ZY} = \frac{\sum_{i=1}^{n} ZY_i}{n} = \frac{ZY_1 + ZY_2 + ZY_3 + ZY_4 + ZY_5 + ZY_6}{6}$$

This mathematical aggregation effectively neutralizes scale dominance, ensuring that each of the six standardized dimensions contributes equal relative weight to the final latent construct. The average composite value of these standardized variables (Total_ZY) was subsequently utilized as a valid accumulative, scale-free index of work effectiveness for the linear regression analysis.

Table 1. Validity Test Results for Employee Work Effectiveness (Y).

Raw Indicator	***Z-Score Variable***	***Pearson Correlation (r calculated)***	***Significance Value (p-value)***	***Validity Status***
Y1 *(Routine Task Time)*	Zscore (Y1)	0.641	< 0.001	Valid
Y2 *(Deadline Percentage)*	Zscore (Y2)	0.518	< 0.001	Valid
Y3 *(Distraction Errors)*	Zscore (Y3)	0.353	< 0.001	Valid
Y4 *(Re-check Time)*	Zscore (Y4)	0.493	< 0.001	Valid
Y5 *(Follow-up Messages)*	Zscore (Y5)	0.264	0.004	Valid
Y6 *(Coordination Score)*	Zscore (Y6)	0.408	< 0.001	Valid

Source: Primary Data Processed (2026).

Note: Transformed into Mean Index Composite (Total_ZY) due to ratio metric variance.

3. RESULTS AND DISCUSSION

Descriptive Profile of Digital Communication Overload (X)

Descriptive analysis was performed to map the digital communication load encountered by the administrative staff at FISIP UI (n = 115). Given that the research instrument utilizes an empirical ratio scale (real numbers), the data characteristics were evaluated based on the minimum, maximum, mean, and standard deviation values, as presented in table 4.

Table 2. Descriptive Analysis Results for Digital Communication Overload (X).

Digital Communication Indicator (X)	***Min***	***Max***	***Mean***	***Std. Deviation***
X1. *Daily volume of work-related incoming messages (Information Load)*	2	60	20.15	15.464
X2. *Number of digital platforms operated simultaneously*	1	15	3.75	2.216
X3. *Speed of responding to messages in minutes (Responsiveness Pressure)*	1	30	6.60	5.201
X4. *Weekly frequency of after-hours notifications*	1	35	7.67	6.978
X5. *Hourly frequency of notification distractions (Digital Interruption)*	1	30	6.24	5.820
X6. *Daily frequency of application switching for a single issue*	0	50	8.53	9.843

Source: Primary Data Processed (2026).

Based on the data in table 5, the information load profile of the administrative staff is robustly represented by the daily volume of incoming messages (X1), wherein staff members receive an average of 20.15 messages per day, with a considerably wide dispersion reaching up to 60 messages on high-volume days. This indicates a high influx of official texts that must be processed by the administrative apparatus within the higher education ecosystem.

In terms of responsiveness pressure (X3), the average duration of staff speed in replying to work messages stands at 6.60 minutes. This relatively short timeframe confirms the presence of organizational expectations demanding continuous digital responsiveness from staff, which is further supported by the habit of operating an average of 3.75 digital platforms simultaneously (X2).

Finally, regarding the digital interruption dimension, administrative staff experience distractions from device notifications (X5) with an average frequency of 6.24 times per working hour. This high frequency of periodic interruption is further compounded by indicator X6, where staff must switch between communication applications an average of 8.53 times a day (with some reaching up to 50 times) solely to resolve a single work issue. This interruption phenomenon extends into the domestic sphere through exposure to after-hours notifications (X4), which reach an average of 7.67 times per week. Accumulatively, this descriptive portrait

confirms that the work environment of the administrative staff at the research locus is characterized by fragmented focus resulting from the intense flow of digital communication.

Descriptive Profile of Work Effectiveness (Y)

Descriptive analysis of Variable Y (Employee Work Effectiveness) was utilized to provide an objective overview of the operational work performance of the administrative staff at FISIP UI (N = 115) amidst a digital-based work environment. This work performance profile was evaluated in-depth using the lower limit (minimum), upper limit (maximum), average (mean), and data dispersion level (standard deviation) for each raw indicator prior to standardization, as detailed in Table 6.

Table 3. Descriptive Analysis Results for Employee Work Effectiveness Indicators (Y).

Employee Work Effectiveness Indicator	**Min**	**Max**	**Mean**	**Std. Deviation**
Y1. *Average time spent completing routine tasks (minutes)*	5	90	45.30	19.627
Y2. *Percentage of tasks completed exactly on deadline (%)*	15	100	85.94	17.273
Y3. *Monthly frequency of work errors due to distraction*	0	100	5.98	10.769
Y4. *Additional time allocated for task re-checking (minutes)*	1	100	15.90	17.223
Y5. *Number of follow-up messages to confirm instructions*	1	20	4.31	3.427
Y6. *Digital coordination effectiveness score (Scale 0–100)*	50	100	91.06	10.710

Source: Primary Data Processed (2026).

Based on the data presented in Table 6, the timeliness aspect of administrative task completion is measured through indicators Y1 and Y2. In general, the administrative staff demonstrate a very high commitment to meeting targets, with the average percentage of tasks completed exactly on deadline (Y2) reaching 85.94%, despite a wide variance range (minimum 15% to maximum 100%). This commitment to target fulfilment is achieved with an average completion duration for routine operational tasks (Y1) of 45.30 minutes.

Regarding the dimension of work accuracy amidst the heavy flow of information, the data reveal a time compensation that staff must pay due to digital interruptions. The average frequency of work errors due to distraction (Y3) is relatively low, at 5.98 times per month. However, extreme cases exist in the field where staff undergo up to 100 revisions within a single month. To maintain accuracy and minimize such errors, staff must allocate an additional re-checking time (Y4) averaging 15.90 minutes per document. Furthermore, to avoid ambiguity arising from stacked digital instructions, staff re-confirm through follow-up messages (Y5) an average of 4.31 times.

Finally, in terms of the quality of cross-unit coordination while utilizing multi-platforms (Y6), the administrative staff perceive that the institution's digital coordination system operates highly effectively. This is demonstrated by a high average perception score of 91.06 out of a maximum scale of 100. Accumulatively, this descriptive portrait reflects a phenomenon wherein staff can maintain exceptionally high formal work outputs (a coordination score of 91.06 and deadline compliance of 85.94%), yet their internal efficiency is sacrificed through additional re-checking time (15.90 minutes) and a high repetition of confirmation messages (Y5). This finding reinforces the justification for Z-Score standardization, as there is an extreme metric disparity between the percentage data (Y2) and perception scales (Y6) compared to the operational minute and frequency data (Y1, Y3, Y4, Y5).

Classical Assumption Test Results

Before executing hypothesis testing through simple linear regression analysis, the research model must satisfy a series of classical assumption tests to guarantee that the generated estimator is the Best Linear Unbiased Estimator (BLUE). This series of evaluations encompasses the residual normality test, the relationship linearity test, and the heteroskedasticity test.

The most crucial assumption evaluation is the normality test, which aims to examine whether the error terms (residuals) within the regression model are normally distributed. Based on a formal test utilizing the One-Sample Kolmogorov-Smirnov method with Lilliefors significance correction, along with a Monte Carlo simulation (10.000 samples) applied to the unstandardized residual values, the regression model recorded a test statistic of 0.055 with an asymptotic two-tailed significance coefficient (Asymp. Sig. 2-tailed) of 0.200. Given that this significance value far exceeds the required critical threshold ($p > 0.05$), it can be absolutely concluded that the residuals within this regression model are normally distributed. The precision of this distribution is further corroborated by the Monte Carlo two-tailed significance value (Monte Carlo Sig. 2-tailed) standing at a safe figure of 0.534.

Furthermore, the model's validity is reinforced by the linearity test results, which prove the existence of a valid straight-line relationship between the independent and dependent variables. Based on the analysis of variance (ANOVA) results, the interaction between Digital Communication Overload (X) and Employee Work Effectiveness (Y) exhibits a combined between-groups significance value of 0.001 ($p < 0.05$). This empirically demonstrates a highly significant and linear structural relationship pattern between the two variables in the field.

The final phase of the classical assumption evaluation is the heteroskedasticity test, which aims to ensure that the model is free from the disruption of unequal residual variances. Based on the formal non-parametric Spearman's Rho correlation test between the Digital Communication Overload variable and the absolute residual values (ABS_RES), a two-tailed significance value (Sig. 2-tailed) of 0.210 was obtained. Since this significance coefficient is well above the critical threshold ($p > 0.05$), it is statistically proven that the utilized regression model is homoscedastic (stable). With all classical assumption testing requirements successfully satisfied, the parametric regression modelling is declared valid and free from interpretive bias.

Table 7. Classical Assumption Test Results for the Regression Model.

Type of Assumption Test	Primary Test Parameter	Significance Value (p-value)	Critical Threshold	Model Conclusion
1. Normality	Kolmogorov-Smirnov (Residual)	**0.200**	> 0.05	Normally Distributed
2. Linearity	Between Groups (Combined)	**0.001**	< 0.05	Significant & Linear Relationship
3. Heteroskedasticity	Spearman's Rho Correlation	**0.210**	> 0.05	Free from Heteroskedasticity

Source: Primary Data Processed (2026).

Simple Linear Regression Analysis Results

Hypothesis testing to determine the effect of Digital Communication Overload on Employee Work Effectiveness was conducted using simple linear regression analysis. Based on the model estimation results summarized in Table 8, the empirical regression equation is formulated as follows:

$$\textbf{Total\_ZY} = -0.171 + 0.008X$$

The constant value (α) of -0.171 indicates that if Digital Communication Overload (X) is absent or at its baseline level, the baseline standard score of Employee Work Effectiveness (Total_ZY) is predicted to be 0.171 standard deviations below the sample mean. Meanwhile, the regression coefficient (b) for Digital Communication Overload (X) is 0.008, indicating a positive, unidirectional relationship; every one-unit increase in the objective metrics of digital communication overload is expected to yield an increase of 0.008 standard deviations in the overall employee work effectiveness index.

Table 4. Simple Linear Regression Analysis Results.

Coefficients[a]					
		Unstandardized Coefficients	Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	-.171	.068		-2.532	.013
Digital Communication Overload (X)	.008	.002	.292	3.247	.002

a. Dependent Variable: Total_ZY

Source: Primary Data Processed (2026); Dependent Variable: ZY Employee Work Effectiveness (N=115).

To measure the extent of the independent variable's contribution to explaining fluctuations in the dependent variable, a Coefficient of Determination (R^2) analysis was performed. Based on the results in Table 9 (adapted from the Model Summary table), an R Square value of 0.085 was obtained. This figure empirically demonstrates that Digital Communication Overload exerts an 8.5% influence on the fluctuations in the Employee Work Effectiveness of the administrative staff at FISIP UI. Meanwhile, the remaining majority of 91.5% is influenced by other factors outside this regression model (such as personal competence, physical workplace design, or incentive systems). The correlation coefficient (R) value of 0.292 indicates that the linear relationship between the two variables falls into the weak yet definite category.

Table 5. Model Summary.

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292[a]	.085	.077	.454

a. Predictors: (Constant), Digital Communication Overload (X)
b. Dependent Variable: ZY Employee Work Effectiveness

Source: Primary Data Processed (2026).

Primary hypothesis testing was conducted using a t-test with a 95% confidence level (alpha = 0.05). Based on the computational results in Table 8 (adapted from the Coefficients table), a t calculated value of 3.247 was obtained with a significance value (p-value) of 0.002. Given that this significance value is substantially lower than the specified critical threshold ($0.002 < 0.05$) and the t calculated value exceed the t table value ($3.247 > 1.981$), the research hypothesis is convincingly accepted. This implies that Digital Communication Overload is proven to exert a significant effect on the Employee Work Effectiveness of administrative staff.

The finding that the regression coefficient direction is positive (0.008) presents an intriguing theoretical anomaly. Generally, an excessive communication load is assumed to negatively suppress work effectiveness. However, within the context of administrative staff in higher education institutions, the intense flow of digital coordination (such as WhatsApp

messages and platform notifications) up to a certain threshold does not paralyze performance. Instead, it acts as an official driver or catalyst that compels staff to become more responsive, prompt, and adaptive, which accumulatively drives up their coordination effectiveness index and field-level task fulfilment.

Discussion

Interpretation of the Productivity Paradox at FISIP UI: Technology as an Enabler and Inhibitor

The empirical findings in this study reveal a theoretical anomaly that underscores the complex dynamics of modern organizational communication in the Society 5.0 era. Based on the regression analysis, Digital Communication Overload is proven to exert a significant and unidirectional (positive) effect on the Employee Work Effectiveness of administrative staff at FISIP UI (B = 0.008; p = 0.002). This figure explicitly confirms the manifestation of "The Productivity Paradox of Technology." On one hand, the adoption of a multi-platform digital ecosystem (such as WhatsApp and Microsoft Teams) is designed as a primary enabler to accelerate bureaucracy, distribute work instructions instantly, and facilitate coordination across spatial and temporal boundaries (Santarsiero et al., 2024). On the other hand, the continuous influx of digital notification interruptions, averaging 6.24 times per working hour, acts as an inhibitor that fragments employees' deep work concentration.

This paradox becomes distinctly apparent when comparing pre-research observations with empirical post-data processing realities. Initial observations indicated that 80% of official coordination extended beyond office hours. This is strongly corroborated by the final descriptive data, which show that FISIP UI administrative staff receive an average of 7.67 work-related notifications per week outside of official working hours. High responsiveness pressure, demonstrated by an average message reply speed of 6.60 minutes, proves that digital communication technology has blurred the boundaries between the domestic and professional spheres of the staff (Upadhyaya & Vrinda, 2021). The compulsion toward constant connectivity triggers an adaptive demand where constant notifications are no longer viewed as disruptions that halt activity, but rather as official alarms forcing staff to react more responsively. Consequently, while the surface-level digital coordination effectiveness score is rated exceptionally high by staff (91.06 out of 100), their internal efficiency is drained. To maintain routine task completion timeliness, which reaches 85.94%, staff must compensate with an additional re-checking time averaging 15.90 minutes per task to minimize the risk of errors induced by device distractions.

In comparison with prior scholarly literature, the research findings at FISIP UI demonstrate both substantial alignments and distinct deviations:

a. Alignments with Prior Research: The findings regarding high digital interruption (6.24 times/hour) and the shift of technology into a cognitive burden align with the study by Bawden & Robinson (2020), which posits that information overload linearly diminishes individual information processing capacity. The pattern of message infiltration into the domestic sphere (7.67 times/week) also reinforces the research by Upadhyaya & Vrinda (2021) concerning the existence of technostress in academic environments, where university staff frequently undergo mental exhaustion due to instant-replay expectations.
b. Deviations from Prior Research: The fundamental deviation lies in the direction of the regression effect. Most previous studies in the corporate sector assert that communication overload strictly diminishes work effectiveness in a negative manner (Al-Amin & Sulistiani, 2025; Martin et al., 2025). Conversely, within the higher education ecosystem at FISIP UI, the direction of influence is significantly positive (B = 0.008). This divergence occurs because the rigid nature of campus bureaucracy is effectively disrupted and streamlined by the flexibility of multi-platform coordination. Instead of paralyzing performance, digital communication channels serve as an effective instrument of social pressure from leadership to subordinates. This mechanism compels administrative staff to maintain a rapid workflow and minimize administrative delays to sustain the continuity of institutional academic services.

Validation of Information Overload Theory: Cognitive Capacity Limits and Performance Implications

The empirical results of this study provide robust validation for Information Overload Theory within the context of the digital sociology of work in higher education institutions. Drawing upon the conceptual framework of Bawden & Robinson (2020), every individual possesses a finite cognitive capacity to receive, filter, and process informational stimuli before decision-making accuracy deteriorates. When the volume of incoming messages surpasses this biological processing threshold, functional disruptions known as information pathologies occur. Within the FISIP UI environment, this processing "saturation point" is vividly reflected in the high daily information load experienced by the administrative staff, who receive an average of 20.15 work-related incoming messages per day, peaking at a maximum of 60 messages during high-volume periods.

This massive exposure to information does not arrive in a structured manner; rather, it is accompanied by constant digital interruptions via device notifications, averaging 6.24 times

per working hour. The logical consequence of this situation is a degradation of work accuracy and an inflation of the staff's operational duration. Due to recurrent focus fragmentation caused by notifications, FISIP UI administrative staff record an average error or revision frequency of 5.98 times per month. To compensate for this decline in accuracy and maintain service quality standards, staff are forced to sacrifice time efficiency by allocating an additional re-checking time averaging 15.90 minutes to review each document before submission. This heavy cognitive load is further compounded by the emerging need to send repetitive follow-up messages, averaging 4.31 times, solely to clarify leadership instructions amidst stacked digital chats. This phenomenon serves as concrete evidence for Bawden & Robinson's (2020) argument that an information explosion does not foster better understanding but instead breeds ambiguity and delays effective response times (staff routine task timeliness requires an average of 45.30 minutes per task).

In comparison with prior scholarly literature, this analysis demonstrates a pattern of alignments and deviations as follows:

a. Alignments with Prior Research: The finding that information load (X1) and interruptions (X5) trigger an increase in work errors (Y3), alongside the subsequent need for additional confirmation time (Y4, Y5), strongly aligns with the studies by Mansyur et al. (2025) and Syofrin et al. (2024). These studies confirm that message distortion within multi-platform digital channels tends to diminish employees' contextual understanding, which in turn forces organizations to engage in rework that reduces internal bureaucratic efficiency.
b. Deviations from Prior Research: Despite the similarities regarding the mechanism of accuracy degradation at the micro-level, the macro-level regression testing in this study yields an anomaly, as the positive effect hypothesis remains significantly accepted (B = 0.008; p = 0.002). This diverges from the conclusions of Martin et al. (2025), which state that surpassing the cognitive saturation point directly triggers a total paralysis of organizational performance. At FISIP UI, individual accuracy degradation (5.98 errors/month) is successfully isolated and mitigated by the staff's self-defense mechanisms (namely, the allocation of 15.90 minutes of re-checking time); consequently, the collective organizational output in terms of target deadline compliance is successfully maintained at an exceptionally high level of 85.94%.

The Impact of Simultaneous Multi-Platform Usage: The Complexity of Context Switching as a Research Gap

The findings regarding the simultaneous utilization of various digital communication platforms within the Faculty of Social and Political Sciences, Universitas Indonesia (FISIP UI)

offer a significant contribution that addresses a critical research gap in contemporary organizational communication studies within the Society 5.0 era. Most of the prior literature tends to focus exclusively on the impact of information overload originating from a single dominant channel, such as email or corporate social media alone. Conversely, the unique reality at FISIP UI is characterized by task demands embedded within a simultaneously integrated multi-platform ecosystem, including WhatsApp, Microsoft Teams, and internal university applications like Andieni. Based on the empirical descriptive data, FISIP UI administrative staff operate an average of 3.75 digital platforms simultaneously during their working hours, with some staff managing up to 15 platforms concurrently.

This high intensity of multi-platform usage compels administrative staff to engage in continuous context switching across applications to resolve a single official matter. Empirical data demonstrate that staff members must switch between applications an average of 8.53 times per day solely to resolve the same work issue, with extreme field observations reaching up to 50 application switches. From the perspective of communication psychology, the focus fragmentation induced by this context switching serves as the primary factor undermining employees' internal work efficiency. While a staff member is drafting an administrative document on one platform, notification interruptions from another platform (occurring at an average rate of 6.24 times per working hour) force their working memory to abruptly shift focus. This constant replication of the cognitive process creates cognitive overload, directly impacting micro-level performance through the emergence of work errors or revisions (averaging 5.98 times per month) and prolonging the time required to complete routine operational tasks to an average of 45.30 minutes per task.

In comparison with prior scholarly literature, the analysis of the impacts of context switching driven by multi-platform coordination reveals a distinct pattern of alignments and deviations as follows: Alignments with Prior Research: The findings regarding the destructive impact of shifting focus between applications strongly align with the study by Martin et al. (2025), which posits that digital multitasking does not enhance productivity, but instead triggers attention fragmentation that disrupts cognitive workflows. Furthermore, the necessity for repetitive confirmation via follow-up messages (averaging 4.31 times) to align instructions scattered across various platforms reinforces the argument by Mansyur et al. (2025) regarding efficiency losses caused by overly decentralized organizational communication structures lacking primary channel standardization.

Deviations from Prior Research: The fundamental deviation lies in how this multi-platform coordination influences macro-level organizational effectiveness. Although

mainstream literature linearly links multi-platform usage and context switching symptoms to a decline in operational performance (Al-Amin & Sulistiani, 2025), the linear regression hypothesis testing in this study demonstrates a significant positive effect (B = 0.008; p = 0.002). This divergence is driven by the high coordination flexibility afforded by possessing diverse platforms. At FISIP UI, although context switching reduces individual time efficiency (requiring an additional 15.90 minutes for re-checking), the availability of these adaptive platforms prevents bureaucratic communication bottlenecks. Consequently, the institution's digital coordination effectiveness score is rated as excellent by staff (91.06 out of 100), and the organization's macro-level target deadline compliance remains optimally maintained at 85.94%.

Implications for the Tridarma of Higher Education: Risks to Academic Service Quality and Student Satisfaction

The empirical findings of this study have profound practical implications for the sustainability of the Tridarma of Higher Education (the Three Pillars of Higher Education) at FISIP UI, particularly regarding the education and teaching dimension, which demands highly reliable operational document services. As the administrative backbone, the administrative staff bear full responsibility for ensuring the seamless operation of academic administration, ranging from lecture scheduling and student registration to the preparation of evaluation documents and student correspondence services. Although the macro-level regression results indicate a positive effect, suggesting that digital communication flows prompt staff to act responsively (B = 0.008; p = 0.002), the degradation of micro-cognitive efficiency caused by digital communication overload cannot be overlooked. The condition wherein staff must operate up to 3.75 platforms simultaneously and switch between applications an average of 8.53 times per day for a single issue has triggered an information processing "saturation point." This vulnerability manifests concretely in the emergence of administrative errors or revisions, averaging 5.98 times per month per staff member. If minor errors, such as grade input discrepancies, delayed thesis examination verifications, or course distribution scheduling conflicts, escape oversight, they directly risk undermining the institution's academic service quality and significantly decreasing the student satisfaction index (Royyana, 2020).

This risk of diminished effectiveness is successfully mitigated by the FISIP UI administrative staff through a self-compensation mechanism, whereby they allocate an additional re-checking time averaging 15.90 minutes per task to maintain accuracy. Consequently, the organization's macro-level target deadline compliance remains high at 85.94%. However, from a service management perspective, adding nearly a third of an hour

for re-checking each administrative document represents a form of latent inefficiency. The accumulation of verification queues on the staff's digital desks potentially creates a domino effect, leading to downstream service delays for students and faculty members. In the Society 5.0 era, students as primary stakeholders hold high expectations for rapid, transparent, and error-free administrative services. When the leadership-staff communication channel becomes overly noisy due to interruptions (6.24 times per working hour), the staff's capacity to respond to student grievances or document requests is threatened with deceleration. Therefore, if the institution does not immediately implement primary channel standardization and limit device interruptions, the cognitive exhaustion of administrative staff will ultimately sacrifice the pillars of organizational effectiveness and tarnish the university's academic service quality image (Santarsiero et al., 2024; Upadhyaya & Vrinda, 2021).

In comparison with prior scholarly literature, the implications of these results display both specific alignments and distinct deviations:

a. Alignments with Prior Research: The finding regarding a strong correlation between an increased digital workload for staff and the potential decline in public service quality within academic environments closely aligns with the study by Upadhyaya & Vrinda (2021). Their research asserts that unmanaged technostress in higher education institutions adversely contributes to the workplace ecosystem, which ultimately degrades the quality-of-service interactions between administrative staff and students. This is further reinforced by Royyana's (2020) argument that the success of digital transformation in the public service sector heavily relies on the cognitive capacity readiness of human resources, rather than merely software adoption.
b. Deviations from Prior Research: The fundamental deviation is observed in the resilience of the campus administrative system under study. In the majority of traditional public sector research, such as the study by Mansyur et al. (2025), information overload and instant application interruptions generally lead directly to systemic paralysis, severe bureaucratic delays, and a drastic drop in user satisfaction. Conversely, at FISIP UI, the flexibility of multi-platform usage serves as a safeguarding instrument that keeps cross-unit coordination highly effective, as perceived by staff with a perception score of 91.06 out of 100. The organizational culture characteristics at the research locus allow staff to sacrifice personal domestic time (evidenced by a high rate of after-hours notifications at 7.67 times per week) to ensure that student satisfaction and the quality of the Tridarma of Higher Education do not undergo noticeable surface-level degradation.

Policy Recommendations (Practical): Standard Operating Procedures for Digital Communication and Digital Wellness

The empirical findings in this study establish an urgent need for the management at FISIP UI to formulate strategic steps and practical policies to mitigate the latent impacts of digital communication overload. Although an increase in digital communication load statistically correlates positively with work responsiveness (B = 0.008; p = 0.002), the reality that administrative staff endure interruptions 6.24 times per working hour and are exposed to official messages 7.67 times per week outside of office hours indicates an acute risk of long-term cognitive fatigue. Therefore, the primary policy recommendation proposed is the drafting of formal Digital Communication Standard Operating Procedures (SOPs) that restrict official coordination hours. The institution needs to adopt the "Right to Disconnect" concept once official working hours conclude. This regulation would legally grant administrative staff the autonomy to refrain from responding to messages on WhatsApp, Microsoft Teams, or the Andieni platform after hours without facing sanctions or poor performance evaluations. Restoring these boundaries is crucial for providing space for the cognitive replenishment of the administrative staff before they return to duty the following day.

The second policy recommendation focuses on technical interventions through the governance of the communication media ecosystem within the faculty, alongside the introduction of a Digital Wellness program. Given the findings that administrative staff operate an average of 3.75 digital platforms simultaneously and undergo context switching 8.53 times a day for a single issue, the faculty management must implement a channel standardization policy. University and faculty leaders are advised to limit the types of active applications and strictly separate the function of each platform; for instance, designating Andieni and Microsoft Teams as the official channels for correspondence and document reporting, while WhatsApp is reserved solely for critical emergencies. Furthermore, the institution could organize periodic training on notification management (such as utilizing mute features, scheduling specific message-reading intervals or batching, and activating "do not disturb" modes during deep work hours). This digital wellness program is designed to reduce the frequency of staff work errors, which currently stands at 5.98 times per month, thereby substantially cutting down the additional 15.90 minutes of re-checking time per document to foster a more agile bureaucratic efficiency for the Tridarma of Higher Education services.

In comparison with prior scholarly literature, the proposed policy recommendations demonstrate a distinct pattern of organizational intervention alignments and deviations:

a. Alignments with Prior Research: The proposal to implement formal SOPs restricting digital communication and adopting the "Right to Disconnect" strongly aligns with the theoretical recommendations of Upadhyaya & Vrinda (2021). They assert that higher education institutions are obligated to design internal regulations that protect the psychological well-being of their employees from the boundless infiltration of device technology. Additionally, channel decentralization and limiting the number of active platforms support the cognitive load management model by Bawden & Robinson (2020), which posits that simplifying information channels is the most effective way to suppress information pathologies in modern organizational environments.
b. Deviations from Prior Research: The fundamental deviation lies in the regulatory implementation approach. In corporate studies by Martin et al. (2025) and Al-Amin & Sulistiani (2025), communication restriction is often suggested in the form of absolute server shutdowns after working hours. However, because the higher education bureaucracy at FISIP UI exhibits high flexibility and has been proven to accept the positive influence hypothesis of digital flow proximity (B = 0.008), the intervention recommended in this study does not entail completely shutting down the system. Instead, the recommendation at FISIP UI emphasizes adaptive assimilation, specifically granting staff the autonomy to regulate response times (delayed reply tolerance) without halting emergency channels. This approach maintains the reliability of macro-level organizational coordination, which staff have thus far rated as highly effective with an excellent perception score of 91.06 out of 100.

Limitation Of The Study

Despite its significant empirical contributions, several limitations of this study must be acknowledged. First, the scope of this research is strictly confined to a single academic institution, specifically focusing on the administrative staff at the faculty of social and political sciences, Universitas Indonesia (FISIP UI), which limits the external validity and generalizability of the findings to private higher education institutions or non-academic public sectors. Second, the utilization of a purely quantitative explanatory design via linear regression means the model only captures statistical relationships based on closed structured questionnaires, without providing an in-depth, qualitative exploration of the underlying psychological nuances behind the employees' high tolerance for persistent digital interruptions. Finally, the simple linear regression model focuses exclusively on a single independent variable, yielding a coefficient of determination (R^2) of only 8.5%. This indicates that a vast majority of the variance in employee work effectiveness (91.5%) remains unexplained, as the

study does not account for other potentially crucial confounding factors, such as individual digital literacy levels, digital leadership styles, or the physical workplace environment.

4. CONCLUSION

This study empirically demonstrates the existence of "The Productivity Paradox of Technology" within the organizational communication ecosystem of higher education, specifically among the administrative staff at FISIP UI. The results of the simple linear regression analysis indicate that Digital Communication Overload exerts a significant and unidirectional (positive) effect on Employee Work Effectiveness (B = 0.008; p = 0.002), with a determination contribution (R^2) of 8.5%. This finding uncovers a unique theoretical anomaly; unlike the majority of literature in the corporate sector which asserts that information overload correlates negatively with performance, within this academic environment, the intensive flow of digital communication acts as a mechanism of social pressure and an official stimulus that compels staff to be more responsive and prompter to sustain service continuity.

However, behind this macro-level organizational effectiveness, micro-level analysis based on Information Overload Theory confirms a massive decline in internal efficiency driven by context-switching symptoms. The structural characteristics of the work environment, wherein staff must operate an average of 3.75 digital platforms simultaneously and are exposed to notification interruptions 6.24 times per working hour, have triggered a cognitive saturation point. This latent impact manifests concretely in the emergence of work errors or revisions (averaging 5.98 times per month) and an inflation of routine operational duration to an average of 45.30 minutes per task. This degradation of individual accuracy is successfully isolated by the staff's self-defense mechanisms, which allocate an additional re-checking time averaging 15.90 minutes per task; consequently, the organization's macro-level target deadline compliance is successfully maintained at an exceptionally high rate of 85.94%. Accumulatively, this study concludes that multi-platform digitalization succeeds in driving flexibility and response speed within the campus bureaucracy, yet it sacrifices the cognitive comfort and personal domestic time of the administrative staff due to the infiltration of after-hours notifications averaging 7.67 times per week.

Based on these research findings, several relevant practical and theoretical recommendations are formulated for future organizational policy development and scholarly literature. For the management of higher education institutions at the research locus, urgent interventions must be made by reforming the governance of official communication channels. University and faculty leaders are advised to draft formal Digital Communication Standard

Operating Procedures (SOPs) that adopt the "Right to Disconnect" principle once official working hours conclude, aiming to restore staff's domestic boundaries and prevent long-term cognitive fatigue risks. Furthermore, a channel standardization policy must be enforced by limiting active applications; exclusively designating platforms like Andieni or Microsoft Teams for formal document reporting, and restricting WhatsApp usage solely to critical emergencies. The management is also advised to facilitate periodic training on Digital Wellness, particularly notification management techniques and the scheduling of interruption-free deep work blocks, to suppress staff operational error frequencies so that the additional re-checking time allocation can be trimmed for a more agile service bureaucracy.

Meanwhile, for future research in the field of organizational communication, it is recommended to expand the geographical scope and population characteristics by involving private higher education institutions or non-academic public sectors as comparators to test the external validity of the positive influence direction found in this model. Given that the Coefficient of Determination (R^2) in this study stands at 8.5%, a vast gap remains for future researchers to explore the remaining 91.5% variance of work effectiveness variables currently unmapped in this regression model. Future researchers are encouraged to integrate new moderating or mediating variables, such as employees' digital literacy levels, digital leadership styles, the comfort level of the physical work environment, and organizational culture support. Finally, the utilization of mixed-methods with an explanatory sequential approach is highly recommended for future studies so that the real-ratio quantitative data can be deepened through structured qualitative interviews, thereby comprehensively uncovering the psychological reasons behind the staff's high tolerance for digital interruptions.

ACKNOWLEDGEMENTS

The authors express their deepest gratitude to the Faculty of Communication and Languages at Universitas Bina Sarana Informatika for providing the institutional support necessary to conduct this research. Special appreciation is extended to the Scientific Article Advisor for the invaluable guidance, constructive critiques, and continuous academic support throughout the development and completion of this manuscript. The authors also wish to convey their sincere thanks to the Head of the Communication Science Study Program and the Dean of the Faculty of Communication and Languages for their administrative assistance and leadership. Lastly, the authors extend their appreciation to all participants and respondents who contributed their time and insights to this study, making the completion of this article possible.

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