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Digital Communication and Organizational Coordination in Modern Work Environments

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Abstract

The increasing adoption of Information and Communication Technology (ICT) has transformed how organizations coordinate work and manage human resources in complex environments. Digital communication systems have become essential infrastructures that enable organizations to exchange information, coordinate tasks, and support operational efficiency. This study aims to examine how ICT-mediated communication influences human resource coordination and organizational productivity in digitally mediated work environments. The research adopts a qualitative conceptual design based on secondary data analysis of existing scholarly literature related to ICT in management, organizational communication, and coordination processes. Relevant peer-reviewed studies were systematically reviewed and synthesized using Organizational Information Processing Theory as the analytical framework. The analysis focuses on key dimensions including communication quality, managerial coordination, and human resource coordination. Through thematic synthesis of the literature, the study develops a conceptual explanation of how digital communication infrastructures support organizational coordination mechanisms. The results indicate that ICT communication systems improve information flow and strengthen coordination among employees, thereby contributing to more efficient work processes and improved organizational productivity. The study concludes that ICT communication infrastructures function as critical mechanisms that enhance organizational information-processing capacity and facilitate effective coordination in digitally mediated work environments. These findings contribute to the field by providing a theoretically grounded explanation of how ICT-enabled communication systems link coordination processes with organizational productivity.

1. Introduction

The increasing integration of Information and Communication Technology (ICT) into organizational management has significantly transformed how work coordination occurs in modern organizations (Froese, 2010; Maqsood et al., 2003). Digital communication systems allow managers and employees to exchange information quickly across organizational and geographical boundaries (Lota et al., 2022; Maqsood et al., 2003). In many project-based industries, coordination among multiple actors requires continuous information exchange and real-time decision making (Froese, 2010; Lota et al., 2022). ICT platforms such as online communication tools, digital management systems, and internet-

based collaboration platforms support this need by facilitating communication among project stakeholders (Eliwa et al., 2022; Froese, 2010). The growing reliance on digital communication has therefore reshaped the mechanisms through which human resources are coordinated within organizations (Bellamy et al., 2005; Rimmington et al., 2015). In sectors characterized by complex project structures, communication technologies have become essential infrastructures for organizing work activities (Eliwa et al., 2022; Lew, 2011). The development of ICT has also changed the role of managers from direct supervisors to coordinators of digital communication processes (Bellamy et al., 2005; Froese, 2010). As organizations increasingly operate in digitally mediated environments, the effectiveness of communication systems becomes a central concern for management practices (Froese, 2010; Rimmington et al., 2015).

Despite these developments, many organizations continue to face coordination challenges when managing human resources in complex work environments (Eliwa et al., 2022; Maqsood et al., 2003). Project-based sectors such as construction frequently involve large teams, multiple professional roles, and distributed decision-making structures (Eliwa et al., 2022). In such environments, coordination problems often emerge when communication channels are inefficient or unclear (Rimmington et al., 2015). Poor information flow may lead to misunderstandings, delays, and conflicts among project participants (Froese, 2010; Lota et al., 2022). These challenges are particularly visible in large-scale projects where multiple actors must synchronize their activities in order to achieve project goals (Eliwa et al., 2022). When communication systems fail to support coordination effectively, productivity can decline and operational inefficiencies may arise (Maqsood et al., 2003). Organizations therefore increasingly rely on ICT tools to improve communication processes among workers and managers (Eliwa et al., 2022; Froese, 2010). Digital communication platforms provide opportunities for more structured information exchange and clearer task coordination (Lota et al., 2022). The growing use of ICT in management reflects an attempt to address persistent coordination problems within organizational environments (Eliwa et al., 2022).

Existing literature has widely acknowledged the importance of communication for organizational performance and project success (Froese, 2010; Maqsood et al., 2003). Studies in management and project management research consistently emphasize that effective communication contributes to improved coordination among team members (Froese, 2010). Communication management practices have been identified as critical components of successful project execution (Froese, 2010). Previous research also suggests that ICT technologies provide important tools for facilitating organizational communication (Eliwa et al., 2022; Maqsood et al., 2003). Internet-based communication systems allow organizations to share information rapidly and coordinate tasks more efficiently among employees (Lota et al., 2022; Maqsood et al., 2003). Research on construction management has further highlighted that communication failures often lead to project delays and operational disruptions (Rimmington et al., 2015). Consequently, many scholars argue that communication technologies can improve the efficiency of organizational coordination processes (Eliwa et al., 2022). The adoption of ICT tools in management has therefore been widely discussed as a potential mechanism for enhancing organizational productivity (Maqsood et al., 2003). These studies provide an important foundation for understanding the relationship between communication systems and organizational performance.

Although previous studies recognize the role of ICT in organizational communication, several conceptual limitations remain in the existing literature. Much of the research on ICT adoption focuses primarily on technological implementation rather

than on how digital communication reshapes managerial coordination processes. Many studies treat ICT as a technological resource without fully examining its role in facilitating coordination among human resources. As a result, the mechanisms through which ICT influences organizational productivity remain insufficiently explained. Research often emphasizes the availability of communication technologies rather than the quality of communication processes enabled by those technologies. This limitation makes it difficult to understand how communication systems function as coordination infrastructures within organizations. Additionally, existing research tends to analyze communication and human resource management separately rather than examining their interaction. The lack of integrated analysis leaves important questions about digital coordination processes unresolved. Consequently, the relationship between ICT communication quality, human resource coordination, and productivity remains conceptually underdeveloped.

Another limitation concerns the insufficient theoretical explanation of how communication systems support organizational information processing. Organizations operating in complex environments must continuously process information in order to coordinate tasks and reduce uncertainty (Galbraith, 1973). However, many empirical studies discuss communication technologies without linking them to broader theoretical explanations of organizational coordination. Without a clear theoretical perspective, the role of ICT in managerial coordination may be interpreted only as a technical improvement rather than as an organizational transformation. The absence of theoretical guidance can also obscure the mechanisms through which communication quality influences work performance. Understanding these mechanisms requires conceptual frameworks that explain how information flows within organizations. Organizational Information Processing Theory (OIPT), introduced by Galbraith (1973), provides an important theoretical foundation for understanding these processes. The theory argues that organizations must develop communication structures and information systems to process information effectively and reduce uncertainty in complex work environments (Galbraith, 1973). Within this perspective, ICT-based communication systems function as mechanisms that enhance the organization's capacity to process information and coordinate activities among members (Galbraith, 1973).

The identification of these conceptual limitations reveals a gap in the literature concerning the relationship between ICT-based communication and human resource coordination. Existing studies acknowledge the importance of communication technologies but rarely explore how communication quality shapes coordination processes among employees. Furthermore, limited attention has been given to understanding how digital communication environments influence the interaction between management practices and workforce productivity. The fragmentation of research across communication studies, project management, and human resource management has contributed to this gap. Integrating these perspectives is necessary to develop a more comprehensive understanding of digitally mediated work coordination. Such integration allows scholars to examine communication not merely as a technological tool but as an organizational process that structures interactions among workers. Addressing this gap requires conceptual research that synthesizes existing knowledge across these related fields. By examining communication quality within ICT-mediated environments, it becomes possible to clarify how digital infrastructures influence organizational coordination.

Filling this gap is important because organizations increasingly depend on digital communication systems to manage complex work environments. As ICT technologies

become embedded in everyday management practices, understanding their organizational implications becomes increasingly relevant. Effective coordination among employees depends not only on the availability of communication technologies but also on how those technologies support information processing within organizations. When communication systems facilitate rapid and accurate information exchange, they may enhance coordination efficiency and improve work performance. Conversely, poorly managed communication systems may create information overload or miscommunication among employees. Exploring the relationship between ICT communication quality and human resource coordination therefore provides valuable insight into the functioning of digitally mediated organizations. This understanding is particularly important in project-based environments where coordination failures can have significant operational consequences. Addressing these issues contributes to the broader effort to understand how digital transformation reshapes organizational management.

Based on these considerations, this study aims to examine the role of ICT communication systems in coordinating human resources within digitally mediated work environments. The research seeks to analyze how communication quality influences the coordination of tasks among organizational members. It also aims to explore how ICT-based communication infrastructures support managerial coordination processes in complex organizational settings. By focusing on the interaction between communication systems and human resource coordination, the study addresses an area that has received limited attention in previous research. The investigation is guided by questions concerning how digital communication environments shape information flows among employees and managers. Another key question concerns how communication quality contributes to effective coordination in project-based organizations. These research questions are informed by the theoretical perspective of Organizational Information Processing Theory. Through this perspective, the study examines communication as a mechanism for managing organizational information flows.

The urgency of this research lies in the rapid digitalization of organizational communication practices across industries. Organizations are increasingly adopting ICT platforms to coordinate employees, manage projects, and facilitate decision-making processes. As digital communication becomes embedded in everyday managerial practices, the effectiveness of these systems directly influences organizational performance. Understanding how ICT communication systems function as coordination infrastructures is therefore essential for contemporary management research. Insights into these processes can contribute to theoretical discussions about digital transformation in organizations. At the same time, they can enhance understanding of how communication structures influence human resource coordination in complex work environments. By addressing the identified research gap, this study contributes to the broader discourse on ICT in management and organizational coordination. The research also provides a conceptual foundation for future investigations exploring the role of digital communication systems in shaping organizational productivity.

2. Research Method

This study employs a qualitative research design based on conceptual and literature-based analysis (Jaakkola, 2020; Meredith, 1993) to examine the role of Information and Communication Technology (ICT) in facilitating human resource coordination in digitally mediated work environments. A qualitative approach is appropriate because the research seeks to understand the conceptual relationships between ICT communication

systems, human resource coordination, and organizational productivity rather than measuring causal relationships through statistical testing (Creswell, 2014). The analytical framework is guided by Organizational Information Processing Theory (OIPT), which conceptualizes organizations as systems that process information to coordinate complex tasks and reduce uncertainty (Galbraith, 1973). Using this theoretical lens allows the study to interpret ICT communication systems as organizational mechanisms that support information processing and coordination among employees. The qualitative design enables an in-depth synthesis of existing scholarly discussions on ICT in management, communication quality, and coordination processes within organizations (Snyder, 2019; Torraco, 2005). Through this approach, the research focuses on developing a structured conceptual understanding of how digital communication infrastructures shape managerial coordination practices. This design is suitable for the research because the study aims to integrate fragmented insights from previous literature and interpret them within a coherent theoretical framework. Consequently, qualitative conceptual analysis provides the flexibility needed to explore complex organizational dynamics that cannot be adequately captured through purely quantitative methods (Jaakkola, 2020).

The study relies on secondary data derived from scholarly literature as the primary source of analysis. Data were collected from peer-reviewed journal articles, academic books, and conference publications related to ICT in management, organizational communication, project coordination, and human resource management. The units of analysis consist of conceptual arguments, empirical findings, and theoretical discussions reported in prior studies addressing digital communication systems and organizational coordination. Literature sources were identified through systematic searches of academic databases using keywords such as ICT in management, digital communication, human resource coordination, and organizational productivity. Relevant documents were selected based on their relevance to the research problem and their contribution to theoretical or empirical discussions on ICT-mediated organizational processes. The analytical dimensions guiding the study include ICT communication systems, communication quality, human resource coordination, and organizational productivity. These dimensions were derived from the theoretical framework and used to organize the literature during the analysis process. Data collection involved reviewing, categorizing, and synthesizing relevant scholarly insights in order to construct a coherent conceptual understanding of digitally mediated coordination processes.

To ensure the trustworthiness and rigor of the qualitative analysis, several strategies were applied throughout the research process. Credibility was strengthened through systematic literature selection and the use of peer-reviewed academic sources to ensure the reliability of the data. Analytical consistency was maintained by applying a clearly defined theoretical framework and analytical dimensions during the literature review and synthesis process. Dependability was supported by maintaining transparent documentation of the data collection and analysis procedures, allowing the analytical process to be traceable and replicable. Confirmability was addressed by grounding interpretations in documented scholarly arguments rather than subjective assumptions. Ethical considerations were also taken into account throughout the research process. Because the study relies exclusively on secondary data from published academic sources, no direct human participation was involved. Nevertheless, the research adhered to principles of academic integrity by properly acknowledging all cited sources and avoiding misrepresentation of previous studies. Confidentiality and informed consent requirements were respected by using only publicly available scholarly materials and

ensuring that all referenced works were accurately cited in accordance with academic standards.

3. Result and Discussion
3.1 ICT Communication Quality as an Information Processing Mechanism in Human Resource Coordination

Organizational Information Processing Theory provides an analytical foundation for understanding how communication systems influence coordination within complex organizations. The theory proposes that organizations must develop mechanisms capable of processing large volumes of information in order to manage uncertainty and coordinate interdependent tasks (Galbraith, 1973). In digitally mediated work environments, ICT communication systems function as infrastructures that facilitate the processing and distribution of information among organizational members. From this perspective, the quality of digital communication channels becomes a critical factor in determining how effectively organizations coordinate human resources. Communication quality reflects the reliability, speed, clarity, and accessibility of information flows within organizational networks. When communication infrastructures enable accurate and timely information exchange, organizations can reduce coordination problems and improve task synchronization (Galbraith, 1974). The analytical problem addressed in this subsection concerns how ICT-mediated communication quality supports human resource coordination in complex work environments. Guided by Organizational Information Processing Theory, the analysis interprets digital communication systems as organizational mechanisms that structure information flows among employees and managers.

The analysis of secondary literature indicates that ICT communication systems significantly reshape the coordination dynamics within project-based organizations. Digital platforms allow managers and employees to exchange operational information quickly across different organizational units and geographic locations. This capacity for rapid communication reduces delays in decision making and enhances the ability of managers to monitor project activities. Studies consistently report that internet-based communication platforms improve the efficiency of information dissemination among project stakeholders (Lota et al., 2022; Maqsood et al., 2003). In complex project environments, the availability of real-time communication tools allows teams to coordinate tasks with greater precision (Froese, 2010). Workers can receive instructions, share updates, and report progress without the delays associated with traditional communication channels. These digital interactions create a more continuous flow of operational information throughout the organization. As a result, ICT communication systems contribute to more responsive coordination processes. The findings suggest that communication infrastructures serve as central organizational mechanisms that support the alignment of activities among distributed teams.

The literature further demonstrates that communication quality plays a crucial role in shaping the effectiveness of digital coordination systems. High-quality communication environments enable information to circulate clearly and consistently among organizational actors. When digital communication systems provide reliable connectivity and structured information channels, employees can interpret managerial instructions more accurately. This clarity reduces the risk of misunderstandings that often arise in complex project environments (Rimmington et al., 2015). Several studies indicate that improved communication quality allows managers to coordinate multiple tasks simultaneously across different teams. Workers are able to respond more quickly to

operational changes when communication channels function efficiently. Moreover, digital communication systems facilitate collaborative problem-solving by enabling teams to exchange information in real time. These interactions strengthen the organizational capacity to process information collectively. Consequently, communication quality becomes an important determinant of coordination efficiency within digitally mediated organizations.

Another important finding emerging from the literature concerns the relationship between ICT communication systems and managerial oversight. Digital communication platforms enable managers to maintain continuous interaction with employees even when teams operate in dispersed environments. Through digital communication channels, managers can monitor progress, distribute instructions, and provide feedback without requiring direct physical supervision. This form of coordination reflects a shift from hierarchical control toward information-based management practices (Froese, 2010). Managers increasingly rely on communication systems to guide work processes rather than relying solely on traditional supervisory structures. The availability of digital communication platforms allows organizations to integrate information from different operational units. This integration improves the overall visibility of project activities and enables faster responses to emerging problems. As a result, ICT communication systems function as coordination infrastructures that support managerial decision making. The findings illustrate how digital communication reshapes the relationship between managerial authority and organizational information flows.

The analysis also reveals that digital communication systems influence how employees collaborate within organizational environments. ICT platforms enable workers to share operational knowledge and coordinate tasks with colleagues more efficiently. Communication technologies support horizontal coordination among team members by facilitating peer-to-peer information exchange (Bellamy et al., 2005). This type of interaction strengthens collaborative problem solving within project teams. Workers are able to clarify responsibilities, exchange technical knowledge, and coordinate task sequences through digital communication channels. These processes contribute to a more integrated working environment where information circulates across different functional roles. As employees interact through digital platforms, organizational coordination becomes increasingly dependent on the effectiveness of communication infrastructures. The literature indicates that improved communication quality enhances employees' ability to interpret organizational objectives and align their activities accordingly. Consequently, ICT communication systems contribute to the development of more coordinated work environments.

Interpreted through the lens of Organizational Information Processing Theory, these findings demonstrate that ICT communication systems increase the capacity of organizations to process information. Digital communication infrastructures expand the range and speed of information exchange within organizational networks. By facilitating continuous communication among employees, ICT platforms reduce the uncertainty associated with complex work processes (Galbraith, 1973, 1974). This increased information-processing capacity enables organizations to coordinate tasks more effectively across different operational units. The findings therefore confirm the theoretical argument that communication structures play a central role in organizational coordination. ICT systems act as technological mechanisms that enhance the organization's ability to process information and respond to operational demands. In digitally mediated work environments, communication quality determines how effectively these mechanisms function. When communication systems operate efficiently,

organizations can manage complex coordination requirements with greater stability. The analysis therefore illustrates the relevance of information processing theory for interpreting digital communication dynamics in modern organizations.

The results also contribute to refining existing theoretical discussions concerning ICT in management. Previous research often emphasized the technological adoption of ICT without fully examining its role in organizational coordination processes. The present analysis suggests that the value of ICT lies not merely in its technological capabilities but in its function as an information-processing infrastructure (Eliwa et al., 2022). Communication quality emerges as a critical factor that determines whether digital communication systems effectively support coordination. This perspective extends earlier studies by emphasizing the interaction between communication systems and human resource coordination. It also provides empirical support for theoretical arguments that highlight the importance of information flows in organizational management. By interpreting ICT communication systems through an information-processing lens, the analysis clarifies how digital technologies reshape coordination mechanisms within organizations.

These findings also shed light on the contextual dynamics of digitally mediated organizational environments. As organizations adopt digital communication systems, managerial coordination increasingly depends on the ability to manage information flows across complex networks of employees. The transition toward digital communication infrastructures reflects broader transformations in organizational governance structures (Lew, 2011). Managers must adapt their coordination practices to environments where communication occurs continuously through digital platforms. This shift requires organizations to invest not only in technological infrastructure but also in communication management practices that support effective information exchange. The analysis therefore highlights the importance of understanding communication quality as a governance issue within organizational systems. By addressing this dimension, the study contributes to filling the theoretical and empirical gaps identified in the introduction. The findings demonstrate that ICT communication systems function as organizational coordination infrastructures that enhance the capacity of organizations to process information and coordinate human resources in digitally mediated work environments.

3.2 ICT-Mediated Coordination and the Transformation of Managerial Practices

Organizational Information Processing Theory explains that organizations must continuously develop mechanisms capable of processing information in order to coordinate complex activities (Galbraith, 1973). As work environments become more dynamic and interdependent, managerial coordination increasingly depends on the efficiency of communication structures that support information exchange. In digitally mediated organizational contexts, ICT platforms function as infrastructures that allow managers to collect, distribute, and interpret information across dispersed teams. These communication infrastructures alter traditional managerial roles by shifting emphasis from direct supervision toward coordination through digital information flows (Froese, 2010). Managers increasingly rely on communication technologies to organize tasks, monitor progress, and facilitate collaboration among employees. Consequently, managerial practices are transformed from hierarchical control structures into systems of information-based coordination (Galbraith, 1974). This transformation illustrates how ICT expands the organization's capacity to process information and manage operational uncertainty. The analysis therefore focuses on how digital communication infrastructures

reshape managerial coordination practices and support the organization's ability to coordinate human resources in complex project environments.

The review of secondary literature shows that ICT communication systems influence managerial practices through several interconnected coordination functions. Digital communication platforms enable managers to coordinate distributed teams, monitor operational processes, and maintain continuous information exchange with employees. These systems allow managers to organize communication channels more systematically, ensuring that information reaches the appropriate actors within organizational networks. As a result, managerial coordination becomes increasingly dependent on the effectiveness of communication infrastructures rather than solely on hierarchical authority (Eliwa et al., 2022; Lew, 2011). To clarify these functional relationships, the coordination roles of ICT-mediated communication in managerial practices can be summarized as follows.

Table 1. Functions of ICT-Mediated Communication in Managerial Coordination

ICT Coordination Function	Managerial Role Transformation	Organizational Coordination Effect
Real-time information exchange	Managers shift from delayed reporting systems to continuous information monitoring	Faster decision making and reduced operational uncertainty
Digital supervision and monitoring	Managers supervise work processes through digital platforms rather than physical presence	Improved oversight across dispersed teams
Task coordination through communication platforms	Managers organize work instructions and operational updates through integrated communication systems	Greater synchronization of team activities
Collaborative problem solving	Managers facilitate communication among employees to resolve operational issues collectively	Strengthened horizontal coordination among team members
Knowledge and information sharing	Managers encourage information exchange through digital communication channels	Enhanced organizational learning and information integration

Source: Processed by the researcher, 2026

The functions summarized in Table 1 illustrate how ICT communication systems transform managerial coordination practices within digitally mediated work environments. Digital communication platforms enable managers to maintain continuous interaction with employees and monitor operational developments in real time (Lota et al., 2022). This capability reduces the delays that often occur when information must pass through multiple hierarchical layers before reaching decision makers (Maqsood et al., 2003). Managers can therefore respond more quickly to operational challenges and adjust project activities as conditions change. The presence of integrated communication platforms also allows managers to coordinate multiple teams simultaneously without relying solely on face-to-face supervision (Bellamy et al., 2005). Through digital communication channels, instructions and operational updates can be distributed efficiently across different units within the organization. This process enhances the overall visibility of work processes and allows managers to maintain a broader understanding of project dynamics.

The transformation of managerial practices also reflects a shift toward more collaborative coordination structures within organizations (Bellamy et al., 2005). ICT communication systems enable employees to interact directly with managers and colleagues through digital platforms, facilitating faster exchange of operational

knowledge. Managers increasingly function as facilitators of information flow rather than solely as authoritative supervisors (Froese, 2010). This role transformation aligns with the principles of Organizational Information Processing Theory, which emphasizes the importance of communication structures in coordinating complex organizational tasks (Galbraith, 1973, 1974). When digital communication systems enable continuous interaction among organizational members, the organization's capacity to process information increases significantly. This increased capacity allows managers to coordinate complex activities more effectively and respond to uncertainties within project environments. Consequently, ICT communication infrastructures support a more adaptive and responsive managerial coordination system.

The literature further indicates that ICT-mediated coordination contributes to improved integration of organizational knowledge (Maqsood et al., 2003). Communication platforms allow information generated in one part of the organization to be rapidly transmitted to other operational units. Managers can therefore integrate technical insights, operational updates, and performance data from different teams into a coherent understanding of project progress (Eliwa et al., 2022; Lota et al., 2022). This integration strengthens the organization's ability to coordinate interdependent activities across multiple actors. Employees benefit from clearer communication channels that allow them to access relevant information needed to perform their tasks. The presence of structured digital communication systems reduces ambiguity regarding responsibilities and operational procedures (Galbraith, 1973). As a result, coordination becomes less dependent on informal communication networks and more reliant on structured information systems. These dynamics demonstrate how ICT infrastructures reshape the organizational mechanisms through which coordination occurs.

Interpreting these findings through Organizational Information Processing Theory highlights the strategic importance of communication infrastructures in modern managerial practices. ICT communication systems expand the organization's information-processing capacity by enabling faster and more comprehensive information exchange among employees and managers (Galbraith, 1973, 1974). The transformation of managerial coordination practices therefore reflects a broader shift toward information-driven organizational governance. Managers rely increasingly on digital communication infrastructures to maintain situational awareness and coordinate complex work processes. This transformation confirms theoretical arguments suggesting that organizations facing high levels of task complexity must develop advanced communication mechanisms to manage uncertainty (Galbraith, 1973). ICT platforms serve precisely this function by enabling organizations to process information more efficiently and coordinate activities across distributed teams. The findings therefore reinforce the theoretical relevance of information-processing perspectives in explaining how digital communication technologies reshape managerial coordination in contemporary organizational environments.

3.3 Human Resource Coordination and Organizational Productivity in Digitally Mediated Work Environments

Organizational Information Processing Theory suggests that organizational productivity depends largely on how effectively information flows are structured and coordinated among members (Galbraith, 1973). In complex organizational environments, productivity is not determined solely by individual performance but by the ability of employees to coordinate tasks through efficient communication systems (Maqsood et al., 2003). Digitally mediated work environments introduce new communication infrastructures

that reshape how human resources interact and align their activities. ICT platforms enable employees to exchange information rapidly, coordinate responsibilities, and adapt to operational changes in real time. From the perspective of information processing theory, these systems increase the organization's capacity to process operational information and reduce coordination uncertainty (Galbraith, 1974). As a result, the effectiveness of human resource coordination becomes closely linked to the quality of communication infrastructures that support organizational interactions. When employees can access reliable communication channels, coordination processes become more structured and responsive. This subsection therefore examines how ICT-enabled coordination mechanisms influence organizational productivity within digitally mediated work environments.

The analysis of secondary literature shows that ICT communication systems significantly influence the coordination patterns among employees working in complex organizational structures. Digital communication platforms provide employees with continuous access to operational information necessary for performing their tasks. Workers are able to receive instructions, share updates, and communicate with colleagues through integrated communication systems. These interactions reduce delays in information transmission and allow employees to respond more quickly to changes in project conditions (Lota et al., 2022). In project-based organizations, coordination often requires the alignment of multiple tasks that depend on one another. ICT communication infrastructures facilitate this alignment by enabling workers to synchronize their activities more effectively (Froese, 2010). Employees can coordinate schedules, exchange technical information, and report operational progress through digital communication channels. The presence of reliable communication systems therefore strengthens the capacity of employees to collaborate within complex project environments. These coordination dynamics contribute to more stable and predictable work processes.

Another important observation emerging from the literature concerns the role of communication clarity in supporting productive coordination among employees. When digital communication systems provide clear and structured channels for information exchange, employees are better able to interpret organizational instructions. This clarity reduces ambiguity regarding task responsibilities and operational procedures (Galbraith, 1973). Workers can access updated information about project activities and adjust their actions accordingly. Improved communication clarity also reduces the risk of coordination errors that often occur when information is fragmented or delayed (Rimmington et al., 2015). Employees are therefore able to perform their tasks more efficiently because they operate within a coordinated information environment. Digital communication infrastructures also enable rapid feedback between managers and employees, allowing operational adjustments to occur more quickly. These interactions strengthen the alignment between managerial directives and employee actions. As coordination clarity improves, the overall efficiency of work processes also increases.

The literature further indicates that ICT communication systems support the development of collaborative work environments that contribute to organizational productivity. Digital platforms allow employees to engage in continuous interaction with colleagues across different organizational units. Through these interactions, workers can share knowledge, exchange technical expertise, and collectively resolve operational challenges (Bellamy et al., 2005). Collaboration enabled by digital communication systems helps employees integrate different perspectives when addressing complex tasks. This collaborative environment strengthens the organization's capacity to process information collectively. Workers become more capable of adapting their activities to evolving project

requirements when they have access to shared information networks. As a result, coordination becomes a distributed process that involves multiple actors working within a connected communication system. ICT communication infrastructures therefore enable organizations to develop more integrated coordination networks among employees. These networks contribute to more effective task execution and improved operational outcomes.

From the perspective of Organizational Information Processing Theory, the relationship between coordination and productivity can be interpreted as a function of information-processing capacity (Galbraith, 1973, 1974). Organizations that can process operational information quickly and accurately are better able to coordinate complex tasks among employees. ICT communication systems expand this capacity by increasing the speed and reach of information exchange within organizational networks (Lew, 2011). Employees receive the information necessary to perform their tasks without delays associated with traditional communication channels. This reduction in informational bottlenecks allows organizations to maintain continuity in operational processes (Maqsood et al., 2003). As coordination becomes more efficient, the organization's ability to achieve productive outcomes improves. Digital communication infrastructures therefore function as mechanisms that strengthen the link between coordination processes and productivity. The findings support the theoretical proposition that improved information-processing capabilities enhance organizational performance.

The results also demonstrate that digitally mediated coordination contributes to the stabilization of work processes within complex organizational environments. When employees have access to reliable communication infrastructures, they can maintain consistent coordination even when project conditions change (Eliwa et al., 2022). Workers are able to update each other about progress, technical issues, or emerging operational constraints through digital communication channels. This capacity allows teams to adapt their coordination strategies without disrupting overall work processes. The presence of continuous information exchange strengthens the organization's ability to maintain productivity under dynamic conditions. Employees become less dependent on centralized communication structures and more capable of coordinating activities through distributed information networks. These dynamics illustrate how ICT infrastructures support resilience in organizational coordination systems. Productivity improvements therefore emerge from the stability and responsiveness of these digitally mediated coordination processes.

These findings extend previous research by clarifying the mechanisms through which ICT communication systems influence organizational productivity. Earlier studies often highlighted the role of technology adoption without fully explaining how digital communication structures shape coordination processes among employees (Eliwa et al., 2022). The present analysis suggests that communication quality plays a central role in connecting ICT infrastructure with productive outcomes. ICT platforms enable employees to access the information required for coordinated action, thereby strengthening organizational information-processing capacity. This interpretation confirms theoretical expectations derived from Organizational Information Processing Theory regarding the importance of communication structures in managing complex work environments (Galbraith, 1973, 1974). At the same time, the findings refine prior research by emphasizing the role of human resource coordination as a key mechanism linking ICT communication systems with productivity. By clarifying this relationship, the study contributes to filling the theoretical and empirical gaps identified earlier. The analysis demonstrates that productivity in digitally mediated organizations depends on

the effectiveness of communication infrastructures that enable employees to coordinate their activities through continuous information exchange.

3.4 Conceptual Integration of ICT, Coordination, and Productivity

To clarify the analytical relationships identified in the preceding discussion, the findings can be synthesized into a conceptual framework grounded in Organizational Information Processing Theory. The theory suggests that organizations must continuously develop mechanisms capable of processing increasing volumes of information in order to coordinate complex activities and reduce uncertainty (Galbraith, 1973). Subsequent theoretical developments further emphasize that organizational structures and communication systems evolve as responses to information-processing requirements within complex environments (Tushman & Nadler, 1978). In digitally mediated organizational contexts, ICT communication systems function as infrastructures that expand the organization's capacity to manage information flows among employees. Digital communication platforms enable organizations to process operational information more rapidly and distribute it across multiple actors simultaneously. This capacity is particularly important in project-based environments where coordination among diverse professional roles must occur continuously. When communication infrastructures support rapid information exchange, organizations can maintain alignment among employees and adapt to operational changes more efficiently. Consequently, ICT communication systems become critical organizational mechanisms that connect communication processes with coordination outcomes. The analytical relationships discussed throughout this section can therefore be represented through a conceptual framework illustrating how ICT communication infrastructures influence organizational productivity through coordination mechanisms.

Figure. Conceptual Framework of ICT-Enabled Coordination
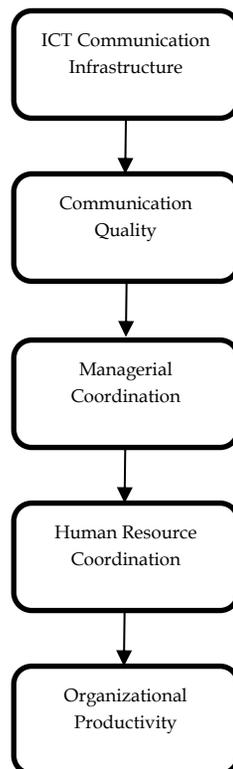
Source: (Developed by the author based on Galbraith, 1973; Tushman & Nadler, 1978, (2026))

The conceptual framework presented in this study is derived from the synthesis of Organizational Information Processing Theory and prior research on ICT-enabled organizational communication and coordination. According to Organizational Information Processing Theory, organizations must develop mechanisms capable of processing information efficiently in order to coordinate complex tasks and reduce operational uncertainty (Galbraith, 1973). Subsequent theoretical developments further emphasize that communication structures and organizational design evolve as responses to increasing information-processing requirements within complex environments (Tushman & Nadler, 1978). Based on this theoretical perspective, ICT communication infrastructures can be interpreted as organizational mechanisms that expand the capacity of managers and employees to process and distribute information. In digitally mediated work environments, communication technologies enable continuous information exchange across organizational units, allowing coordination processes to occur more efficiently. The framework therefore integrates theoretical insights from organizational information processing research with empirical findings from studies on ICT communication and project coordination. Through this integration, the model explains how digital communication infrastructures influence organizational productivity through coordination mechanisms.

Within this framework, ICT communication infrastructure represents the foundational enabling mechanism that allows organizations to establish digital communication channels among employees and managers. These infrastructures support the development of communication quality, which refers to the clarity, reliability, and speed of information exchange within organizational networks. When communication quality improves, managers gain the ability to coordinate tasks more effectively through digital communication platforms. This transformation reflects the shift toward information-based managerial coordination, where supervision and decision-making rely increasingly on real-time information flows rather than hierarchical control structures. As managerial coordination becomes more structured and responsive, employees receive clearer instructions and more timely operational updates. Consequently, coordination among human resources becomes more efficient, allowing teams to synchronize their activities and collaborate more effectively in complex project environments.

The final stage of the framework illustrates how human resource coordination contributes to organizational productivity. When employees operate within coordinated communication environments supported by ICT infrastructures, they are able to interpret organizational objectives more accurately and align their activities with broader project goals. Improved coordination reduces information delays, operational misunderstandings, and task misalignment among team members. These improvements strengthen the stability and efficiency of work processes within digitally mediated organizations. From the perspective of Organizational Information Processing Theory, these outcomes occur because ICT communication systems increase the organization's overall capacity to process operational information. As information-processing capacity increases, organizations are better able to manage complex coordination requirements and maintain productive work performance. The conceptual framework therefore provides an integrated explanation of how ICT communication infrastructures influence

productivity through sequential coordination mechanisms linking communication quality, managerial coordination, and human resource coordination.

4. Conclusion

This study examined how Information and Communication Technology (ICT) influences human resource coordination and organizational productivity within digitally mediated work environments. Guided by Organizational Information Processing Theory, the analysis emphasized the role of communication systems as mechanisms that enable organizations to process information and coordinate complex activities. The findings from the secondary literature indicate that ICT communication infrastructures significantly improve the speed, clarity, and accessibility of information exchange among managers and employees. Improved communication quality allows organizations to reduce coordination uncertainty and maintain continuous information flow across project teams. Digital communication platforms also reshape managerial practices by enabling managers to coordinate tasks through information-based mechanisms rather than relying solely on hierarchical supervision. As coordination processes become more structured and responsive, employees are able to align their activities more effectively with organizational objectives. The analysis further demonstrates that effective human resource coordination supported by ICT communication systems contributes to more stable work processes and improved operational performance. Overall, the study highlights the importance of communication infrastructures in enabling organizations to manage complex coordination requirements in digitally mediated environments.

This research contributes to the literature on ICT in management by clarifying the mechanisms through which digital communication systems influence organizational coordination and productivity. While previous studies often focused on technological adoption, this study emphasizes the importance of communication quality and coordination processes as central elements linking ICT infrastructure with organizational outcomes. By applying Organizational Information Processing Theory, the study provides a theoretical explanation for how communication systems expand the organization's capacity to manage information and coordinate interdependent tasks. The analysis also contributes to project management and human resource management research by demonstrating how ICT-mediated communication reshapes managerial coordination practices and collaborative work environments. Furthermore, the study integrates insights from communication studies, organizational theory, and management research to develop a more comprehensive understanding of digitally mediated coordination processes. The conceptual framework proposed in this research highlights the sequential relationship between ICT communication infrastructure, managerial coordination, human resource coordination, and productivity outcomes. Through this theoretical integration, the study addresses the gap identified in earlier literature concerning the relationship between communication quality and organizational performance. Consequently, the research advances scholarly discussions on digital transformation and organizational coordination in complex work environments.

Although this study provides conceptual insights into ICT-enabled coordination processes, several opportunities remain for future research. Subsequent studies could extend this research by conducting empirical investigations that examine how ICT communication systems influence coordination practices across different organizational sectors. Quantitative or mixed-method approaches may help measure the direct relationship between communication quality, coordination efficiency, and productivity outcomes. Future research may also explore how organizational culture, leadership

styles, or technological capabilities moderate the effectiveness of ICT-mediated coordination systems. Comparative studies across industries or geographical contexts could further enhance understanding of how digital communication infrastructures operate within different organizational environments. Additionally, researchers may investigate how emerging digital technologies such as collaborative platforms, artificial intelligence, and data analytics reshape managerial coordination practices. Longitudinal studies may also provide insights into how communication systems influence coordination dynamics over time as organizations continue to undergo digital transformation. These research directions would contribute to a deeper understanding of how ICT infrastructures shape organizational governance and productivity in increasingly digital work environments.

References

Bellamy, T., Williams, A., Sher, W., Sherratt, S., & Gameson, R. (2005). Preliminary examination of ICT collaborative design and management in the construction industry. Engineering, Construction and Architectural Management, 12(6), 570–584.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage.

Eliwa, H. K., Babaeian Jelodar, M., & Poshdar, M. (2022). Information and Communication Technology (ICT) Utilization and Infrastructure Alignment in Construction Organizations. Buildings, 12(3), 281. https://doi.org/10.3390/buildings12030281

Froese, T. (2010). The impact of emerging information technology on project management for construction. Automation in Construction, 19(5), 531–538. https://doi.org/10.1016/j.autcon.2009.11.004

Galbraith, J. R. (1973). Designing complex organizations. Addison-Wesley.

Jaakkola, E. (2020). Designing conceptual articles: Four approaches. AMS Review, 10(1-2), 18-26. https://doi.org/10.1007/s13162-020-00161-0

Lew, S. L. (2011). Achieving Competitive Advantage through Information Infrastructure Capability: An Empirical Justification. Communications of The IBIMA, 2011, 842405. https://doi.org/10.5171/2011.842405

Lota, P. S., Vijayashree, T. M., & Dave, B. R. (2022). Streamlining production management in construction projects with ICT. CSI Transactions on ICT, 10(1-2), 1–10. https://doi.org/10.1007/s40012-022-00359-6

Maqsood, T., Walker, D. H. T., & Finegan, A. D. (2003). Investigating the role of ICT in improving productivity in construction supply chains in Australian construction industry. Journal of Construction Procurement, 9(2), 64–82.

Meredith, J. (1993). Theory building through conceptual methods. International Journal of Operations & Production Management, 13(5), 3-

11. https://doi.org/10.1108/01443579310028120

Rimmington, A., Dickens, G., & Pasquire, C. (2015). Impact of Information and

Communication Technology (ICT) on construction projects. Organization, Technology

and Management in Construction: An International Journal, 7(1), 1267–1282.

https://doi.org/10.5592/OTMCJ.2015.3.4

Snyder, H. (2019). Literature review as a research methodology: An overview and

guidelines. Journal of Business Research, 104, 333-

339. https://doi.org/10.1016/j.jbusres.2019.07.039

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and

examples. Human Resource Development Review, 4(3), 356-

367. https://doi.org/10.1177/1534484305278283