

The Quality of Knowledge Management in Government: Assessing WhatsApp for Administrative Learning and Professional Dissemination

Praveen Kumar

School of Open Learning, University of Delhi, Delhi, India

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ABSTRACT

In the era of digital transformation, rapid advancements in Information and Communication Technology (ICT) have transformed the paradigms through which government organizations create and share knowledge to ensure transparency and effective decision-making. This study evaluates the quality of knowledge management (KM) within public administration by assessing the extent, nature, and implications of WhatsApp usage for administrative learning and professional dissemination among 100 government officials in Delhi. Utilizing structured questionnaires and weighted mean score analysis, the findings reveal an exceptional level of digital familiarity (4.83) and a high frequency of usage (4.98), indicating that the platform has become a routine infrastructure for administrative coordination. The application is predominantly utilized for professional learning through organization specific updates (98%), office related resource sharing (93%), and administrative reminders (91%). Although the mean score of 2.83 suggests that digital engagement is strictly task oriented rather than for prolonged personal use, it facilitates a rapid information flow within the governance structure. Despite functional advantages such as quick response (90%) and remote access (97%), significant barriers to quality KM persist, including device storage limitations (80%) and a lack of formal institutional acceptance (71%). Furthermore, unregulated usage contributes to substantial work pressure (90%), stress (79%), and an imbalance between work and life (90%). These findings necessitate the implementation of structured communication guidelines to harmonize operational efficiency with employee well-being. This research contributes to digital governance frameworks by offering empirical insights into bridging the gap between widespread informal digital usage and the requirement for formal, regulated knowledge management practices within public institutions.

Keywords: Knowledge Management, Administrative Learning, WhatsApp, Government Officials, Professional Dissemination, Operational Quality, E-Governance



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Corresponding Author:

Praveen Kumar

School of Open Learning, University of Delhi, Delhi, India

Email: praveen.libsci@gmail.com

1. INTRODUCTION

Rapid advancements in Information and Communication Technology (ICT) have significantly transformed the operations and functions of government organizations in creating, sharing, and disseminating knowledge (Agrawal et al., 2021; Bilan et al., 2023; Das, 2024). In today's digital era, various social platforms and instant messaging applications have emerged as powerful tools for real-time communication and knowledge exchange that support administrative learning. Within a modern governance

ecosystem, according to Zamiri & Esmaili (2024), Nakash & Bolisani (2025), timely communication and efficient knowledge sharing are fundamental prerequisites for transparency, coordination, and effective decision-making. Consequently, the quality of knowledge management within the bureaucracy becomes a determining factor in optimizing public resources and realizing government accountability toward public welfare.

In the context of organizational education, the government is responsible for drafting and executing policies through legislative rules that require accurate and systematic knowledge dissemination. Government officials are required to utilize their skills, knowledge, and experience efficiently (Latupeirissa et al., 2024; Truong et al., 2024), especially when tasked with highly intensive roles and busy work structures. These officials must address public grievances, analyze policies, engage with various stakeholders, and execute reformed policies for the general public. Under these conditions, WhatsApp has emerged as a popular social media platform due to its ease of use, low cost, and multimedia support (Andayana et al., 2022). These features encourage officials to adopt WhatsApp as an informal yet effective channel for professional knowledge dissemination.

As a platform that supports transparency and coordination, WhatsApp has become an unavoidable tool within the government environment (Chagas & Da-Costa, 2023; Kira, 2025). Various tasks, such as sharing official orders, reports, circulars, and policy updates, are performed with ease through this platform. It not only provides rapid information dissemination but also enhances knowledge accessibility and facilitates collaborative work (Enakrire & Kehinde, 2022; Udem et al., 2020), particularly in resource-constrained and geographically dispersed settings. However, concerns regarding privacy, confidentiality, record management, and information authenticity often restrict its full utilization within a formal framework.

While the adoption of WhatsApp has altered traditional modes of knowledge communication in government, there is currently no systematic documentation of how officials utilize the platform for official purposes and professional learning. This lack of empirical study creates a gap in understanding the strategic role of WhatsApp in knowledge management and information dissemination within the public sector. In light of these developments, the present study evaluates the quality of knowledge management by examining how government officials leverage WhatsApp for administrative learning and professional dissemination. Specifically, the research is guided by the following objectives: 1) To assess the level of familiarity, frequency, and duration of WhatsApp usage as indicators of its integration into professional learning activities; 2) To examine the specific purposes and the extent of dependence on the platform for official communication and collaborative knowledge-sharing activities; 3) To identify the underlying reasons for using WhatsApp alongside preferred features and content formats that facilitate efficient information sharing; 4) To investigate the systemic barriers and professional challenges faced by officials that influence the overall quality of digital communication governance.

2. LITERATURE REVIEW

2.1. Social Media as a Catalyst for Knowledge Management and Professional Learning

The emergence of social media platforms has fundamentally reshaped knowledge-sharing practices within organizations during the era of digital transformation. Studies by Yaqub & Alsabban (2023) and Etemadi et al. (2022) indicate that the utilization of social media is directly associated with enhanced knowledge-sharing capabilities. Furthermore, the perceived efficacy of these platforms as tools for professional interaction significantly increases both the motivation to share expertise and the frequency of platform engagement.

Within the concept of learning organization (Akella, 2021; Kumar et al., 2021), social media facilitates "team learning" and a "shared vision" through decentralized and fluid communication channels. This is further explained by the SECI Model, which includes Socialization, Externalization, Combination, and Internalization (Songkram & Chootongchai, 2020). In this model, the rapid exchange of digital resources supports the "combination" process, which involves the synthesis of explicit knowledge to support administrative decision making.

A systematic review study by Zamiri & Esmaili (2024), Fauzi et al. (2024), and Alghamdi et al. (2023) suggests that social media for knowledge-sharing facilitates a dynamic environment for collaborative learning and organizational growth. However, for this process to be sustainable, the organization must create systems that institutionalize individual insights to ensure long-term quality. This process is further influenced by diverse perspectives, including gender-based differences in how knowledge is disseminated and received on digital platform

2.2. Impact of Digital Communication on Organizational Innovation and Performance

In the context of administrative learning, work-related social media use has been found to have a direct and positive impact on the innovative performance of employees in organizational settings (Hussain et al., 2022; Inthavong et al., 2023; Zhang et al., 2024). By facilitating real-time communication, these tools allow for the rapid exchange of ideas, which is a cornerstone of a high-quality learning organization (Alenezi,

2023; Zamiri & Esmaceli, 2024). This digital agility enhances the overall quality of intellectual capital by allowing the organization to remain responsive to external changes.

However, the integration of such technologies also presents significant challenges to performance quality. According to cognitive load theory (Sweller, 2020, 2024), the human information processing system has a limited capacity. When extraneous cognitive load, such as constant digital interruptions and media overload, exceeds these limits, the ability to internalize professional knowledge is impaired. This cognitive taxation can hinder the transition from mere information receipt to meaningful administrative learning.

Furthermore, the phenomenon of "cyberloafing" (Lim & Teo, 2024; Tandon et al., 2022), which is the use of digital tools for non-work-related purposes, can negatively impact organizational targets. Factors such as high workload and job insecurity have been shown to influence these behaviors, which in turn can significantly diminish overall employee performance. As high workloads are coupled with the omnipresence of digital tools, employees may struggle to filter essential data from the noise of continuous digital pings, ultimately diminishing the quality of their professional output.

2.3. Educational Dissemination and Behavioral Change via Social Media

Beyond simple communication, social media possesses significant potential to facilitate educational dissemination (Khan et al., 2021) and catalyze behavioral change toward sustainable organizational practices (Chen et al., 2020). Targeted digital campaigns can lead to effective learning and increased awareness among educated young adults, highlighting the pedagogical potential of these platforms (Naeem & Mushibwe, 2025). The role of social media not just as a messaging tool, but as an educational medium that can foster a culture of continuous learning and skill acquisition within professional environments.

However, the efficacy of this educational dissemination is heavily contingent upon the individual's ability to maintain professional boundaries. According to boundary theory (Mols & Pridmore, 2021; Park et al., 2020), the integration of work-related communication into personal spaces via instant messaging disrupts the "segmentation" required for psychological recovery. This "always on" culture creates a state of perpetual "telepressure," or the urge to respond immediately to digital messages. Consequently, conservation of resources theory (Hu et al., 2023) suggests that these constant digital demands can deplete an employee's cognitive and psychological resources, ultimately threatening the sustainability of the knowledge management system itself.

2.4. Psychological Well-being and the Need for Governance Frameworks

The quality of professional dissemination is intrinsically linked to the well-being of the individuals involved (Chapman et al., 2020). Although, according to Kim & Fingerma (2022), using social media to contact colleagues and family can increase social support and daily well-being, research by Beyari (2023) shows that excessive social media exposure is associated with a high prevalence of mental health problems. Therefore, to optimize the quality of knowledge management, according to Santos et al. (2024), it is recommended to form a formal policy framework and guidelines.

From the perspective of institutional theory (Berthod, 2023), for any innovative practice to gain long-term legitimacy and stability within a bureaucratic environment, it must be embedded into the organization's formal structures and normative rules. Without a structured policy framework, shared knowledge remains outside the official memory, leading to a loss of institutional capital. Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) (Bayaga & du Plessis, 2024) highlights that providing robust digital infrastructure and clear protocols acts as a critical "facilitating condition" that directly influences user persistence and the quality of administrative learning. By institutionalizing these protocols, government organizations can transform informal digital habits into recognized, high-quality organizational assets.

3. METHOD

This study employs an empirical research design focused on assessing the quality of knowledge management and professional learning through digital communication platforms. The methodology utilizes a simple random sampling technique, selecting 100 government officials from various ministries in New Delhi to ensure a representative cross-section of administrative perspectives. This approach allows for a comprehensive evaluation of communication patterns across officials holding different designations and professional portfolios within the governmental structure.

Primary data were gathered through a structured questionnaire comprising closed-ended multiple-choice responses to ensure data consistency and facilitate rigorous quantification. To enhance the depth of the findings and verify respondent perceptions, the questionnaire was administered simultaneously with direct interviews. This dual-approach data collection strategy was instrumental in capturing nuanced insights into the extent, nature, and implications of using instant messaging for the dissemination of professional knowledge.

The recorded responses were analyzed using descriptive statistics and weighted mean score analysis to identify dominant trends in administrative learning. Numerical weights were assigned to ordinal responses measured on a five-point Likert scale, ranging from 5 (Very High/Always) to 1 (Very Low/Never). For duration-based data and multiple-response items, progressive weighting and dichotomous coding (Yes=1, No=0) were implemented, respectively. All statistical computations, including the calculation of mean intensity scores, were performed using SPSS and MS-Excel to ensure analytical precision. To ensure the robustness of the instrument, a pilot study was conducted, and the reliability was confirmed with a Cronbach's Alpha coefficient exceeding 0.70. Furthermore, ethical considerations were strictly followed, ensuring respondent anonymity and voluntary participation.

4. RESULTS AND DISCUSSION

4.1. Results

The empirical results regarding the utilization of WhatsApp as a tool for professional knowledge dissemination are documented through various attributes, including digital familiarity, usage frequency, operational motives, and systemic challenges. To evaluate the quality of knowledge management, the analysis integrates raw percentages with mean score assessments. Numerical values from a five-point Likert scale, ascending weights for usage duration, and dichotomous coding were processed using SPSS and MS-Excel to identify dominant trends in administrative learning and communication behavior.

4.1.1. Assessment of Digital Proficiency for Professional Knowledge Exchange

While WhatsApp is universally recognized for its popularity as a social platform, a rigorous quantitative assessment of user proficiency is a fundamental prerequisite for determining its efficacy in a professional knowledge management (KM) framework. Digital familiarity serves as the bedrock for administrative learning; without high levels of user comfort, the dissemination of professional resources would be hindered by technical barriers. Data concerning the officials' familiarity with the platform, derived from structured interviews, are presented in Table 1.

Table 1. Levels of Familiarity with WhatsApp for Professional Usage

No.	Level	Response Score	Percentage (%)
1	Very High	89	89%
2	High	5	5%
3	Moderate	6	6%
4	Low	0	0%
5	Very Low	0	0%
	Total	100	100%
	Mean Score	4.83	

The results indicate an exceptional degree of digital literacy among the government officials, with a calculated mean score of 4.83. Specifically, 89% of the participants demonstrated "Very High" familiarity, while 5% were "Highly" familiar, suggesting they are fully adapted to the platform's core features for managing administrative tasks. Notably, the absence of any "Low" or "Very Low" familiarity scores highlights that WhatsApp is not merely a supplementary tool but a deeply established infrastructure within the governance setup. This widespread proficiency ensures that officials are sufficiently comfortable and capable of utilizing the platform for the high-speed dissemination of professional knowledge and real-time administrative coordination.

4.1.2. Frequency of Engagement in Digital Knowledge Exchange

The consistency of digital engagement among officials serves as a critical metric for assessing the integration of instant messaging tools into the organizational learning culture. The frequency of WhatsApp usage, which underscores its function as a real-time conduit for administrative communication and professional interaction, is detailed in Table 2.

Table 2. Frequency of Usage for Administrative Learning and Coordination

No.	Frequency	Response Score (%)
1	Always	98
2	Often	2
3	Sometimes	0
4	Seldom	0
5	Never	0
	Total	100
	Mean Score	4.98

Empirical results indicate that an overwhelming majority of officials (98%) utilize WhatsApp "Always," with the remaining 2% reporting "Often" usage. Significantly, no participants reported usage categories of "Sometimes," "Seldom," or "Never". The remarkably high mean score of 4.98 substantiates that WhatsApp has become a deeply embedded and routine instrument within the professional environment. This continuous engagement is essential for ensuring the quality of real-time knowledge exchange and fostering a seamless administrative learning process across various governmental sectors.

4.1.3. Temporal Dynamics of Engagement in Administrative Knowledge Sharing

The duration of time spent on digital platforms serves as a key indicator of the intensity and nature of knowledge consumption within a professional setting. Table 3 delineates the temporal distribution of WhatsApp engagement among the surveyed officials, reflecting the balance between operational duties and digital communication.

Table 3. Daily Duration of WhatsApp Usage for Professional Interaction

No.	Duration	Response Score (%)
1	Less than 15 min	2
2	15–30 min	11
3	30–60 min	86
4	1–2 Hours	0
5	More than 2 Hours	1
	Total	100
	Mean Score	2.87

The findings indicate that the vast majority of officials (86%) engage with the platform for 30–60 minutes per day, followed by 11% who report a duration of 15–30 minutes. Only a negligible fraction of respondents utilizes the application for less than 15 minutes (2%) or more than 2 hours (1%). Notably, no usage was reported in the 1–2 hour category.

This distribution, supported by a mean score of 2.87, suggests that while WhatsApp is utilized as a routine instrument, its application is generally moderate and strictly task-oriented. Rather than prolonged or continuous engagement, usage appears to be dispersed across multiple brief interactions throughout the workday. Such a pattern facilitates rapid professional dissemination and real-time administrative learning, allowing officials to integrate digital knowledge exchange into their busy work structures without compromising primary operational responsibilities.

4.1.4. Dimensionality of WhatsApp as a Tool for Knowledge Management and Professional Learning

While originally designed as a social platform, the professional adoption of WhatsApp is influenced by a complex interplay of individual intent, psychological factors, and the specific exigencies of the administrative environment. Table 4 highlights the diverse purposes of WhatsApp usage among respondents, emphasizing its role in facilitating professional dissemination and administrative learning.

Table 4. Purpose of Usage for Professional Knowledge Management

No.	Purposes	Response Score (%)
1	Social Interaction	74
2	Official Communications	87
3	Office-related resource sharing	93
4	Meetings and Collaborations	35
5	Conveying informal decisions	42
6	Confidential discussions	79
7	Reminders for administrative works	91
8	Service-related document dissemination	88
9	Political news sharing	68
10	Dissemination of self-recognitions and achievements	39
11	Organization-specific updates	98
12	Current and forthcoming national and international events	77
13	For purpose-specific communities and groups	82
14	Record Maintenance	47
15	Any other	0
	Mean Intensity Score	72.8

The empirical data demonstrates that the application is predominantly utilized for official communication and professional activities, serving as a critical infrastructure for organizational knowledge

management. A significant majority of officials employ WhatsApp for organization-specific updates (98%), which include the dissemination of newly formulated policies, agreements, and leadership changes. Furthermore, the platform is heavily used for professional resource sharing (93%), facilitating the exchange of documents, files, and administrative notes essential for daily tasks. The high engagement in administrative reminders (91%) and service-related document dissemination (88%), such as orders regarding promotions or postings, further underscores its role in streamlining administrative learning and operational efficiency.

Beyond primary administrative tasks, WhatsApp serves as a versatile medium for information exchange, with high percentages reported for confidential discussions (79%), monitoring current national and international events (77%), and sharing political news (68%). Its collaborative potential is highlighted through its use for social interaction (74%) and engagement within purpose-specific groups (82%), such as departmental task forces.

In contrast, a relatively lower engagement is observed for official meetings and collaborations (35%). This can be attributed to the rigid procedural codes and formal protocols inherent in governmental settings, where high-profile meetings often require established formal channels rather than informal digital platforms. Overall, the mean intensity score of 72.8 reflects a multifunctional usage pattern, positioning WhatsApp as a robust, albeit informal, tool for enhancing the quality of knowledge management in the public sector.

4.1.5. Institutional Dependence on WhatsApp as a Knowledge Management Infrastructure

An analytical evaluation of the reliance on digital platforms for professional duties is a critical metric in understanding the maturity of an organization's knowledge management (KM) system. In this context, the degree of dependence on WhatsApp for official purposes reflects the extent to which instant messaging has been internalized as a primary conduit for administrative learning. The findings regarding this institutional reliance are presented in Table 5.

Table 5. Levels of Dependence on WhatsApp for Official Administrative Purposes

No.	Level	Response Score (%)
1	Very High	90%
2	High	4%
3	Moderate	5%
4	Low	1%
5	Very Low	0%
	Total	100%
	Mean Score	4.83

The results reveal that a substantial majority of officials (90%) exhibit a "Very High" level of dependence on WhatsApp for official communication. Furthermore, 4% reported a "High" level, while only 5% indicated a "Moderate" reliance. Remarkably, only 1% of respondents reported a low level of dependence, with no participants indicating a "Very Low" status.

Supported by a robust mean score of 4.83, these findings demonstrate that WhatsApp has transitioned from a supplementary social tool into a significant and indispensable infrastructure for professional activities. This high degree of reliance is instrumental in facilitating rapid information exchange, ensuring cross-departmental coordination, and enhancing overall administrative efficiency within the governance framework.

4.1.6. Strategic Rationale for Digital Knowledge Dissemination

Table 6 elucidates the underlying rationale driving officials' preference for WhatsApp as a vehicle for professional commitments and administrative coordination. The primary motivations for adoption are centered on the platform's functional superiority in ensuring communication fidelity and accessibility. Specifically, the most significant reasons cited include recipient acknowledgments (99%), which provide essential verification of information receipt, followed by remote access (97%), user-friendliness (92%), ease of access (91%), and the capacity for quick response (90%).

Table 6. Rationales for WhatsApp Utilization in Professional Knowledge Management

No.	Reason	Response Score (%)
1	Quick response	90
2	Recipient Acknowledgments	99
3	Documents sharing	80
4	Ease of access	91
5	Broadcast communication	68
6	Time saving	87
7	User friendly	92

8	Confidentiality	43
9	Economical	89
10	Remote access	97
Mean Intensity Score		83.6

The data further demonstrates that officials value the platform's efficiency in supporting organizational learning objectives, highlighting its time-saving nature (87%), its economical benefits to the organization (89%), and hassle-free document sharing (80%), particularly for large-scale professional resources. These factors collectively emphasize WhatsApp's role in optimizing the cost-effectiveness and speed of administrative communication.

Conversely, confidentiality (43%) and broadcast communication (68%) were identified as relatively minor drivers for adoption. This lower emphasis on security-related features is justified by established governmental protocols, where sensitive or strictly confidential matters are traditionally disseminated through physical media, such as sealed covers or direct personal delivery, rather than digital platforms. Consequently, the high mean intensity score of 83.6 reflects the broad acceptability of WhatsApp for its functional advantages in providing convenient, rapid, and accessible professional knowledge exchange.

4.1.7. Core Functional Features Supporting Professional Knowledge Management

The WhatsApp interface provides a diverse array of integrated features that facilitate different levels of professional engagement, ranging from traditional communication tools to emerging artificial intelligence (AI) and marketing functionalities. Table 7 illustrates the specific preferences of government officials regarding these features, highlighting the tools most conducive to professional knowledge exchange.

Table 7. Preferred Integrated Features of WhatsApp for Knowledge Exchange

No.	Feature	Response Score (%)
1	Chat	98
2	Community or Group	63
3	Broadcast communication	54
4	Documents sharing	97
5	Image and emotion Sharing	91
6	Video Sharing	41
7	Audio Sharing	66
8	Audio chat	27
9	WhatsApp Audio call	93
10	WhatsApp Video call	11
11	WhatsApp Group call	28
12	Meetings	17
13	Build in Translators	7
14	Sentence creation and correction	47
15	Status updates	62
16	AI ask or search	5
17	Multiple social Platform sharing through Single source	4
18	Privacy (chat, status, Display Picture, doc sharing)	38
19	Marketing platform	0
20	Location sharing	39
Mean Intensity Score		51.2

The empirical data highlights a concentrated focus among government officials on the core communicative features essential for organizational task execution. Specifically, Chat (98%) and Document Sharing (97%) are the most utilized tools for disseminating administrative resources and managing daily professional duties. High engagement with WhatsApp Audio Calls (93%) and Image Sharing (91%) underscores a preference for rapid, well-informed decision-making and the visual identification of administrative solutions. Furthermore, features such as Audio Sharing (66%) and Status Updates (62%) play a strategic role in administrative learning, particularly when officials are conducting ground inspections or disseminating government initiatives for social welfare.

Conversely, the relatively low mean intensity score of 51.2 indicates that while officials are highly proficient in core functionalities, they exhibit limited interest in advanced or emerging features. Emerging tools such as AI Search (5%), Built-in Translators (7%), and Marketing Platforms (0%) remain largely unused in the professional context. This suggests that officials prioritize functional reliability and task-

oriented engagement over advanced technological features that do not directly facilitate the discharge of their primary administrative responsibilities.

4.1.8. Preferred Content Formats for Professional Knowledge Exchange

The selection of specific content formats is a critical component of administrative learning, as it dictates the speed and clarity with which professional resources are consumed and disseminated. Table 8 delineates the preferred format types utilized by government officials, reflecting their reliance on specific digital media for official knowledge sharing.

Table 8. Preferred Format Types for Professional Communication

No.	Format	Response Score (%)
1	Text	100
2	Pictures/Images	91
3	Audio	64
4	Video	32
5	Word Doc	83
6	PDF	94
7	Zip	10
8	URLs/weblinks	88
9	Spreadsheets	67
10	PPTs	74
Mean Intensity Score		70.3

The empirical data reveals a definitive inclination among respondents toward text-based communication (100%), PDF document formats (94%), and pictures/images (91%) as the primary vehicles for information and knowledge sharing. These results underscore a preference for high-fidelity, document-oriented communication that aligns with the rigorous requirements of official administrative tasks. Conversely, videos (32%) and zip files (10%) are the least preferred formats, suggesting that officials avoid media types that may require prolonged engagement or complex extraction processes.

A significant finding is the high utilization of URLs/weblinks (88%), which serves as a critical time-saving tool for officials. In the context of government administration, officials are frequently required to consult policy orders, circulars, and notifications hosted on various ministerial websites. The ability to share these links directly through WhatsApp enables the rapid dissemination of essential materials to both subordinates and higher authorities, thereby enhancing organizational efficiency. Analytically, the mean intensity score of 70.3 confirms that WhatsApp has secured a robust and indispensable position within the landscape of professional administrative communication.

4.1.9. Structural and Technical Barriers to Qualitative Knowledge Management

While WhatsApp has been adopted extensively for administrative dissemination and offers various functional benefits to government officials, several systemic barriers continue to impede its effectiveness as a formal tool for knowledge management. A comprehensive evaluation of these constraints is essential to understanding the limitations of digital professional learning within a bureaucratic framework. A detailed analysis of these barriers is presented in Table 9.

Table 9. Barriers in Usage of WhatsApp for Professional Interaction

No.	Barriers	Response Score (%)
1	Unstable Internet speed or weak network	33
2	Device Storage capacity	80
3	Communication Preference for Real over virtual	41
4	Internet Data restrictions	15
5	Applications based barriers (updates, errors, bugs etc)	3
6	Travelling/ Commutation linked barrier	51
7	Lack of acceptance as formal communication tool	71
8	Lack of Authenticity	28
9	Technological Barrier	19
Mean Intensity Score		34.1

Based on empirical observations, the most critical barriers identified by respondents are device storage capacity (80%) and the lack of institutional acceptance as a formal communication tool (71%). Within a governmental setting, the high volume of information from diverse stakeholders leads to an overflow of electronic data, which is frequently cited as a significant logistical burden. Furthermore, despite its widespread practical use, there remains a notable absence of established legal frameworks or internal regulations that officially recognize media disseminated via WhatsApp within rigid government structures.

Additional constraints include travelling/commutation-linked barriers (51%) and unstable internet connectivity (33%), the latter often exacerbated by security restrictions during official protocols. Concerns regarding the authenticity (28%) of digital media also persist among officials in various instances. Collectively, the mean intensity score of 34.1 suggests that while these constraints are moderate, they represent significant hurdles to achieving a fully integrated and high-quality digital knowledge management system.

4.10. Socio-Technical Challenges in Digital Knowledge Management

While WhatsApp facilitates rapid administrative learning and enhances communication responsiveness, its intensive and perpetual use introduces a complex array of socio-technical challenges. These challenges extend beyond mere technical limitations, significantly impacting the psychological and professional quality of the organizational environment. The analysis of these perceived difficulties is summarized in Table 10.

Table 10. Perceived Challenges in WhatsApp-Based Professional Knowledge Management

No.	Challenges	Response Score (%)
1	Time Mismanagement	87
2	Enhanced Work Pressure	90
3	Work-life Disturbances	90
4	Formal Obligations	71
5	Unavoidable stress	79
6	Administrative Confusion	35
7	Legal complications	39
8	Breach of Privacy	79
9	Overloading of electronic media on device	92
10	Health issues	81
Mean Intensity Score		77.3

Empirical evidence indicates that a vast majority of officials identify the overloading of electronic media on devices (92%) as a primary challenge, which creates an ongoing necessity for costly technological upgrades to maintain the quality of knowledge access. Furthermore, the transition toward instant professional dissemination is associated with enhanced work pressure (90%) and significant work-life disturbances (90%), as the boundary between official duties and personal time becomes increasingly blurred due to over-engagement in digital communications.

The quality of administrative focus is also compromised by time mismanagement (87%), often resulting from the continuous shuffling of priority tasks within digital threads. The physical and psychological toll is evident, with officials reporting health issues (81%) and unavoidable stress (79%) attributed to prolonged exposure to mobile and IT devices. Additionally, the informal nature of the platform raises concerns regarding the breach of privacy (79%), frequently due to the disclosure of personal status to professional contacts, and the imposition of formal obligations (71%) immediately upon receipt of media.

While administrative confusion (35%) and legal complications (39%) are perceived as lower-tier risks, they still present occasional hurdles when conflicting stakeholder opinions are disseminated via unofficial channels. Ultimately, the high mean intensity score of 77.3 underscores the significant socio-technical challenges inherent in current digital knowledge management practices. This suggests that while WhatsApp improves communication speed, its excessive and continuous use poses substantial professional and personal challenges that may diminish the long-term quality of the learning organization.

4.2. Discussion

4.2.1. The Digital Proficiency Paradox: Bridging High Familiarity with Institutional Acceptance

The empirical results of this study reveal a significant degree of digital readiness among government officials, characterized by an overwhelming familiarity score of 4.83 and a near-constant usage frequency of 4.98. These metrics indicate that the "soft infrastructure" or human capital within the ministries is highly prepared for digital knowledge management practices. However, a critical quality gap emerges, as 71% of respondents identified the lack of institutional acceptance as a primary barrier to utilizing WhatsApp as a formal communication tool. This underscores a "Digital Proficiency Paradox" where high individual capability is met with organizational inertia, preventing the transition from ad-hoc information sharing to a structured administrative learning environment.

The disconnect between user proficiency and institutional recognition can be analyzed through the lens of learning organization concept (Akella, 2021; Kumar et al., 2021), which posits that for an organization to truly learn, it must create systems that capture and institutionalize individual insights to ensure long-term quality. In this context, although WhatsApp facilitates rapid professional knowledge

dissemination, the absence of a formal policy framework renders the shared knowledge "volatile" or legally unstable within the governance hierarchy. Previous research by Kwayu et al. (2021) and Feeney & Porumbescu (2021) aligns with these findings, suggesting that while social media has a significant effect on outward knowledge sharing, its lack of formal guidelines in public organizations often limits systemic integration and inward stakeholder interaction. Furthermore, Yaqub & Alsabban (2023) notes that while digital platforms increase the motivation to share expertise, their effectiveness as a professional management tool is contingent upon the perceived reliability and efficacy of the platform within the organizational structure.

Furthermore, the volatile nature of information shared on unregulated platforms directly impacts the overall quality of knowledge management. When a substantial majority of officials perceive a lack of formal acceptance, the validity and authenticity of disseminated resources remain questionable within a rigid bureaucratic framework. Alghamdi et al. (2023) and Tajpour et al. (2022) emphasize that for social media to serve as a sustainable tool for sharing knowledge, organizations must address administrative barriers to ensure information integrity and technical stability. This is consistent with Zhang et al. (2024) and Ince et al. (2022), who argue that while social media use at work promotes innovative performance, its positive outcomes are moderated by the clarity of usage protocols and the organizational environment. Therefore, to enhance the quality of administrative learning, government institutions must bridge this gap by establishing formal protocols that validate digital interactions and transform informal habits into recognized assets of high quality.

4.2.2. Real-Time Resource Sharing and its Impact on Administrative Learning Quality

The empirical findings demonstrate that WhatsApp functions as a highly efficient catalyst for administrative learning, evidenced by the dominant usage of the platform for organizational updates (98%) and professional resource sharing (93%). The absolute preference for text-based communication (100%) and the substantial reliance on PDF formats (94%) further reveal that government officials prioritize "structured knowledge" that facilitates easy storage and rapid retrieval. This pattern suggests that knowledge management within the bureaucracy has shifted toward a model of real-time accessibility, where the platform serves as a dynamic, albeit informal, repository for policy circulars, orders, and operational guidance.

The seamless flow of information observed in this study aligns with the core tenets of learning organization concept (Akella, 2021; Kumar et al., 2021), specifically the concept of "team learning" and "shared vision" which require decentralized and fluid communication channels. By utilizing instant messaging for the dissemination of critical documents, the government bureaucracy effectively bypasses traditional and hierarchical bottlenecks often referred to as "siloes" communication that historically delay policy implementation. According to the SECI model of knowledge creation (Songkram & Chootongchai, 2020), the rapid exchange of PDFs and text based updates facilitates the "combination" process, where explicit knowledge is collected from various sources and synthesized to support administrative decision making. This digital agility allows the organization to remain responsive to external changes, thereby enhancing the overall quality of its intellectual capital.

This acceleration of administrative learning through digital tools is corroborated by contemporary scholarship in the field of knowledge management. Alias & Razak (2025) and Thomas & Jo (2024) argue that digital platforms significantly catalyze educational dissemination by providing targeted, just-in-time engagement that fosters professional awareness. The preference for structured digital formats observed among the officials reflects the effectiveness of professional interaction is intrinsically linked to the clarity and "archival value" of the information shared. However, the successful adoption of technologies in public sectors is heavily driven by "perceived ease of use" (AbdulKareem et al., 2024), which directly explains why WhatsApp has outpaced formal, more complex internal management systems. Despite this efficiency, researchers like Aldhafeeri & Alotaibi (2023) caution that the transition to digital-based learning requires a careful balance between the speed of social media and the systemic reliability of formal records. Thus, the integration of WhatsApp into the administrative workflow represents a transformative shift toward a more agile, knowledge-driven governance ecosystem that prioritizes rapid professional dissemination.

4.2.3. The Socio-Technical Toll: Balancing Operational Efficiency and Professional Well-being

The study's findings highlight a significant paradox within the digitalized bureaucracy: while the duration of WhatsApp usage appears moderate and task-oriented (mean score of 2.87), it paradoxically yields high levels of perceived work pressure (90%) and work-life disturbances (90%). This intensity is further exacerbated by technical constraints, specifically the overloading of electronic media on devices (92%) and storage limitations (80%), which create significant cognitive barriers. Furthermore, the perceived necessity for rapid responsiveness (90%) correlates with a high prevalence of unavoidable stress (79%), suggesting that the current mode of professional dissemination may be reaching a point of diminishing returns regarding the quality of administrative decision-making.

The detrimental impact of media overload on administrative performance can be analyzed through the lens of cognitive load theory. Sweller (2020, 2024), posits that the human information processing system

has limited capacity. When the extraneous cognitive load, which in this case includes the 92 percent media overload and constant technical interruptions, exceeds the limits of the working memory, the ability to internalize and process germane or professional knowledge is significantly impaired. In a governmental context, this cognitive taxation hinders the transition from mere information receipt to meaningful administrative learning. As Obasi & Benson (2025) and Valtonen & Holopainen (2025) observe, high workloads coupled with the omnipresence of digital tools often lead to diminished employee performance quality, as the brain struggles to filter essential policy data from the noise of continuous digital pings.

Moreover, the high levels of work life disturbance and stress reported by officials underscore the erosion of professional boundaries in the digital era. According to boundary theory (Mols & Pridmore, 2021; Park et al., 2020), the integration of work related communication into personal spaces via instant messaging disrupts the "segmentation" required for psychological recovery. This "always on" culture creates a state of perpetual "telepressure," which is the urge to respond immediately to ICT mediated messages. Conservation of resources theory (Hu et al., 2023) identifies this as a primary driver of resource depletion. When officials are constantly forced to shuffle priority lists and manage digital overload, their psychological and cognitive resources are drained, eventually threatening the sustainability of the Knowledge Management (KM) system itself. While communication technology can enhance accessibility, its unregulated use often results in "communication based stressors" that negate the efficiency gains of real time dissemination. Therefore, ensuring the long term quality of government KM requires not just technical proficiency, but a socio technical framework that protects the cognitive and personal wellbeing of administrative professionals.

4.2.4. Policy Implications for Digital Governance

The transition from the organic adoption of instant messaging to a sophisticated, high-quality knowledge management system necessitates a robust shift from informal practice to formal institutionalization. The current disparity between the pervasive use of WhatsApp for professional tasks and the lack of official recognition highlights an "informality gap" that threatens the integrity of administrative records. According to institutional theory (Berthod, 2023), for any innovative practice to gain long-term legitimacy and stability within a bureaucratic environment, it must be embedded into the organization's formal structures and normative rules. Without a structured policy framework, the "knowledge" shared remains outside the official memory of the organization, leading to a loss of institutional capital.

To enhance the quality of digital governance, institutions must implement specific "facilitating conditions" that address the technical and ethical constraints identified in this study. The establishment of "Digital Ethics" protocols is essential to regulate professional conduct, ensuring that rapid dissemination does not compromise information integrity or personal privacy. Research by Banghart et al. (2018) and Aman-Ullah et al. (2025) suggests that governance frameworks for social media must explicitly define the boundaries of professional interaction to mitigate the risks of telepressure and work-life disturbances. Furthermore, to resolve the persistent challenge of device storage and media overload, a transition toward integrated cloud-based storage systems is imperative. From the perspective of the Unified Theory of Acceptance and Use of Technology (UTAUT), providing such infrastructure is a critical "facilitating condition" that directly influences user persistence and the quality of administrative learning (Bayaga & du Plessis, 2024). Social media policies in government serve as "boundary objects" that harmonize individual communication habits with institutional goals. By institutionalizing these protocols and providing centralized digital repositories, government organizations can transform WhatsApp from a mere messaging application into a high-quality, secure, and sustainable platform for professional knowledge management.

5. CONCLUSION

This study concludes that WhatsApp has evolved into a critical infrastructure with a high frequency of usage for administrative learning and professional knowledge dissemination within government ministries. The deep integration of the platform into professional activities is evidenced by the integration indicators of exceptional digital familiarity, constant frequency, and consistent duration of engagement among officials. Furthermore, the findings reveal a profound institutional reliance on the platform for official communication and collaborative knowledge sharing activities. This operational efficiency is fundamentally driven by the user friendly interface and the preference for structured content formats such as text and PDF that facilitate seamless information exchange. Finally, the research establishes that the overall quality of digital governance is significantly influenced by systemic barriers and professional challenges, including the lack of formal recognition, technical storage limitations, and the social and technical toll of increased work pressure and disturbances to the balance between work and life.

The contribution of this research lies in its empirical validation of the "informal knowledge management" phenomenon within the public sector, providing a nuanced perspective on how instant messaging transforms bureaucratic interactions. By systematically mapping usage patterns, content

preferences, and perceived barriers, this study bridges the gap between individual digital literacy and organizational learning theory. It provides a critical framework for policymakers to move beyond ad-hoc usage toward the development of "Digital Ethics" and formal governance protocols. Such institutionalization is essential to transform informal digital habits into recognized, high-quality organizational assets that enhance the sustainability of intellectual capital in government institutions.

Despite these insights, the study is subject to several limitations, primarily its reliance on a cross-sectional sample of 100 officials within a specific administrative context and its exclusive focus on a single platform. These factors limit the generalizability of the findings and the ability to observe the long-term evolution of digital policy impacts. Consequently, future research should adopt longitudinal designs to evaluate how the formalization of digital communication influences administrative efficiency over time. Furthermore, comparative studies involving diverse digital platforms and different geographical or cultural governance settings are recommended to provide a more comprehensive understanding of the global digital transformation in public sector knowledge management.

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