



INFLUENCE OF TACIT KNOWLEDGE AND USER BEHAVIOUR ON DIGITAL EFFICIENCY OF AUTOMATED ORGANIZATIONAL SUPPORT FUNCTIONS IN TEXTILE INDUSTRY

Review paper

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ABSTRACT: This paper investigates how tacit knowledge and user behavior (employees) influence the effectiveness of automation and AI-driven tools in organizational support functions. Drawing on Knowledge Management and Socio-Technical Systems theory, the study adopts a human-centric perspective aligned with Industry 5.0. Evidence from textile manufacturing and supply chain environments, supported by insights from prior research on tacit knowledge in automated business environments, shows that digital efficiency is shaped not only by technological capabilities but also by how employees interpret, adapt, and at times circumvent formalized systems in their daily work. In practice, system complexity and ingrained routines often lead workers and managers to rely on familiar “legacy” approaches or informal workarounds, even when advanced digital solutions are available. While these behaviors may enhance short-term efficiency, they can reduce data reliability, limit process visibility, and constrain organizational learning. The findings emphasize that, regardless of the level of automation, the end user ultimately determines system effectiveness. The paper concludes that sustainable digital transformation requires balancing technological innovation with the preservation of human expertise and collaborative practices.

Keywords: tacit knowledge, user behaviour, process automation efficiency, Industry 5.0, human-centric approach.

UTICAJ TACITNOG ZNANJA I PONAŠANJA KORISNIKA NA DIGITALNU EFIKASNOST AUTOMATIZOVANIH ORGANIZACIONIH FUNKCIJA PODRŠKE U TEKSTILNOJ INDUSTRIJI

APSTRAKT: Ovaj rad ispituje kako tacitno znanje i ponašanje korisnika (zaposlenih), utiču na efikasnost automatizovanih i veštačkom inteligencijom pokrenutih alata u funkcijama organizacione podrške. Oslanjajući se na teoriju upravljanja znanjem i socio-



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tehničkih sistema, studija usvaja perspektivu usmerenu na ljude, usklađenu sa principima Industrije 5.0. Rezultati iz tekstilne proizvodnje i lanca snabdevanja, potkrepljeni uvidom u prethodna istraživanja o implicitnom znanju u automatizovanim poslovnim okruženjima, pokazuju da digitalnu efikasnost oblikuju ne samo tehnološke mogućnosti, već i način na koji zaposleni tumače, prilagođavaju, a ponekad i zaobilaze formalizovane sisteme u svakodnevnom radu. U praksi, složenost sistema i ukorenjene rutine često navode radnike i menadžere da se oslanjaju na poznate “naseđene” pristupe ili neformalna zaobilazna rešenja, čak i kada su im na raspolaganju napredna digitalna rešenja. Iako ova ponašanja mogu poboljšati kratkoročnu efikasnost, ona mogu umanjiti pouzdanost podataka, ograničiti vidljivost procesa i otežati organizaciono učenje. Nalazi naglašavaju da, bez obzira na nivo automatizacije, krajnji korisnik u krajnjem određuje efikasnost sistema. Rad zaključuje da održiva digitalna transformacija zahteva uravnoteženje tehnoloških inovacija sa očuvanjem ljudske ekspertize i kolaborativnih praksi.

Ključne reči: *tacitno znanje, ponašanje korisnika, efikasnost automatizacije procesa, Industrija 5.0, pristup usmeren ka čoveku.*

1. INTRODUCTION

Automation and digital technologies are transforming how organizations produce, manage, and deliver work [1,2]. Digital transformation is seen as a main strategic goal across different industries, as well as textile industry. It is driven by the integration of artificial intelligence (AI), machine learning (ML), enterprise resource planning (ERP) systems, robotic process automation (RPA), digital twins, and advanced analytics. These technologies are increasingly implemented not only in production environments but also in organizational support functions such as procurement, accounting, payroll, contract administration, supply-chain coordination, and risk management [3,4]. Research on AI adoption in textile environments increasingly highlights the importance of preserving and transferring tacit knowledge, particularly as organizations face workforce transitions, increasing automation, and growing complexity of digital systems [5,6]. In support functions such as accounting, payroll, finance, and risk management, ERP, RPA, and AI tools have replaced many manual tasks [7,8]. While these systems deliver speed and consistency, they remain dependent on human users who provide data, interpret outputs, and maintain process discipline [9,10]. As digitalization expands, organizations risk losing tacit knowledge embedded in experience and social interaction [11,12]. Such knowledge enables employees to anticipate errors and adapt to exceptions [13,14]. When it erodes, digital systems become increasingly fragile under disruption [15,16]. Moreover, workload pressure and organizational constraints encourage procedural shortcuts that may undermine data quality and system integrity [17,18,19].

This study therefore combines Knowledge Management and Socio-Technical Systems perspectives within the Industry 5.0 framework to examine how user behaviour and tacit



knowledge jointly shape digital efficiency [20,21,22]. (Trist & Bamforth, 1951; Bostrom & Heinen, 1977; European Commission, 2021). Through the literature research.

2. LITERATURE REVIEW

2.1. Tacit Knowledge Dimension in Digital Work

Automation has become central to contemporary organizational life, particularly in administrative and support functions such as accounting, payroll, and financial operations. Yet, despite technological sophistication, the performance of these systems continues to depend on human understanding, experience, and judgment. Within the field of Knowledge Management (KM), this human contribution is captured by the concept of tacit knowledge—the unspoken, experience-based understanding that enables people to interpret data, solve problems, and adapt to exceptions [11,12]. Tacit knowledge differs from explicit knowledge, which can be codified and stored in manuals or systems. It is situated, relational, and often invisible to formal documentation processes [23]. When organizations automate procedures, they typically convert parts of tacit knowledge into explicit, rule-based forms. However, this process also generates losses: employees begin to “click through” systems without fully understanding the underlying logic of their work [24]. In digital support functions systems, for example, the capacity to troubleshoot errors or interpret exceptions depends on retaining tacit understanding of data flows and dependencies. When this erodes, automation may deliver accuracy under normal conditions but vulnerability under disruption. The human challenge in automation, therefore, is not only the loss of tacit knowledge but also the need to reproduce it through learning, mentoring, and documentation. The reproduction of tacit knowledge allows new employees to grasp not just what to do, but why procedures matter. Conversely, when work becomes fragmented by digital interfaces, the opportunity for reflective learning diminishes, and organizational memory weakens [25].

2.2. User Behaviour Dimension

The implementation of AI-driven systems influences employee behaviour by reshaping workplace dynamics, increasing operational efficiency while simultaneously affecting autonomy, decision-making practices, and user interaction with digital processes [26]. Organizational Behavioral studies of work show that employees frequently adjust formal procedures to meet real operational demands. This is particularly visible in environments of high workload, time pressure, and limited control over system performance. According to [16,17], such deviations are not necessarily negligent; they are rational adaptations to system constraints. People take shortcuts to achieve results, even when these shortcuts undermine reliability. Within digital systems, this manifests as rational non-compliance: users knowingly bypass certain steps because following them would slow performance or because the system itself is cumbersome. For example, employees may skip “lessons learned” fields in ticketing systems, reuse old data entries, or rely on email rather than integrated communication channels. These behaviors create what [15] described as “latent conditions” for failure—errors embedded in the system’s everyday operation.



From a knowledge-management perspective, these adaptations also disrupt knowledge flows. Every skipped documentation step represents a lost opportunity to capture experiential insight. Over time, the organization's collective memory weakens, and inefficiencies repeat. The popular maxim “bad data in, bad data out” illustrates how behavioral drift undermines both data quality and system credibility.

Recent workplace research links these behaviors to structural and cultural factors: increasing workload, understaffing, and shifting motivational patterns [27]. Employees often feel pressured to prioritize speed over reflection and perceive knowledge-sharing as an optional or unrewarded task.

2.3. Digital Efficiency of Automated Organizational Support Functions in Textile Industry

Digital transformation has become a strategic priority within the textile industry as organizations seek to improve operational performance, supply-chain responsiveness, sustainability, and competitiveness. While early digitalization efforts primarily focused on manufacturing technologies and production automation, recent developments increasingly extend into organizational support functions. The concept of digital efficiency refers to the ability of digital technologies to improve organizational performance through faster information processing, enhanced transparency, reduced operational costs, and improved process integration. In textile organizations, digital efficiency is particularly important due to the complexity of supply chains, high product variability, global sourcing networks, and increasing customer expectations regarding speed, customization, and sustainability [28]. Several textile-industry case studies highlight the operational benefits of digitalization in support processes. Nafz et al. [29] emphasize that digital transformation enables the integration of previously fragmented organizational activities, facilitating data exchange between production planning, procurement, inventory control, and administrative functions. Similarly, Berardi [30] found that digitalization of business-to-business processes in Italian textile companies improved communication efficiency, reduced transactional complexity, and enhanced collaboration across supply-chain actors. These findings suggest that digital efficiency extends beyond technological infrastructure and depends on the organization's ability to connect information flows across both operational and administrative domains. The implementation of data-driven business-process management systems allows organizations to monitor performance indicators in real time and identify operational bottlenecks more effectively. A case study conducted within a Peruvian textile manufacturing company showed that integrating lean-management practices with digital process modelling increased production efficiency from 79% to 86%, improved operational agility, and strengthened decision-making capabilities through real-time performance monitoring [31]. From an Industry 5.0 perspective, digital efficiency should therefore be understood as a dynamic balance between automation, organizational knowledge, and human behaviour. Advanced technologies enable faster processing and improved operational control, but long-term efficiency depends on employees' ability to interpret information, reproduce tacit knowledge, maintain process discipline, and support organizational learning. As textile organizations continue adopting AI-driven support



systems, preserving this human dimension becomes increasingly important for achieving resilient, transparent, and sustainable digital transformation [22,31].

2.4. Influence of Tacit Knowledge and User Behaviour on Digital Efficiency in Textile Industry

One of the most significant findings emerging from recent textile-sector research is that tacit knowledge remains essential even in highly digitalized environments. Chyananut and Sangnak [32], examining AI-driven knowledge capture in the Thai textile heritage industry, identified strong concerns regarding the loss of experiential expertise caused by aging workforces and weakened intergenerational knowledge transfer. Their study revealed that employees and artisans demonstrated significantly greater acceptance of AI systems when technology was perceived as supporting knowledge preservation rather than replacing human expertise. The authors describe AI as an “epistemic partner” that enables the capture and transmission of tacit knowledge while maintaining human agency within organizational processes. This finding suggests that user behaviour toward AI systems is strongly influenced by whether employees perceive automation as complementary or threatening to their professional knowledge and identity.

A similar conclusion is presented by Baytar, Yang, and Maher [33], who investigated the role of tacit knowledge in apparel product development and explainable artificial intelligence (XAI). Their research argues that many apparel-development decisions rely heavily on experiential judgement, intuition, pattern interpretation, and contextual decision-making that are rarely documented in formal systems. The authors emphasize that successful digitalization and AI implementation require organizations to first identify, externalize, and understand tacit knowledge before it can be effectively incorporated into explainable AI models. They further argue that the inability to decipher tacit knowledge creates barriers to AI adoption because users may distrust or reject automated recommendations that fail to reflect practical expertise accumulated through experience.

Research on tacit knowledge modelling in industrial environments provides additional evidence supporting the importance of human expertise within automated systems. Kipper et al. [34] demonstrate that tacit knowledge significantly contributes to process optimization, anomaly detection, problem-solving, and decision quality. Their findings indicate that industrial systems perform more effectively when expert knowledge is systematically captured and translated into decision-support mechanisms. However, the study also emphasizes that many contextual elements of tacit knowledge remain difficult to formalize because they depend on experience, judgement, and situational interpretation. As a result, automated systems continue to require active human involvement to maintain performance under changing operational conditions.

The relationship between user behaviour and digital-system performance is particularly relevant within textile-industry environments characterized by complex workflows, high product variability, and continuous adaptation requirements. Research presented within the Contemporary Trends and Innovations in the Textile Industry conference proceedings repeatedly highlights the importance of human expertise in process optimization, quality control, and production management. Studies examining textile-process improvement,



quality management, and business-process development emphasize that organizational performance depends not only on technological infrastructure but also on employees' ability to correctly apply procedures, interpret process information, and adapt operational activities to specific production conditions [35,36].

Employees frequently rely on practical experience when making decisions. If AI-generated recommendations are not transparent or understandable, users may bypass system outputs, rely on informal knowledge-sharing practices, or revert to traditional decision-making methods. This behavioural response reduces the effectiveness of automation and limits the organization's ability to achieve consistent digital-process execution. Similar findings from explainable AI research suggest that user trust, transparency, and understandability directly influence system usage behaviour and technology acceptance [37].

Recent research further highlights that organizations face increasing risks associated with tacit knowledge erosion. As experienced employees retire or transition to new roles, valuable operational knowledge may disappear if organizations fail to implement mechanisms for knowledge capture and transfer. Fenoglio et al. [38] emphasize that many digital transformation initiatives focus primarily on technological implementation while neglecting the systematic incorporation of experiential knowledge into ERP systems and automated workflows. Consequently, organizations may achieve short-term efficiency gains while simultaneously reducing long-term organizational resilience and adaptability.

3. CONCLUSION

Automation does not eliminate the need for human knowledge, it redefines it. The study of digital transformation in support functions such as accounting, payroll, risk management, and contract administration reveal that the effectiveness of automated systems depends on how employees reproduce or disrupt tacit knowledge during their everyday interactions with technology. Digital tools may accelerate processing, but human insight sustains meaning, accuracy, and reliability. The reviewed literature indicates that digital efficiency within AI-supported textile-industry environments emerges from the interaction between technological capability, tacit knowledge, and user behaviour. Automated systems improve information processing, process standardization, and operational visibility; however, their effectiveness remains dependent on employees' willingness to engage with technology, trust automated outputs, reproduce organizational knowledge, and maintain process discipline. User behaviour influences data quality, knowledge continuity, system reliability, and organizational learning, while tacit knowledge provides the contextual understanding necessary for managing exceptions, uncertainty, and operational disruptions [32,33,34].

These findings strongly support the Industry 5.0 perspective, which views human expertise as a strategic resource rather than an obstacle to automation. Within textile-industry support functions and production environments, sustainable digital transformation therefore requires not only technological investment but also mechanisms for preserving tacit knowledge, strengthening organizational learning, and encouraging responsible system usage. AI systems can enhance organizational performance, but long-term digital



efficiency depends on maintaining the human knowledge and behavioural capabilities that enable technology to function effectively in complex real-world environments. Further research will be focused on gathering and analysing practical evidence of impact of tacit knowledge and user behaviour on digital efficiency in support processes.

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