

Exploring the Relationship Between Organizational Structure and Employee Productivity in Knowledge-Intensive Firms

1. Kiana. Daryanavard^{ORCID} : Department of Business Administration, University of Tabriz, Tabriz, Iran

2. Mohammadreza. Tavassoli^{ORCID} : Department of Accounting, University of Tabriz, Tabriz, Iran

*corresponding author's email: Drtavassoli1989@gmail.com

ABSTRACT

This study aims to explore how specific elements of organizational structure influence employee productivity within knowledge-intensive firms operating in Tehran, Iran. A qualitative research design was employed using semi-structured interviews with 18 participants from various knowledge-intensive firms in Tehran. Participants were purposefully selected based on their experience in project management, research, innovation, or technical expertise. Interviews focused on perceptions of structural design, communication dynamics, and their impact on productivity. Data collection continued until theoretical saturation was achieved. Thematic analysis was conducted using NVivo 12 software to code transcripts, identify patterns, and generate emergent themes through an iterative coding process. Three overarching themes emerged: (1) Structural Configuration, including subthemes such as hierarchical clarity, role specialization, and decentralization, which influenced task focus and autonomy; (2) Communication Dynamics, encompassing vertical and horizontal communication flows, technological channels, and information transparency, all of which mediated the structure–productivity relationship; and (3) Productivity Enablers and Barriers, which involved autonomy in task execution, knowledge-sharing culture, innovation support mechanisms, and workload balance. Participants emphasized that flexible structures, effective communication, and supportive cultures significantly enhanced productivity, while structural redundancy, overcommunication, and poor workload planning served as barriers. The study underscores the critical role of adaptive and transparent organizational structures in promoting productivity within knowledge-intensive firms. Aligning structural elements with communication practices, autonomy, and a collaborative culture is essential for maximizing employee performance. These findings contribute to both theory and practice by offering actionable insights for designing more effective organizational environments in dynamic, knowledge-driven contexts.

Keywords: Organizational structure; employee productivity; knowledge-intensive firms; communication dynamics; autonomy; qualitative research

Introduction

In an increasingly knowledge-driven global economy, the performance of organizations—especially those that rely heavily on intellectual capital—depends not only on the talents of individual employees but also on how organizational structures support and amplify that talent. Knowledge-intensive firms (KIFs), defined as enterprises where a majority of value creation stems from employees' expertise and innovation rather than physical assets, are particularly sensitive to the design and dynamics of their internal structures (Starbuck, 1992). As firms in sectors such as IT, consulting, engineering, biotechnology, and financial services expand and evolve, understanding the



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interplay between organizational structure and employee productivity becomes essential to ensuring sustainable performance and competitiveness.

Organizational structure refers to the formal system of task and authority relationships that controls, coordinates, and motivates employees to work together to achieve the organization's goals (Mintzberg, 1979). It encompasses key design elements such as hierarchy, departmentalization, centralization, formalization, and span of control (Daft, 2015). While traditional mechanistic structures—with rigid hierarchies and narrowly defined roles—may be suited for routine-based environments, knowledge-intensive settings demand more organic, flexible, and adaptive configurations. These structural variations can significantly influence how knowledge flows, how decisions are made, and how empowered employees feel to innovate and contribute (Tsoukas & Mylonopoulos, 2004).

Employee productivity in KIFs is less about output volume and more about the quality, creativity, and timeliness of knowledge work. Productivity in such contexts is shaped not only by individual capabilities but also by how the organizational environment fosters knowledge exchange, collaboration, autonomy, and feedback (Alvesson, 2004). Thus, a misaligned or overly rigid structure can hinder performance by introducing silos, restricting communication, or creating barriers to initiative-taking. On the other hand, well-aligned structural arrangements can catalyze performance by enabling fluid knowledge flows, cross-functional collaboration, and decentralized decision-making (Nahapiet & Ghoshal, 1998).

Recent research has emphasized the importance of structural flexibility in enhancing organizational agility and employee responsiveness in knowledge settings. Studies show that flatter structures, reduced bureaucratic controls, and decentralized decision-making contribute to greater employee engagement, job satisfaction, and productivity (Gibson & Birkinshaw, 2004; Lee & Edmondson, 2017). For example, agile organizational designs that allow rapid reconfiguration of teams and tasks are especially suited to innovation-centric firms. These structures reduce unnecessary delays in communication, increase the visibility of individual contributions, and provide employees with a sense of ownership over their work (Birkinshaw & Ridderstråle, 1999).

However, the relationship between organizational structure and productivity is far from linear or uniform. It is mediated by a range of contextual factors, including organizational culture, leadership style, the nature of the work, and the technological infrastructure supporting communication and collaboration (Burns & Stalker, 1961). In particular, the dynamics of communication within and across structural units play a central role. Studies have shown that effective vertical and horizontal communication can mitigate structural rigidities and foster alignment, shared understanding, and faster problem-solving (Tushman & Nadler, 1978). Conversely, communication bottlenecks, overload, or a lack of transparency can negate the potential benefits of an otherwise supportive structure.

Moreover, the emergence of digital workspaces and hybrid work models has introduced new challenges and opportunities for organizational structuring. Knowledge workers increasingly rely on digital platforms for information exchange, task management, and interpersonal interaction. This shift necessitates structural adaptations that account for virtual collaboration, asynchronous communication, and new forms of autonomy and control (Cascio & Shurygailo, 2003). The relevance of traditional structural variables, such as proximity-based supervision or hierarchical approvals, has diminished, making room for newer concerns such as platform governance, digital communication norms, and technology-enabled productivity monitoring (Leonardi, 2011).

Despite the growing literature on organizational design, empirical investigations into how specific structural attributes affect employee productivity in knowledge-intensive firms—particularly in non-Western, developing-country contexts—remain limited. Much of the extant research is conceptual or based on case studies from

multinational firms in Western economies, with limited generalizability to smaller or locally embedded organizations operating in different institutional and cultural environments (Child, 2005). Iran, for instance, has seen a significant rise in knowledge-intensive firms across sectors like information technology, engineering services, and pharmaceutical R&D. However, these organizations often operate in regulatory, cultural, and economic conditions that diverge markedly from those of Western firms, influencing both structural configurations and employee behavior.

To address this gap, the current study explores the relationship between organizational structure and employee productivity in a sample of knowledge-intensive firms located in Tehran, Iran. By drawing on qualitative data obtained through semi-structured interviews with experienced professionals across various firms, the study seeks to uncover how employees experience and interpret the effects of organizational structure on their day-to-day productivity. The focus is not merely on identifying structural components but on understanding how these components interact with communication patterns, knowledge-sharing practices, autonomy, and performance expectations within real organizational settings.

This study is guided by the following research question: *How do specific elements of organizational structure influence employee productivity in knowledge-intensive firms?* To answer this question, we adopt a grounded, inductive approach that captures the lived experiences and insights of employees engaged in knowledge work. By focusing on participants' perspectives, we aim to surface underlying mechanisms and contextual nuances that are often overlooked in quantitative surveys or generalized models of organizational design.

The study makes three key contributions to the literature. First, it empirically identifies the structural configurations—such as hierarchy clarity, span of control, decentralization, and interdepartmental integration—that knowledge workers perceive as most influential to their productivity. Second, it highlights the communication and coordination dynamics that mediate this structure–productivity relationship, including both enabling and inhibiting factors. Third, by situating the research in the context of Iranian knowledge-intensive firms, the study contributes to a more global and context-sensitive understanding of organizational design and its implications for productivity.

In doing so, this research responds to calls in the literature to bridge the gap between formal structural theory and the informal, emergent realities of organizational life (Barley & Kunda, 2001). It also provides practical insights for managers and organizational designers seeking to align structural elements with the needs and preferences of knowledge workers, especially in dynamic and resource-constrained environments. As knowledge continues to emerge as the most critical asset in competitive advantage, ensuring that organizational structures support rather than hinder knowledge-based productivity is both a strategic imperative and a scholarly priority.

Methods and Materials

Study Design and Participants

This study employed a qualitative research design to explore the intricate relationship between organizational structure and employee productivity within knowledge-intensive firms. A purposive sampling strategy was adopted to identify participants who had extensive experience in knowledge-driven work environments and could offer in-depth insights into the influence of structural dynamics on their productivity. The sample consisted of 18 participants, including mid-level and senior-level employees, project managers, and team leaders, all of whom were employed in various knowledge-intensive firms based in Tehran, Iran. Participants were selected based on their familiarity

with organizational design principles and their direct engagement in knowledge-based activities, such as research, innovation, and knowledge transfer.

Data Collection

Data were collected through semi-structured interviews, which allowed for a flexible yet focused exploration of the participants' perceptions and experiences. An interview guide was developed in advance, covering key areas such as organizational hierarchy, communication channels, decision-making autonomy, task interdependence, and the perceived effects of these elements on employee productivity. Each interview lasted approximately 45 to 60 minutes and was conducted either in person or via secure video conferencing platforms. Interviews continued until theoretical saturation was reached—that is, no new themes or insights were emerging from additional interviews. All interviews were audio-recorded with the participants' consent and subsequently transcribed verbatim for analysis.

Data analysis

Thematic analysis was used to analyze the qualitative data, following Braun and Clarke's six-phase framework. The transcribed interviews were imported into NVivo qualitative data analysis software (version 12) to facilitate systematic coding and theme development. Initially, open coding was conducted to identify key ideas and recurring patterns in the data. These codes were then grouped into broader subthemes and overarching themes that captured the structural dimensions affecting productivity. Data were iteratively analyzed and re-coded as needed, with continuous memo-writing and cross-referencing to ensure analytical rigor and conceptual clarity. Researcher triangulation was also employed to enhance the credibility of the findings, with multiple team members independently reviewing and validating the coding structure.

Findings and Results

Theme 1: Structural Configuration

Hierarchical Clarity

Participants emphasized the importance of clearly defined reporting lines and transparent chains of command for enhancing productivity. When roles and responsibilities were clearly assigned, employees felt more confident and focused in their tasks. As one senior analyst noted, "I know who to report to and who's responsible for what—it removes all confusion and saves a lot of time." Conversely, ambiguity in hierarchical structures led to delays in decision-making and uncertainty.

Flexibility in Structure

The ability of an organization to restructure teams or roles based on project needs was consistently cited as a facilitator of employee efficiency. Respondents valued the dynamic reconfiguration of teams and cross-functional roles. A respondent shared, "Sometimes I'm in a research team, sometimes in a strategy one—it keeps things interesting and efficient." Flexibility reduced bottlenecks and encouraged collaboration across departments.

Span of Control

Interviewees mentioned that both excessively narrow and wide spans of control could impede productivity. Narrow spans often led to micromanagement, while wide spans diluted leadership attention. "When one manager

supervises 12 people, it's hard to get feedback," explained a knowledge engineer. The balance of control was found critical in fostering autonomy while maintaining accountability.

Centralization vs. Decentralization

A dominant theme was the degree of autonomy in decision-making. In decentralized environments, employees felt empowered and motivated, which positively impacted their performance. In contrast, highly centralized structures led to delays. As one participant described, "Every small decision has to go up and come down—by the time we get the answer, the opportunity is gone."

Role Specialization

While specialization ensured depth of expertise, excessive compartmentalization created silos. Participants favored moderate specialization coupled with job rotation. "Being stuck in one role limits your growth and understanding of the bigger picture," said a systems architect. Balanced role design supported both knowledge mastery and organizational agility.

Structural Redundancy

Redundant structures, such as overlapping roles or duplicated responsibilities, were identified as barriers. Participants noted frequent rework due to unclear responsibilities. "Two teams doing the same thing with slightly different tools—it's inefficient," commented one interviewee. Redundancy was perceived as a structural flaw that hindered performance.

Interdepartmental Integration

Effective collaboration across departments was highlighted as crucial. Participants appreciated when structural mechanisms such as liaisons or cross-unit task forces were in place. "We had a shared dashboard between departments—it helped align our goals and avoid duplication," noted a team lead. Lack of integration led to siloed decisions and duplicated efforts.

Theme 2: Communication Dynamics

Vertical Communication Flow

Timely and transparent communication from leadership was cited as essential for direction and morale. Employees felt more engaged when they received consistent updates and feedback. One respondent explained, "Our CEO sends a Monday briefing—just knowing what's going on motivates me." Poor top-down communication was associated with confusion and disengagement.

Horizontal Information Sharing

Participants described how collaboration among peers enhanced productivity through shared knowledge. Informal communication and lateral support were especially valuable. "I learn more from hallway conversations than official trainings," joked one senior developer. When horizontal sharing was restricted, innovation and cohesion declined.

Technological Channels

Digital platforms were key enablers of effective communication, particularly in hybrid settings. However, the usefulness varied based on adoption and responsiveness. "Slack works great for us, but only because everyone uses it properly," said a project coordinator. Underutilized or inconsistent tools created communication gaps.

Transparency of Information

Transparency was linked with trust and efficiency. When project goals and performance metrics were openly shared, employees felt more aligned and invested. One manager shared, "Our roadmap is on the intranet—

everyone knows the targets, which helps us prioritize better.” Conversely, restricted access bred mistrust and speculation.

Communication Overload

While communication was generally valued, overload led to fatigue and inefficiency. Excessive meetings and duplicated emails disrupted workflow. A respondent remarked, “I spend more time updating people than actually doing my work.” Streamlining communication was deemed necessary for preserving mental energy and focus.

Feedback Mechanisms

Constructive feedback loops were instrumental in driving continuous improvement. Participants valued two-way feedback processes and real-time correction. “My supervisor gives feedback on the spot—not in quarterly reviews. That helps me adjust quickly,” explained one participant. In contrast, delayed or unstructured feedback was seen as demotivating.

Theme 3: Productivity Enablers and Barriers

Autonomy in Task Execution

High levels of autonomy were associated with enhanced motivation and productivity. Participants appreciated the freedom to decide how to approach tasks. “When I choose my own method, I work faster and take more ownership,” noted a data analyst. Rigid oversight, on the other hand, was described as a productivity drain.

Performance Monitoring

Participants reported mixed experiences with monitoring practices. While some appreciated performance metrics and structured feedback, others felt surveillance reduced their creativity. “I don’t mind KPIs, but constant tracking feels like distrust,” said a researcher. The key lay in balancing evaluation with trust.

Knowledge Sharing Culture

A strong knowledge-sharing culture emerged as a vital enabler. Formal mentorship, documentation habits, and open exchange were praised. “We have internal wikis and mentor sessions—it saves us from reinventing the wheel,” mentioned a senior engineer. Lack of such culture led to duplicated efforts and learning gaps.

Innovation Support Structures

Structures that supported creativity—such as time allocation for innovation and idea platforms—were seen as highly beneficial. “We’re given one day a week to work on side projects—it’s how we’ve come up with some of our best ideas,” explained a developer. Environments that discouraged experimentation stifled initiative.

Workload Balance

Finally, workload management was a recurring concern. Participants stressed that uneven task distribution led to burnout, while balanced workloads improved focus and efficiency. “Some of us are overloaded while others wait for work—it’s demoralizing,” shared one project manager. Better workload planning was suggested as a priority.

Discussion and Conclusion

The findings of this study provide valuable insight into the complex ways in which organizational structure influences employee productivity in knowledge-intensive firms. Participants’ narratives revealed three overarching themes—**structural configuration**, **communication dynamics**, and **productivity enablers and barriers**—each of which comprised specific subcategories that directly impacted employee efficiency, motivation, and engagement. These results are broadly consistent with, and extend, existing theories and empirical studies in the field of organizational behavior and design.

The first major theme, *structural configuration*, emphasized the importance of clarity in hierarchical arrangements and role specialization. Participants indicated that clearly defined reporting lines and responsibilities enhanced task focus and reduced ambiguity. These findings align with Mintzberg's (1979) foundational work on organizational structuring, which suggests that formal clarity reduces friction in coordination and decision-making. Similarly, Daft (2015) highlighted that role clarity is positively associated with employee confidence and goal orientation, both of which are critical in knowledge-based tasks.

Interestingly, the data also underscored the importance of *flexibility in structural arrangements*, such as the ability to fluidly reorganize teams and projects in response to emerging demands. This supports research by Lee and Edmondson (2017), who found that self-managing, adaptable structures are essential in dynamic environments, enabling firms to remain responsive while empowering employees. The emphasis on decentralization and balanced spans of control in our study also parallels the findings of Gibson and Birkinshaw (2004), who noted that organizational ambidexterity—the ability to balance control and flexibility—leads to enhanced performance in innovation-driven firms.

A particularly salient insight from participants was the counterproductive effect of *structural redundancy*, such as overlapping roles and duplicated processes. These issues, often neglected in formal structural models, were seen as major drains on productivity. This finding corroborates earlier critiques by Burns and Stalker (1961), who argued that overly layered structures in mechanistic models hinder responsiveness and information flow. In knowledge-intensive contexts, where agility is paramount, redundancy may erode not only efficiency but also employee morale.

The second theme, *communication dynamics*, emerged as a powerful mediator between structure and productivity. Participants frequently linked productivity to the quality of both vertical and horizontal communication. Vertical communication—particularly the flow of timely information and feedback from leadership—was viewed as essential for alignment and motivation. These results echo Tushman and Nadler's (1978) theory of information processing in organizations, which posits that communication mechanisms must be aligned with structural complexity to ensure performance.

Similarly, horizontal communication and peer collaboration were cited as critical to knowledge sharing and innovation. Participants highlighted informal communication channels and lateral problem-solving as more effective than formal mechanisms in many cases. This supports Nahapiet and Ghoshal's (1998) argument that social capital—built through informal ties—enhances intellectual capital and productivity. Moreover, digital communication platforms were noted as essential in today's hybrid work environments. However, their effectiveness was contingent on consistent usage and clearly defined norms, a finding also supported by Leonardi (2011), who emphasized the role of digital affordances in shaping workplace interaction.

However, the study also revealed potential downsides of overcommunication. Communication overload—through excessive meetings or redundant messaging—was cited as a source of cognitive fatigue and distraction. This concern resonates with recent findings by Mazmanian et al. (2013), who described the “always-on” culture enabled by digital technologies as a double-edged sword: while it fosters connectedness, it can also hinder deep work and sustained focus. Effective structural design, therefore, must not only enable communication but also regulate its volume and relevance.

The third major theme, *productivity enablers and barriers*, included factors such as autonomy, performance monitoring, knowledge-sharing culture, innovation support, and workload balance. Autonomy in task execution was overwhelmingly viewed as a productivity enhancer. This aligns with Deci and Ryan's (2000) self-determination

theory, which posits that autonomy is a core driver of intrinsic motivation and optimal performance. In knowledge-intensive settings, where employees often solve complex and non-routine problems, the ability to self-direct one's work is particularly important (Alvesson, 2004).

Performance monitoring, on the other hand, elicited mixed reactions. While some participants appreciated structured feedback and clarity in expectations, others perceived it as micromanagement or surveillance. This dichotomy reflects broader debates in the literature about the fine line between performance management and control. Adler and Borys (1996) argue that enabling bureaucracies—those that support rather than constrain employees—can reconcile this tension by framing controls as support mechanisms rather than punitive tools.

The value of a strong knowledge-sharing culture was also a recurring theme in the data. Participants highlighted how mentoring, documentation, and openness to share tacit knowledge significantly improved their efficiency. This supports findings by Cross and Sproull (2004), who emphasize that organizational productivity increasingly depends on employees' access to expertise across structural boundaries. In environments where knowledge is the primary asset, fostering a culture of open exchange is essential.

Moreover, the role of *innovation support structures*—such as time allocated for creative projects or institutionalized channels for new ideas—was described as a critical driver of both productivity and engagement. This aligns with research by Amabile et al. (1996), who found that organizational support for creativity significantly predicts both individual innovation and collective performance outcomes. Finally, the importance of balanced workloads cannot be overstated. Participants indicated that uneven task distribution and excessive demands led to burnout, while equitable workload planning enhanced focus and sustained performance—echoing findings by Maslach and Leiter (2008) on burnout prevention through organizational design.

In sum, this study contributes to a more holistic understanding of how organizational structure affects productivity in knowledge-intensive firms by identifying both formal and informal mechanisms through which structure shapes work experience. It reinforces the notion that structure is not merely an administrative necessity but a dynamic system that either enables or hinders knowledge work, depending on how well it is aligned with communication, autonomy, and cultural practices.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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