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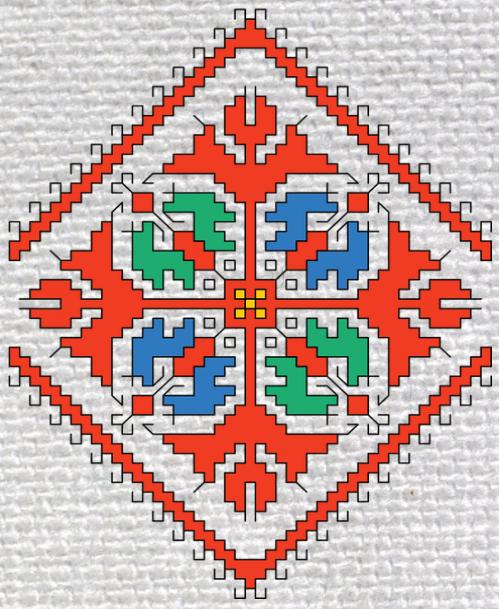

Education, scientific research and innovation

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ГЛАВЕН РЕДАКТОР
гл. ас. д-р Елисавета Цветкова
Факултет по библиотекознание
и културно наследство
Университет по библиотекознание
и информационни технологии
бул. „Цариградско шосе“ № 119,
София 1784, България
тел.: +359 894 70 38 70
е-поща: e.cvetkova@unibit.bg

ИЗДАТЕЛ
Академично издателство
„За буквите – О писменехь“
Университет по библиотекознание
и информационни технологии
ДИРЕКТОР
доц. д-р Диана Стоянова
бул. „Цариградско шосе“ № 119,
ет. 2, стая 213
София 1784, България
тел.: +359 879 14 83 85
е-поща: d.stoyanova@unibit.bg

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Chief Assist. Prof. Elisaveta Tsvetkova, PhD
Faculty of Library Studies
and Cultural Heritage
University of Library Studies
and Information Technologies
119, Tsarigradsko Shosse Blvd.
Sofia 1784, Bulgaria
tel. +359 894 70 38 70
E-mail: e.cvetkova@unibit.bg

PUBLISHER
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Technologies
DIRECTOR
Assoc. Prof. Diana Stoyanova, PhD
119, Tsarigradsko Shosse Blvd.
fl. 2, room 213
Sofia 1784, Bulgaria
tel.: +359 879 14 83 85
E-mail: d.stoyanova@unibit.bg

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ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

TOOL AND PROCESS IN INFORMATION MANAGEMENT IN THE INDUSTRIAL CONTEXT

Maximilian Renke
University of Library Studies and Information Technologies

Abstract: *This paper examines the interplay between technological tools, such as Internet of Things (IoT) devices and Enterprise Resource Planning (ERP) systems, and structured processes in optimizing information management within industrial contexts. It argues that while these tools enable real-time data collection, analysis, and automation, their efficacy is amplified when integrated within defined processes that ensure data consistency, security, and regulatory compliance. By reviewing existing literature, this study identifies the comparative roles, benefits, and limitations of ICT tools and structured workflows, providing insights into how these components collectively enhance operational efficiency, data integrity, and decision-making capabilities in industrial settings. Through a systematic literature review, the paper identifies best practices and highlights recurring challenges in ICT tool integration, such as high implementation costs, training requirements, and compatibility with existing workflows. The findings underscore that a balanced approach, where tools operate within standardized processes, is essential for effective information management in the industrial context. This alignment supports predictive maintenance, resource optimization, and overall adaptability, enabling organizations to meet Industry 4.0 goals and respond to dynamic market demands.*
Keywords: *Information Management, ICT, IoT, ERP, Industry 4.0*

INTRODUCTION

Concerning Information Management in the industrial context, tools and processes are essential components that drive operational efficiency, data consistency, and informed decision-making. Tools in this context refer to systems Enterprise Resource Planning (ERP) platforms and applications such as like the Internet of Things (IoT), which facilitate real-time data collection, analysis, and automation within industrial workflows (Ahmetoglu, Che Cob & Ali, 2023). These tools allow organizations to capture, store, and manipulate data to optimize resource allocation, monitor production, and predict maintenance needs, making them invaluable for data-driven operations (Xu, He & Li, 2014). However, while these tools provide the technological means for efficient data handling, they require defined processes to be effective.

Processes from Information Management in the industrial context encompass the structured workflows, protocols, and standards that govern how data is entered, stored, shared, and used within an organization. They ensure that data management practices are consistent, compliant, and secure, forming a framework that enables reliable information flow across departments and external partners. Processes thus act as the organizational backbone, ensuring that tools operate in a standardized and legally compliant environment that aligns with organizational goals. Without such structured processes, even the most advanced tools may lead to inconsistent data handling and inefficiencies, potentially compromising data integrity and regulatory compliance (Abramovici & Filos 2011).

This paper explores the interplay between tools and processes, asking the guiding question: How can a balanced integration of tools and processes optimize information management in industrial contexts? By examining the comparative roles, benefits, and limitations of tools like IoT and ERP systems and the structured processes that govern them, this study seeks to provide practical insights for industrial

managers. Through a systematic review of existing literature, it will highlight best practices for achieving efficiency, compliance, and adaptability in managing industrial data.

RESEARCH METHODOLOGY

The research methodology for this paper follows a systematic literature review approach, focusing on evaluating and synthesizing existing academic research and industry reports relevant to ICT integration within industrial processes. A systematic literature review enables a structured analysis of secondary sources, allowing for a detailed understanding of how technologies such as IoT and ERP impact industrial efficiency, adaptability, and data management. This method involves collecting, assessing, and synthesizing findings from reputable sources to create an overview of current knowledge, identifying trends, gaps, and established practices in industrial information management.

By examining multiple studies and industry reports, this methodology provides an understanding of the field of ICT integration in the industrial context, drawing insights from diverse perspectives and contexts. This approach is particularly valuable for identifying recurring patterns and challenges, such as high implementation costs, training needs, and data governance issues, which are critical for understanding both the strengths and limitations of ICT integration. The systematic nature of this review ensures that findings are not based on isolated studies but are representative of broader, validated trends across the industry, supporting the results presented in this study on the integration of ICT tools and processes.

RESULTS

In the following, the integration of ICT tools like IoT and ERP within structured industrial processes is explored, highlighting their role in enhancing efficiency, decision-making, and adaptability. When aligned with defined workflows, such tools provide real-time data access across areas such as asset management and predictive maintenance, enabling proactive and data-driven decisions.

While ICT integration offers significant operational benefits, the results also address challenges such as high initial costs, training demands, and compatibility with existing workflows. These barriers can affect technology adoption and necessitate careful planning. By examining both the strengths and obstacles of ICT and ERP integration, this chapter provides a comprehensive view of how structured processes and advanced tools support efficiency and adaptability in the industrial sector.

INTEGRATION OF TOOLS INTO PROCESSES

In industrial information management, integrating tools such as IoT and ERP within structured processes is essential for enhancing operational effectiveness. Research shows that when IoT systems are linked with ERP platforms, they provide real-time data across operations, allowing managers to make proactive, data-driven decisions that optimize resources and reduce downtime (Ahmetoglu, Che Cob & Ali 2023). This connection enhances visibility in areas such as asset management and predictive maintenance, which are crucial for streamlined operations in manufacturing contexts (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024).

Despite the advantages of these tools, research also emphasizes the necessity of defined processes to manage the large volumes of data generated by IoT. Structured processes within ERP frameworks help ensure data privacy and security, establishing protocols that manage data transmission and storage effectively. This structure minimizes risks related to potential data breaches or inconsistencies, ensuring that data is handled securely and consistently across various departments (Ahmetoglu, Che Cob & Ali 2023).

Moreover, aligning IoT and ERP tools with structured processes supports Industry 4.0 goals, allowing organizations to benefit from predictive analytics and automation. By embedding IoT data within ERP workflows, organizations can improve productivity, lower costs, and increase flexibility, all of which are critical in today's competitive industrial landscape. This alignment positions organizations to respond to operational demands while maintaining efficiency (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024).

Research highlights that integrating IoT with ERP systems enhances efficiency in industrial settings by enabling real-time data collection from equipment and processes, thereby supporting faster and more

informed decision-making. This real-time visibility allows companies to adjust operations dynamically in response to live data, optimizing resources and reducing downtime, which is particularly critical in manufacturing environments (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024). Without defined workflows to structure the use of this data, however, inconsistencies may arise, reducing the effectiveness of the insights generated and potentially causing operational delays (Janiesch et al. 2020).

Structured processes also establish crucial data governance protocols, addressing security and compliance needs in handling the extensive information generated by IoT devices. Defined procedures help manage data privacy risks, ensure regulatory compliance, and maintain the consistency and reliability of the information, which strengthens the foundation for effective information management (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024). When structured processes are absent, there is a higher likelihood of data inaccuracies, potentially leading to misinformed decisions that can disrupt production workflows (Janiesch et al. 2020).

Finally, clear processes enable the scalability of IoT in combination with ERP systems, allowing organizations to expand their benefits as they grow. For example, structured workflows within ERP systems can automate responses to data from IoT sensors, such as triggering maintenance schedules when equipment data indicates a potential issue. This capability not only reduces manual intervention but also enables predictive maintenance, supporting long-term operational sustainability and helping organizations adapt to future demands (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024).

INCREASING EFFICIENCY AND COMPLIANCE

Integrating Information and Communication Technology (ICT) and ERP systems into industrial operations has been shown to significantly enhance efficiency by automating data flows and providing real-time data access. This integration streamlines processes such as inventory management, order processing, and production scheduling, reducing manual intervention and minimizing errors. For instance, Ahmetoglu et al. (2023) demonstrated that IoT-enabled ERP systems facilitate seamless data exchange between machinery and management systems, leading to optimized resource utilization and improved operational efficiency (Ahmetoglu, Che Cob & Ali 2023).

The automation provided by ICT and ERP systems also plays a crucial role in decision-making by reducing lead times. Real-time data access allows managers to monitor production processes continuously and identify bottlenecks or inefficiencies promptly. This capability enables swift corrective actions, minimizing downtime and enhancing overall productivity. Real-time monitoring through integrated ERP systems allows for immediate adjustments in production schedules, aligning output with demand fluctuations and reducing the risk of overproduction or stockouts (Wijesinghe, Nanayakkara, Pathirana, Wickramarachchi & Fernando 2024).

Moreover, the adaptability of ICT and ERP systems supports rapid adjustments to changes in production needs. In dynamic industrial environments, the ability to respond quickly to market demands or supply chain disruptions is vital. Integrated systems provide the flexibility to modify production plans, reallocate resources, and adjust workflows efficiently. Janiesch et al. (2020) emphasized that the integration of IoT data into ERP systems enhances the responsiveness of manufacturing processes, enabling companies to maintain competitiveness in volatile markets (Janiesch et al. 2020).

Structured processes are essential for information management in the industrial context, as they ensure consistent data utilization across operations and provide a framework for information handling. By implementing standardized procedures for data entry, processing, and retrieval, organizations can reduce the likelihood of errors and discrepancies, enhancing data integrity and reliability. This consistency is crucial for reporting and informed decision-making, as it ensures that all stakeholders have access to coherent information (Davenport & Prusak 1998).

In supply chain contexts, ICT tools enhance operational flexibility by enabling real-time data sharing and communication among partners; however, structured processes are fundamental for ensuring data privacy and accuracy. Standardized procedures govern how data is collected, stored, and shared, preventing unauthorized access and reducing data breaches. These processes incorporate validation checks that

ensure shared data is accurate and up to date, which is essential for coordinated activities such as inventory management and order fulfillment (Christopher & Lee 2004). A report by the European Union Agency for Cybersecurity emphasizes that robust processes in ICT supply chains are critical for maintaining data integrity, thereby fostering trust among partners (enisia 2015).

Furthermore, adherence to standardized processes supports compliance with regulatory requirements related to data handling and privacy. Many industries are subject to regulations mandating specific practices to protect sensitive information, and standardized processes help organizations meet these legal obligations, reducing the risk of penalties and reputational damage. Structured processes provide traceability, making audits and compliance checks more straightforward and allowing organizations to demonstrate adherence to both industry and legal requirements. Additionally, standardized processes improve information quality by promoting data accuracy and consistency, which is key to regulatory compliance. These processes reduce risks related to data privacy and allow organizations to maintain a high level of accountability, further supporting compliance efforts (Kahn, Strong & Wang 2002). For example, the National Institute of Standards and Technology (NIST, 2015) highlights that process-driven approaches in ICT supply chains enhance security and ensure compliance with regulatory standards (Boyens, Paulsen, Feldman & Witte 2015).

ENHANCING INDUSTRIAL ADAPTABILITY

The integration of ICT tools, such as IoT and ERP systems, significantly enhances adaptability in industrial operations by facilitating real-time data collection and analysis. Xu, He, and Li (2014) describe how IoT applications in industrial environments enable continuous monitoring of equipment and production processes, allowing organizations to respond swiftly to changes in market demand or operational disruptions. This capability is particularly valuable in supply chains, where real-time insights support more agile decision-making, ensuring that operations remain aligned with changing conditions (Xu, He & Li 2014).

However, the effectiveness of ICT tools is greatly enhanced when they are embedded within a structured process framework. Streltsova et al. (2019) argue that standardized processes are essential for data integrity, as they provide consistent protocols for data collection, storage, and retrieval. These processes reduce the risk of data discrepancies and errors, creating a reliable foundation for information management within industrial enterprises. By following a standardized approach to data handling, organizations can leverage ICT tools more effectively, ensuring that the insights gained from real-time data collection translate into coherent and actionable decisions (Streltsova, Borodin, Yakovenko & Sokira 2019).

Standardized processes also facilitate the deployment of ICT tools across various industrial sectors by aligning these technologies with specific operational requirements and regulatory standards. Abramovici and Filos (2011) highlight the importance of standardized processes in integrating ICT tools such as Intelligent Manufacturing Systems, internationally, as these frameworks support consistency and compliance across different regions and sectors. This alignment with regulatory standards ensures quality control and reduces the likelihood of disruptions caused by inconsistent data handling practices, making ICT tools more adaptable and beneficial for global industrial applications (Abramovici & Filos 2011).

In supply chain management, the adaptability of IoT-based systems enables reconfiguration in response to changing demands. However, as Li and Liu (2019) explain, structured processes are essential for managing the extensive data flows generated by these tools, ensuring that information remains accurate and secure throughout the supply chain. Standardized processes in data handling provide a foundation for trust among supply chain partners, as they guarantee data accuracy, privacy, and compliance with regulatory standards. This structured approach supports efficient collaboration and enables organizations to capitalize on the flexibility offered by ICT tools in dynamic industrial environments (Li & Liu 2019).

INTEGRATION CHALLENGES OF ICT TOOLS

Integrating ICT tools into industrial settings introduces challenges, particularly related to costs, training, and compatibility. High initial investment costs can be prohibitive for organizations, especially in competitive or cost-sensitive sectors, which may limit the adoption of technologies like IoT and ERP

systems. Pilat (2004) emphasizes that while ICT has economic benefits, the financial demands associated with its implementation often require organizations to have robust financial strategies, deterring smaller organizations from full adoption due to limited resources. Additionally, the specialized nature of these technologies necessitates comprehensive training for employees, which adds further expense and time demands, creating a potential barrier to adoption (Pilat 2004).

Process compatibility is another notable challenge. Many industries have established workflows that are not designed to seamlessly integrate with modern ICT tools. Cresswell, Worth, and Sheikh (2011) discuss in a health care centered view, how adapting existing processes to accommodate new technology often requires extensive restructuring, which can disrupt established operational routines. This misalignment may result in partial utilization of the technology's capabilities, as existing processes may not support the advanced functionalities of ICT tools. Consequently, organizations might face inefficiencies or reduced technology benefits if significant process adjustments are not implemented to align with the new tools (Cresswell, Worth & Sheikh 2011).

Integrating ICT tools like IoT and ERP systems into supply chains enhances efficiency and responsiveness but introduces privacy and security challenges due to extensive data sharing across multiple platforms and organizations. While these technologies facilitate real-time data flow and operational improvements, they also create vulnerabilities, as data often between different entities, increasing the risk of unauthorized access and data breaches. Such breaches could compromise sensitive information and result in financial and reputational damage. To mitigate these risks, robust data governance frameworks that establish standardized security protocols across collaborative networks should be considered. These frameworks ensure that consistent security measures are applied across all supply chain partners, which is essential for maintaining data integrity and building trust among stakeholders (Barakat, Alam, Chowdhury & Miraz 2020).

To address these challenges, establishing standardized data governance processes is essential. Smith and Alexander (2022) argue that consistent data governance practices can significantly enhance data integrity, reduce inconsistencies, and ensure compliance with regulatory requirements. Standardized governance protocols provide organizations with structured guidelines for data handling, storage, and access, ensuring that ICT tools operate securely within collaborative networks. This standardization not only builds trust among partners but also facilitates efficient information flow, enhancing the effectiveness of ICT integration across industries (Smith & Alexander 2022).

FINDINGS AND DISCUSSION

In the following, the comparative roles of ICT tools, such as IoT and ERP systems, and structured processes in achieving effective information management within industrial contexts are explored. While both elements are essential, each offers distinct contributions that support different aspects of operational efficiency and data management. ICT tools enable real-time data collection, automation, and responsiveness, which are critical for enhancing productivity and facilitating data-driven decisions. However, as the findings reveal, the effectiveness of these tools is significantly enhanced when embedded within structured processes that ensure data consistency, security, and regulatory compliance. This comparison highlights the need for a balanced approach, where tools and processes work in harmony to optimize information management in industrial settings.

COMPARATIV FINDINGS

In comparing the effectiveness of tools, such as IoT and ERP systems, and structured processes in information management in the industrial context, the literature emphasizes the importance of both elements, each serving distinct but complementary roles. Tools like IoT and ERP systems enable real-time data collection, automate workflows, and facilitate quick responses, thereby enhancing operational efficiency and supporting data-driven decision-making. These technologies allow for capabilities such as asset management, predictive maintenance, and seamless communication across departments. However, their effectiveness is significantly amplified when they operate within structured, standardized processes. Without defined workflows, tools may be underutilized or lead to inconsistent data handling, reducing

their overall impact on operational efficiency and reliability.

The literature suggests that while tools provide substantial operational benefits, structured processes are often the foundational element for successful information management in industrial contexts. Processes provide a framework for consistent data handling, ensuring accuracy, security, and compliance with regulatory requirements. For instance, processes within ERP systems help manage data flows, address privacy concerns, and maintain data integrity across departments. This approach enables adaptability and scalability, supporting industry standards and regulatory compliance, which are essential in heavily regulated industrial environments. Thus, while tools enable real-time operations and automation, structured processes are the backbone of effective information management, allowing tools to achieve their full potential within a secure and coherent system.

IMPLICATIONS FOR INFORMATION MANAGEMENT IN THE INDUSTRIAL CONTEXT

The findings underscore the importance of a balanced approach for industrial managers looking to integrate ICT tools like IoT and ERP systems within structured processes. While these tools enable real-time data access, enhance decision-making, and improve operational efficiency, the results show that their effectiveness is significantly amplified when aligned with defined workflows. Managers can use these insights to recognize that, although advanced tools provide powerful capabilities, structured processes are essential for consistency, security, and scalability. By prioritizing both tools and processes, managers can ensure that real-time data from IoT systems can be securely transmitted and stored within ERP frameworks, minimizing risks related to data breaches and inconsistencies. This integrated approach allows industrial organizations to benefit fully from predictive maintenance, asset management, and resource optimization, as each process is grounded in reliable and secure information management practices.

To apply these findings effectively, managers should focus on best practices gleaned from the literature, which emphasize the need to establish structured processes that govern data handling, privacy, and compliance before fully implementing ICT tools. For example, standardized data governance protocols are critical for ensuring data accuracy, security, and regulatory adherence across departments. Additionally, investing in ongoing employee training ensures that staff can operate ICT tools within the set framework, enabling consistent data utilization and reducing the likelihood of errors. The results also highlight the importance of scalability, structured workflows within ERP systems can facilitate predictive maintenance and other automated responses, supporting long-term operational sustainability as the organization grows. By adopting a flexible, process-oriented approach to ICT integration, managers can create a resilient information management system that aligns with Industry 4.0 goals, adapts to dynamic market demands, and supports continuous operational improvement.

CONCLUSION

This paper has highlighted the comparative roles of ICT tools, such as IoT and ERP systems, and structured processes in achieving effective information management within industrial contexts. The findings reveal that while tools provide crucial capabilities for real-time data collection, automation, and responsiveness, their impact is enhanced when embedded within structured workflows. Structured processes ensure data consistency, security, and compliance, providing a reliable foundation that maximizes the effectiveness of these technologies. Ultimately, tools and processes serve distinct yet complementary functions; tools enhance operational efficiency and decision-making, while structured processes maintain data integrity, regulatory compliance, and scalability.

For industry practitioners, these insights emphasize the need for a balanced approach that integrates both tools and processes to optimize information management. To implement this balance effectively, managers are advised to establish standardized data governance protocols and ensure that ICT tools are aligned with regulatory requirements and organizational workflows. Additionally, continuous training for employees on data handling practices and ICT tool usage is essential for reducing errors and maintaining consistent data utilization across departments. Best practices from the literature suggest that setting up scalable workflows within ERP systems and regularly updating data governance protocols can support predictive maintenance, resource optimization, and overall operational resilience.

In closing, the integration of both tools and structured processes is critical for building a robust and adaptive information management system within industrial settings. As the field continues to evolve, advancements in Industry 4.0 and data-driven technologies will likely create new opportunities and challenges for industrial information management. By fostering a balanced and adaptable approach, industrial organizations can ensure that they are equipped to leverage future technological developments, driving continuous improvement and maintaining a competitive edge.

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ИНСТРУМЕНТИ И ПРОЦЕСИ В УПРАВЛЕНИЕТО НА ИНФОРМАЦИЯТА В ИНДУСТРИАЛНИЯ КОНТЕКСТ

Резюме: *В статията се разглежда взаимодействието между технологичните инструменти, като например устройствата на интернет на нещата (IoT) и системите за планиране на ресурсите на предприятието (ERP), и структурираните процеси при оптимизиране на управлението на информацията в индустриален контекст. Твърди се, че макар тези инструменти да дават възможност за събиране, анализ и автоматизация на данни в реално време, тяхната ефикасност се засилва, когато са интегрирани в рамките на определени процеси, които осигуряват последователност, сигурност и съответствие с нормативните изисквания. Като прави преглед*

на съществуващата литература, настоящото изследване идентифицира сравнителните роли, ползите и ограниченията на ИКТ инструментите и структурираните работни процеси, предоставяйки информация за това как тези компоненти колективно повишават оперативната ефективност, целостта на данните и възможностите за вземане на решения в индустриални условия. Чрез систематичен преглед на литературата документът идентифицира най-добрите практики и подчертава повтарящите се предизвикателства при интегрирането на ИКТ инструменти, като например високите разходи за внедряване, изискванията за обучение и съвместимостта със съществуващите работни процеси. Това съгласуване подпомага прогнозната поддръжка, оптимизацията на ресурсите и цялостната адаптивност, което позволява на организациите да постигнат целите на Индустрия 4.0 и да отговорят на динамичните изисквания на пазара.
Ключови думи: *управление на информацията, ИКТ, IoT, ERP, Индустрия 4.0*

Максимилиан Ренке, докторант
Университет по библиотекознание и информационни технологии
E-mail: maximilian.renke@gmail.com

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

WHAT MAKES AN INTERNAL CONTROL SYSTEM EFFECTIVE?

Philipp Hoffmeister
University of Library Studies and Information Technologies

Abstract: *An internal control system within a company comprises a multitude of internal controls that are designed to ensure the effective implementation of management decisions. Critical questions in this context concern the criteria for deeming an internal control system effective, the precise definition and differentiation of the concept of effectiveness from efficiency, and the identification of additional factors that influence effectiveness. This article seeks to address these questions by utilizing the COSO Internal Control Framework, as research indicates a strong connection between these issues and the COSO model. Specifically, the three objective categories of the COSO model serve as the effectiveness construct of an internal control system. Moreover, the five components of the COSO model – Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring – function as drivers of effectiveness. Thus, the empirical interaction between an internal control system, the COSO Internal Control Framework, and effectiveness forms the core focus of this article. To expand this analysis, future research should investigate whether and to what extent the findings shift when contemporary and emerging megatrends are incorporated into the analysis of the COSO model, which underwent its last update in 2013. Furthermore, concentrating on specific industries could yield more nuanced insights.*
Keywords: *Internal control, internal control system, COSO Internal Control Framework, effectiveness, efficiency*

INTRODUCTION

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines internal control as "(…) a process, effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance." (COSO 2013a, p. 3). Although various other frameworks for internal control exist, the COSO model enjoys widespread acceptance in business practice and is recognised globally (cf. Bungartz 2020, p. 115; Arwinge 2013, p. 39f; Hübner 2009, p. 276; Ruud, Jenal 2004, p. 1045; Kinney 2000, 93). It also establishes a standardised terminology for internal control (cf. Pfister 2009, p. 50). Internal controls are crucial because they ensure that top management decisions are not only executed but also effectively implemented within the company (cf. Bungartz 2020, p. 23). However, in German-speaking countries, the term 'control' is often misunderstood as mere monitoring (cf. Hunziker et al. 2018, p. 4). In such cases, it takes on a detective role, uncovering undesirable circumstances that have already occurred (cf. Hunziker 2015, p. 62), which then require corrective measures (cf. Ruud, Jenal 2005, p. 456). This approach is often referred to as an "after-the-fact" (Finkler et al. 2007, p. 238) scenario. Conversely, the Anglo-Saxon understanding of 'control' encompasses a blend of mechanisms and guidelines that are both detective – intended to identify mistakes that have already been made – and preventive, aiming to avoid errors actively (cf. Hunziker et al. 2018, p. 4; Ruud et al. 2008, p. 938f; Ruud, Rüdisser 2008, p. 33). This difference highlights the preventive and steering nature of control (cf. Hübner 2009, p. 276). In alignment with this understanding, this article will consider internal control and the internal control system from a broader perspective. Consequently, it will explore when a variety of internal controls within a company can be understood as an internal control system, how the concept of effectiveness can be clearly defined and delineated, and ultimately, under what conditions an internal control system can be deemed effective. Building on this foundation, the article will investigate the drivers of effectiveness of an internal control system and how these drivers function. Finally, the article

will summarise the key findings from the analysis and propose questions for future research.

RESEARCH METHODOLOGY

This article's findings on the effectiveness of an internal control system predominantly stem from an extensive literature review. The objective is to capture the current state of research and provide readers, particularly risk managers in corporate settings, with a clear definitional framework, a thematic delineation, and a more nuanced understanding of the effectiveness construct of an internal control system.

RESULTS

Ideally, organisations implement a multitude of individual controls that differ significantly in their design, ranging from informal to formal in nature. Conversely, control systems in general – and internal control systems in particular – comprise formal, information-based routines and procedures. Through these mechanisms, both top management and subordinate middle management endeavour to direct and, when necessary, alter the company's structures and processes (cf. Simons 1995, p. 5). In essence, internal controls encompass both formal and informal activities, whereas an internal control system consists of a diverse array of formal mechanisms, commonly referred to as checks and balances (cf. Pfister 2009, p. 24). Consequently, an internal control system encompasses a variety of internal controls (cf. Bungartz 2020, p. 24; Hübner 2009, p. 276). To illustrate, consider the scenario where a manager engages informally with the responsible Human Resources Business Partner regarding the requirements for an open position in their department. Although this interaction constitutes an element of internal control, it does not qualify as part of an internal control system unless, for example, the discussion adheres to a formal guideline or the conversation outcomes are systematically documented, perhaps in digital form. By contrast, implementing technical restrictions on access to specific areas of the company's assets unequivocally forms part of an internal control system (cf. Pfister 2009, p. 24).

Moreover, addressing the central question of an internal control system's effectiveness necessitates a precise and clear definition of the concept of effectiveness itself. In everyday language, the term is often used interchangeably with efficiency, leading to confusion, which is exacerbated by the lack of a universally accepted definition of effectiveness (cf. Dyckhoff, Ahn 2001, p. 112). Both concepts – effectiveness and efficiency – revolve around actions occurring within a predetermined decision-making framework, such as those undertaken by management, which facilitate a transition from the current state to an intended future state (cf. Ahn, Dyckhoff 2004, p. 518f; Dyckhoff, Ahn 2001, p. 114f). In academic discourse, these two terms can thus be differentiated as follows (cf. Ahn, Dyckhoff 2004, p. 519):

- *Partial effectiveness*: An activity is considered effective concerning specific purposes if it induces a state change that fulfils these purposes.
- *(Total) effectiveness*: An activity is deemed totally effective if it fulfils all relevant purposes through its state-altering impact.
- *Partial efficiency*: An activity is efficient in relation to a specific subset of relevant objectives and alternative activities if it triggers a state change that enhances the achievement of one objective while simultaneously diminishing the achievement of another.
- *(Total) efficiency*: An activity is described as totally efficient if it optimally balances efficiency across all relevant objectives and realistic activity alternatives.

Effectiveness, therefore, pertains to the appropriateness of an activity (cf. Ahn, Dyckhoff 2004, p. 519) and addresses the critical question: 'Are the specified goals being achieved?' (cf. Lasslop 2003, p. 8, 10ff; Reinecke, Janz 2007, p. 39). In contrast, efficiency focuses on the optimal utilisation of resources. This distinction implies that an activity deemed effective is not necessarily efficient, and vice versa. For instance, corporate projects may demonstrate an 'optimal' allocation of resources, such as employee capacities, without incurring waste, yet fail to meet the predefined objectives (cf. Ahn, Dyckhoff 2004, p. 519; Dyckhoff, Ahn 2001, p. 115). From a business management perspective, effectiveness in a broader sense evaluates the efficacy of measures using the parameters of 'output' and 'target', without accounting for resource utilisation. Conversely, when assessing effectiveness in a narrower sense – also referred to as the degree of target achievement – it is measured against a previously established target ambition (cf.

Branz 2009, p. 10; Reinecke, Janz 2007, p. 39; Lasslop 2003, p. 8, 10ff). On the other hand, efficiency examines the relationship between input and output and is calculated by dividing the benefit by the effort expended (cf. Branz 2009, p. 10; Kreutzer 2006, p. 56). In the context of business administration, this concept is also known as productivity or profitability (cf. Heinen 1976, p. 62, 67). Ideally, an organisation should strive to achieve a 'correct (predefined) goal' with the 'right (minimal) means' (cf. Branz 2009, p. 9f). The following figure elucidates the relationships and distinctions between effectiveness in both the broader and narrower senses, as well as efficiency (figure based on Englet 2014, p. 6; Lasslop 2003, p. 12):

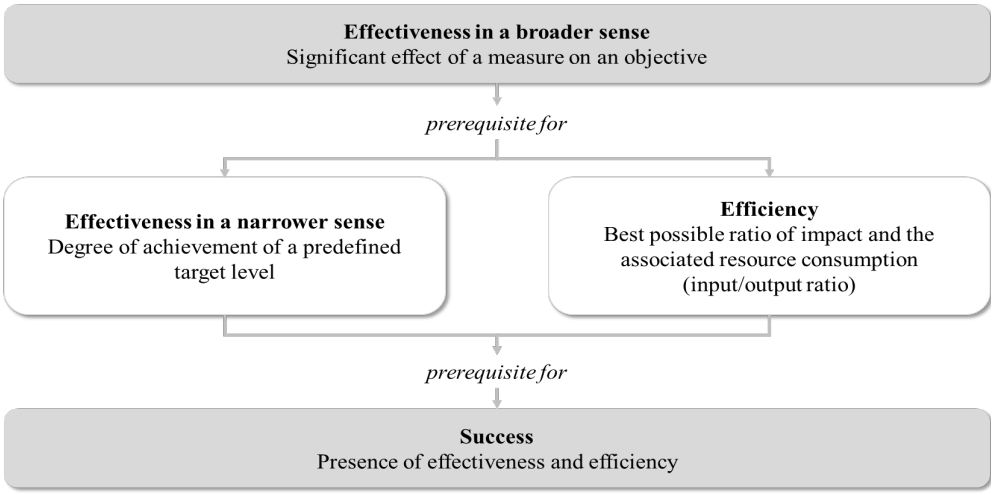

Fig. 1. Overview of the definitions of effectiveness and efficiency in connection with the target value 'success'

To distinguish effectively between effectiveness and efficiency, and vice versa, the American economist Peter Drucker offered a seemingly straightforward yet memorable definition in his 1963 book 'Managing for Business Effectiveness': "It is fundamentally the confusion between effectiveness and efficiency that stands between doing the right things (effectiveness, author's note) and doing things right (efficiency, author's note)." (Drucker 1963, p. 54).

In order to define the effectiveness construct within the context of internal control, it is imperative to examine the COSO model and its specific objectives. The COSO model delineates three distinct target categories (cf. COSO 2013b, p. 2):

- *Operations Objectives:* "These pertain to effectiveness and efficiency of the entity's operations, including operational and financial performance goals, and safeguarding assets against loss." (COSO 2013b, p. 2)
- *Reporting Objectives:* "These pertain to internal and external financial and non-financial reporting and may encompass reliability, timeliness, transparency, or other terms as set forth by regulators, standard setters, or the entity's policies." (COSO 2013b, p. 2)
- *Compliance Objectives:* "These pertain to adherence to laws and regulations to which the entity is subject." (COSO 2013b, p. 2)

When an internal control system successfully meets all three target categories of the COSO model, it is considered effective (cf. Anh et al. 2020, p. 134, 136f, 138; Gamage, Low Lock 2018, p. 231; Vu 2016, p. 144; Länsiluoto et al. 2016, p. 8, 10, 12f; Gamage et al. 2014, p. 39; Jokipii 2010, p. 118, 126, 133; Amudo, Inanga 2009, p. 127ff, 134, 140ff; Agbejule, Jokipii 2009, p. 501, 503, 508). Consequently, these three target categories collectively constitute the effectiveness construct of an internal control system.

In order to achieve these three target categories and thus establish an effective internal control system, the COSO model specifies five interrelated components: Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring (cf. Anh et al. 2020, p. 134; Bungartz 2020, p. 54f; Hung, Tuan 2019, p. 1801, 1809f; Vu 2016, p. 144; COSO 2013a, p. 4f). The subsequent figure illustrates the interdependencies and hierarchical relationships among these components (figure based on Tanski et al. 2009, p. 17):

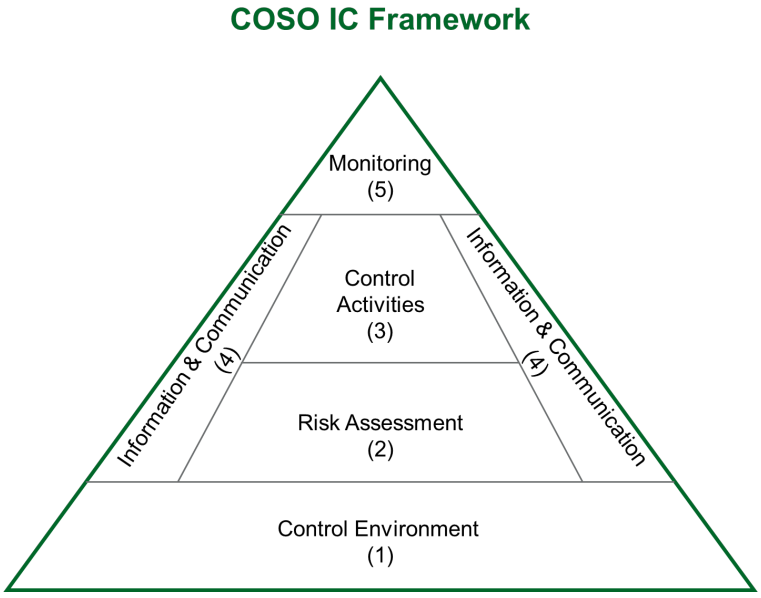

Fig. 2. The COSO Internal Control Framework with its five components

The subsequent sections provide a concise overview of the five COSO components and evaluate their impact on the effectiveness construct, drawing upon insights from various scientific studies.

(1) Control Environment

The control environment serves as the foundation for all other components of the COSO model and is primarily shaped by a company's history and culture. A key influencing factor in this context is the management of the company, which establishes the so-called 'tone at the top' through its leadership style and, crucially, its perspective, attitude, and behaviour towards internal control and the internal control system (cf. Bungartz 2020, p. 56; Umar, Umar Dikko 2018, p. 17f; Paetzmann 2005, p. 277). Moreover, the control environment significantly influences the overall control awareness within the organisation (cf. Arens et al. 2017, p. 380; Ramos 2008, p. 30f; Ramos 2004, p. 75). It also encompasses various sub-components, including integrity and ethical values, professional competence, the activities of the monitoring body, management philosophy and business conduct, organisational structure, the assignment of authority and responsibility, as well as principles of personnel policy (cf. Bungartz 2020, p. 56).

Empirical research conducted by Anh et al. (2020, p. 141), Hung and Tuan (2019, 1809), Gamage and Low Lock (2018, p. 232f), and Vu (2016, p. 150f) consistently identifies a significant positive influence of the 'Control Environment' component on the effectiveness of an internal control system.

(2) Risk Assessment

Companies face a multitude of internal and external risks that can adversely affect the achievement of corporate objectives and the execution of corporate strategy (cf. Bungartz 2020, p. 65; COSO 2013a, p. 4). COSO defines risk as "(…) the possibility that an event will occur and adversely affect the achievement of objectives." (COSO 2013a, p. 4). These risks can be categorised into performance, legal, financial, and strategic risks. Effective risk assessment is crucial in this context, as it involves identifying and analysing relevant risks that could impede the organisation's ability to meet its objectives. This process is both continuous and iterative, echoing the seemingly simple yet profound question: 'What could go wrong?' Risks should be assessed at both the organisational level (e.g., fraudulent activities, new regulatory requirements) and the business process level (e.g., incomplete booking of payments to suppliers). Objectives should ideally be formulated according to the three COSO target categories outlined above during the risk assessment process (cf. Bungartz 2020, p. 65f; Ramos 2008, p. 35).

The studies conducted by Anh et al. (2020, p. 141), Hung and Tuan (2019, p. 1809), Gamage and Low Lock (2018, p. 232f), and Vu (2016, p. 150f) corroborate the significant positive impact of the 'Risk

Assessment' component on the effectiveness of an internal control system.

(3) Control Activities

Control activities employ principles, guidelines, and procedures to ensure the execution of management decisions and the mitigation of risks (cf. Bungartz 2020, p. 69; COSO 2013a, p. 4). They are implemented at all levels and across all functions of the organisation to ensure that appropriate measures are taken against identified risks, thereby minimising or, where possible, eliminating them. Typically, control activities comprise a policy outlining the desired targets and a procedure for implementing this policy (cf. Bungartz 2020, p. 69). These activities can take various forms, ranging from preventive to detective, manual to automated, and physical to IT-supported. In essence, they function as mechanisms to facilitate the achievement of corporate goals by ensuring that risks are appropriately managed (cf. Bungartz 2020, p. 70ff).

Research findings from Anh et al. (2020, p. 141), Hung and Tuan (2019, p. 1809), Gamage and Low Lock (2018, p. 232f), and Vu (2016, p. 150f) confirm that the 'Control Activities' component exerts a significant positive influence on the effectiveness of an internal control system.

(4) Information and Communication

This fourth component permeates all other COSO components, as it aims to ensure that relevant and well-prepared information is disseminated in an appropriate manner to the necessary stakeholders within the organisation. Its primary objective is to equip top management with the requisite information for making fundamental and strategic decisions. Information and communication processes are also characterised by their continuous and iterative nature within the organisation (cf. Bungartz 2020, p. 75; COSO 2013a, p. 5). The information may be sourced both externally and internally, and it is integrated into an information system that transmits relevant data to both internal and external stakeholders. Maintaining high-quality information is crucial for ensuring the effectiveness of an internal control system (cf. Bungartz 2020, p. 75ff).

The analyses conducted by Anh et al. (2020, p. 141), Hung and Tuan (2019, p. 1809), Gamage and Low Lock (2018, p. 232f), and Vu (2016, p. 150f) indicate that the 'Information and Communication' component has a significant positive impact on the effectiveness of an internal control system.

(5) Monitoring

The monitoring component represents a process designed to ensure that the other COSO components are established, functional, and effective. It systematically reviews the internal control system and its effectiveness, highlighting any need for adjustment. Monitoring occurs at all hierarchical levels within the organisation and may involve either ongoing or specific evaluations, or a combination of both (cf. Bungartz 2020, p. 78f; COSO 2013a, p. 5). The core focus of this component is to assess whether the internal control system is appropriately structured, executed by the relevant individuals, and remains functional and adaptable. Each internal control must be meticulously designed to meet its specific objectives and purposes. Ultimately, documentation and verification requirements complete the monitoring process (cf. Bungartz 2020, p. 80ff).

The scholarly work of Anh et al. (2020, p. 141), Hung and Tuan (2019, p. 1809), Gamage and Low Lock (2018, p. 232f), and Vu (2016, p. 150f) demonstrates that the 'Monitoring' component significantly enhances the effectiveness of an internal control system.

The following table summarises the key findings on the drivers of internal control system effectiveness and their respective impacts:

Table 1. Overview of the factors influencing the effectiveness of an internal control system

No.	Variable	Studies	Effect
1	Control Environment	Anh et al. (2020), Hung/Tuan (2019), Gamage/Low Lock (2018), Vu (2016)	positive
2	Risk Assessment	Anh et al. (2020), Hung/Tuan (2019), Gamage/Low Lock (2018), Vu (2016)	positive
3	Control Activities	Anh et al. (2020), Hung/Tuan (2019), Gamage/Low Lock (2018), Vu (2016)	positive
4	Information and Communication	Anh et al. (2020), Hung/Tuan (2019), Gamage/Low Lock (2018), Vu (2016)	positive
5	Monitoring	Anh et al. (2020), Hung/Tuan (2019), Gamage/Low Lock (2018), Vu (2016)	positive

CONCLUSION

Internal controls play a pivotal role in enabling top management to implement their strategic decisions effectively. A comprehensive internal control system comprises numerous formal and informal internal controls, which are structured through formal mechanisms, commonly referred to as checks and balances. This raises a crucial question: under what conditions can an internal control system be deemed effective, thereby allowing company management to reasonably ensure, despite a certain residual risk, that its decisions are implemented adequately? To address this issue, it is prudent to select an appropriate framework for the design and implementation of an internal control system. In this context, the globally recognised and widely adopted COSO Internal Control Framework emerges as a suitable choice, as it inherently incorporates an effectiveness construct. An activity is considered effective if it involves 'doing the right things', and this must always be accompanied by efficiency, which focuses on 'doing things right'. The COSO framework delineates three categories of objectives: operations objectives, reporting objectives, and compliance objectives. When an internal control system successfully achieves these three target categories, it is regarded as effective according to empirical evidence. The framework further identifies five interrelated components – Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring – that significantly enhance the effectiveness of an internal control system.

The research framework encompasses a broad range of industries, including the cement and industrial sectors, as well as the banking sector. Interestingly, certain studies deliberately exclude the financial services industry and insurers. This exclusion is predicated on the premise that these entities possess distinct internal control requirements and operate in a manner akin to risk management units. It is widely assumed that, owing to their stricter regulatory environment and the nature of their business activities, they inherently maintain effective and appropriate internal control systems (cf. Hunziker 2016, p. 409; Länsiluoto et al. 2016, p. 10; Hunziker 2015, p. 180). Future research should thus explore whether this assumption holds true and examine how current megatrends, such as agility, digitalisation, and artificial intelligence, impact this effectiveness construct of the framework of the COSO Internal Control model. It is noteworthy that the COSO framework was last revised in 2013, at a time when these trends were not as prominent as they are today. Additionally, it is imperative to investigate how remote work, as an element of New Work, affects the effectiveness of an internal control system, given that many internal controls were originally designed for a traditional work environment with employees physically present in the office.

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КАКВО ПРАВИ ЕДНА СИСТЕМА ЗА ВЪТРЕШЕН КОНТРОЛ ЕФЕКТИВНА?

Резюме: *Системата за вътрешен контрол в едно дружество включва множество механизми за вътрешен контрол, които са предназначени да гарантират ефективното изпълнение на управленските решения. Критичните въпроси в този контекст са свързани с критериите за признаване на системата за вътрешен контрол за ефективна с точното определяне и разграничаване на понятието „ефективност“ от „ефикасност“, както и с идентифицирането на допълнителни фактори, които оказват влияние върху ефективността. Настоящата статия се стреми да отговори на тези въпроси, като използва Рамката за вътрешен контрол на COSO, тъй като изследванията показват силна връзка между тези въпроси и модела на COSO. По-конкретно, трите категории цели на модела COSO служат за конструкцията на ефективността на системата за вътрешен контрол. Освен това петте компонента на модела COSO – контролна среда, оценка на риска, контролни дейности, информация и комуникация и мониторинг – функционират като двигатели на ефективността. По този начин емпиричното взаимодействие между системата за вътрешен контрол, рамката на COSO за вътрешен контрол и ефективността формира основния фокус на настоящата статия. За да се разшири този анализ, бъдещите изследвания следва да проучат дали и до каква степен се променят констатациите, когато съвременните и нововъзникващите мегатенденции се включат в анализа на модела COSO, който претърпя последната си актуализация през 2013 г. Освен това концентрирането върху конкретни индустрии би могло да даде по-различни прозрения.*
Ключови думи: *вътрешен контрол, система за вътрешен контрол, рамка за вътрешен контрол COSO, ефективност, ефикасност*

Филип Хофмайстер, докторант
Университет по библиотекознание и информационни технологии
E-mail: p.hoffmeister@t-online.de

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

LACK OF JOB SATISFACTION AND ITS FAR-REACHING CONSEQUENCES FOR EMPLOYEES AND COMPANIES

Jasmin Carmen Baumann
University of Library Studies and Information Technologies

Abstract: *As an important influencing factor, job satisfaction plays a key role in the economic success and the stability of a company. Since lack of job satisfaction causes serious operational consequences, such as declining employee performance, as well as considerate repercussions for businesses, a brief presentation of the factors leading to it is provided in the current paper. The focus of the present research is on the consequences of job satisfaction with an emphasis on the negative effects caused by its lack, which in turn include a reduction in performance, increased absenteeism and a rising fluctuation rate. To counteract this, strategies are developed in the further course of the present work that have a potentially positive effect on job satisfaction. Targeted measures are used to improve job satisfaction so that the importance of job satisfaction is prioritized within the company while at the same time competitiveness is maintained. It follows from this that a steady focus on the improvement of job satisfaction leads to positive effects, which, in times of constantly increasing competitive pressure, ensures the continued existence of competitiveness and the business success related to it. The research methodology is based exclusively on literature sources that are listed accordingly. This includes a current study that is used to underline the extreme importance of the subject matter.*
Keywords: *job satisfaction, company success, influencing factors, competitiveness*

INTRODUCTION

Because of its significant influence on company results, job satisfaction has become one of the most researched topics in economics recently. The problems that emerged as a result of globalization, such as increased competition due to global networking and the resulting sustained competitive pressure, which is also made evident in an increased pressure for efficiency, bring to the fore the importance of a high level of job satisfaction among employees (Fischer 2006, p. 1). The positive effects resulting from high job satisfaction not only include increased commitment and a higher productivity rate, but also promote long-term employee loyalty and thus reduce the fluctuation rate, so that satisfied employees contribute to the stability and further development of a company in the long term.

The importance of job satisfaction is obvious. Nevertheless, a recent study by EY in 2023, which surveyed over 1,555 employees in Germany, found that employee satisfaction in Germany had fallen by 18 percent compared to 2021. The proportion of completely "satisfied" employees in 2023 was only 31 percent, 52 percent saw a need for optimization and stated "rather satisfied", 13 percent said they were "rather dissatisfied" and 4 percent even stated that they were completely "dissatisfied" (Heinen/ Hinz 2023, p. 5).

To underline the importance of job satisfaction, the operational impact of the lack of job satisfaction is examined below.

RESEARCH METHODOLOGY

The research design of this work is explanatory, as the explanation of the relationships between the lack of job satisfaction and the associated operational effects is causal. The second chapter looks first at

the general definition of job satisfaction and at the associated influencing factors, before focusing on the operational effects caused by the lack of it. The theoretical foundations are based on literature sources; all sources are listed accordingly.

DEFINITION OF JOB SATISFACTION

According to the Gabler Business Dictionary, job satisfaction is generally a central issue in the modern world of work and plays a crucial role in the well-being of employees, as well as in the long-term success of companies. Basically, the term job satisfaction describes a positive attitude towards both the conventional and the individual work situation, which arises from the subjective assessments of each respective employee (Maier 2018).

It follows from this that the term job satisfaction encompasses multidimensional interpretations. On the one hand, it represents a cognitive evaluation process because of the subjective evaluation of the work situation in view of one's own expectations. On the other hand, it is an emotional reaction based on the positive and negative feelings that arise from the affective perceptions of the respective employee. Generally speaking, the level of job satisfaction is the result of the extent to which people are satisfied with their work and the associated conditions such as work environment, remuneration, recognition and work content (Drabe 2015, p. 60).

DETERMINANTS OF JOB SATISFACTION

The factors influencing job satisfaction are diverse and affect different areas of the work environment, the management and the personal needs of employees. The determinants can be divided into three categories: situational factors, dispositional factors and interactionist approaches (Drabe 2015, p. 77). Situational factors with regard to job satisfaction are external circumstances and also conditions in the workplace that can influence employee satisfaction. These factors vary depending on the work environment and the external conditions and they can also be temporary or permanent. On this level, the influence on job satisfaction usually occurs directly without reference to the personal characteristics or the intrinsic motivation of the employees (Drabe 2015, p. 76). Situational determinants are those referring to work environment. On the one hand, this factor includes physical working conditions, i.e. factors concerning the organisation of the workplace, for example, equipment, cleanliness and such trivial components as room temperature. On the other hand, safety conditions, such as a protected workplace environment free of hazards or, otherwise, poor safety standards, also belong to the situational factors of the work environment.

The workload and the time pressure that comes with it are also situational factors. Overwork as a result of too high expectations on the part of the employer or basically large volumes of work, contradict a balanced workload and have a negative effect on job satisfaction. In contrast, insufficient demands can also be a negative factor. In addition, the workload can have only a temporary negative effect on job satisfaction, for example in situations with high time pressure and tight deadlines.

Other factors, which should not be overlooked, are organizational changes such as restructuring and transfers and social factors. Company changes, transfers and promotions can have both a positive and a negative impact on job satisfaction. Other factors that count as situational influencing factors are working time regulations, remuneration and other financial incentives, as well as external influences such as the economic situation and increased competitive pressure. Accordingly, situational influencing factors can have a positive or a negative impact on job satisfaction. With a high level of job security, employee satisfaction increases, whereas relatively low remuneration has a negative impact (Drabe 2015, pp. 77–81).

In addition to the situational influencing factors, there are also dispositional factors which have to do with internal characteristics and the personal qualities of an employee. These relate to a person's personality, values and individual preferences and turn out to be relatively stable and constant. Dispositional factors have a major influence on the attitude employees develop towards their work, regardless of the situational factors. Personality as a dispositional factor is based on a positive or negative basic attitude, emotional stability, extraversion and conscientiousness. The aspect of personal values and attitudes is closely related

to this. People whose personal values are congruent with the values of the company generally experience a higher level of job satisfaction. Employees who regard their work as meaningful, often experience greater satisfaction.

Other dispositional factors include resilience and stress management, self-confidence and competence, as well as the ability to solve problems. In summary, dispositional factors include the presumption that various personality factors have a decisive influence on the level of job satisfaction (Drabe 2015, pp. 85–87).

Finally, interactionist factors also influence job satisfaction. The model of interactionist factors describes the interaction between situational and dispositional factors and assumes that both the personality of an employee and the circumstances and conditions of his or her work environment jointly influence job satisfaction. Interactionist factors therefore address the interaction of the two levels and affect job satisfaction the most.

The person-job-fit approach, which focuses on the compatibility between a person and their job, can also be regarded as influencing factor. The more congruent the match between the job requirements and the individual skills, knowledge and interests of an employee, the higher the resulting job satisfaction. This also applies to the convergence between a person and the organization as a whole, since the match between personal goals and company goals has a positive effect on job satisfaction.

The factors of intrinsic motivation and task interpretation as well as extrinsic motivation and reward systems are also considered to be crucial in relation to job satisfaction. Depending on the extent, these can have a positive or a negative impact on job satisfaction (Drabe 2015, pp. 87–91). Overall, however, with regard to the interactionist perspective, it must be noted that so far there have only been isolated empirical studies that combine situational and dispositional factors influencing employee satisfaction.

JOB SATISFACTION AND ITS IMPACT ON BUSINESS

In general, an increase in job satisfaction is considered desirable both on the part of the company and on the part of the employee, as it brings with it clear advantages. From an economic point of view, a decrease in absenteeism, lower fluctuation and increasing performance prove to be of valuable advantage in the competitive business world. With regard to employees, job satisfaction leads to increased enjoyment at work, increased self-esteem and hence an increased willingness to perform (Ferreira 2019, p. 14).

In contrast, lack of job satisfaction in a company can have significant negative effects, which manifest themselves in various operational areas and have both short-term and long-term detrimental effects, which will be discussed below (Ferreira 2019, p. 14). The effects on the individual employee, as well as on the company as a whole, are also considered.

IMPACT ON INDIVIDUAL PERFORMANCE

Lack of job satisfaction has a direct and profound impact on employee performance (Ferreira 2019, p. 14). Since job satisfaction is closely linked to motivation, dissatisfied employees often experience a significant decrease in their motivation, followed by negative effects on their everyday work.

Herzberg's motivation theory distinguishes between hygiene factors such as working conditions and salary and motivational factors such as recognition and appreciation (Ferreira 2019, p. 38). Reduced job satisfaction, therefore, leads to a decrease in intrinsic motivation on the part of employees and thus the inner willingness to perform at their best or even to complete tasks with commitment and conscientiousness declines. In addition, lack of appreciation and insufficient development opportunities cannot ensure that the basic needs for autonomy and competence can be met.

Deci and Ryan's self-determination theory states that employees are particularly motivated and productive when the factors concerning their job satisfaction are taken into consideration. In contrast, undermining employees' needs can lead to a significant drop in performance (Rohlfs 2011, p. 93).

Another effect on individual performance is increased absenteeism due to sick leave, which, in turn, negatively affects a company's profits. The causes of this are often psychosomatic complaints such as stress, exhaustion and burnout due to insufficient job satisfaction (Ferreira 2019, p. 188). A study by Navarro and Bass shows that the costs caused by absenteeism are, on average, 15% of the total compensation costs (Drabe 2015, p. 71).

Long-term and frequent absences can in turn lead to staff shortages, which disrupt internal company bottlenecks (cf. Drabe 2015, p. 71). In this context, numerous researchers postulate that a lack of job satisfaction is a key determinant of absenteeism. This is also confirmed and made visible by a large number of different studies (Drabe 2015, p. 72).

ORGANIZATIONAL IMPACT

Increased turnover rates and along with intentions to quit as a result of low or even non-existent job satisfaction, represent a fundamental problem as this is usually associated with immense costs for the company, especially in professional fields with high educational requirements (Drabe 2015, p. 70). The costs of high employee turnover arise not only from the necessary recruitment of new employees but go beyond that, as the induction and training of new employees also entail immense additional expenses and therefore require a considerable amount of resources.

Another fundamental aspect is the loss of specialist knowledge that has been built up over many years, as the departure of experienced employees is accompanied by a loss of valuable specialist knowledge and can therefore lead to an emerging quality problem. This loss of experienced employees can also potentially lead to a long-term weakening of a company's competitiveness since loss of competence prevents innovation (Drabe 2015, pp. 70–71).

Furthermore, there is a risk that insufficient job satisfaction will damage the prevailing working atmosphere through increased susceptibility to conflict and tension. Job satisfaction is an incentive for increased willingness to cooperate within a work group, but if job satisfaction diminishes, it can lead to a decline in collective commitment and fragmentation of the team with the result that organizational effects become consistently negative (Ehrlich 2024, pp. 61–62).

LONG-TERM IMPACT ON COMPANY IMAGE

Fluctuation of dissatisfied employees, as well as work environment characterized by negativity, carry the risk of causing long-term negative effects on the image of a company. Digital networking means that positive and negative experiences are shared globally, for example via employer rating platforms, which can make it much more difficult to attract new, suitable employees if the ratings are negative. The danger for companies that are perceived as 'bad employers' is that they will have to contend with a long-term decline in applications in terms of labour and skills shortage and thus risk a decline in competitiveness. The negative impact on customer satisfaction is also undisputed, as poor customer service and reduced innovation go hand in hand with a lack of job satisfaction (Hunziker et al. 2024, pp. 27–29).

STRATEGIES TO IMPROVE JOB SATISFACTION

To promote job satisfaction in general, companies can take a variety of measures. These range from improving working conditions to creating opportunities for professional and personal development. In general, working conditions can be improved through the model of flexible working hours. Flexitime, home office, or part-time work allows employees to better combine their work and private life. Companies that offer flexible working time models and consequently strengthen employee loyalty, can also reduce the fluctuation rate (Piele, Piele. 2017, p. 48).

Other aspects that serve to promote job satisfaction are recognition and appreciation of employees, as well as an open feedback culture. Regular employee discussions are a central element in promoting job satisfaction (Bullinger 2013, p. 138). Measures to promote external motivation, which can also have a positive effect on job satisfaction, are innovative remuneration systems such as bonus payments (Bullinger 2013, p. 221).

Finally, promoting professional and, above all, personal development through continuing education and training programmes generates the opportunity to sustainably increase job satisfaction (Bullinger 2013, p. 251).

RESULTS

Taking into account the analysis above, it can be concluded that job satisfaction is one of the most influential and complex determinants when it comes to company results. In view of that, it is necessary that not only the possible positive effects should be considered, but also the consequences resulting from a lack of job satisfaction. To avoid risks, it is advisable to raise awareness of the importance of a high level of job satisfaction within a company and to strengthen it by applying such strategies as consistent further development of the existing working conditions. This also includes an appreciative corporate culture, as well as continuously expanding training and education programmes. In order to ensure a high level of job satisfaction as a standard, it is essential to continually work on it and improve the factors that influence it.

CONCLUSIONS AND DISCUSSION

The present analysis provides only a brief outline of the extensive topic of job satisfaction and looks superficially at the effects of the influencing factors and theories. It is therefore advisable to investigate the individual influencing factors in depth and, for the purpose of practical benefit, to adapt them individually to each company respectively. Furthermore, theoretical foundations offer no guarantee of success, so empirical studies within a company can help to increase the chances of success.

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ЛИПСАТА НА УДОВЛЕТВОРЕНОСТ ОТ РАБОТАТА И НЕЙНИТЕ ПОСЛЕДИЦИ ЗА СЛУЖИТЕЛИТЕ И КОМПАНИЯТА

Резюме: *Удовлетвореността от работата, като важен фактор, играе централна роля за икономическия успех и стабилността на една организация. Тъй като липсата на удовлетвореност от работата има сериозни оперативни последици, като например спад в представянето на служителите, както и предприемачески последици, е представено компактно описание на факторите, водещи до това. Поради това фокусът на настоящата статия е върху обхвата на удовлетвореността от работата, като се акцентира върху отрицателните последици от липсата на удовлетвореност от работата, които включват намаляване на производителността, увеличаване на отсъствията от работа и увеличаване на процента на флуктуация. За да се*

противодейства на това, в по-нататъшния ход на работата се използват стратегии, които имат потенциално положителен ефект върху удовлетвореността от работата. За тази цел служат целенасочените мерки за подобряване на удовлетвореността от работата, така че значението на удовлетвореността от работата да бъде приоритизирано в предприятието и да се поддържа конкурентоспособността. От това става ясно, че фокусирането върху непрекъснатото подобряване на удовлетвореността от работата води до положителни ефекти, които във времена на непрекъснато нарастващ конкурентен натиск гарантират съществуването на конкурентоспособност и свързания с нея предприемачески успех в дългосрочен план.Методологията на изследването се основава изключително на литературни източници, които са обозначени по съответния начин. Това включва и текущо проучване, което се използва за обосноваване на изключително важното и актуално значение на въпроса.

Ключови думи: *удовлетвореност от работата, успех на предприятието, влияещ фактор, конкурентоспособност*

Ясмин Кармен Бауман, докторант
Университет по библиотекознание и информационни технологии
E-mail: Jasmin.Baumann@dvag.de

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

THE ROLE OF DATA IN MODERN INDUSTRIAL PRACTICES: ANALYSIS AND IMPACT

Maximilian Renke
University of Library Studies and Information Technologies

Abstract: *In today's digitalized industrial landscape, the seamless management and exchange of operational data, such as Bills of Materials (BoMs), technical schematics, production schedules, and quality control data, are essential for enhancing manufacturing efficiency and supply chain performance. However, many organizations face persistent challenges, including data silos, system incompatibility, and cybersecurity risks, which can hinder the potential of digital platforms like Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP) systems. This study explores the management of critical data types within industrial environments, emphasizing how these structured data types support regulatory compliance, workflow optimization, and product quality. By examining established standards, particularly ISO 10303 (STEP) and IEC/ISO 81346, this research highlights the role of data standardization in addressing issues related to interoperability, security, and data accessibility. Findings indicate that while digital platforms facilitate real-time access and improved decision-making, challenges in data fragmentation and integration remain significant. The research emphasizes the potential of unified, cloud-based systems and adherence to international standards to enhance data consistency, interoperability, and operational agility, ultimately supporting industry competitiveness in a complex, globalized market.*

Keywords: *Interoperability, Standardization, Digitalization, Efficiency*

INTRODUCTION

In today's digital and interconnected industrial landscape, the management and exchange of technical and operational data is key in manufacturing and supply chain efficiency. As organizations shift towards digital platforms, such as Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP) systems, the need for robust, accessible, and interoperable data becomes essential. However, many organizations face challenges such as data silos, incompatibility across systems, and cybersecurity risks, which can undermine the potential benefits of these digital systems. Consequently, understanding how critical data types such as Bills of Materials (BoMs), technical schematics, production schedules, and quality control data—are managed and exchanged within and across industrial departments is vital to enhancing both operational performance and compliance with regulatory standards.

This research seeks to examine the mechanisms and technologies that enable or hinder effective data handling within industrial environments, especially considering the advancements in Industry 4.0 technologies. By exploring both the descriptive characteristics of critical data types and the analytical facets of data exchange processes, this paper aims to support on understanding on how structured information can support industrial operations, streamline workflows, and ensure product quality. Through an analysis of established frameworks and standard protocols like ISO 10303 (STEP) and IEC/ISO 81346, this study aims to provide insights into the role of data standardization in fostering seamless, secure, and efficient data exchange across industrial settings. The following two questions shall guide the research:

1. How are critical data types, such as Bills of Materials, technical schematics, and quality control data, managed and exchanged across departments and with external stakeholders in the industrial sector?
2. What are the primary challenges industries face in achieving data interoperability, security, and

real-time accessibility, and how can standardized frameworks, such as ISO 10303 and IEC/ISO 81346, address these challenges?

RESEARCH METHODOLOGY

This paper employs a descriptive and analytical approach, focusing on secondary data to examine the management and exchange of technical and operational data within industrial settings. The research identifies and investigates how the most common data types in the industrial context are managed across departments and shared between stakeholders, both internal and external. The descriptive aspect of this study is concerned with outlining the characteristics and functions of these data types in manufacturing and supply chain processes, providing a foundational understanding of how structured information supports operational efficiency, regulatory compliance, and quality assurance. The analytical component explores the mechanisms and technologies enabling effective data handling, emphasizing the challenges industries face, such as interoperability issues, data silos, and cybersecurity risks. This dual focus allows for an in-depth exploration of the role of data in contemporary manufacturing environments, especially as organizations increasingly shift toward digital platforms.

The literature review in this research contextualizes current practices in industrial data management and exchange, drawing upon existing studies and industry reports. It highlights established frameworks and systems like Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP), which play crucial roles in organizing and optimizing the use of data across manufacturing stages. The review analyses prior findings on specific data types, including BoMs and technical schematics, and the standards governing their use, such as ISO 10303 (STEP) and IEC/ISO 81346.

RESULTS

Results analyzes the types of industrial data essential to modern manufacturing and supply chain operations, focusing on their role in ensuring accuracy, efficiency, and compliance. Structured data and information management, including Bills of Materials (BoMs), technical drawings, production schedules, and quality control data, is vital for optimizing production processes and facilitating cross-departmental collaboration. As manufacturing becomes increasingly complex and globalized, the precision and accessibility of this data are crucial for maintaining product quality and meeting regulatory requirements. Moreover, the integration of real-time production schedules and process data supports operational efficiency, helping manufacturers to minimize delays and improve resource allocation.

The digitalization of industrial data has introduced transformative changes in how organizations handle and exchange critical information. The adoption of digital platforms such as Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP) systems has enabled real-time data access, enhancing decision-making and reducing errors. However, challenges such as data silos, interoperability issues, and cybersecurity risks continue to pose significant obstacles. The growing use of cloud-based systems and standardized formats like ISO 10303 (STEP) and IEC/ISO 81346 helps address these challenges, improving data exchange, enhancing interoperability, and ensuring secure, traceable data and information management throughout the production lifecycle.

TYPES OF CRITICAL INDUSTRIAL DATA

A Bill of Material (BoM) is a structured list detailing all the raw materials, components, subassemblies, and quantities needed to manufacture a product. It serves as a document for product lifecycle management and plays a critical role in ensuring that the manufacturing process is accurate. The BoM provides not only the materials required but also the sequence and hierarchy in which they are assembled, enabling resource planning, cost estimation, and inventory management (León & Farris 2011). In today's manufacturing environments, BoMs are often integrated into digital systems, such as Enterprise Resource Planning (ERP) and Product Lifecycle Management (PLM) systems, to streamline the production process and reduce errors in both the design and manufacturing phases.

In addition to being a vital tool for production, the BoM also facilitates collaboration across different departments, including engineering, procurement, and manufacturing. By having a detailed list of com-

ponents and materials, the BoM allows teams to coordinate more effectively, reducing the risk of delays or material shortages (Meyers & Stephens 2005). In industries with complex products, such as automotive or electronics manufacturing, an accurate BoM ensures traceability and accountability throughout the supply chain, which is essential for regulatory compliance and product recalls. As manufacturing becomes increasingly globalized and complex, the accuracy and management of BoMs are critical to maintaining operational efficiency and product quality (Tompkins, White, Bozer & Tanchoco 2013).

Technical drawings and schematics are engineering documents that provide a detailed visual representation of the design specifications of parts, products, or systems. These drawings serve as a universal language in engineering and manufacturing, conveying all necessary information about a product's dimensions, geometry, tolerances, materials, normative restrictions and assembly processes. By providing clear and precise instructions, technical drawings ensure that different teams, such as engineers, machinists, and assembly workers, can accurately interpret the design intent and produce components that meet required standards (French & Vierck 1993). Technical drawings adhere to specific international standards, such as those established by ISO or ANSI, to maintain consistency and avoid misinterpretation across global teams.

Schematics, on the other hand, are specialized diagrams that represent the functional relationships between different components within a system, particularly in fields like electrical engineering and circuit design. They focus on the flow of information, energy, or materials through a system, rather than on physical dimensions. Both technical drawings and schematics are critical for facilitating communication throughout the product development lifecycle, from concept design to final production. With advancements in computer-aided design technologies (CAD), these documents have become increasingly detailed and accessible, enabling quicker revisions and better collaboration between cross-functional teams (Zeid 2004). As a result, they play a central role in ensuring accuracy, efficiency, and quality in the manufacturing process.

Production schedules and process data are critical components of manufacturing management, guiding the sequencing of operations, timing, and overall workflow within factories. Production schedules outline the specific sequence of tasks required to manufacture products, ensuring that resources, machinery, and labor are utilized to meet delivery deadlines. These schedules provide a framework for optimizing production flows, minimizing idle time, and balancing workloads across different workstations (Nahmias & Olsen 2015). By managing production schedules, manufacturers can achieve a higher level of operational efficiency, reduce lead times, and improve customer satisfaction through timely deliveries.

Process data involves the collection and real-time analysis of information about each stage of the manufacturing process. This data includes key metrics such as machine performance, material consumption, and production cycle times, enabling manufacturers to monitor and control operations efficiently. By using this data, industries can identify bottlenecks, track deviations from production standards, and implement continuous improvement initiatives to optimize productivity (Kumar & Suresh 2009). The advent of Manufacturing Execution Systems (MES) has further advanced the integration of production schedules and process data, allowing for real-time adjustments and increased responsiveness in production workflows. MES solutions offer dynamic production management, enhancing the agility and adaptability of manufacturing systems in today's fast-paced industrial environments (Haddara & Elragal 2015).

Quality control and testing data are essential records that provide insights into product quality, performance metrics, and compliance with industry standards. This data encompasses a range of information, including test results, inspection reports, and statistical analyses of product consistency and reliability. By systematically capturing quality control data, manufacturers can ensure that products meet regulatory requirements and quality benchmarks, helping to reduce defect rates and enhance customer satisfaction (Montgomery 2019). Quality control data often involves rigorous testing processes at different stages of production, enabling early detection of deviations from expected standards and allowing for corrective actions before products reach the market.

Moreover, quality control and testing data play a central role in continuous improvement practices, such as Six Sigma and Total Quality Management (TQM). These methodologies rely on data analy-

sis to identify areas for process optimization, reduce variability, and improve overall production quality (Evans & Lindsay 2016). In industries where regulatory compliance is crucial, such as pharmaceuticals or aerospace, quality control data is not only a best practice but a regulatory requirement, e.g. ICH Q10 Pharmaceutical Quality System and ISO 9001. The use of advanced technologies, such as real-time monitoring and digital quality management systems, has further enhanced the precision and accessibility of quality control data, making it a vital asset for ensuring product excellence and operational efficiency.

DIGITALIZATION OF INDUSTRIAL DATA

Industry reports have shown a considerable transition from traditional paper-based management systems to digital platforms for managing industrial data such as Bills of Materials (BoMs), technical documentation, and production records. This shift is part of the broader trend of digital transformation in manufacturing, driven by the need for improved efficiency, enhanced collaboration, and more precise data handling (Milošević, Lukić & Vukman 2019). The implementation of Industry 4.0 technologies has been central to this transformation, enabling companies to replace manual processes with digital systems that ensure real-time access to critical production data. The benefits of these digital platforms include reduced errors, enhanced data security, and the ability to make faster and more informed decisions throughout the product lifecycle.

Additionally, the digital transformation in supply chains and manufacturing has been accelerated by the integration of advanced technologies such as cloud computing, the Internet of Things (IoT), and artificial intelligence (AI). These technologies allow for seamless data exchange and real-time monitoring, improving overall production management (Plekhanov, Franke & Netland 2022). Platforms like Product Lifecycle Management (PLM) and Enterprise Resource Planning (ERP) have enabled more dynamic responses to operational challenges and have further facilitated collaboration across geographically dispersed teams (Abdallah, Shehab & Al-Ashaab 2021). As companies continue to adopt these digital solutions, they gain greater agility and the capacity to innovate within their supply chains (Özkanlısoy & Akkartal 2021).

The adoption of PLM systems and ERP tools has seen a significant rise, especially in manufacturing industries (Majstorovic, Stojadinovic, Lalic & Marjanovic 2020). PLM systems are crucial for managing the entire lifecycle of a product, from initial concept through to disposal, enabling efficient data integration across different departments. On the other hand, ERP systems manage core business processes such as inventory control, procurement, and production planning, ensuring that resources are optimized and operations run (Kundaragi, Kulkarni, Gaitonde & Jangali 2023). By leveraging these systems, manufacturers are able to streamline operations, reduce inefficiencies, and foster greater collaboration between departments.

In the era of Industry 4.0, the integration of PLM and ERP tools is essential for achieving digital transformation within manufacturing operations. These tools allow for management of product data but also enable real-time decision-making and predictive maintenance through enhanced data analytics (Kersten, Blecker & Ringle 2018). Additionally, the deployment of cloud-based and IoT-enabled systems in combination with PLM and ERP has led to improvements in production efficiency, faster response times, and better compliance with regulatory standards. This widespread adoption of digital tools has become indispensable in helping manufacturers remain competitive and agile in the rapidly evolving industrial landscape (Kundaragi, Kulkarni, Gaitonde & Jangali 2023).

CHALLENGES OF DATA EXCHANGE

Data silos occur when information, such as technical drawings and Bills of Materials (BoMs), is stored in separate systems or departments, preventing access or integration across the organization. In industrial settings, data silos are particularly problematic as they lead to inefficiencies, errors, and miscommunication between different teams like engineering, production, and procurement. Without integration, teams often work with outdated or incomplete information, leading to delays in production and increased costs (Khan & Vorley 2017). The isolation of data also hampers decision-making processes, as managers cannot access a holistic view of operations, which is essential in modern, data-driven environments.

As industries adopt Industry 4.0 technologies, overcoming data silos has become critical to ensuring operational efficiency. By integrating systems such as PLM and ERP, organizations can break down these silos, enabling seamless data sharing across departments. This shift allows for real-time updates and better coordination, ultimately improving production workflows and reducing the risk of errors (Matt, Pedrini, Bonfanti & Orzes 2023). The ability to access unified data across departments is crucial for industries looking to remain competitive in an increasingly digital and interconnected marketplace.

Interoperability issues arise when different organizations, suppliers, or departments use incompatible software or file formats, creating challenges in exchanging critical data. In the context of manufacturing and supply chains, this lack of compatibility can result in delays, errors, and additional costs. For example, when suppliers use different software systems for product design and technical documentation, sharing key data like BoMs or CAD files can be inefficient. These incompatibilities can lead to data translation errors, version control problems, and a lack of real-time collaboration across the supply chain (Matt, Pedrini, Bonfanti & Orzes 2023). In general, as manufacturing processes become more globalized, the need for seamless data exchange becomes even more critical.

To address these challenges, many industries are turning to standardized data exchange formats and integration platforms that enable better interoperability. Solutions such as the use of STEP (ISO 10303) for product data exchange, or middleware systems that bridge gaps between incompatible software, are becoming more common (Khan & Vorley 2017). However, achieving interoperability remains a complex task, as organizations must align not only their software systems but also their data and information management practices. Without such efforts, the inefficiencies caused by software incompatibility will continue to pose significant barriers to operational efficiency and collaboration across the industrial landscape.

Security concerns in industrial environments have become increasingly prominent with the rise of digital transformation and the adoption of interconnected systems. The shift to digital platforms, such as cloud-based PLM and ERP tools, has improved operational efficiency but has also exposed industries to new vulnerabilities. Cyber-attacks targeting sensitive industrial data, including technical drawings, BoMs, and operational data, have surged, making secure data exchange systems a top priority for organizations (Matt, Pedrini, Bonfanti & Orzes 2023). Reports indicate that security-related incidents, particularly targeting industrial data, are rising by the year, underscoring the urgency of improving cybersecurity frameworks and protocols (Pochmara & Świetlicka 2024). This trend has led companies to invest heavily in encryption, access control, and other cybersecurity measures to protect their data from breaches (Wasyihun, Yirga & Abebe 2024).

As industries increasingly rely on digital data to manage critical processes, the implications of a security breach can be severe, resulting in financial losses, operational disruptions, and reputational damage. The rise in attacks targeting industrial environments can be attributed to the growing use of IoT devices and cloud-based systems, which, if not adequately protected, create potential entry points for cybercriminals (Ab Rahman & Choo 2015). Securing these systems is not only about protecting sensitive information but also about ensuring the continuity of production operations. Given these challenges, industries are increasingly adopting comprehensive cybersecurity strategies to mitigate risks and secure the data that drives their operations.

ADOPTION OF DIGITAL EXCHANGE PLATFORMS

Many industries are transitioning to cloud-based platforms to facilitate the real-time exchange of critical production data such as BoMs, technical drawings, and other essential documents. This shift is driven by the need for enhanced operational efficiency and collaboration between geographically dispersed teams. Cloud-based systems enable manufacturers, suppliers, and customers to access up-to-date data simultaneously, improving communication and reducing delays in decision-making processes (Qi & Tao 2022). Additionally, these platforms offer greater flexibility in managing data flow and provide enhanced security for intellectual property, helping industries mitigate the risks associated with data breaches (Hosseinpoor, Zolfi & Mosalanezhad 2017).

The adoption of cloud-based platforms is especially impactful in supply chain management, where

the ability to share real-time information reduces bottlenecks and enhances the responsiveness of manufacturing processes. By enabling all stakeholders to collaborate through a centralized system, cloud solutions streamline production workflows and ensure that changes in design, materials, or scheduling are communicated instantly, preventing costly disruptions (Dalenogare, Benitez, Ayala & Frank 2018).

The adoption of ISO 10303 (STEP) and IEC/ISO 81346 standards has significantly improved the exchange and standardization of product model data across industries. STEP provides a robust framework for the seamless exchange of product design and manufacturing information, allowing various systems to interpret and use complex technical data without compatibility issues (Pratt 2001). The integration of such standards ensures that critical data, such as Bills of Materials (BoMs) and technical drawings, can be easily exchanged between stakeholders in a unified format, reducing errors that arise from incompatible systems or file formats. This capability is particularly important in sectors like aerospace and automotive, where precise and accurate data exchange is critical to maintaining product integrity and meeting regulatory requirements (Kemmerer 1999).

The implementation of IEC/ISO 81346, which provides standardized principles for structuring industrial systems and equipment, further complements the functionality of STEP. Together, these standards support a digital thread, a continuous and reliable flow of information throughout a product's lifecycle. By using ISO 10303 and IEC/ISO 81346, industries are better equipped to create a more robust, archivable, and accessible digital thread, ensuring that data is interoperable, traceable, and secure across the entire supply chain (Hall & Taylor, 2024). This standardization also plays a pivotal role in advancing Industry 4.0 initiatives, where the seamless integration of systems and data is critical to enabling smart manufacturing processes (Hall & Taylor 2024).

FINDINGS AND DISCUSSION

The findings and discussion chapter examines the role of data and information management in modern industrial operations, focusing on critical data types like BoMs, technical drawings, and production schedules. It highlights the growing shift toward digital platforms, such as PLM and ERP systems, which enhance data accessibility and interdepartmental coordination. However, challenges persist in areas like system integration, data standardization, and cybersecurity. This chapter also identifies opportunities for improvement, emphasizing the adoption of unified, cloud-based systems and standardized frameworks like ISO 9001, STEP, and IEC/ISO 81346 to support seamless data exchange and operational efficiency.

KEY FINDINGS

The paper highlights that data forms like BoMs, technical drawings, production schedules, and quality control data are foundational to modern industrial operations. These data types enable seamless coordination between departments, ensuring that materials, components, and processes are effectively managed. BoMs and technical drawings are critical for maintaining accuracy in production and facilitating communication across engineering, procurement, and manufacturing teams. The research confirms that efficient management and exchange of this data are essential for ensuring product quality, regulatory compliance, and the smooth operation of increasingly complex manufacturing systems.

Another finding is the growing adoption of digital data management systems, such as PLM and ERP platforms. While these systems offer real-time access to production data and foster better collaboration across geographically dispersed teams, challenges remain. Issues related to system integration, data standardization, and cybersecurity pose significant obstacles for industries transitioning to digital platforms. The study emphasizes that while cloud-based systems and standard formats like ISO 10303 (STEP) and IEC/ISO 81346 help address these challenges, achieving full interoperability and ensuring secure data exchange remain ongoing concerns for manufacturers.

OPPORTUNITIES FOR IMPROVEMENT

The paper identifies opportunities for improvement in the adoption of unified, cloud-based platforms, which are becoming essential for managing and exchanging industrial data. These integrated systems enable organizations to share real-time updates and synchronize changes across departments and locations,

leading to reduced errors and enhanced efficiency. By moving away from isolated, department-specific information management practices, manufacturers can improve communication and streamline workflows, ultimately contributing to a more agile production environment. Cloud-based solutions also support remote accessibility, making it easier for geographically dispersed teams to collaborate, monitor processes, and respond to production challenges in real time.

Another area for improvement lies in the standardization of data formats and processes through international standards such as ISO 9001, STEP, and IEC/ISO 81346. These standards promote compatibility and interoperability across different systems, minimizing issues associated with incompatible formats and software. The IEC/ISO 81346 standard, in particular, provides a structured approach to organizing and referencing industrial systems and equipment, facilitating clearer communication across complex manufacturing environments. By adhering to these standardized frameworks, organizations can enable seamless data exchange, reduce translation errors, and enhance operational consistency. Standardization not only supports better information management practices but also aligns with regulatory and quality requirements, helping manufacturers maintain compliance and improve product reliability in a competitive, globalized market.

CONCLUSION

The adoption of unified, cloud-based platforms for data and information management and exchange represents a significant opportunity for improvement within industrial environments. These platforms enable real-time data sharing across departments, locations and organizations, allowing organizations to respond more dynamically to changes in production requirements and operational conditions. By centralizing data on a single platform, companies can reduce the inefficiencies caused by data silos and departmental fragmentation, which are often barriers to effective communication and workflow. With cloud-based systems, teams have access to the latest information, whether they are working from a remote location or coordinating across multiple sites, reducing the likelihood of errors and delays due to outdated or inconsistent data. Additionally, integrated platforms support collaboration and streamline workflows by offering a shared environment where modifications and updates are reflected instantly, allowing for better resource allocation and increased responsiveness to production challenges. This shift not only optimizes productivity but also strengthens organizational agility.

Standardization through international protocols, such as ISO 9001 for quality management and STEP (ISO 10303) for product data exchange, is another critical area for improvement that will facilitate smoother data interoperability and consistency. These standards provide structured frameworks for managing data, enabling different software systems and teams to communicate without the risk of translation errors or compatibility issues. The structured approach of ISO 9001 supports the creation of uniform quality management processes, helping manufacturers align with regulatory requirements and improve product consistency and reliability. Meanwhile, STEP provides a standardized format for data related to products and manufacturing, allowing various systems across the supply chain to interpret technical information consistently. Implementing these standards helps ensure that elementary data, such as BoMs and technical drawings, can be accurately exchanged, minimizing the risks of errors associated with incompatible file formats. By adopting these standards, industries can achieve better operational consistency, enhance compliance, and ultimately improve product quality, making standardization a foundational component for fostering interoperability and data integrity in a globalized market.

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РОЛЯТА НА ДАННИТЕ В СЪВРЕМЕННИТЕ ИНДУСТРИАЛНИ ПРАКТИКИ: АНАЛИЗ И ВЪЗДЕЙСТВИЕ

Резюме: *В съвременната дигитализирана индустриална среда безпроблемното управление и обмен на оперативни данни, като например материални сметки (BoM), технически схеми, производствени графици и данни за контрол на качеството, са от съществено значение за повишаване на ефективността на производството и ефективността на веригата за доставки. Много организации обаче са изправени пред постоянни предизвикателства, включително силози на данни, несъвместимост на системите и рискове за киберсигурността, които могат да възпрепятстват потенциала на цифровите платформи, като системите за управление на жизнения цикъл на продуктите (PLM) и системите за планиране на ресурсите на предприятието (ERP). В това*

проучване се разглежда управлението на критични типове данни в индустриални среди, като се набляга на това как тези структурирани типове данни подпомагат спазването на нормативните изисквания, оптимизацията на работните процеси и качеството на продуктите. Като разглежда утвърдени стандарти, по-специално ISO 10303 (STEP) и IEC/ISO 81346, това изследване подчертава ролята на стандартизацията на данните за решаване на въпроси, свързани с оперативната съвместимост, сигурността и достъпността на данните. Констатациите показват, че макар цифровите платформи да улесняват достъпа в реално време и подобряването на процеса на вземане на решения, предизвикателствата, свързани с фрагментацията и интеграцията на данните, остават значителни. Проучването подчертава потенциала на унифицираните, базирани в облака системи и спазването на международните стандарти за подобряване на съгласуваността на данните, оперативната съвместимост и оперативната гъвкавост, което в крайна сметка подпомага конкурентоспособността на индустрията в един сложен, глобализиран пазар.
Ключови думи: *оперативна съвместимост, стандартизация, цифровизация, ефективност*

Максимилиан Ренке, докторант
Университет по библиотекознание и информационни технологии
E-mail: maximilian.renke@gmail.com

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

DIGITALIZATION: DOES EASY ACCESS TO KNOWLEDGE INFLUENCE THE COLLECTIVE INTELLIGENCE QUOTIENT?

Christian Beikirch
University of Library Studies and Information Technologies

Abstract: *Over the last 30 years, digitalization has brought us unforeseeable information and communication opportunities, ensuring that fast access to public sharing (social media) and easy access to knowledge (search engines) give every member of society the opportunity to disseminate and build knowledge. Thanks to the free access to artificial intelligence, it is even possible to have tasks such as programming, Excel lists or writing essays carried out, often to a high standard, without any specific knowledge of one's own. In the previous use of information from the Internet, where help was provided in the form of faster acquisition of knowledge or faster solutions to problems based on experience reports from the Internet, knowledge was nevertheless built up. This is now in danger of disappearing and the question arises as to the extent to which these possibilities influence social IQ. In addition to its enormous boost for society, does digitalization also stand for the decline of our intelligence quotient? Does the easy access to knowledge promote people's thirst for knowledge or does the possibility of using artificial intelligence to solve complex problems cause the collective IQ to fall in the medium term? what do we need to do to counteract the dangers of digitalization?*
Keywords: *Digitalization, intelligence quotients, society, artificial intelligence*

INTRODUCTION

The digital revolution has fundamentally changed the way people work, communicate and learn. Thanks to the internet and its unrestricted access to information and means of communication, we can acquire knowledge in the shortest possible time or solve complex problems in the shortest possible time thanks to knowledge transfer via the internet or artificial intelligence. With a smartphone, it is possible to access knowledge within seconds and answer complex questions quickly. However, studies show that it is precisely these opportunities to obtain knowledge and the dependence on digital media that can also lead to in-depth knowledge and critical thinking losing value and fading into the background. Instead of building up one's own knowledge over the long term, there is a risk of relying on search engines and algorithms, which could have a negative impact on our society's cognitive abilities in the long term. This article examines this thesis and looks at the impact of digitalization and its consequences on society and the collective intelligence quotient. The positive aspects of digitalization are primarily to be found in the areas of knowledge provision and knowledge transfer. Countries with a lower level of education in particular have improved opportunities for faster and more effective education thanks to the internet. However, these advantages are also offset by the disadvantages of superficial consumption.

RESEARCH METHODOLOGY

The study is based on a literature review and examines the hypothesis of whether the increasing dependence on digital technologies could reduce society's collective intelligence quotient in the long term. It looks at how digitalization affects attention span, creativity, critical thinking and the handling of information. At the same time, possible countermeasures are identified that can promote the positive use of digital opportunities without impairing society's cognitive abilities. The discussion about the influence of digitalization and its impact on our society is a global question, the answer to which will have far-

reaching consequences. The question is whether the digital revolution will make us a smarter, more connected community or whether it has the potential to weaken our collective intellect in the long term.

RESULTS

The collective intelligence quotient

The term "collective intelligence quotient" refers to the collective cognitive, social and emotional intelligence of a society. It refers to the ability to solve complex problems, generate new knowledge and thus create added value for society. The collective intelligence quotient is influenced by culture, structural characteristics, technological developments and education. As a result of digitalization, there is an extreme flood of information, which also influences the collective intelligence quotient in various ways (Zenk 2017).

Decreasing attention span

Social media and entertainment platforms in particular provide a large quantity of entertaining content that often only requires a short attention span. According to a 2019 study by Nature, the average human attention span fell from over 12 seconds to just 8-9 seconds between 2000 and 2017 (Lorenz-Spreen et al. 2019). Influenced by social media and the huge flood of content, this reduced attention span naturally also makes it more difficult to build up knowledge or solve complex problems. In addition, the constant distraction of digital devices such as smartphones also means that knowledge acquisition over a longer period of time is often ineffective due to a lack of concentration.

Influence through algorithms

The use of algorithms influences users of social media and other internet-based platforms with regard to their content consumption behavior. There are two dangers here: Firstly, it can happen that you find yourself in so-called "bubbles", i.e. you are only exposed to content controlled by the algorithm, which both influences the formation of your own opinion and promotes a lack of understanding for opposing opinions or arguments. Human beings are inclined to cherry-pick facts and rely on sources that are familiar to them. Influenced by algorithms, cognitive biases are exploited and it is easier to fall into the aforementioned "bubbles" (Mneczer/Hills 2021).

Digital amnesia

The simplest example to describe digital amnesia is the fact that you do not remember routes that you have taken with navigation by cell phone or car. If you have traveled the same route without navigation, you are more likely to be able to answer questions about the route. The same thing happens in the human brain with information that can be accessed at any time via the internet and artificial intelligence. It is not stored in the brain. This phenomenon is called digital amnesia. Even if we wanted to, the digital world with thousands of passwords, account accesses or PINs is difficult to store in our own brains, and with the help of account accesses being stored on devices, there is almost no reason to use brain memory for them (Sparrow, Liu, Wegner 2011). While I still have the home phone numbers of my childhood friends in my head, I don't know my mother's cell phone number by heart. We are dependent on our smartphones, navigation systems and search engines. This can also influence the collective intelligence quotient (Kochetkova 2015).

Consumption prevents creativity

The easy access to all kinds of information and the use of artificial intelligence also means that a lot of consumption is pushing creativity into the background. While painting, writing and making music used to be very important, these days ready-made digital solutions are often used. As a result, creativity suffers. Why spend a lot of time on your own texts or images when artificial intelligence can deliver a very good result in seconds. The high level of passive consumption can therefore lead to a reduction in active and creative problem-solving thinking in the long term (Bernhard 2024).

Spreading "fake news"

Wherever progress offers new aids for our society, these aids are also misused through criminal activity. The recently coined term "fake news" in particular has a huge impact on society. In a Bertelsmann study from 2024, many Germans are afraid of disinformation in the election campaign for the new federal government and are concerned about the examples in America (Berger, Unzicker 2024). The presidential elections when Donald Trump became president for the first time were demonstrably affected in this way. False information was deliberately distributed via social media in order to influence the election campaign in Donald Trump's favor, with success. Another very popular example is the slipping into information bubbles during the Covid-19 pandemic. Many people fell for conspiracy theories via social media such as Telegram and still hold on to them today. This problem is exacerbated by artificial intelligence in particular, as fake photos and videos can only be identified as false with a trained eye and people are generally willing to believe what they see with their own eyes.

Reduction in the ability to empathize

As a result of digitalization, many meetings and important communications now take place digitally, either via video call or email. This also affects a very important human skill: empathy. As a result of digital life, there is a risk that empathetic behavior will fall by the wayside and have a negative impact on society in the medium term. As empathy is largely based on reading and interpreting non-verbal communication signals such as gestures, facial expressions and tone of voice, it is becoming increasingly difficult to interpret these signs in the digital world. The distance in video calls and the lack of looking people in the eye also has a negative impact on our ability to empathize. Social media, with its system of likes and reach idealism, also contributes to the neglect of empathy skills. What's more, being online all the time is no substitute for social interaction, which can lead to loneliness and isolation.

Countermeasures

In order to counteract the challenges posed by digitalization, comprehensive countermeasures are needed to minimize the negative effects on the collective intelligence quotient and at the same time exploit the positive potential. Education, social awareness, political measures and technological innovation are the key fields of action here. Education has the task of conveying an awareness that includes a stronger focus on the use of artificial intelligence, recognizing fake news and encouraging critical thinking as early as school. In addition, ethical issues surrounding this topic should also be addressed. The aim is to strengthen young people's media skills in order to prevent possible dangers of misuse or manipulation. The ability to critically question information and the conscious use of algorithms must also be trained. Furthermore, an awareness of the frequency of digital media use must be created in the form of time and content control. Self-regulation of usage time is a key to success. Another important point is the regulation of algorithms by governments and companies. If there is more transparency in the use of algorithms, it will also be easier to avoid information bubbles. Educational institutions also have a key role to play in promoting creativity with regard to solving complex problems. Instead of focusing purely on imparting knowledge, the focus should increasingly be on the ability to find solutions.

CONCLUSIONS

In summary, it can be said that digitalization and the use of artificial intelligence offer society endless new opportunities in terms of more efficient work and problem-solving, but also pose great dangers in terms of the collective intelligence quotient, such as declining attention spans, digital amnesia or the spread of deceptively genuine fake news. In the long term, this could have enormous consequences for our society. A population with a declining intelligence quotient is also more susceptible to manipulation through misinformation. It is therefore all the more important that society develops an awareness of critical questioning and independent complex thinking when dealing with social media and, in particular, artificial intelligence. In order to implement this, a clear focus must be placed on such topics in the education system. The reduction of the collective intelligence quotient through digitalization and the use of artificial intelligence is already underway. The short-term challenge for society is to introduce

countermeasures in order to avoid lasting damage in the long term. The study makes it clear that education plays a key role in overcoming these challenges. Media literacy, critical thinking and creative problem-solving approaches should be increasingly integrated into educational programs. In addition, technologies must be designed and regulated in such a way that they are not only efficient and accessible, but also ethical and inclusive. A conscious approach to algorithms and the promotion of transparency in their use are key building blocks for minimizing the influence of information bubbles and disinformation. However, the responsibility does not lie solely with education and politics. Individuals must also reflect on their use of digital media and actively work on their self-regulation. Consciously reducing passive consumption can help to promote cognitive and creative skills. On a societal level, the promotion of empathy and social intelligence is essential in order to maintain interpersonal connections in an increasingly digitalized world. Digitalization offers immense opportunities for progress and innovation, but its ill-considered use could weaken the foundations of human thought and coexistence in the long term. It is therefore necessary to find a balance between technological development and human competence. Educational institutions, governments, businesses and individuals must take joint responsibility to shape a sustainable digital future. With the right mix of technological innovation, policy measures and individual responsibility, society can reap the benefits of digitalization without leaving its intellectual, creative and social potential untapped. The challenge is not only to contain the negative effects, but to actively use digitalization as a tool to increase the collective intelligence quotient. A mindful, reflective and creative approach to digital media can help to create a resilient and intelligent society in the long term.

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ЦИФРОВИЗАЦИЯТА: ВЛИЯЕ ЛИ ЛЕСНИЯТ ДОСТЪП ДО ЗНАНИЯ ВЪРХУ КОЕФИЦИЕНТА НА КОЛЕКТИВНА ИНТЕЛИГЕНТНОСТ?

Резюме: *През последните 30 години цифровизацията ни предостави непредвидими възможности за информация и комуникация, като гарантира, че бързият достъп до публично споделяне (социални медии) и лесният достъп до знания (търсачки) дават възможност на всеки член на обществото да разпространява и натрупва знания. Благодарение на свободния достъп до изкуствения интелект е възможно дори да бъдат изпълнявани задачи като програмиране, изготвяне на списъци в Excel или писане на есета, често на високо ниво, без собствени специфични познания. При предишното използване на информация от интернет, при което помощта се предоставяше под формата на по-бързо придобиване на знания или по-бързо решаване на проблеми въз основа на доклади за опита от интернет, все пак се натрупваха знания. Сега има опасност това да изчезне и възниква въпросът*

доколко тези възможности влияят върху социалния коефициент на интелигентност. Освен огромния тласък, който дава на обществото, дали цифровизацията не означава и намаляване на коефициента ни на интелигентност? Дали лесният достъп до знания насърчава жаждата на хората за знания или възможността за използване на изкуствен интелект за решаване на сложни проблеми води до спад на колективния коефициент на интелигентност в средносрочен план? Какво трябва да направим, за да противодействаме на опасностите от цифровизацията?
Ключови думи: *цифровизация, коефициенти на интелигентност, общество, изкуствен интелект*

Кристиан Байкирх, докторант
Университет по библиотекознание и информационни технологии
E-mail: christian.beikirch@gmx.de

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

URRENT CHANGES IN PERSONNEL MANAGEMENT

Detlef Scholz
University of Library Studies and Information Technologies

Abstract: *If one considers the modern working world, there are a number of indications of a fundamental change in management culture. New leadership realities are emerging that do not have long-term perspectives. Modern leadership requires a new understanding of collaboration, a focus on the needs of employees and the adoption of participation models and agile working. Employee-orientation points to reference points of individualism and the creation of meaning. Hierarchies are becoming flatter, which is why there is more autonomy and, with it, greater personal responsibility. Leadership roles are changing fundamentally. The changed forms of leadership require new forms of leadership communication. Overall, there are numerous indications that transformative leadership styles are beneficial in times of change. This study deals with the changes in leadership aspects that can be expected from the current changes in the world of work. The aim of the article is to find out the intentions of change that focus on personnel management.*
Keywords: *New work, Change, Hierarchy reduction, Agility, Participation*

INTRODUCTION

Work is currently undergoing a transformation that poses challenges for everyone involved. A new basic understanding of work is focusing on the trend towards New Work, which presents the characteristics of a new world of work. Flexible working models, flatter structures and more opportunities for participation are emerging. On the other hand, however, there are a number of challenges (see Zukunftsinstitut 2019, p. 1). New Work is understood in particular to mean new concepts and methods of work that rely on flexibility, agility and mobility and intend participation (cf. Ferrimann 2023, p. 1). The term "New Work" stands for modern and self-organized work. Digital change adds to this definition transforming it to "New Digital Work" (cf. Lanzl et al. 2023, p. 6). The current world of work is overall characterized by change. The coronavirus pandemic and advances in the field of digitalization are aspects that prove to be strong drivers of change within the world of work. The new world of work requires new perspectives when it comes to leadership. A change in leadership culture seems necessary (cf. Hansen 2021, p. 1). The change in work is characterized by a rapid pace. Workers are expected to adapt flexibly to new tasks and to be willing to continuously develop themselves. They are also expected to meet high requirements across all areas. Mobility is considered a universal requirement, whereas long-term career prospects are a thing of the past (cf. Hahn 2024, p. 1). The change is currently focusing on the dimensions of digitalization, globalization, sustainability and agility in collaboration (cf. Koprek 2022, p. 1). In his remarks, Koprek (2022) suggests that managers need new skills, especially leadership and decision-making skills are in demand more than ever (see Koprek 2022, p. 1). The human-to-human leadership relationship is increasingly taking a back seat in the course of developments (see Fischer 2019, p. 6). As a result, managers are called upon to act with new leadership tools. The change in the world of work requires new competency profiles overall, which should be flexibly adaptable. This appears necessary in order to be able to act successfully in the long term in times of dynamic change (see Kauffeld & Albrecht 2021, p. 1). Continuously expanding digitization also entails new forms of collaboration. Digital transformation promotes the agility of collaboration. It is not just about developing digital skills among those involved, but more specifically, skills that promote self-organization, self-management and commitment (see Kauffeld & Albrecht 2021, p. 2).

The aim of this article is to find out how the world of work is changing and what impact this is having on HR management. It is also intended to identify challenges for managers. The aim is also to find out what action and development measures are necessary for managers to be sustainably successful in the future. Overall, it seems necessary to derive recommendations for further discourse.

METHODOLOGY

The purpose of the present article is to answer the following research question: How does the current change in the world of work affect managers, especially with regard to human resources management, and what measures are necessary for a successful future? To answer the research question a systematic literature research is carried out and related scientific studies are analyzed. In particular, the examined literature is more critically interpreted in the context of the topics "change in the world of work and current requirements for human resources management". The focus here is on the processing of existing findings and a reflected contextualisation in relation to the scientific question.

RESULTS

Leadership aspects in the new world of work

Self-leadership, the advancement of personal responsibility and the creation of development opportunities are considered to be the principles of the new world of work. Overall, New Work focuses on the development of employees through coaching, assessments and digital systems in order to increase motivation and personal responsibility (see Krings 2023, p. 10). Managers are encouraged to provide support by creating meaning, appreciation and trust. Employees should be involved right from the start when designing New Work in order to incorporate their wealth of experience (see Krings 2023, p. 11). When implementing New Work, stress should be avoided, flexible work and collaboration should be promoted, and employees should be qualified. Suitable interventions and support for this include digital communication and collaboration methods, stress evaluations, interventions to improve the work environment, the organization of working hours and performance volume, and adequate qualification opportunities (see Seibold & Mugler 2022, pp. 32–33). By introducing New Work, companies intend to increase their attractiveness to new employees. It seems clear that the new world of work intends to implement the principles of flexibility, participation and self-organization. For the introduction of a new corporate culture, it is recommended that the interests of all participants are balanced (see Ahlens 2023, p. 10). Ahlens (2023) argues that a professional introduction of New Work requires framework conditions that are equipped with adequate resources (see Ahlens 2023, p. 6). Management is recommended to design concepts geared towards the introduction of New Work and to implement these with company agreements. This is based on the need to secure the introduction with a framework and resources (cf. Ahlens 2023, p. 10). Seibold and Mugler (2022) also assume that the introduction of a new corporate culture requires targeted agreements with employee representatives in order to define tasks, responsibilities, roles and function profiles. It is already recommended that employees be involved in this process (cf. Seibold & Mugler 2022, p. 33). The study "German Change Readiness Index 2022" by Staufen AG found that the changing world of work shows visions of new forms of collaboration such as agile work and points to the resulting flatter structures (cf. Staufen AG 2022, p. 28). Consistently there is a requirement for managers and employees to develop according to future needs (cf. Staufen AG 2022, p. 37). The study "How's Work" by the Institut für Betriebliche Gesundheitsberatung (IFBG) shows that agile collaboration and associated participation is a central aspect of the new world of work. Accordingly, the result of the study, in which only 50% of respondents stated that they had influence over decisions, appears to indicate a need for development (see IFBG 2021, p. 31). Participation opportunities in terms of the workload are considered a given by only 31% of the respondents (see IFBG 2021, p. 32).

Leadership in change

According to Fischer (2019), the change in leadership points to a fundamentally new understanding of leadership. There is less and less traditional influencing of employees by managers (cf. Fischer 2019, p. 6). It is thematised that reskilling and leadership have so far been underestimated as factors

(cf. Leichsenring 2023a, p. 1). In this context, reskilling is defined as a process of development, which on the one hand aims at learning new skills, but also means that existing skills are developed further. In sum, reskilling is a form of adaptation to new requirements in the world of work (cf. EDT 2024, p. 1). In the course of the last few years, especially in the crisis years, the demands of employees have changed. Leichsenring (2023a) therefore sees reskilling as the personnel security of the future. Pohlabeln et al. (2020) assume that the current dynamics of change, triggered in particular by digitalization, will lead to a fundamentally new understanding of leadership. The basis of this new style is the principle of new cooperation, which is based on the cornerstones of transparency, autonomy and personal responsibility (cf. Pohlabeln et al., 2020, p. 53). With regard to digitalisation, the focus is on remote management, which is easier to implement within a flat hierarchy. Overall, it is assumed that more and more knowledge is available. This transparency of knowledge also enables more participation. Digitalization promotes broader communication between all parties involved. Work that takes place at a distance is supported in this way, while at the same time managers are challenged. They are called upon to promote a sense of belonging to the team and the company through team development work (cf. Pohlabeln et al. 2020, p. 55). In the course of digital leadership, managers are assigned new roles. On the one hand, roles in communication and moderation, and on the other hand, managers are becoming personnel developers in order to support employees in their skills development during the transformation of the working world (cf. Pohlabeln et al. 2020, p. 56).

Changed leadership reality

Aron-Weidlich (2021) describes change as a comprehensive transformation of the world of work driven primarily by globalisation, digitalisation and demographic change. The maturity of the agility of companies is assessed as an essential factor in the transformation (cf. Aron-Weidlich 2021, p. 1). It is recommended that a framework be created to give employees room for manoeuvre. It is emphasised that creating a sense of purpose is essential and that managers are seen as role models in this regard (see Aron-Weidlich 2021, p. 1). Bauer (2021) sees a specific strategy in relation to the complexities of the new world of work as a success factor for change. It is assumed that managers need a comprehensive understanding of the context (cf. Bauer 2021, p. 1). Current challenges are seen primarily in remote leadership. Especially in this context, it is assumed that communication, coordination, evaluation, organization, delegation and collaboration have changed greatly (cf. Koprek 2022, p. 1). Digital leadership is assumed to require a new type of relationship design. New structures and respectively new ways of communication are required. Flexibility and change reach high dimensions, and overall more adaptations are expected. This is due to the prevailing dynamics of change, the flood of information, and the associated impermanence of knowledge (cf. Keller 2022, p. 32). Goal-orientated intentions of new relationships should promote participation, personal responsibility, mobility and agility. Overall, it is suggested that managers involve employees in the digital transformation process from the outset (see Keller 2022, p. 33).

Transformational leadership

Meyerhoefer (2023) believes that modern leadership styles are needed as a result of the change in leadership. Currently, a leadership style of diversity is sought, which is individually adaptable and usable (cf. Meyerhoefer 2023, p. 1). It seems essential that managers know the needs of their employees (cf. Meyerhoefer 2023, p. 1). Waldmann (2019) confirms that despite digitalization, human leaders are in demand more than ever. Social leadership in these circumstances requires a high level of communication and interaction (cf. Waldmann 2019, p. 36). Waldmann (2019) assumes that the transformational leadership style best corresponds to what is happening. This management style is therefore able to link company goals with those of the employees (cf. Waldmann 2019, p. 36). Transformational leadership means that employees are intrinsically rewarded, and performance is driven by motivation and purpose (cf. Indeed 2023, p. 1). According to the study "The Art of Leadership" by Kienbaum and Stepstone, leadership currently focuses more on performance optimization than on employee orientation (cf. Kienbaum & Stepstone 2018, p. 10). Thus, a change in the attitude of managers is recommended in such a way as to address indicators of employee orientation (cf. Kianbaum & Stepsstone 2018, p. 13). The majority of

respondents want transformational leadership interventions. Digital leadership skills combined with a transformational leadership culture not only generate motivation and commitment, but are the basis for sustainable success (cf. Kienbaum & Stepstone 2018, p. 26).

Leadership skills

Future-oriented leadership skills are considered essential factors for the success of transformations. According to the statements of Suling and Wildner (2024), managers pass on competencies to employees as part of their role model function (cf. Suling & Wildner 2024, p. 23). These include the ability to deal confidently with changes and challenges, the design of transparent and open communication, the implementation of motivation and participation, flexibility in making adjustments, dealing with learning and improvement processes and the ability to assess and appreciate performance (cf. Suling & Wildner 2024, pp. 23–24). Overall, managers should also have a corresponding level of resilience (see Suling & Wildner 2024, p. 24). Resilience is understood as the resilience or restorative capacity of people, especially in the event of critical circumstances or events (cf. Hogrefe AG 2024, p. 1). Bauer (2021) describes that leaders need a changed understanding of leadership processes in order to be successful (cf. Bauer 2021, p. 1). To achieve goals, leaders should not only be able to identify a need for change, but overall have the ability to derive relevant leadership skills from it. At the heart of this argument, Bauer (2021) believes that leadership should be effectively aligned with corporate strategy (cf. Bauer 2021, p. 21). Communication is mentioned as a central dimension of the new world of work. Transparency and the willingness to discuss play a role in this. Methodically, managers should be skilled in as many forms of communication as possible (cf. Hansen 2021, p. 1). Leichsenring (2023b) interprets the study "Zukunft Weiterbildung" von Staufen from the year 2023, which confirms that managers should develop their communication skills, in particular (cf. Leichsenring 2023b, p. 1). The "Future Skills – Future Learning" study by Kienbaum and Stepstone shows that 59% of those surveyed expect their company to have an increasing need for skills development. In particular, there is a lack of digital skills. Recommendations include skills-oriented recruiting on the one hand and personnel and skills development measures on the other (see Kienbaum & Stepstone 2021, p. 4). Avantgarde's 'Work Satisfaction Study' clearly shows that 56% of respondents would like to see empathy, 48% openness and 47% a positive attitude as well as professional expertise from managers. More than half of the respondents in this study see a specific need for development on the part of managers (Avantgarde 2023, p. 5).

CONCLUSIONS

The results presented here show changes that influence the world of work as a whole. The trend points towards New Work and a range of new methods associated with it. New Work relies on employees being given more personal responsibility and managing themselves. It should be questioned whether this actually meets expectations. It can be assumed that participation and co-determination methods are understood as shared responsibility. What exactly is meant by self-management remains open in the research. Interventions aimed at creating meaning, appreciation and building trust appear to be appropriate, although these probably do not represent an innovation for management. Companies are called upon to initiate appropriate transformations in order to remain successful in the future. Cultural, strategic, and structural changes seem indispensable. Structural changes suggest flatter hierarchies to make room for new methods and tools. It is conceivable that this will widen leadership ranges, but it should be questioned in view of the many new roles of leaders. In any case, the order in which planned changes are implemented appears to be essential in order to promote appropriate developments in advance. Leaders are seen as all-encompassing implementers. Critically, change in the context of leadership addresses predominantly executives, although there are a few references to adjustments and changes to companies. Differentiating between corporate and leadership perspectives is beneficial. Current challenges are seen in remote leadership. It is assumed that management efforts will not only change, but that they will lead to higher management costs overall. It can be assumed that extensive personnel and skills development measures are a necessary consequence.Modern leadership aspects show corresponding dimensions here. According to the results, flexibility, adaptability, future orientation, leadership communication and

corresponding resilience are considered as core competencies. It seems conceivable that competencies that are lacking or necessary will be developed in the course of change.

The current world of work is challenged to implement changes due to various aspects of change. There are many indications of new working models and the need to evaluate management structures. Modern management concepts appear necessary in order to provide orientation for new forms of cooperation. In summary, it can be said that the transformation of work is fundamentally changing management tasks. Managers are not only challenged with regard to change. In particular, managers should adapt and expand their skills with regard to modern management methods. As a recommendation for further scientific discourse, a greater focus on the company perspective appears to be relevant. Overall, it is recommended for further research that all parties affected by the transformation of the world of work are equally represented and researched. The results presented should support the focus of further research contributions.

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АКТУАЛНИ ПРОМЕНИ В УПРАВЛЕНИЕТО НА ПЕРСОНАЛА

Резюме: *Ако разгледаме съвременния свят на работа, има редица признаци за фундаментална промяна в културата на управление. Появяват се нови лидерски реалности, които нямат дългосрочна перспектива. Съвременното лидерство изисква ново разбиране за сътрудничеството, фокусиране върху нуждите на служителите и възприемане на модели на участие и гъвкава работа. Ориентацията към служителите насочва към опорните точки на индивидуализма и създаването на смисъл. Йерархиите стават все по-плоски, поради което се наблюдава по-голяма автономност, а с нея и по-голяма лична отговорност. Лидерските роли се променят из основи. Промененитe форми на лидерство изискват нови форми на лидерска комуникация. Като цяло има многобройни признаци, че трансформативните лидерски стилове са полезни във времена на промени. Настоящото изследване разглежда промените в аспектите на лидерството, които могат да се очакват от настоящите промени в света на труда. Целта на статията е да се установят намеренията за промяна, които са насочени към управлението на персонала.*
Ключови думи: *нова работа, промяна, намаляване на йерархията, гъвкавост, участие*

Детлеф Шолц, докторант
Университет по библиотекознание и информационни технологии
E-mail: bebico.scholz@gmail.com

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

EMPLOYEE RETENTION – ONE OF THE MOST IMPORTANT SUCCESS FACTORS IN THE CONTEXT OF DEMOGRAPHIC CHANGE

Christian Conrad
University of Library Studies and Information Technologies

Abstract: *Ongoing demographic changes and crises have affected the job market dramatically in recent years. The number of qualified workers has dropped, resulting in the so-called War for Talent. It is no longer the employers that select skilled workers, but the employees, who choose their employers. Retaining staff has therefore increasingly become a challenge for many companies. Especially highly qualified personnel show a growing tendency towards 'job hopping'. In recent years, particular importance has been attached to job satisfaction among employees to increase company loyalty. Yet, despite complex measures to increase job satisfaction, the time that some employees spend with a company is short. This is where the present study comes in. Until now, no definite approach has been established in industrial and organisational psychology research that could comprehensively explain professional loyalty to an employer. Therefore, this article aims to analyse the most important retention factors of today's employees and to promote them accordingly within the framework of suitable measures. At the same time, the results should highlight the importance of corporate culture, leadership qualities, personnel development, career opportunities and rewards, which are key factors in establishing company commitment. For that reason, in times of labour and skills shortage, it is not only important to improve one's image as an employer, but also to work towards retaining valuable staff members in the organisation in the long term.*
Keywords: *employee retention, shortage of skilled workers, demographic change, corporate culture, leadership, personnel development*

INTRODUCTION

Company features such as product quality, a strong brand name, or the use of state-of-the-art technology have long ceased to guarantee success in achieving a leading market position (Fischer 1991, p. 1). For decades, many companies have been able to find recognition through their products, circumstances, however, have changed drastically in recent years. Digital transformation, artificial intelligence and Big Data, along with the resultant increase in competition, present companies with a situation of permanent change (Träger 2021, p. 1). As the US scientist Lee Iacocca aptly puts it: 'Ultimately, all economic processes can be summed up in three words: *people, products and profit*, in that very order. People increasingly come first. If you don't have good staff, you will hardly be able to compete with your products and will generate little, if any, profit (Kuhl et al. 2010, p. 10). The goal of retaining employees has never ceased to be an issue, and yet it is currently gaining even more importance and becoming the focus of relevant events, social media posts and publications (Mudra et al. 2024, p. 143). It becomes clear that not only skilled workers and managers are in demand, but also workforce in general in numerous industries and occupational fields (Von Hofe 2005, p. 1). This shortage can now be seen as one of the limiting factors in terms of achieving a company's strategic goals. The Boston Consulting Group has calculated a loss of economic output amounting to 84 billion euros per year due to workforce shortages, which, following the same company, indicates a structural shortage, as the workforce shortage of 1.9 million vacancies is around one million above the long-term average (Klatt 2022, p. 1). In addition, the current crisis study conducted by the Institute for Employees and Employability (IBE) and Hays AG, shows that after the current energy crisis, the demographic crisis is what most companies feel threatened by (see Figure 1) (Mudra et al. 2024, p. 144).

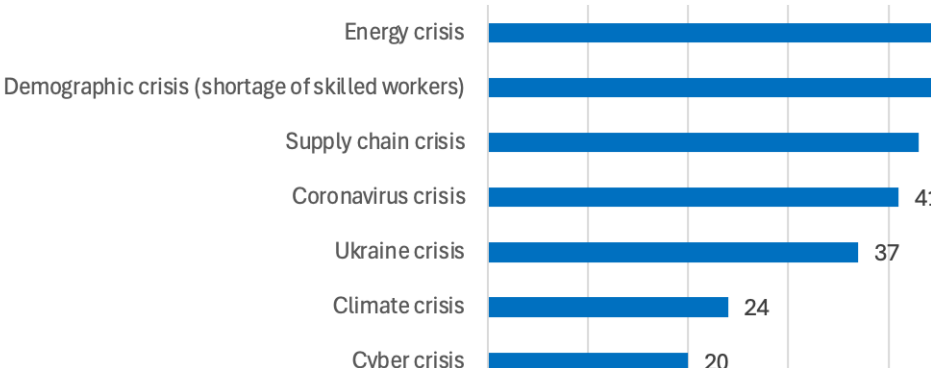

Fig. 1. Companies affected by various crises (in percent)

Business fears are justified, as demographic change and an aging society are now visible in many sectors. To make matters worse, the shortage of qualified specialists and managers is becoming more serious and is bound to get worse in the coming years. The so-called *War of Talents* is in full swing. As a result, good employees will be able to choose the most attractive employer for them. This is reason enough to nurture and strengthen those employees who have already been recruited and to retain them for the long term (Loffing 2010, p. 6). In addition, from an economic point of view, turnover, absenteeism and lack of motivation minimize the success of a company (Steinweg 2011, p. 183). Securing the organizational bond of employees is therefore necessary for a constant use of the labor factor and thus for an efficient allocation of resources. From an entrepreneurial point of view, two retention approaches are generally considered (Von Hofe 2005, p. 4):

- **motivational retention** of personnel with the aim of increasing motivation and reducing fluctuation and absenteeism,
- person-independent **skills retention** with the aim of securing company knowledge in the long term.

The absence of such commitment can lead to loss of skills and motivation, which in turn can manifest itself in a wide variety of symptoms (Von Hofe 2005, p. 5). Figure 2 below shows the most common deficiencies in employee retention.

Deficiencies in employee retention	
Symptoms of loss of motivation	**Symptoms of loss of qualification**
• Low level of satisfaction • Low level of motivation • High level of fluctuation • Work stoppage • Illegal second occupations • Resistance to change • Lack of interest in company-specific further training • Deficient loyalty in contact with customers and co-operation partners • Criminal behavior to the detriment of the company	• Strong dependence on employees with specialized knowledge or experience • High-time expenditure for the induction of new employees • High expenditure for the further development of products, structures and processes in the company • High expenditure of coordination between branches and departments • Former employees become serious competitors in the market

Fig. 2. Symptoms of loss of motivation and skills

The above listed symptoms present additional costs for companies in which there is a lack of personnel or retention management. Therefore, once you have talented people on board, it is a good idea to keep them, as the job market is unlikely to offer immediately an adequate replacement for them. Furthermore, new professional options become increasingly available to employees, while the impediments in switching employers decrease. This is so because employees who have the opportunity to choose between several employers, look very closely at the benefits of their current workplace in comparison to many others, and consciously choose the conditions that best suit them. The 'new transparency' provided by exchange forums and portals, as well as networking platforms on the internet, have a strong supportive effect (Mudra et al. 2024, p. 145). Equally shocking for many employers are the finding of the Gallup Engagement Index 2022, according to which, and in line with the European average, only one in six employees in Germany still feels a strong emotional bond with their employer. While 78% of those surveyed in 2018 still intended to be working for their employer in a year's time, this figure had already shrunk to 55% by the year 2022. Prospects are even worse in terms of switching employers. While two out of three employees were still firmly convinced in 2018 that they would be working for their employer in three years' time (65%), this figure has fallen to just 39% at the present time. These figures illustrate how critical this issue is to the survival of many businesses. Businesses that fail to recognise this trend and act now will have a lasting impact on their competitiveness in the future (Quiram 2022, p. 1).

In academic literature, employee retention is defined **as the intention to retain high-performing staff through incentives and thus motivate them to perform at their best and increase their loyalty to the company** (Von Hofe 2005, p. 8). Various organisational aspects play a decisive role in this (Maihöfner 2013, p. 22):

- **leadership,**
- **environment,**
- **role models,**
- **remuneration,**
- **activity.**

The above factors can be weighed differently for each individual and vary depending on the industry, company size and corporate culture (Nerdinger et al. 2011, p. 396).

RESEARCH METHODOLOGY

The analysis of the **research question** *'What are the most important retention factors of employees?'*, is carried out by applying a scoping review. Scoping reviews are characterised by the fact that various publication formats are used to describe the existing state of knowledge on a specific topic area in order to document existing findings, specify research questions, concepts and theories, and gain new research insights (Rothe 2017, p. 13).

In one of the largest employer studies on **employee retention** from Germany, Austria and Switzerland – the HR Report 2023 – a total of 1,001 interviewees took part. The HR Report is an annual anonymous online survey conducted by the Institute for Employment and Employability (IBE) and Hays AG, which surveys a wide range of participants within an organisation about their working conditions (Rump et al. 2023, p. 6).

The sample of respondents is made up of Germany (71%), Austria (14%) and Switzerland (14%). 50% of the respondents come from the service sector, 32% from the industrial sector and 18% from the public sector. (Rump et al. 2023, p. 7). The individual sample components are shown in Figure 3 below.

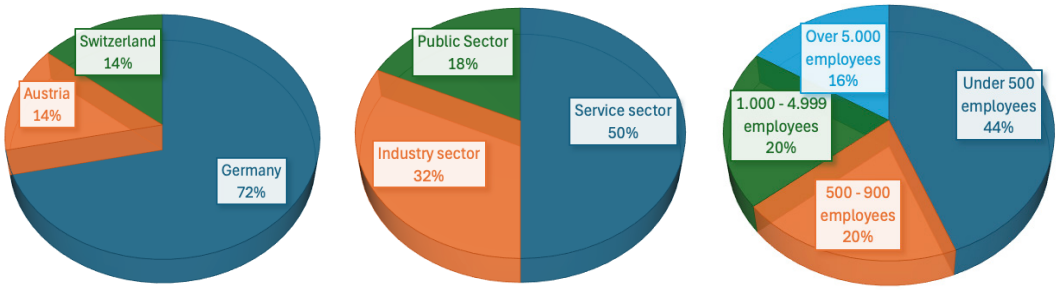

Fig. 3. Sample distribution and description of the study (figures in percent)

At 60%, male participants are slightly more represented. In terms of age, 30–39-year-olds represent the largest group at 36%, followed by 40–49-year-olds at 24% and 50-59-year-olds at 21%. Roughly equal shares of respondents are 29 years of age or younger (10%) and 60 years of age or older (9%). As in previous years, executives from specialist departments form the largest block at 37%. Non-executive employees, top managers and HR executives are represented at 21% each (Rump et al. 2023, p. 7) (cf. Figure 4).

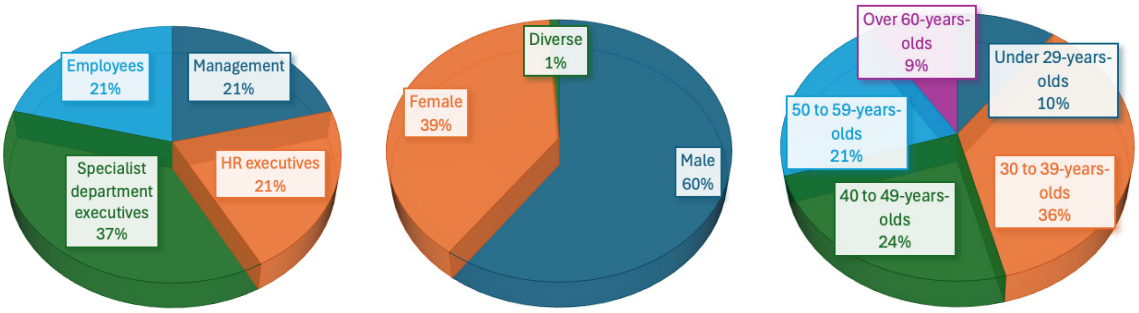

Fig. 4. Structure of respondents (in percent)

RESULTS

A look at the respondents' assessment provides an initial insight into the tools that employees can use to retain their loyalty to an employer. As an HR Report study, conducted for 12 years, shows, a slight shift in priorities can be recognised in recent years. The two frontrunners – *positive work environment* and *competitive pay* – have not changed over time. *Flexible working hours* continue to be an important tool for employee retention. However, *employer reputation*, which was still in third place in 2011/2012, is now in the bottom third of the ranking, and *job security*, which used to be at the top of the list, now only makes it into the bottom third. In contrast, *work-life balance measures* and *company benefits* have increased significantly (Figure 5). This is reflected not least in the influence of the up-and-coming 'Generation Y', which, compared to 2011/2012, is now fully engaged in working life. As relevant surveys of younger people have repeatedly shown, work-life balance has become an integral part of their professional self-image and a key attraction factor in terms of employment. The situation is similar with additional company benefits, which are also gaining in importance in view of longer working lives, lower pension expectations and increasing insecurity. Astonishingly, instruments such as strength-oriented *personnel development* have become less important compared to the past (Mudra et al. 2024, p. 146).

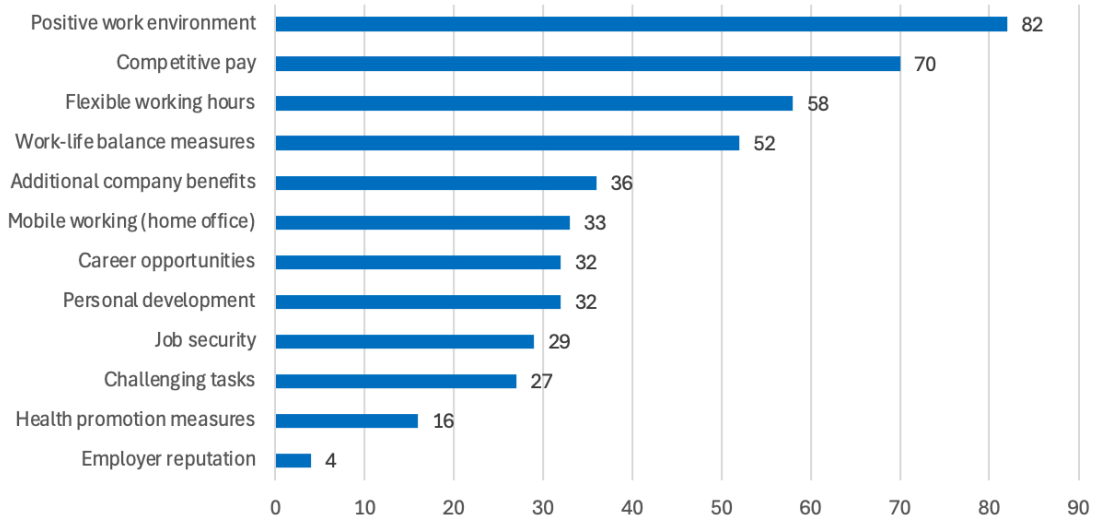

Fig. 5. Particularly suitable measures for employee retention (in percent)

In the survey, almost 50% of respondents stated that there are no specific measures in place to retain employees in certain target groups. This statement was made by representatives of companies with fewer than 500 employees. Where there are differentiated measures, these are particularly related to the position of the employees and are rarely tailored to their individual situation, phase of life, gender, age, or length of service (Mudra et al. 2024, p. 146). It should also be noted that employee retention is something that is deeply individual and can hardly be addressed by an employer using the principle of 'giving everybody an equal share'. The number of HR report studies also show that the implementation of employee retention measures is not always perceived accordingly. It is particularly interesting to note that although health promotion measures, which, for example, already have a high degree of implementation, are hardly considered relevant for employee retention by the participants in the study (Mudra et al. 2024, p. 147).

Other key areas of employee retention highlighted in the HR Report of 2023 are **corporate culture**, **leadership behaviour**, **personnel development**, **career prospects,** and **compensation and benefits.** The results will be presented below:

- Within **corporate culture,** the *promotion of work-life balance* is the number one priority (see Figure 6). In particular, employees without management responsibility attach great importance to work-life balance. This is followed by several measures in the midfield with a similar level of approval, which can be assigned to the current topics of *communication*, *transparency* and *promoting a sense of community* and are also suitable for dealing with the current crisis situations. Topics such as *participation*, *generational awareness* and *diversity awareness* (Mudra et al. 2024, p. 148) are rather less popular.

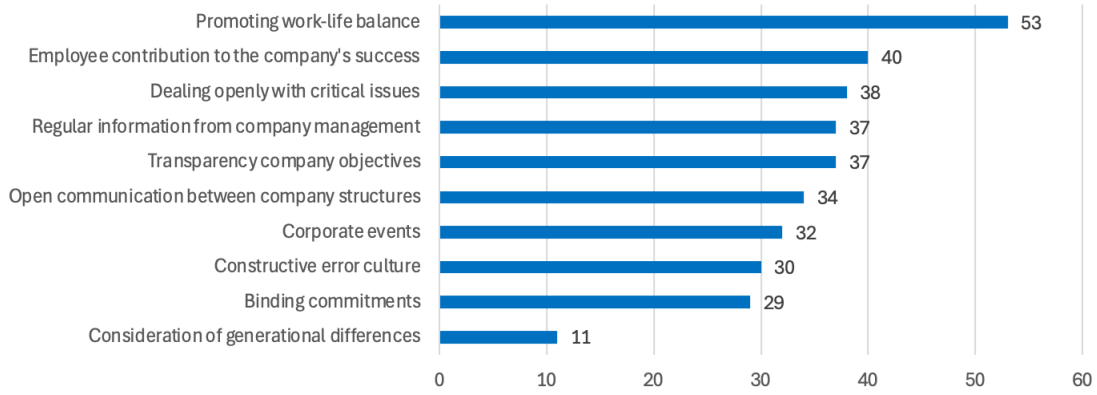

Fig. 6. Contribution of corporate culture to employee retention (in percent)

- For respondents, **leadership behaviour** that promotes employee retention involves an interplay of various factors (cf. Figure 7). For participants, it is *recognition of performance* in particular that makes the difference, and this is all the more pronounced the older the respondents are. However, *fairness* and *sufficient time for employees* also play an essential role in retaining employees in an organisation (Mudra et al. 2024, p. 149).

Fig. 7. Contribution of management to employee retention (in percent)

- In a changing professional world, the opportunity to constantly develop oneself and to 'stay on the ball' is very important to employees. When asked about the tools that are most likely to promote **personnel development** (see Figure 8), respondents ranked *varied tasks* and the consideration of *work-life balance* almost equally at the top of the list of development opportunities. Access to *development measures for all employees* and *strength-orientated deployment* is also very important to the participants. In addition, *development planning should be individualised* and *transparent* and take place *regularly*. *Management development* should not be neglected either (Rump et al. 2023, p. 17).

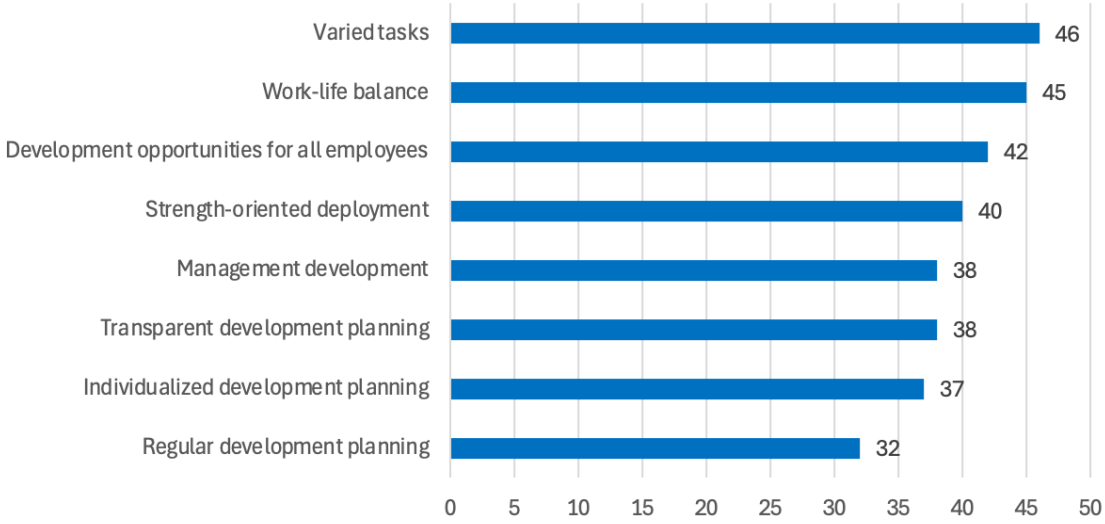

Fig. 8. Contribution of personnel development to employee retention (in percent)

- In addition to development opportunities, **career prospects** also play a decisive role in retaining employees (see Figure 9). It should be noted that the concept of career is changing and is no longer limited to vertical advancement. This is also confirmed by the respondents' evaluation, who assign great importance to the equal value of specialist, project and management careers as well as different career paths opportunities on offer. In their opinion, however, the *consideration of the respective phase of life* has the greatest influence on career planning. Furthermore, the respondents consider a *transparent promotion policy* to be just as crucial as a *strength-oriented career structure*, and a *regular assessment of potential* is also among the most important aspects (Mudra et al. 2024, p. 151).

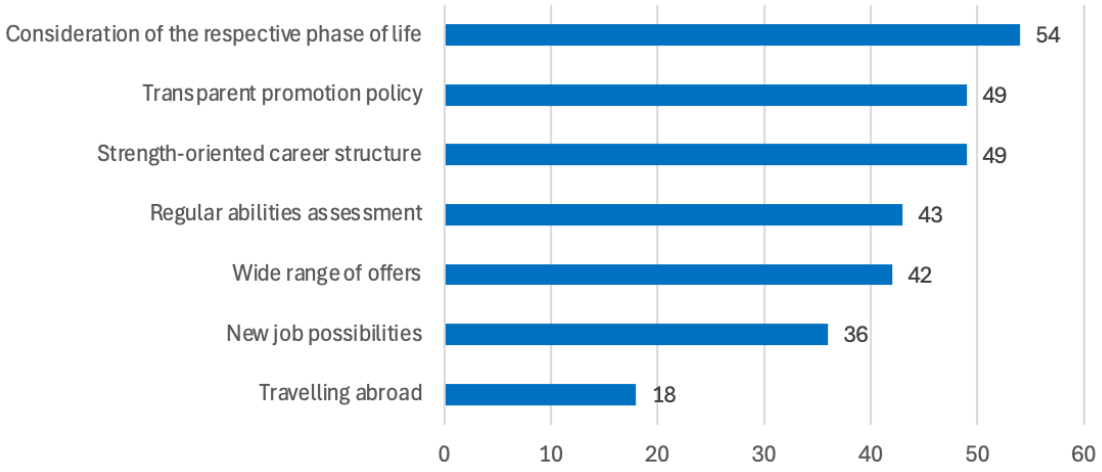

Fig. 9. Contribution of career prospects to employee retention (in percent)

- In the area of **compensation and benefits**, *market-based remuneration* (56%) remains consistently among the top instruments for employee retention within this study series (cf. Figure 10). Along with this, it becomes clear that not only market-based remuneration is perceived as a key retention instrument (56%), but also *performance-oriented remuneration* (51%). It is particularly important for respondents to receive appreciation and recognition for their performance, which is reflected in remuneration. *Contribution to the company's success*, *transparent payment policy* and *qualification-oriented remuneration* receive similarly high approval scores (Rump et al. 2023, p. 23).

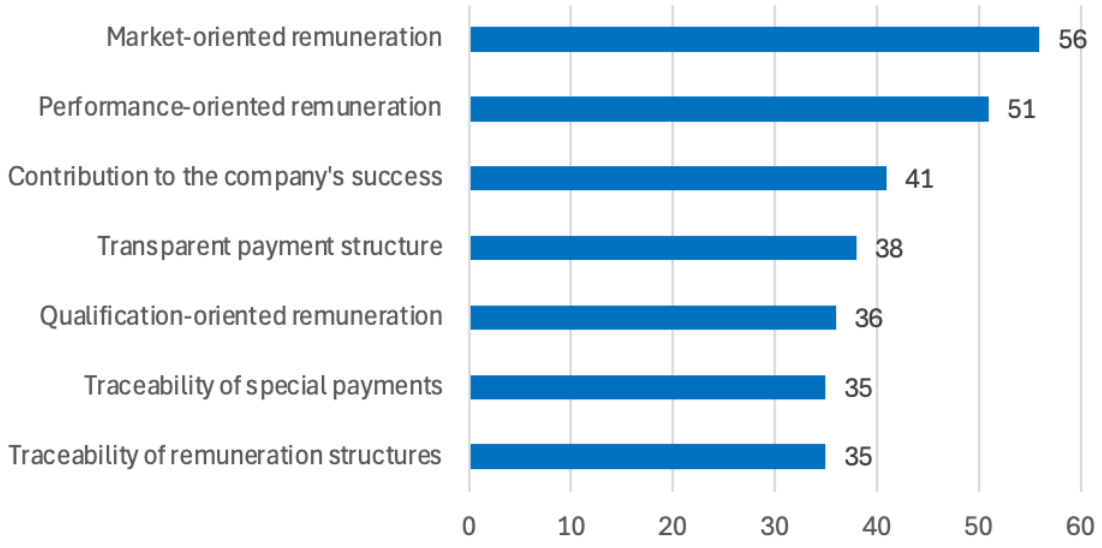

Fig. 10. Contribution of compensation and benefits to employee retention (in percent)

With regard to the **research question** posed at the beginning, these explanations show that companies today have a wide range of options for using targeted incentive concepts to increase their employees' motivation and consequently, their loyalty to the company. The results make it clear that the size of the organisation and its financial resources are of significant importance (Hübers 2022, p. 6). At the same time, more than two-thirds of respondents agree that long-term employee retention has a positive impact on business activities and the company's success. A cross-country comparison shows that respondents

from Switzerland agree significantly less often (59%). In Germany, the figure is 70% and in Austria 72% (Rump et al. 2023, p. 25).

CONCLUSION

The success of a company is largely due to the performance behaviour of its employees. This performance behaviour is seen as a consequence of the respective working conditions (Volk 2004, p. 1). Therefore, the fundamental question of this research work – analysis of **the most important retention factors of employees**, in view of a continuous crisis mood, exacerbated by the war in Ukraine – is the focus of many companies, not least for reasons caused by demographic change. In order for the respective incentive concepts to achieve their desired effect, it is crucial to know which type of loyalty the employees of a company have (Maihöfner 2013, p. 24):

- **affective** (emotional attachment),
- **calculative** (monetary attachment),
- **normative** (moral-ethical attachment).

Based on the results listed, organisations should consider suitable measures in terms of remuneration, corporate culture and leadership. The most important retention factors are summarised once again (Rump et al. 2023, p. 33):

1) **Market-based and performance-related remuneration:** Although many discussions on employee retention revolve around 'soft' factors, appropriate remuneration in line with the market remains one of the most important components of retention. At the same time, payment data can now be viewed on the Internet, allowing employees to assess their own remuneration policy. Therefore, a transparent payment structure and its reference to performance are becoming increasingly important.

2) **Additional company benefits:** This topic is gaining in popularity, especially in relation to retirement provision. As the statutory pension scheme is coming under pressure, younger people expect their employer to step in and make up the difference. In addition, financial participation in the company's success is worthwhile for long-term commitment concepts.

3) **Work-life balance:** Employees expect their employer to do even more to make work-life balance possible. From the respondents' point of view, it is not enough to rely solely on flexible working hours. Instead, the package must consist of several elements – from preventative health measures to personal coaching programmes.

4) **Communication and appreciation:** These two segments are sometimes the most important components within corporate cultures – in everyday life, in the workplace, in every interaction. These values need to be applied in practice, not just documented in"well-meaning" papers. This is where senior management plays a crucial role.

5) **Plenty of time for leadership**: Leaders need more time for leadership tasks, especially in times of the New Normal, so that they are able to respond adequately to the needs and concerns of their team members. To fulfill this task, leaders also need high emotional and communicative skills. In the future, these skills will be critical to winning over employees. As a result, professional skills are increasingly taking a back seat.

6) **Regular measures for employee retention:** Every measure and its impact on employee retention must be analysed at regular intervals. This is the only way to ensure which measures are target-oriented and which are ineffective.

In conclusion, it can be stated that the research results of this work make it all the more evident that the concept of effective personnel retention consists of multiple factors and, because of different segment-specific employee characteristics and retention determinants, it requires an individual approach in the sense of differentiated personnel work. As a result, future studies should expand the scope of the current analysis, for instance, by examining additional success factors and consequences (Felfe 2008, p. 237). Nevertheless, it is not only essential to carry out regular assessments, but also to clarify responsibilities within the organisation. Taking this into consideration, the main objective of HR management should be to promote contemporary employee retention concepts, which in turn could generate company commitment and maintain the resulting employee satisfaction.

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ЗАДЪРЖАНЕ НА СЛУЖИТЕЛИТЕ – ЕДИН ОТ НАЙ-ВАЖНИТЕ ФАКТОРИ ЗА УСПЕХ В КОНТЕКСТА НА ДЕМОГРАФСКИТЕ ПРОМЕНИ

Резюме: *Продължаващите демографски промени и кризи се отразяват драматично на пазара на труда през последните години. Броят на квалифицираните работници намалява, което довежда до така наречената „Война за таланти“. Вече не работодателите избират квалифицираните работници, а служителите са, които избират своите работодатели. Поради това задържането на персонала все повече се превръща в предизвикателство за много компании. Особено висококвалифицираните кадри проявяват все по-голяма склонност към смяна на работата. През последните години особено значение се отдава на удовлетвореността от работата на служителите, за да се повиши лоялността към компанията. Въпреки комплексните мерки за повишаване на удовлетвореността от работата обаче времето, което някои служители прекарват в едно предприятие, е кратко. Именно тук е мястото на настоящото проучване. Досега в изследванията по индустриална и организационна психология не е установен определен подход, който да обяснява цялостно професионалната лоялност към работодателя. Ето защо настоящата статия има за цел да анализира най-важните фактори за задържане на днешните служители и съответно да ги насърчи в рамките на подходящи мерки. Същевременно резултатите трябва да подчертаят значението на корпоративната култура, лидерските качества, развитието на персонала, възможностите за кариера и възнагражденията, които са ключови фактори за установяване на ангажираност към компанията. Поради тази причина във времена на недостиг на работна ръка и умения е важно не само да се подобри имиджът на работодателя, но и да се работи за задържане на ценните служители в организацията в дългосрочен план.*

Ключови думи: *задържане на служителите, недостиг на квалифицирани работници, демографски промени, корпоративна култура, лидерство, развитие на персонала*

Кристиан Конрад, докторант
Университет по библиотекознание и информационни технологии
E-mail: christian.conrad@vodafone.de

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

MANAGEMENT APPROACHES IN TIMES OF NEW WORK

Nathalie Christin Weiß
University of Library Studies and Information Technologies

Abstract: *Over the last few years, work styles, behaviour and concepts have been undergoing a fundamental change.New Work describes the structural changes in the world of work. Digitalisation, globalisation and the use of artificial intelligence are among the causes of these changes. New Work is paving the way for human-centred, modern and flexible work organisation.To remain competitive, companies and managers need to respond to this change. The present article looks at possible management approaches to actively promote this change and is based on a literature research with sources from specialist books, trade journals, online articles and studies. The term New Work was first coined in the 1970s and describes the idea that people should do follow their intrinsic interests. The flexibility of working hours and location, the importance of training and development, meaningfulness and agile work all stand for New Work. The role of the manager is changing, the traditional leader is transforming from a mere commanding figure to a coach within a structure of flat hierarchies. The traditional management concept of control and organisation of day-to-day tasks is turning into leadership that fosters empathy, creativity or inspiration. Approaches such as digital, agile or transformational management are taking centre stage.*
Keywords: *management, New Work, purpose, flexibility, agility*

INTRODUCTION

The world of work has been undergoing a significant change – and not just since the coronavirus pandemic. Companies have been thinking about the need for digitalisation or the shortage of skilled workers for years, with the first lockdown acting as a kick-start for change. This has accelerated a change in social framework conditions and has posed a major challenge for many companies (Bremer 2024).

New Work is the result of cultural change and the transformation of previous working styles, behaviour and concepts. The triggers for this are manifold: connectivity, globalisation and digitalisation, as well as demographic developments. The question of how societies and companies react to the latest New Work megatrend is becoming increasingly important (Bergmann quoted from Helmold, 2022).

In order to remain competitive, it is essential for companies to respond to these changes. Employees no longer come into the office every day, but rather work remotely from home or sit with their laptop in Bali, Hawaii or South Africa. To ensure that decentralised teams continue to work together successfully, it is important that managers are open to the above mentioned changes (Helmold 2023).

RESEARCH METHODOLOGY

The following paper is based on a literature research which focuses on the understanding of New Work and the appropriate management approaches for this work environment. The literature review includes existing sources and data from journals, textbooks, online articles and studies. Firstly, the topics surrounding New Work are analysed in order to understand what is meant by this term. Theories on leadership are then developed and various leadership approaches are described that are of great importance in times of New Work.

RESULTS

When confronted with the changing world of work, it is hard to avoid terms such as ‘New Work’ or ‘Working World 4.0’ (Arbeitswelt 4.0).

Working World 4.0 refers to the changes in the world of work that are associated with digital transformation.

New technologies are making work increasingly flexible, computerised and interconnected. Job profiles, processes and task profiles are changing or being created from scratch. This affects development and knowledge work as well as production work.

Work 4.0 is leading to far-reaching changes in management and organisational structures as well as changes in corporate culture. The term 'New Work' is often used in this context. Work 4.0 mainly focuses on strategies for coping with digital transformation, while New Work is concerned with the change in terms of meaning and values, which leads to new expectations on the part of employees. The approaches of Work 4.0 and New Work influence each other (New Work: Buzzword oder Allheilmittel? 2022).

The term New Work (German: Neue Arbeit) was coined back in the 1970s by social philosopher Prof. Dr Frithjof Bergmann (Haufe Akademie GmbH & Co. KG), who studied the consequences of automation of car factories. With New Work, he created a concept that reverses traditional wage labour: work must serve people, not the other way around. People should do what they want deep down in their hearts. Bergmann defined New Work as follows: 'New Work is the work that a person really wants to do.' (New Work: Buzzword oder Allheilmittel? 2022).

This concept is more relevant today than ever before (New Work: Buzzword oder Allheilmittel? 2022).

Nowadays, New Work describes the structural change in the world of work. Globalisation, digitalisation and the use of artificial intelligence are among the reasons for this and they are opening up new possibilities in the organisation and execution of work (Haufe Akademie GmbH & Co. KG).

New Work is paving the way for a modern, flexible, people-centred work organisation (New Work: Buzzword oder Allheilmittel? 2022) and is a collective term for various work models with new approaches such as:

- Flexibility of working time and place: New Work means freedom to decide when and where to work. Covid-19 has given digital collaboration a real boost, with many people now working from home. The flexibility between office and home office, and the freedom it brings, is also part of Work 4.0. Such a privilege reduces care stress and commuting time and creates more free time for relaxation (New Work: Buzzword oder Allheilmittel? 2022).
- Further training: As artificial intelligence and robots are going to take over routine tasks in the future, the demands on humans will change. New skills will have to be learnt, and abilities such as resilience, innovation skills and data literacy will become increasingly important. A degree or a training programme is no longer enough to teach all the skills required for a specific position in professional life. It is therefore essential that companies that want to retain and develop employees in times of New Work offer various further training opportunities (New Work: Buzzword oder Allheilmittel? 2022).
- Purpose and meaningfulness: Back in the 1970s, Frithjof Bergmann expressed what is a key question for people today: What is the meaning of our work? Companies should name their own ideas and their mission and should communicate these to their employees in a meaningful way. Employees should understand the meaning behind their daily work and thus be more productive and motivated at work (New Work: Buzzword oder Allheilmittel? 2022).
- Agility and mindset: Another important part of New Work is agility. This includes an agile mindset, but also agile methods. In today's world, employees need to be able to adapt quickly to changes and be flexible in relation to new challenges, which is why an agile mindset is particularly important. Agile methods are also tools that provide support and promote an incremental way of working. (New Work: Buzzword oder Allheilmittel? 2022).
- Digital and hybrid work: In recent years, it has become clear that work can also be done digitally. In times of New Work, companies are creating the conditions for digital collaboration. Technical infrastructures should be made available and the corporate culture should also take hybrid forms of working into account (New Work: Buzzword oder Allheilmittel? 2022).

The acronym VUCA is often used to summarise various forms of requirements. It dates back to the 1990s and was used during the Cold War to describe a threat situation (Bremer 2024). Today, the extended VUCA construct is used to describe current political, societal and social conditions that are

characterised by uncertainty, rapid change and unpredictable events (Bremer 2024).

The VUCA world consists of the following contents:

- **Volatility** refers to fluctuations, such as unforeseeable events and changes in framework conditions, on the basis of which new political guidelines are drafted or new technologies and trends are developed.
- **Uncertainty** describes the rapidly changing trends and shifting values that provide a poor basis for decision-making and planning. This is triggered by the poor predictability of events.
- **Complexity** in the VUCA framework, means the difficulty of knowing all the factors that can be included in the decision-making process. The impact of different factors is becoming increasingly difficult.
- **Ambiguity** refers to ambiguity, i.e. the lack of a clear interpretation when making decisions. Due to too much data from too many different sources of information, it is difficult to interpret the implications of a decision (Bremer 2024).

In the VUCA world, companies must remain agile and flexible in order to adapt to rapid change. In this environment, it is crucial to think flexibly, react quickly and seize opportunities to succeed (Bremer 2024).

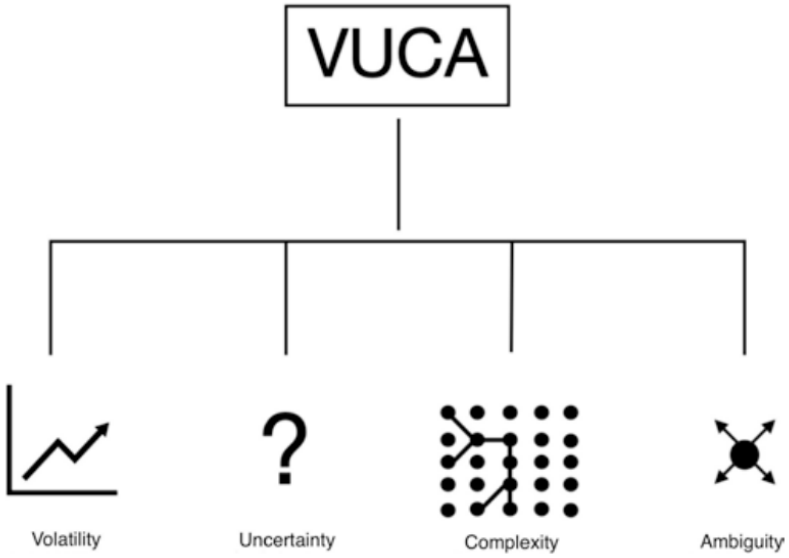

Fig. 1. VUCA world (Modern Corporate Management 2024)

Leadership approaches

Leadership can be interpreted as the wish to influence the behaviour of others in order to achieve common or personal goals. Managers or supervisors are generally the leading persons in organisations. Innovative and modern leadership means the ability to recognise and combine future-oriented qualities and characteristics. Successful leadership means that employees identify with the company's goals and are motivated and committed to achieving them (Helmold 2023).

Due to the changing framework conditions for companies and markets as a result of New Work, it is extremely important to react correctly and establish the necessary processes within the company to ensure competitiveness. The term 'new leadership' is based on a number of theories that highlight modern types of leadership in the new world of work. These include concepts such as digital leadership, agile leadership and shared leadership. Management is no longer just a question of delegating tasks, but of promoting the independence of employees. The traditional manager is transforming from a pure commanding figure to a coach within flat hierarchies (Helmold 2022). In the traditional leadership concept, the leader is there to exert control and to organise day-to-day processes. A leader in the New Leadership, on the other hand, leads through creativity, empathy or inspiration (Helmold 2023).

Many elements of transformational leadership are very important for new management: sharing a

vision, acting as a role model and leading through inspiration and empathy. Some forms of new leadership are briefly presented below.

Digital leadership

In the age of New Work, a great number of workplaces are no longer located exclusively in the office. Many employees work from home or from anywhere else in the world. Digital leadership is the key factor in enabling teams to work together successfully in the digitalised world. Managers need to organise workflows and processes online and to coordinate their employees. Everyone in the team should have the feeling that there is a network for open questions – despite the physical distance. Updates in the form of messages, online meetings or notes are important so that everyone in the team feels informed (Sedlmeier 2021).

No matter what one does, it always boils down to one's own attitude, be it training for a marathon or doing a professional task. Whether or not a leader succeeds as such in today's VUCA world is of equal importance. Managers should be willing to accept digitalisation unconditionally, because such an attitude determines the extent to which they allow change. It is perfectly acceptable for a manager to scrutinise their own attitude and then remove any blockages to change processes through coaching.

The ability to be a good listener is also particularly important in digital leadership. Facial expressions and body language are quickly lost in online meetings, so words have a different weight. This also includes accepting conflicts and complaints. Employees feel valued when the leader is a good listener; as a result, problems at work are discussed more openly (Deutsch 2020).

Agile leadership

Agile leadership means that companies have to adapt to changes in framework conditions as quickly as possible. Openness to new ideas, communication and flat hierarchies are important values of agile leadership.

Agility in the context of a company means that it is able to adapt its business model to new market requirements in the shortest possible time. Agile companies act proactively, take initiative and seize new opportunities. In particular, an agile company is characterised by 'being agile' (mindset) and 'doing agile' (methods). In times of New Work, agility is an important management principle that guarantees success in a fast-moving world. In an unpredictable market world, companies can survive better by implementing agile approaches rather than linear principles (Helmold 2022).

Transformational leadership

Transformational leadership received a lot of attention back in the 1970s from the political scientist James McGregor Burns (Kraus/Kreitenweis 2020) and later in 1985 from the organisational psychologist Bernhard M. Bass (Weibler 2016). In the era of New Work, transformational leadership again plays an overarching role, as it focuses on the development of employees: they are motivated to strive for something higher (Kraus, Creitenweis 2019). Goals, values and ideals are transformed and elevated to "higher positions' (Felfe 2006). Short-term and selfish goals are replaced by long-term ideals and values that convey meaning. The self-image of employees is also stabilised, resulting in greater commitment and self-confidence (Felfe 2006).

Transformational leadership is characterised by four leadership behaviours:

1. **Idealised influence** describes the particular importance of the role model function and defines leadership behaviour in which the leader conveys and exemplifies ideals and values. Through strength of character, moral behaviour, credibility and virtue, the leader earns the trust, respect and recognition of employees.

2. **Inspirational motivation** refers to leadership behaviour in which the transformational leader has attractive notions and views about the future and communicates these to his/her employees. By embodying optimism, giving meaning to the organisational goals and emphasising the performance potential of the team, employees are motivated.

3. **Intellectual stimulation** encourages creative and innovative thinking among employees and aims to promote problem-solving skills. Problems are placed in different contexts and existing assumptions are constantly examined. Employees are motivated to find their own solutions; mistakes are tolerated and not publicly criticised. Employees are encouraged to work independently through transformational leadership behaviour and feel that they are taken seriously as a result.
4. **Individual treatment** takes into account essential personality traits of employees as a basis for leadership behaviour. The leader acts as a coach or mentor and recognises the individual development needs of employees. This systematically develops their potential, skills and strengths (Weibler 2016).

The following quote describes the positive effects that are possible through transformational leadership (Schmidt 2011): *"Transformational leaders motivate others to do more than they originally intended and often even more than they thought possible." (Bass 1994)*

If a manager leads in a transformational way in times of New Work, this increases employee motivation, which in turn leads to better performance (Schmidt 2011).

CONCLUSION

To sum up, it should be emphasised that today's working world is characterised by structural changes. New Work offers a modern, flexible and people-centred working environment. In order to remain competitive and to help in the implementation of this change, companies and managers need to adapt. The flexibility of the workplace and the increasing importance of meaningful work are leading to new demands on companies and managers.

The role of the manager is changing from that of a mere boss to that of a coach within a company structure with hierarchies. Digital, agile or transformational leadership approaches are becoming increasingly important. If companies and managers open up to these changes, there are many opportunities to help advance change and realise new potential.

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ПОДХОДИ ЗА УПРАВЛЕНИЕ В УСЛОВИЯТА НА „НОВА РАБОТА“

Резюме: *От няколко години насам стиловете, поведението и концепциите за работа претърпяват фундаментални промени. „Нова работа“ описва структурните промени в света на труда. Сред причините за тези промени са цифровизацията, глобализацията и използването на изкуствен интелект. Новата работа проправя пътя към ориентирана към човека, модерна и гъвкава организация на труда. За да останат конкурентоспособни, компаниите и мениджърите трябва да реагират на тези промени. Този документ разглежда възможните управленски подходи за активно формиране на тази промяна и се основава на литературно проучване с източници от специализирани книги, професионални списания, онлайн статии и проучвания. Понятието „Нова работа“ е въведено за първи път през 70-те години на миналия век и описва идеята, че хората трябва да правят това, което искат дълбоко в себе си. Днес концепцията проправя пътя за ориентирана към хората, гъвкава и модерна организация на труда. Гъвкавостта на работното време и местоположението, значението на допълнителното обучение и развитие, чувството за цел и гъвкавата работа – всичко това е символ на „Новата работа“. Ролята на ръководителя се променя, традиционният лидер се превръща от обикновена командваща фигура в треньор с плоска йерархия. Традиционната концепция за управление с контрол и организиране на ежедневните задачи се превръща в лидерство чрез съпричастност, творчество или вдъхновение. Подходи като цифрово, гъвкаво или трансформационно лидерство заемат централно място.*

Ключови думи: *лидерство, нова работа, цел, гъвкавост, пъргавина, VUCA, трансформационно лидерство*

Натали Кристин Вайс, докторант
Университет по библиотекознание и информационни технологии
E-mail: Nathalie-christin.weiss@dvag.de

ОБЩЕСТВЕНИ КОМУНИКАЦИИ И ИНФОРМАЦИОННИ НАУКИ
PUBLIC COMMUNICATIONS AND INFORMATION SCIENCES

A DUAL-METHOD STRATEGY: ACHIEVING RESEARCH EXCELLENCE

Xenia Brandstätter
University of Library Studies and Information Technologies

Abstract: *This article investigates the effectiveness of a mixed-method approach that combines laboratory experiments and guided interviews to enhance research outcomes in complex fields. By leveraging the strengths of both methodologies, the study aims to compensate for their respective weaknesses. Laboratory experiments offer precise control and measurement of cause-effect relationships within a structured environment, yielding quantitative data that supports generalizable conclusions. In contrast, guided interviews capture the subjective perceptions and attitudes of participants in natural contexts, providing rich qualitative insights that deepen understanding. The integration of these methods enhances both the validity and reliability of findings, creating a holistic analytical framework that reflects the multifaceted nature of research phenomena. Furthermore, this mixed-method combination allows researchers to not only quantify trends but also explore underlying motivations and contextual factors influencing behavior. The article emphasizes the value of this approach for addressing intricate research questions, demonstrating its capacity to yield comprehensive, actionable insights that can inform practice and drive further inquiry. Ultimately, the mixed-method strategy is positioned as a robust foundation for future studies aiming to unravel the complexities of human behavior in diverse contexts.*
Keywords: *Mixed-methods research, Laboratory experiments, Guided interviews, Comparison of methods*

INTRODUCTION

In contemporary research, the integration of diverse methodologies has become essential for capturing the multifaceted nature of complex phenomena. The mixed-methods approach, which combines quantitative and qualitative techniques, has gained prominence in fields such as social sciences and applied research, where researchers benefit from its capacity to deepen and broaden analysis (Creswell and Plano Clark 2011, p. 5). By bridging quantitative methods like laboratory experiments with qualitative approaches such as guided interviews, mixed-methods research supports a comprehensive understanding that accounts for both statistical rigor and contextual depth (Johnson and Onwuegbuzie 2004, p. 14).

This article focuses on two distinct methodologies – aboratory experiments and guided interviews – evaluating both their individual advantages and their limitations within the context of a mixed-methods framework. Laboratory experiments, known for their capacity to isolate variables and establish cause-and-effect relationships, provide controlled conditions ideal for generalizable findings. However, this environment may sometimes overlook the subtleties of individual perceptions, a gap that can be addressed through guided interviews (Tashakkori and Teddlie 2003, p. 4). Guided interviews, by contrast, enable researchers to explore participants' experiences and motivations in a nuanced manner, adding contextual depth that complements the quantitative data derived from experimental settings (Bryman 2006, p. 8).

This study aims to illustrate how combining laboratory experiments and guided interviews within a mixed-methods framework offers a more balanced perspective by leveraging the strengths of each approach. This dual-method approach not only enhances the robustness and reliability of research findings but also facilitates a richer contextual understandin – especially valuable in fields such as digital environments where human behavior and perception intersect. The following sections will delve into the practical application of each method, assess their complementary benefits, and discuss the implications of this combined approach for capturing insights that are both broad in scope and profound in detail.

THEORETICAL FOUNDATIONS

Definition and Characteristics of Laboratory Experiments

Laboratory experiments are systematic investigations carried out in controlled environments to test specific hypotheses. This method has become prominent in social sciences, particularly after World War II, as new technological advancements allowed for more precise control over variables (Webster & Sell 2014, pp. 5–6). In laboratory experiments, one or more independent variables are manipulated to observe their effect on dependent variables, while other factors are controlled, often through the use of control groups. This structured approach minimizes confounding factors, allowing researchers to reliably examine causal relationships (Webster & Sell 2014, pp. 64, 148).

Thereby, laboratory data collection typically involves quantitative measurements that are analyzed statistically to assess the significance of findings. This process often includes removing errors or outliers to ensure data reliability, followed by statistical analysis with software like SPSS or Excel to identify patterns or trends (Fiske et al. 2010, pp. 94–99). The goal is to produce generalizable insights, which makes laboratory experiments particularly useful for identifying overarching trends and validating hypotheses in a controlled setting.

Definition and Characteristics of Guided Interviews

Guided interviews are a qualitative research method designed to explore participants' experiences, motivations, and perceptions in depth. Unlike quantitative methods, which typically rely on standardized and large-sample analysis, guided interviews allow for open-ended, non-standardized data collection, often with smaller samples to gain insights into specific social phenomena (Brosius et al. 2012, p. 9; Flick et al. 2017, p. 14). This method is inductive, focusing on understanding social reality through the subjective interpretations of participants (Hopf 2016, p. 15f).

In guided interviews, data is often collected in participants' natural environments to maximize authenticity, and analysis typically follows Mayring's qualitative content analysis. This approach is structured enough to handle large qualitative datasets yet flexible enough to capture nuances in individual cases (Kelle & Erzberger 2000, p. 301). While this method provides rich, contextual insights, it can face challenges in achieving full objectivity, as the coding process can be influenced by the researcher's interpretations (Hopf 2016, p. 16).

Fundamentals of the Mixed-Method Approach

The mixed-methods approach combines quantitative and qualitative methods to provide a comprehensive analysis of complex research questions. This integration leverages the strengths of each approach: quantitative methods contribute generalizable data and statistical precision, while qualitative methods offer contextual depth and understanding of subjective experiences (Creswell & Plano Clark 2011, p. 5). Mixed-methods research is particularly effective for studies that require both numerical data and narrative insights, enabling researchers to address multifaceted phenomena in a holistic manner (Johnson, Onwuegbuzie, and Turner 2007, p. 114).

A core characteristic of mixed-methods research is the triangulation of data, which combines results from quantitative and qualitative analyses to enhance validity and reliability. Depending on the research question, different mixed-method designs – such as exploratory, explanatory, or convergent designs – are chosen to sequence or integrate methods in a way that maximizes insight (Creswell 2014, pp. 15–18). While mixed-methods research allows for a more nuanced understanding of complex phenomena, it also presents challenges, requiring expertise in both methods and careful integration to ensure coherent results (Bryman 2007, p. 21). Despite these challenges, the mixed-methods approach remains a powerful strategy for investigating multi-layered research questions by combining numerical rigor with in-depth analysis.

RESEARCH METHODOLOGY

Conceptualizing the Combination of Experiment and Interview

In the mixed-methods framework, combining laboratory experiments with guided interviews offers

a methodological strategy that harnesses the strengths of both quantitative and qualitative approaches. Laboratory experiments bring precision and control, allowing researchers to isolate variables, control confounding factors, and establish causal relationships. This control produces statistically robust data that can be generalized across populations, making it particularly suitable for examining universal patterns or testing specific hypotheses (Webster & Sell 2014).

Conversely, guided interviews provide the depth and flexibility needed to understand subjective experiences and contextual nuances that may be overlooked in controlled settings. The semi-structured nature of interviews allows researchers to explore participants' motivations, interpretations, and personal narratives, generating rich qualitative data (Hopf 2016). By combining the two, researchers can validate quantitative findings with qualitative insights, creating a holistic analysis that explores not only "what" happens but "why" it happens. This conceptual pairing ensures that quantitative data is contextually grounded, and that qualitative insights are supported by measurable patterns (Creswell & Plano Clark 2011).

Research Design for Mixed-Methods

Selecting and sequencing methods within a mixed-methods design depends on the research question and objectives, with the aim of structuring data collection and analysis phases to optimize insights. The three primary design types are exploratory, explanatory, and convergent designs (Creswell 2014):

- **Exploratory Design:** Begins with qualitative research, such as guided interviews, to explore phenomena and develop hypotheses. The quantitative phase, such as a lab experiment, then tests these hypotheses, lending statistical rigor to preliminary findings.
- **Explanatory Design:** Starts with quantitative data collection, such as a laboratory experiment, to establish foundational results. The subsequent qualitative phase helps interpret these results in detail, providing contextual understanding of the quantitative findings.
- **Convergent Design:** Quantitative and qualitative data are collected simultaneously and then compared or combined in the analysis phase. This design is advantageous when both types of data need to be equally weighted and synthesized to provide comprehensive answers (Greene et al. 1989).

Criteria for Validity and Reliability in the Mixed-Method Approach

Ensuring validity and reliability within mixed-methods research requires attention to the methodological rigor of both quantitative and qualitative components and their integration:

- **Validity in Mixed-Methods:** Mixed-methods research emphasizes both internal and external validity. Internal validity in laboratory experiments is maintained by controlling for confounding variables and systematically analyzing quantitative data for statistical significance. In the qualitative phase, validity is supported through techniques like participant validation and triangulation, where multiple perspectives are used to verify findings (Johnson et al. 2007).
- **Reliability:** Reliability in laboratory experiments is achieved through consistent procedures and standardized protocols, ensuring reproducibility of findings. In guided interviews, reliability is enhanced by using a structured interview guide and by following rigorous coding and analysis methods, such as Mayring's content analysis, to maintain consistency across interviews (Kelle & Erzberger 2000).
- **Integration Validity:** A core challenge in mixed-methods research is achieving integration validity – ensuring that the quantitative and qualitative findings are coherently connected to answer the research question more comprehensively. This involves careful synthesis, where the results are placed in dialogue, verifying that each method complements rather than contradicts the other (Bryman 2007).

By adhering to these validity and reliability criteria, researchers can ensure that their mixed-methods approach not only combines but enriches the insights provided by each method independently, allowing a nuanced and balanced understanding of complex phenomena.

Individual Methods: Advantages and Disadvantages

Laboratory Experiment

Laboratory experiments provide a high level of objectivity as they are conducted in controlled settings that allow for precise measurement of variables. Researchers can isolate specific variables and control external factors, minimizing confounding influences and ensuring that observed effects are directly attributable to the manipulated variables. This high control facilitates replicability, allowing other researchers to reproduce the experiment under similar conditions, thereby confirming or challenging the findings. The replicable nature of lab experiments contributes to scientific rigor and supports the generalizability of results, particularly in quantitative research where statistical significance is prioritized (Webster & Sell 2014).

A key drawback of laboratory experiments is their artificial environment, which may not accurately represent real-world settings. Participants may behave differently in a lab than they would in natural contexts, which can limit the external validity or ecological relevance of the findings. Additionally, bias may be introduced through the laboratory setting itself, as participants might alter their responses based on the awareness that they are being studied – a phenomenon known as the Hawthorne effect. This can lead to results that do not fully capture authentic behaviors, thus limiting the broader applicability of laboratory findings (Cook & Campbell 1979).

Guided Interview

Guided interviews allow for in-depth exploration of participants' perspectives, emotions, and experiences. Unlike structured quantitative methods, guided interviews are flexible and can be adapted in real-time based on the respondent's answers, enabling a more tailored approach to data collection. This adaptability is particularly valuable for capturing individual nuances and contextual factors, which may reveal deeper insights that structured questionnaires or experiments might overlook. The open-ended nature of interviews thus supports a richer, more qualitative understanding of the research subject (Kelle & Erzberger 2000).

One disadvantage of guided interviews is the subjectivity inherent to qualitative data, as the responses are influenced by both the interviewer's interpretations and the participant's perspectives. This may introduce bias and variability in data interpretation, impacting the reliability of findings. Guided interviews are also time-intensive, both in terms of conducting interviews and analyzing data, which can limit the sample size and make larger-scale studies challenging. Additionally, comparability between interviews is often restricted, as responses are unique to each individual and may not be easily standardized, making it difficult to draw generalizable conclusions from the data (Hopf 2016).

By understanding these advantages and disadvantages, researchers can make informed decisions on method selection, balancing control and objectivity with depth and contextual richness based on the study's objectives.

The table below is based on the above arguments and illustrated the advantages and disadvantages in one view.

Table 1. *Advantages and Disadvantages of Laboratory Experiments and Guided Interviews*

Method	Advantages	Disadvantages
Laboratory Experiment	**Objectivity**: Ensures high precision and minimal bias through controlled settings.	**Artificial Environment**: May not reflect real-world settings, limiting external validity.
	Control of Variables: Isolates and controls variables, allowing for clear cause-effect relationships.	**Potential Bias**: Participants may behave differently in lab settings (Hawthorne effect).
	Replicability: High reproducibility supports scientific rigor and data reliability.	
Guided Interview	**In-Depth Insights**: Captures participants' emotions, experiences, and contextual details.	**Subjectivity**: Responses can be influenced by interviewer and participant perspectives, causing bias.
	Flexibility: Allows adaptive questioning based on respondent answers, offering a tailored approach.	**High Time Requirement**: Conducting and analyzing interviews is time-consuming.
	Adaptability: Can respond to and clarify unique aspects of each participant's perspective.	**Limited Comparability**: Qualitative data may lack standardization, making generalizations difficult.

RESULTS

The combination of laboratory experiment and guided interview as a mixed method offers the possibility of combining the precision and control of the experimental method with the depth and flexibility of qualitative interviews. This enables a more comprehensive analysis that takes into account both causal relationships and subjective experiences, making the results more robust and relevant to practice.

Mixed-Method Combination of Laboratory Experiment and Guided Interview

The mixed-method approach integrating laboratory experiments and guided interviews serves to leverage the strengths of both quantitative and qualitative research methodologies. The primary objective is to achieve a comprehensive understanding of complex phenomena, particularly in the context of sales

psychology across different generations.

By combining these two methods, researchers can gather precise quantitative data from controlled experiments, which allows for clear cause-and-effect analyses. Simultaneously, guided interviews provide rich qualitative insights that delve into participants' perceptions, attitudes, and motivations. This dual approach not only enhances the robustness of the findings but also allows researchers to triangulate data, providing a more holistic view of the research question. Ultimately, the combination aims to produce actionable insights that can inform practice and policy, particularly in marketing strategies tailored to specific generational cohorts.

The integration of laboratory experiments and guided interviews follows a structured process, typically comprising the following phases:

1. **Pre-Experimental Interviews:** Conducting guided interviews before the laboratory experiments allows researchers to gather initial insights into participants' experiences and expectations. These interviews can help refine the experimental design by identifying relevant variables and factors to consider.
2. **Laboratory Experiments:** In a controlled setting, researchers manipulate independent variables and measure dependent outcomes. This phase provides quantitative data that can be statistically analyzed to identify patterns and relationships.
3. **Post-Experimental Interviews:** After participants engage in the laboratory experiments, follow-up guided interviews can be conducted to explore their thoughts and feelings regarding their experiences. This qualitative data provides context to the quantitative findings, helping to explain why certain behaviors were observed and enhancing the understanding of participants' subjective experiences.

This timeline not only supports a seamless flow of data collection but also facilitates a deeper contextualization of the experimental results through qualitative narratives.

The integration of quantitative and qualitative data in a mixed-method approach enhances the validity and reliability of research findings. Triangulation, which involves corroborating data from multiple sources, allows for a more nuanced interpretation of results.

- **Complementary Insights:** The quantitative data from laboratory experiments can highlight general trends and statistical significance, while the qualitative data from guided interviews can provide context and depth to these trends. For instance, while a lab experiment may show that a specific sales tactic increases conversion rates among a particular age group, the subsequent interviews can reveal underlying psychological mechanisms that explain this effect.
- **Cross-Validation:** Findings from one method can be used to validate or challenge results from the other. For example, if interviews indicate that participants had strong emotional responses to a marketing strategy, researchers can look for statistical evidence of this response in the experimental data.
- **Developing Hypotheses:** Qualitative insights gathered from interviews can inform the development of hypotheses to be tested in laboratory experiments. Conversely, the results from experiments can inspire new qualitative inquiries, creating a feedback loop that enhances the overall research process.

This structured exploration provides a comprehensive overview of the mixed-method combination of laboratory experiments and guided interviews, highlighting their integration and practical application.

Analysis of the Mixed-Method Combination

The mixed-method approach enhances the validity and reliability of research findings by integrating quantitative and qualitative data. This combination helps address the limitations inherent in using a single method, thus providing a more robust framework for analysis.

- **Triangulation:** By employing both methods, researchers can cross-validate findings. For instance, quantitative data from laboratory experiments can identify trends, while qualitative insights from guided interviews can explain the reasons behind these trends. This cross-verification increases confidence in the results and enhances overall validity.

- **Comprehensive Understanding:** The combination allows researchers to capture a more complete picture of the phenomenon being studied. Quantitative methods can measure the extent of a phenomenon, while qualitative methods can elucidate the nuances and contextual factors surrounding it.
- **Reliability through Replication:** Laboratory experiments often allow for controlled replication, increasing the reliability of quantitative findings. Meanwhile, guided interviews can provide consistent themes across different participant groups, adding an additional layer of reliability through qualitative consistency.

The mixed-method combination fosters a richer exploration of research questions, expanding the range of perspectives and deepening the understanding of complex issues.

- **Holistic Insights:** By merging quantitative and qualitative data, researchers can identify patterns and relationships while also exploring the motivations and perceptions behind them. For instance, sales psychology's effects on different generations can be quantitatively measured through experiments and qualitatively understood through interviews.
- **Enhanced Theory Development:** The qualitative data gathered from guided interviews can inform the development of new hypotheses, which can subsequently be tested through laboratory experiments. This iterative process contributes to theory refinement and expansion, promoting a more nuanced understanding of the subject matter.
- **Diverse Perspectives:** The combination of methods allows for the incorporation of varied participant experiences, leading to a richer dataset that reflects multiple viewpoints. This is particularly valuable in fields like marketing, where understanding consumer behavior requires insights from diverse demographic groups.

Despite its numerous advantages, the mixed-method approach presents certain challenges that researchers must navigate. Integrating and analyzing data from both quantitative and qualitative sources can be complex and requires careful planning.

- **Data Compatibility:** Ensuring that quantitative data can effectively complement qualitative data is crucial. This involves aligning different data types and determining how best to merge them in analysis.
- **Analysis Complexity:** Analyzing qualitative data (e.g., themes from interviews) alongside quantitative data (e.g., statistical trends) can be methodologically challenging. Researchers need to be proficient in both statistical analysis and qualitative coding techniques.
- **Interpretation Issues:** Researchers must be cautious when interpreting results from mixed methods. Conflicting findings between quantitative and qualitative data can complicate conclusions, requiring careful negotiation of differing narratives.

The mixed-method approach often demands more time and resources than single-method studies.

- **Time-Intensive:** Collecting both quantitative and qualitative data can be time-consuming. Planning, executing, and analyzing each method necessitate significant effort and careful scheduling to ensure that both types of data are collected in a complementary manner.
- **Resource Allocation:** Researchers may require additional resources, including specialized software for data analysis and expertise in both quantitative and qualitative methods. This can increase the overall cost of the research project.
- **Participant Engagement:** Engaging participants for both methods can be logistically challenging, as individuals may need to be involved in multiple sessions (interviews and experiments), potentially affecting participation rates.

Resulting from this, the mixed-method combination of laboratory experiments and guided interviews offers a powerful framework for exploring complex research questions, particularly in fields like sales psychology and consumer behavior. While the approach enhances validity, reliability, and depth of understanding, it also presents challenges related to data integration and logistical constraints. Researchers must be mindful of these challenges to maximize the potential of mixed-method research and deliver comprehensive insights into the phenomena under study.

Table 2. *Comparative Analysis of Laboratory Experiments and Guided Interviews in Mixed-Methods Research*

Criteria	Laboratory Experiment	Guided Interview	Mixed-Method Combination
Validity	High internal validity due to controlled conditions	High external validity through naturalistic settings	Increased validity through triangulation
Reliability	High reliability with replicable procedures	Lower reliability due to subjective interpretation	Enhanced reliability through method complementarity
Perspectives	Narrow focus on specific variables	In-depth understanding of individual experiences	Broader perspectives from both qualitative and quantitative data
Data Integration	Primarily quantitative data	Primarily qualitative data	Comprehensive insights by combining both data types
Hypothesis Development	Tests hypotheses through controlled experimentation	Generates hypotheses based on participant feedback	Qualitative insights inform quantitative hypotheses
Time and Resource Investment	More efficient data collection and analysis	Time-consuming data collection and analysis	More time and resources needed for integration
Data Analysis Complexity	Statistical analysis of measurable outcomes	Thematic analysis requiring interpretative skills	Requires complex integration and synthesis of results
Generalizability	Low generalizability due to artificial environments	Limited generalizability due to small sample sizes	Improved generalizability by linking lab findings to real-world contexts

Depth of Insight	Provides superficial, measurable data	Offers deep, rich insights into subjective experiences	Combines quantitative breadth with qualitative depth
Challenges	Potential biases due to artificial settings	Subjectivity can lead to bias in data interpretation	Integration of different data types can be difficult
Logistical Issues	Easier logistical management due to structured design	Requires careful planning for interviews and analysis	Increased logistical complexity and planning required

Discussion

The mixed-method combination of laboratory experiments and guided interviews offers unique advantages and disadvantages that are essential to consider in research design.

- **Advantages:**
  - **Comprehensive Insights:** The integration of quantitative and qualitative data enables researchers to achieve a holistic understanding of complex phenomena, such as consumer behavior influenced by sales psychology across different generations.
  - **Increased Validity and Reliability:** The triangulation of data from both methods enhances the credibility of the findings, allowing for cross-validation and a richer context.
  - **Flexibility in Data Collection:** The combination allows for adaptation in data collection methods, providing room for exploratory insights that may arise during qualitative interviews.
- **Disadvantages**:
  - **Complexity in Integration:** Merging quantitative and qualitative data presents challenges in data compatibility, requiring sophisticated analytical skills and frameworks.
  - **Resource Intensiveness:** The mixed-method approach can demand significant time and resources, from participant recruitment to data analysis, making it logistically complex.
  - **Potential for Conflicting Results:** Diverging findings between the quantitative and qualitative data may lead to interpretative challenges, complicating conclusions.

The combination of laboratory experiments and guided interviews significantly enhances knowledge gain in research. By leveraging both quantitative precision and qualitative depth, researchers can explore not just the "what" of a phenomenon, but also the "why" behind it. This dual lens provides a multi-dimensional understanding of complex behaviors and attitudes, which is especially critical in fields like marketing and social sciences.

- **Enhanced Theory Development:** The iterative process of hypothesis testing and theory generation through qualitative interviews followed by quantitative validation allows for a more dynamic understanding of research questions.
- **Real-World Relevance:** The qualitative insights garnered from natural environments help ground the findings from laboratory settings in real-world contexts, thereby increasing the applicability of the research results.

Overall, the mixed-method approach provides a more nuanced perspective that transcends what each method could achieve individually.

Based on the findings from this analysis, the following recommendations are proposed for researchers considering a mixed-method approach:

1. **Careful Planning:** Develop a clear research design that outlines how qualitative and quantitative components will integrate. This includes establishing protocols for data collection and analysis to minimize potential conflicts.
2. **Training and Collaboration:** Ensure that team members are proficient in both qualitative and quantitative methods. Collaborative efforts between specialists in each area can enhance the quality of data interpretation.
3. **Pilot Studies:** Conduct pilot studies to identify potential challenges in data integration and participant engagement before launching full-scale research. This can help refine the research design and methodologies.
4. **Transparency in Reporting:** When presenting findings, be transparent about the methods used and any limitations encountered. This enhances the reproducibility and credibility of the research.

CONCLUSION

The mixed-method combination of laboratory experiments and guided interviews is highly effective for exploring complex research questions. It enables researchers to combine the strengths of both methodologies, offering a comprehensive framework that enhances validity, reliability, and depth of understanding. By integrating precise quantitative analysis with rich qualitative insights, this approach not only facilitates a more thorough examination of phenomena but also contributes significantly to theory development and practical applications in various fields.

Illustrated by the author in this article, the research highlights the challenges of mixed-method approaches, including data integration and logistical constraints. By discussing these challenges, the author provides guidelines for overcoming them, thus aiding future research efforts.

Looking ahead, several avenues for future research can be explored based on the findings and contributions of this study:

1. Expanding Sample Diversity: Future studies could aim to include more diverse participant samples to enhance the generalizability of findings. Research could explore variations across different demographics, such as age, culture, and socioeconomic status.
2. Longitudinal Mixed-Methods Research: Implementing mixed-method designs in longitudinal studies could yield insights into how consumer attitudes and behaviors evolve over time, particularly in the context of rapid technological advancements and changing market dynamics.
3. Exploration of Specific Sales Strategies: Further research could focus on particular sales psychology strategies, analyzing their effectiveness across different contexts and demographics. This could lead to the development of tailored marketing approaches that resonate with specific consumer segments.
4. Integration of Digital Tools: As digital tools and platforms evolve, future research should explore how these tools can enhance data collection and analysis in mixed-method studies. This could involve using online platforms for conducting interviews or integrating behavioral tracking tools in laboratory experiments.
5. Cross-Disciplinary Collaboration: Encouraging collaboration between disciplines such as psychology, data science, and marketing could lead to more comprehensive studies that utilize mixed-method approaches. This could foster innovation in understanding complex consumer behaviors.

In summary, the mixed-method combination holds great promise for advancing research methodologies, contributing to a deeper understanding of intricate phenomena, and fostering the development of applicable knowledge in an increasingly complex world. By building on the contributions of this study, future researchers can continue to explore the nuances of consumer behavior and the effectiveness of sales strategies in diverse contexts.

This addition outlines the specific contributions of the author while providing clear directions for

future work on the research problem, ensuring a comprehensive conclusion and outlook for the study.

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Table 2. *Comparative Analysis of Laboratory Experiments and Guided Interviews in Mixed-Methods Research*

СТРАТЕГИЯ С ДВА МЕТОДА: ПОСТИГАНЕ НА ОТЛИЧНА ИЗСЛЕДОВАТЕЛСКА РАБОТА

Резюме: *В тази статия се изследва ефективността на подход със смесени методи, който съчетава лабораторни експерименти и насочващи интервюта за подобряване на резултатите от изследвания в сложни области. Като използва силните страни на двете методологии, проучването има за цел да компенсира съответните им слабости. Лабораторните експерименти предлагат прецизен контрол и измерване на причинно-следствените връзки в структурирана среда, като дават количествени данни, които подкрепят обобщаващи заключения. За разлика от тях, ръководените интервюта улавят субективните възприятия и нагласи на участниците в естествен контекст, като предоставят богати качествени прозрения, които задълбочават разбирането. Интегрирането на тези методи повишава както валидността, така и надеждността на констатациите, създавайки цялостна аналитична рамка, която отразява многостранния характер на изследователските явления. Освен това тази комбинация от смесени методи позволява на изследователите не само да определят количествено тенденциите, но и да изследват основните мотиви и контекстуалните фактори, влияещи върху поведението. В статията се подчертава стойността на този подход за решаване на сложни изследователски въпроси, като се демонстрира способността му да дава изчерпателни, приложими прозрения, които могат да информират практиката и да стимулират по-нататъшни изследвания. В крайна*

сметка стратегията на смесените методи се позиционира като стабилна основа за бъдещи проучвания, целящи да разкрият сложността на човешкото поведение в различни контексти.
Ключови думи: *изследване със смесени методи, лабораторни експерименти, насочващи интервюта, сравнение на методи*

Ксения Брандщетер, докторант
Университет по библиотекознание и информационни технолгии
E-mail: xenia.brandstaetter@gmx.d

THE INTERSECTION OF FINTECH AND E-MOBILITY: SHAPING THE FUTURE OF ECO-FRIENDLY TRANSPORTATION SOLUTIONS

Kahtan Abedalrhman[1], Ammar Alzaydi[2], Roumen Nikolov[3], Stoyan Denchev[4]
[1] *Kanzi Business Consultant, Saudi Arabia*
[2] *Department of Mechanical Engineering, King Fahd University of Petroleum and Minerals, Saudi Arabia*
[3] *University of Library Studies and Information Technologies, Bulgaria*
[4] *University of Library Studies and Information Technologies, Bulgaria*

Abstract: *This paper explores the intersection of Financial Technology (FinTech) and Electric Mobility (E-Mobility), highlighting FinTech's crucial role in eco-friendly transportation. It examines how financial innovations like blockchain, smart contracts, and tailored payment systems can drive the adoption and sustainability of electric vehicles (EVs) and infrastructure. The study discusses FinTech's capacity to address E-Mobility's financial challenges, enabling novel models such as E-Mobility as a Service (EMaaS) (Nikolaidou et al. 2017). Additionally, it considers regulatory, ethical, and security issues, providing a balanced view of potential risks and benefits. Through theoretical analysis and case studies, the research offers insights and a roadmap for using financial technology to enhance sustainable transportation, emphasizing the importance of interdisciplinary collaboration for future research and policy-making in FinTech and E-Mobility.*
Keywords: *financial technology, electric mobility, blockchain, smart contracts, electric vehicles*

INTRODUCTION

The integration of Financial Technology (FinTech) and Electric Mobility (E-Mobility) signals a transformative shift towards sustainable transportation, leveraging FinTech innovations such as blockchain and AI to revolutionize financial services and enhance the adoption of electric vehicles (EVs) (Alam 2024; Schueffel 2017). This paper explores how advancements in finance catalyze E-Mobility, addressing opportunities and challenges to guide policymakers, investors, and industry stakeholders.

FinTech has evolved to meet demands for efficient, accessible financial services through technologies like blockchain and AI (Mhlanga 2024; Arner et al. 2017; Thakor 2019). Concurrently, E-Mobility, driven by sustainability goals, focuses on reducing carbon emissions and adopting EVs as alternatives to fossil fuels (Saleh 2024; Sierzchula et al. 2014). Despite challenges such as high initial costs and infrastructure needs, FinTech facilitates E-Mobility through innovative financial solutions (Moriarty & Smart 2024; Mock and Yang 2014; Andoni et al. 2019).

FinTech is undergoing a shift towards digitalization, driven by big data and blockchain technology, enhancing the efficiency and security of financial transactions (Zalan and Lewis 2019; Philippon 2016). E-Mobility progresses with technological advances in EV efficiency and battery costs, supported by expanding charging infrastructure and government incentives (Şimşir and Ghayth 2024; Axsen and Kurani 2013; Hall and Lutsey 2018). The synergy of these trends fosters innovative financial solutions in E-Mobility, promoting investment in sustainable technologies (D'Acunto 2024; Andoni et al. 2019).

This study examines FinTech's impact on the growth and sustainability of E-Mobility, exploring how financial technologies like blockchain and smart contracts can streamline operations and enhance transparency (Sowmya, Sridevi and Rao 2024; Tapscott and Tapscott 2016). It aims to provide insights for strategic decision-making, addressing the financial barriers to EV adoption and the potential for FinTech to contribute to climate change mitigation (Alzaydi 2024; Bocken et al. 2016).

The primary objective is to elucidate how FinTech reshapes E-Mobility, focusing on blockchain, digital payments, and smart contracts (Tarr, Tarr, Thompson and Wilkinson eds. 2023; Yermack 2017). The study evaluates FinTech's role in fostering EV adoption and financial sustainability, exploring regulatory and ethical issues related to privacy and compliance (Lyon and Montgomery 2013). It aims to deepen understanding of FinTech's role in advancing sustainable transportation, offering valuable insights for various stakeholders.

FINTECH: AN OVERVIEW

Financial Technology (FinTech) combines technology with financial services to transform how these services are delivered and accessed. It encompasses innovations from basic banking to complex trading and investment solutions, significantly changing the financial industry due to the widespread adoption of internet and mobile technology (George 2024; Gimpel et al. 2018). Technologies such as digital banking, peer-to-peer lending, and mobile payment systems have made financial transactions more efficient and user-friendly.

Advanced technologies like Artificial Intelligence (AI) and Machine Learning (ML) are leading this transformation, enhancing financial data analysis, personalizing financial advice, and improving fraud detection and investment optimizations (Mhlanga 2023; Huang and Rust 2017). Another significant innovation is blockchain technology, initially important for cryptocurrencies and now extended to supply chain management and secure data sharing, enhancing transaction security and transparency (Abedalrhman et al. 2024; Crosby et al. 2016).

FinTech is reshaping the broader financial ecosystem, supporting economic growth through alternative financing models like crowdfunding, crucial for startups and small businesses (Mollick 2014). It also poses new challenges for regulators who must balance fostering innovation with ensuring consumer protection and financial stability (Karkkainen 2023; Buckley et al. 2015).

The Evolution of Financial Technology

The evolution of FinTech began in the mid-20th century with the introduction of credit cards and ATMs (King 2010). The sector has seen rapid changes marked by technological advancements and regulatory developments, with notable growth from $12 billion to $197 billion in investments from 2014 (FinTech 3.0) reflecting its expansion. Historical milestones like the 1838 commercial telegraph and the 1866 transatlantic cable highlight technology's role in financial globalization (Wilkins 2016; Darolles 2016).

FinTech's historical development is segmented into three phases:

- **FinTech 1.0 (1866–1967):** Integration of basic technology in financial services, remaining largely analog.
- **FinTech 2.0 (1967–2008):** Began with digital evolution, significant technological adoptions for transaction processing, and the shift from analog to digital.
- **FinTech 3.0 (2008-present):** Triggered by the 2008 financial crisis, focusing on regulatory reforms and the rise of startups offering direct financial services like Bitcoin in 2009 and P2P payment systems in 2011.

Today's FinTech, termed **FinTech 4.0**, is characterized by disruptive technologies such as blockchain and open banking, impacting traditional financial models and enhancing customer interaction through AI and machine learning (George 2024). This evolution towards democratization, decentralization, and personalization in finance promises further disruptions and innovations, reshaping the financial landscape for greater financial inclusion and innovation.

The illustration in Figure 1 provides a comprehensive overview of the historical development of FinTech.

Key Technologies in FinTech (Blockchain, AI, Big Data)

FinTech's growth leverages major technological advancements such as blockchain, artificial intelligence (AI), and big data. Blockchain has evolved beyond its initial role in cryptocurrencies,

providing a decentralized ledger that enhances transparency and security, suitable for fraud prevention, smart contracts, and cross-border transactions. This reduces reliance on traditional intermediaries, increasing trust and efficiency in financial services and transforming of the Financial Landscape from 4.0 to 5.0 (Subburayan, Sankarkumar, Singh and Mushi 2024; Tapscott and Tapscott 2016).

AI transforms financial services by personalizing services, enhancing decision-making, and boosting risk management. AI algorithms process vast data sets to improve financial planning, customer service, and security, with tools like chatbots and robo-advisors providing tailored financial advice. AI in risk management aids in anomaly detection and fraud prevention (Ijiga, Idoko, Ebiega, Olajide, Olatunde and Ukaegbu 2024; Bughin et al. 2017).

Big Data analytics examines large data sets to identify patterns and trends, influencing decision-making and customer engagement. Combined with AI, big data enhances predictive analytics, optimizing financial operations and customer interactions (Nalla and Reddy 2024; Mayer-Schönberger and Cukier 2013). Together, these technologies drive FinTech towards more sophisticated, secure, and customer-centric services, continually transforming financial models and creating opportunities for innovation. There is a significant perspective on integrating Industry 5.0 in FinTech (**FinTech 5.0**), addressing identified gaps, and outlining a future research agenda (Kumar, Addula, Seranmadevi and Tyagi 2025; Eskandarany 2024). This process is being driven by technologies like AI, Internet of Things (IoT), big data and human-centric digital twins (Dai, Giang and Kiet 2024).

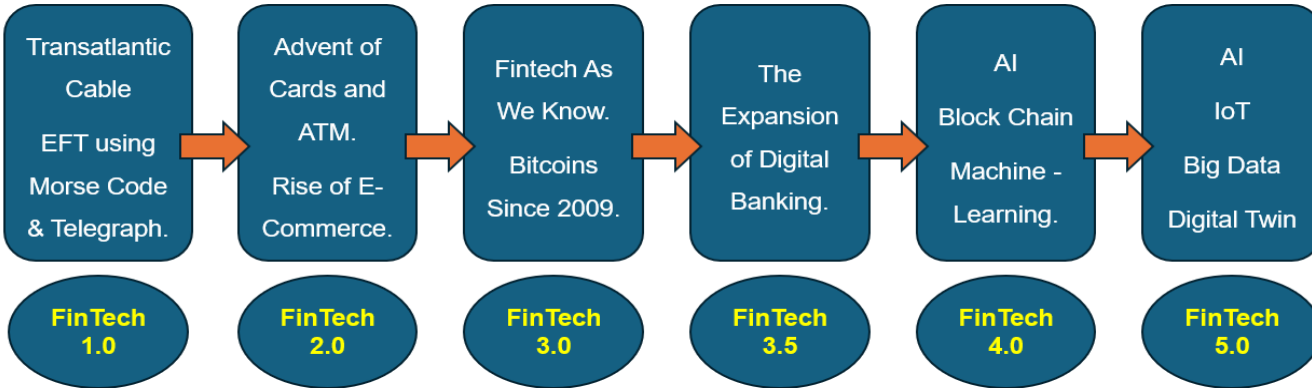

Fig. 1. Comprehensive overview of the historical development of FinTech.

FinTech in the Global Financial Ecosystem

FinTech reshapes the global financial ecosystem by enhancing service accessibility and customization, moving away from the traditional banking model towards competitive, innovative services that meet diverse consumer needs. This transition facilitates financial inclusion by offering essential services like mobile banking and digital payments to underserved regions, promoting economic empowerment (Alzaydi et al. 2024; Demirguc-Kunt et al. 2018).

In international finance, FinTech reduces the costs and complexities of cross-border transactions through technologies like blockchain, streamlining global commerce and remittances (Zhao 2024; Arner et al. 2015). The sector also influences regulatory practices, as policymakers adapt to accommodate new technologies while ensuring consumer protection and financial stability (Igbinenikaro and Adewusi 2024; Zetzsche et al. 2017). Overall, FinTech's integration into the financial landscape signifies a significant shift in the delivery, design, and experience of financial services, fostering a more inclusive, efficient, and responsive global financial system.

E-MOBILITY: CURRENT LANDSCAPE AND FUTURE PROSPECTS

E-Mobility is transforming transportation with the growing adoption of electric vehicles (EVs) and associated technologies, driven by advancements in battery technology and charging infrastructure, environmental concerns, and changing consumer preferences. Improvements in battery performance and the expansion of fast-charging networks are making EVs more practical and appealing (Suhail, Guangul

and Nazeer 2024; Nykvist and Nilsson 2015). Environmental imperatives, such as reducing greenhouse gas emissions and combating urban air pollution, fuel the shift towards E-Mobility, supported by global policies that incentivize EV adoption (D'Acunto 2024; Sierzchula et al. 2014). The automotive market is adapting by expanding electric options, enhancing competition and diversity (Kolasani 2024; Hardman and Tal 2018). Future prospects suggest a continued evolution of E-Mobility, with further enhancements in battery and charging technology and integration with renewable energy and smart grids, pointing to a significant transformation in clean, efficient, and sustainable transportation (Hawkins 2023).

Development of E-Mobility

The evolution of E-Mobility has been accelerated by technological innovations, policy support, and a shift towards sustainability. Key developments include advancements in lithium-ion batteries that enhance EV viability and appeal (Veza, Syaifuddin, Idris, Herawan, Yusuf and Fattah 2024; Scrosati et al. 2015). Government incentives and investments in charging infrastructure, along with agendas to phase out combustion engines, are crucial for promoting electric alternatives (Shelar 2024; Biresselioglu et al. 2018). Automakers are transitioning to electrify their fleets in response to regulatory demands and consumer preferences for greener vehicles (Azevedo et al. 2021). Additionally, the integration of digital and autonomous driving technologies is poised to further transform the transportation ecosystem, positioning EVs at the center of future mobility solutions (Webb 2019).

Challenges and Opportunities in E-Mobility

E-Mobility faces challenges such as high initial EV costs, primarily from expensive battery production, though costs are declining due to technological advances (Morgan 2020). Adequate charging infrastructure, particularly for long-distance travel, remains a significant hurdle, despite urban infrastructure improvements (Jones et al. 2022). However, E-Mobility offers substantial environmental benefits by reducing emissions and improving air quality, supporting global climate initiatives (Franzò and Nasca 2021). Economically, it stimulates new business models and market opportunities, reshaping the automotive value chain and integrating EVs with smart grids to enable innovative energy management, such as vehicle-to-grid (V2G) systems (Qazi et al. 2024; Sioshansi 2011). Furthermore, the convergence of electrification and automation through advances in autonomous driving is transforming urban mobility, altering transportation experiences and offering new paradigms for both personal and public transport (Litman 2019). Despite challenges, the opportunities presented by E-Mobility can significantly influence its development and widespread adoption.

E-Mobility and Environmental Impact

E-Mobility is pivotal in offering a sustainable alternative to fossil fuel-based transportation, addressing major environmental concerns like climate change, air pollution, and the depletion of non-renewable resources. EVs are particularly beneficial in urban areas, substantially reducing greenhouse gases and pollutants such as nitrogen oxides and particulate matter, thus improving air quality and public health (Abedalrhman et al. 2024; Tong et al. 2014).

However, the environmental footprint of EVs includes their entire life cycle, from production to disposal. Manufacturing, especially of batteries, is resource-intensive, involving significant raw material extraction and processing with notable environmental impacts. Advancements in battery technology and recycling are crucial for reducing these impacts and enhancing EV sustainability (Chigbu 2024; Ellingsen et al. 2014).

The electricity source for charging EVs also significantly affects their environmental benefits. The use of renewable energy sources for charging maximizes GHG emission reductions, while reliance on fossil fuels diminishes these benefits (Rossi and Bianchi 2024; Hawkins et al. 2013). Technologies like smart charging and vehicle-to-grid (V2G) systems improve energy use and grid stability by allowing EV batteries to store and return energy, facilitating the integration of renewables into the grid (Alzaydi and Abedalrhman 2024; Kempton and Tomic 2005).

Overall, while E-Mobility offers significant environmental benefits, especially in reducing

air pollution and GHG emissions, its broader impact depends on advances in manufacturing, battery technology, and the energy mix for electricity generation. Continuous improvements in these areas are essential for maximizing E-Mobility's environmental benefits and establishing it as a key component of sustainable transportation.

INTEGRATION OF FINTECH AND E-MOBILITY

The integration of Financial Technology (FinTech) into Electric Mobility (E-Mobility) is catalyzing innovation and enhancing financing models, operations, and user experiences in sustainable transportation. FinTech facilitates novel financing solutions like peer-to-peer lending and crowdfunding, democratizing investment and supporting E-Mobility projects (Dorfleitner et al. 2017). Blockchain technology improves transparency and efficiency in supply chain management and vehicle-to-grid systems, while smart contracts streamline charging service transactions (Andoni et al. 2019). Digital payment systems simplify the EV charging process, enhancing user experience and adoption (Kshetri, 2018).

Data analytics in E-Mobility provides insights for optimizing operations and tailoring marketing strategies. Usage-based insurance models, powered by telematics and data analytics, offer personalized insurance solutions, reflecting the unique driving patterns of EVs (Adeoye et. al. 2024; Lammert et al. 2019). Overall, FinTech's role in E-Mobility drives growth by providing innovative financing options, improving operational efficiency, and enhancing user experiences, accelerating the adoption and sustainability of electric vehicles.

Financial Solutions for E-Mobility (e.g., E-Mobility as a Service)

'E-Mobility as a Service' (EMaaS) represents a significant shift in vehicle access and financing, combining various services into a unified subscription model that includes EVs, charging, and maintenance (Hietanen et al. 2019). FinTech supports EMaaS through digital platforms that manage transactions and customer interactions efficiently, leveraging AI and big data to personalize services and optimize pricing (Chen et al. 2019). Innovative financing models like green bonds and peer-to-peer lending are crucial for funding E-Mobility initiatives, addressing the high initial costs and technological evolution of EVs (Yiasoumas, Berbakov Janev, Asmundo, Olabarrieta, Vinci, Baglietto and Georghiou 2023; Mohanty et al. 2016). Pay-per-use charging models, facilitated by FinTech, promote the expansion of accessible charging infrastructure, similar to traditional fuel payments (Darbari 2024; Altaleb and Rajnai 2020).

Blockchain and Smart Contracts in E-Mobility

Blockchain technology and smart contracts are revolutionizing E-Mobility by enhancing security and efficiency across various operations. Their decentralized, transparent nature improves transaction frameworks, while smart contracts automate processes, enhancing compliance and reducing administrative burdens in global supply chain management (Dudczyk, Dunston and Crosby 2024).

Battery Lifecycle Management: Blockchain plays a crucial role in managing the lifecycle of electric vehicle (EV) batteries, from manufacturing to recycling. It ensures transparent tracking and verifies the ethical sourcing of materials, optimizes recycling processes, and supports a reliable secondary battery market to extend battery life and reduce waste (Kouhizadeh et al. 2020).

Vehicle-to-Grid Systems: In vehicle-to-grid (V2G) systems, blockchain and smart contracts facilitate secure, transparent energy transactions. Smart contracts automate billing and compensation for energy returned to the grid, ensuring fairness and efficiency (Liang, Wang and Abdallah 2024; Mengelkamp et al. 2018).

Charging Station Transactions: Smart contracts streamline operations at charging stations by automating access authorization, payment processing, and dispute resolution, enhancing the user experience by reducing intermediary involvement (Li et al. 2019).

Data Sharing and Collaboration: Blockchain fosters secure data sharing and collaboration within the E-Mobility ecosystem. It allows manufacturers, service providers, and consumers to securely exchange data, leading to more efficient services and customized mobility solutions, such as optimized charging station placement (da Silva, Lohmer, Rohla and Angelis 2023; Dütsch and Schumacher 2020).

Overall, blockchain and smart contracts increase transparency, security, and operational efficiency in E-Mobility, addressing challenges and enabling innovative services and business models.

Innovative Payment Systems for E-Vehicles

Innovative payment systems are transforming E-Mobility by simplifying transactions and improving user experiences, underscoring the impact of FinTech in this sector.

Contactless and Mobile Payments: These payment methods provide convenience at EV charging stations, using technologies like QR codes and NFC for fast, secure transactions (Mogaji and Nguyen 2024). This system removes the need for cash or cards, streamlining the charging process (Patel et al. 2019).

Digital Wallets and App-Based Platforms: Digital wallets and apps extend functionality beyond simple payments, allowing users to track costs, locate charging stations, and schedule charging, enhancing user engagement and offering a comprehensive service experience (Bhattacherjee, 2024; Ondrus and Pigneur, 2009).

Subscription-Based Models: These models, popular among corporate fleets and regular users, bundle services like charging, maintenance, and leasing into a recurring fee, simplifying budgeting and payments (Jindal et al. 2019).

Blockchain-Enabled Transactions: In V2G systems, blockchain facilitates secure, transparent transactions between EV owners, charging operators, and energy providers. Smart contracts ensure timely and accurate payments (Zrikem, Hasnaoui and Elassali 2023; Aitzhan and Svetinovic 2018).

AI and Dynamic Pricing: AI and machine learning develop dynamic pricing for EV charging, adjusting fees based on demand, energy costs, and user preferences, optimizing costs for both consumers and providers (Kumari 2024; Chen and Härdle 2019).

The advancement of payment systems in E-Mobility is crucial for enhancing the accessibility and appeal of electric vehicles. By incorporating technologies like blockchain, AI, contactless payments, and digital wallets, these systems simplify transactions and promote a user-friendly E-Mobility ecosystem.

CASE STUDIES AND APPLICATIONS

Exploring real-world applications and case studies highlights the practical effects of integrating FinTech into E-Mobility, revealing successes, challenges, and innovative approaches across diverse scenarios.

Blockchain for EV Battery Lifecycle Management: A prominent EV manufacturer utilizes blockchain to oversee the lifecycle of EV batteries, enhancing traceability and transparency from production to recycling. This boosts supply chain integrity and consumer confidence in the sustainability of their products (Jansen et al. 2020).

EMaaS in a European City: A European city has adopted an E-Mobility as a Service (EMaaS) model that consolidates vehicle sharing, charging services, and digital payments into one subscription service, managed by a FinTech platform. This model has significantly increased EV usage, reducing carbon emissions and traffic congestion (Becker et al. 2020).

AI-Enabled Smart Charging: An AI and machine learning system tailors EV charging schedules to user preferences, electricity tariffs, and grid demands. This smart charging solution minimizes consumer costs and evens out grid load, demonstrating AI's potential in E-Mobility (Fernandez Pallares et al. 2024; Chen and Härdle 2020).

Contactless Payments at Charging Stations: A startup has developed a mobile app that facilitates payments at EV charging stations using contactless technology, solving payment fragmentation and improving user convenience, thereby encouraging wider EV adoption (Kamble and Gohokar 2024; Patel et al. 2020).

Blockchain in V2G Systems: A project applies blockchain and smart contracts in vehicle-to-grid (V2G) systems, enabling EVs to act as mobile energy storage units. This setup secures energy transactions and guarantees fair compensation for energy supplied by EV owners, benefiting both vehicle owners and the energy grid (Aitzhan and Svetinovic 2019).

These case studies show how FinTech addresses key E-Mobility challenges, enhancing sustainability, user convenience, energy optimization, and fostering new business models.

Success Stories of FinTech in E-Mobility

These success stories illustrate the transformative impact of FinTech in E-Mobility:

Blockchain for Supply Chain Transparency: An EV manufacturer leveraged blockchain to securely track EV battery lifecycles, enhancing supply chain operations and consumer trust (Franz et al. 2020).

City-Wide EMaaS Program: A major European city implemented an EMaaS program merging EV sharing, charging services, and digital payments, boosting EV adoption and helping achieve environmental goals (Holzer and Costanza 2020).

Digital Payment Solutions for EV Charging: A FinTech startup focusing on digital payment solutions for EV charging stations created an app that simplified the charging payment process, enhancing the user experience and adoption (Gupta et al. 2020).

Blockchain in V2G Projects: A V2G project utilized blockchain and smart contracts to handle energy transactions between EVs and the grid, creating a new revenue stream for EV owners and improving grid stability (Kundu et al. 2020).

These successes highlight FinTech's role in advancing E-Mobility, from optimizing supply chains and improving service offerings to simplifying payments and introducing innovative energy solutions.

Comparative Analysis of Different Markets

The integration of FinTech and E-Mobility varies globally, reflecting distinct strategies and outcomes:

European Market: Emphasis on sustainability supports advanced E-Mobility solutions, backed by strong government policies and substantial infrastructure investment. FinTech promotes widespread adoption of digital payments for EV services and successful EMaaS implementations (D'Acunto 2024; Burke 2021; Weiller et al. 2013).

North American Market: E-Mobility growth is slower due to established infrastructure for traditional vehicles, but FinTech innovations like blockchain for supply chain transparency are emerging (Shelar 2024; Burke 2021; Sierzchula et al. 2017).

Asian Market: Led by China and Japan, rapid E-Mobility adoption is driven by severe pollution and energy security concerns, supported by FinTech through mobile payment solutions and innovative financing for E-Mobility projects (Shelar 2024; Burke 2021; Zhang et al. 2018).

Emerging Markets: Though still developing and facing challenges like limited infrastructure and economic constraints, these markets show potential for growth through accessible FinTech solutions that overcome traditional barriers (Arowolo, Diallo and Perez 2024; Burke 2021; African Development Bank Group 2020).

This comparative analysis reveals that FinTech's integration in E-Mobility is influenced by regulatory environments, market maturity, and cultural attitudes towards sustainability, offering valuable insights for stakeholders navigating the global E-Mobility landscape.

Lessons Learned and Best Practices

Integrating FinTech in E-Mobility yields key lessons and best practices vital for successful deployment and future developments:

- **Regulatory Support and Incentives:** Robust regulatory frameworks and government incentives, such as subsidies and tax breaks, are critical in promoting E-Mobility. These supports help mitigate high initial costs and encourage wider adoption (Dhankhar, Sandhu and Muradi 2024; Axsen and Wolinetz 2017).
- **Cross-sector Collaboration:** Collaborative efforts between automakers, energy providers, tech companies, and governments are essential for creating a comprehensive E-Mobility ecosystem. This collaboration ensures adequate infrastructure and cohesive regulatory policies, crucial for widespread EV adoption (Sovacool et al. 2018).
- **Consumer Education and Awareness:** Educating consumers about the benefits of EVs is

crucial. Effective strategies that emphasize environmental benefits, lower operational costs, and technological advancements can influence consumer preferences towards sustainable options (D'Acunto 2024; Egbue and Long 2012).

- **User-Friendly and Secure Digital Payments:** Developing intuitive and secure digital payment systems enhances the user experience and fosters E-Mobility adoption. Ensuring the security of these systems is essential for maintaining consumer trust (Singh 2024; Pagallo et al. 2018).
- **Continuous Innovation:** Staying at the forefront of technology and adapting to market and regulatory changes are necessary. Innovations in battery technology, digital payments, and charging infrastructure ensure competitiveness and sustainability in the evolving E-Mobility market (D'Acunto 2024; JafariNaimi et al. 2019).

These lessons underscore the importance of supportive policies, effective collaboration, consumer education, innovative payment solutions, and ongoing innovation as fundamental components for navigating the complexities of E-Mobility.

REGULATORY AND ETHICAL CONSIDERATIONS

The integration of FinTech and E-Mobility brings significant regulatory and ethical considerations to ensure sustainable and responsible growth:

- **Data Security and Privacy:** Regulatory frameworks must address data protection, especially with FinTech handling extensive personal and financial information. Implementing standards like the GDPR is crucial for safeguarding consumer data and ensuring privacy (Varsha 2024; European Commission 2016).
- **Standardization and Interoperability:** Developing and enforcing standards for EV charging infrastructure and payment systems prevents market fragmentation and enhances user accessibility across different systems and regions (Varsha 2024; Sierzchula et al. 2014).
- **Blockchain Regulation:** Regulating blockchain technology involves balancing the encouragement of innovation with adherence to financial regulations and oversight, given its decentralized nature (Varsha 2024; Werbach 2018).
- **Equitable Access:** Ensuring equitable access to E-Mobility services is vital. Advancements should benefit all demographics to prevent access inequalities (Varsha 2024; Cohen and Kietzmann 2018).
- **Ethical Sourcing of Materials:** Ethical sourcing for EV batteries is critical, as the extraction of materials like cobalt and lithium involves environmental and human rights concerns. Blockchain can ensure transparency and responsible sourcing practices (Varsha 2024; Lacey and Pyper 2017).

Addressing these challenges requires a collaborative approach among stakeholders to create protective frameworks that uphold consumer interests, promote fairness, and foster responsible and sustainable growth in E-Mobility and FinTech.

CHALLENGES AND FUTURE TRENDS

1. **Infrastructure Investment:** Significant capital and cross-sector collaboration are needed to develop a robust EV charging network, which is vital to support the growing number of EVs (Li and Chang 2024; Sierzchula et al. 2015).
2. **Technological and Operational Integration:** Merging FinTech solutions like payment systems with EV charging infrastructure requires overcoming technical challenges, ensuring interoperability, and aligning standards across various regulatory environments (Li and Chang 2024; Ondrus and Pigneur 2009).
3. **Regulatory Alignment:** The blend of FinTech and E-Mobility navigates complex, varied regulatory frameworks to standardize operations and ensure compliance across financial and automotive regulations (Li and Chang 2024; European Parliament 2019).
4. **Data Security and Privacy:** As these sectors converge, maintaining the security and privacy of personal and financial data is crucial. Strong cybersecurity measures and adherence to compliance protocols are necessary to preserve consumer trust (Alzaydi et al. 2024; Romanosky 2016).
5. **Financing Challenges:** Substantial funding is required to develop EV charging infrastructure

and other related facilities. Innovative financial solutions are essential for these long-term capital investments (Li and Chang 2024; Zhou et al. 2013).

6. **Consumer Adoption:** Addressing consumer concerns about EV range, charging convenience, and the usability of FinTech solutions is critical for widespread acceptance. Effective education and user-friendly technology are key to encouraging adoption (Li and Chang 2024; Axsen and Wolinetz 2017).

Emerging Trends and Future Technologies:

1. **Decentralized Finance (DeFi):** DeFi could revolutionize E-Mobility by enabling decentralized platforms for EV charging and peer-to-peer energy trading, enhancing financial accessibility and flexibility (Alam et al. 2024; Zetzsche et al. 2020).
2. **Advancements in Battery Technology:** Innovations are focused on improving battery energy density, reducing charging times, and extending lifespans, with developments like solid-state batteries poised to enhance EV efficiency and sustainability (Alam et al. 2024; Tarascon and Simon 2014).
3. **Integration of IoT:** IoT technology can greatly enhance the connectivity and functionality of EVs and charging stations, facilitating smarter energy management and predictive maintenance (Alam et al. 2024; Atzori et al. 2010).
4. **Autonomous and Connected Vehicles:** Future integration of autonomous vehicles with E-Mobility and FinTech may lead to new business models, such as on-demand mobility services and dynamic pricing (Alam et al. 2024; Fagnant and Kockelman 2015).
5. **Sustainable Finance:** Environmental concerns are driving green finance initiatives like green bonds and sustainability-linked loans, which are crucial for financing sustainable transportation projects (Alam et al. 2024; Ehlers et al. 2020).

Predictions for the Future of FinTech in E-Mobility:

1. **Blockchain Integration:** Blockchain is set to secure transactions, manage supply chains, and facilitate energy trades, improving transparency and efficiency in E-Mobility (Uchechukwu and Echegu 2024; Swan 2015).
2. **Dynamic Pricing Models:** AI and big data may enable real-time, dynamic pricing for EV charging based on demand and grid capacity, optimizing costs and energy usage (Kumari 2024; Chen and Härdle 2019).
3. **Advanced Digital Payment Platforms:** Future platforms are expected to provide seamless, integrated payment solutions for EV-related expenses, enhancing user experience (Uchechukwu and Echegu 2024; Ondrus and Pigneur 2006).
4. **Innovative Financing Models:** As EV adoption increases, FinTech could provide flexible and accessible financing models, accelerating the transition from traditional vehicles to EVs (Uchechukwu and Echegu 2024; Gomber et al. 2018).
5. **Integration with Autonomous EVs:** The convergence of FinTech with autonomous and connected EVs could redefine vehicle ownership and usage, promoting models like subscription-based or pay-per-use mobility (Uchechukwu and Echegu 2024; Burns et al. 2018).

Overall, the merging of FinTech with E-Mobility is crafting a future where transportation is not only more efficient and sustainable but also deeply integrated with advanced financial technologies, offering robust solutions for global mobility and environmental challenges.

CONCLUSION

The integration of Financial Technology (FinTech) and Electric Mobility (E-Mobility) significantly transforms both the transportation and financial sectors by introducing innovative solutions to address complex challenges. FinTech plays a crucial role in enhancing transaction efficiency and improving user experiences within E-Mobility, utilizing technologies like blockchain and AI to streamline vehicle financing and energy management. However, the convergence faces challenges including regulatory

alignment, infrastructure development, and data security, necessitating collaborative efforts from all stakeholders. Future advancements are anticipated in battery technology, decentralized finance, IoT applications, and green finance, promising to enhance sustainability and efficiency in transportation systems. For industry stakeholders, adapting to technological shifts and consumer preferences is essential, requiring investments in new technologies and partnerships. Policymakers are urged to develop adaptable regulatory frameworks that support these integrations while ensuring data protection and sustainable practices. Further research is recommended to explore the impact of technological integration on supply chains and energy systems, the economic and social impacts on market dynamics and employment, and the environmental sustainability of EV batteries and digital financial services. This study is a crucial resource for navigating the dynamic opportunities presented by FinTech and E-Mobility integration, offering foundational insights for stakeholders in these evolving fields.

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ИНТЕГРАЦИЯТА НА ФИНТЕХ И Е-МОБИЛНОСТ: ОФОРМЯНЕ НА БЪДЕЩЕТО НА ЕКОЛОГИЧНИТЕ ТРАНСПОРТНИ РЕШЕНИЯ

Резюме: *Статията изследва интеграцията на финансовите технологии (FinTech) и електрическата мобилност (E-Mobility), като подчертава решаващата роля на FinTech в екологичния транспорт. Изследва се как финансови иновации като блокчейн, интелигентни договори и персонализирани платежни системи могат да стимулират приемането и устойчивостта на електрическите превозни средства (EV) и инфраструктурата. Проучването обсъжда капацитета на FinTech да се справи с финансовите предизвикателства на E-Mobility, позволявайки нови модели като E-Mobility as a Service (EMaaS) (Nikolaidou et al, 2017). В статията се разглеждат регулаторни, етични и свързани със сигурността въпроси, като се предоставя балансиран поглед върху потенциалните рискове и ползи. Чрез теоретичен анализ и казус изследването предлага прогноза и пътна карта за използване на финансови технологии за подобряване на устойчивия транспорт, като подчертава значението на интердисциплинарното сътрудничество за бъдещи изследвания и изготвяне на политики във FinTech и E-Mobility.*
Ключови думи: *финансови технологии, електрическа мобилност, блокчейн, интелигентни договори, електрически превозни средства*

Кахтан Абедалръман
Бизнес консултант Саудитска Арабия
E-mail: kahtansalm@gmail.com

Амар Алзайди
Университет за петрол и минерали „Крал Фахд“, Дахран, Саудитска Арабия
E-mail: ammar.alzaydi@kfupm.edu.sa

Проф. д-р Румен Николов
Университет по библиотекознание и информационни технологии
E-mail: r.nikolov@unibit.bg

Проф. д.ик.н. Стоян Денчев
Университет по библиотекознание и информационни технологии
E-mail: s.denchev@unibit.bg

НАЦИОНАЛНА СИГУРНОСТ
NATIONAL SECURITY

IMPLEMENTATION OF RISK MANAGEMENT IN THE MUNICIPALITIES

Jonas Heesch
University of Library Studies and Information Technologies

Abstract: *The article deals with the implementation of systematic risk management in local authorities. It emphasises the growing importance of such management, especially in the face of events such as pandemics, extreme weather and cyber-attacks. One of the main difficulties is embedding risk management into day-to-day operations, as many local authorities focus on small irregularities rather than prioritising larger risks. The article identifies four key factors: prioritisation, integration into existing management systems, promotion of a risk culture and training and communication. Systematic risk management should focus on the key risks that can have a significant impact on the municipality, such as damage to infrastructure or financial losses. Furthermore, the importance of a transparent risk culture and open communication is emphasised in order to promote awareness and acceptance of the management system. Finally, it emphasises that risk management should focus more strongly on sustainability and digital transformation in the future in order to also use new technologies such as artificial intelligence. In summary, the document calls for greater integration of risk management into municipal decision-making processes and emphasises the need for broad acceptance and continuous training of employees.*
Keywords: *Risks, risk management system, integration, risk culture, municipality*

INTRODUCTION

Local authorities are increasingly recognising the need for systematic risk management. The pandemic, extreme weather events and cyber attacks on cities and municipalities have shown that this is essential. This article highlights the challenges and key factors for setting up such management in administrations.

RESEARCH METHODOLOGY

Focus on key risks

In recent years, which have been characterised by upheaval and uncertainty, there has been a renewed awareness of the need for forward-looking risk management (Kuhlicke 2018, p. 363). Events such as the spread of infectious diseases, financial crises, extreme weather events, migration movements, attacks on critical infrastructure and the tightening of the regulatory environment will not fail to materialise in the future (Schwarting 2021, pp. 23–26). In order to be prepared for risks, municipalities must develop processes, structures and competences. Crises are often the result of already known risks. The establishment of systematic risk management is associated with obstacles that should not be underestimated.

This article does not deal with techniques for identifying and assessing risks, possible control measures and the basics of risk reporting. The specialised literature describes these in detail.

Anchoring systematic risk management in day-to-day business is the greatest challenge for local authorities. The following four key factors have proven to be particularly relevant.

Municipalities should not place day-to-day business at the centre of their risk management, which is often characterised by many small disruptions and irregularities. It does not make sense to report on every small and minor risk. The first key factor is to prioritise risk management. In particular, there is a need for action where the occurrence of a risk can have a significant impact on individuals, the local community or the organisation. These include risks that could lead to serious personal injury or damage to property. They also include risks that endanger municipal services of general interest (Behrend 2022,

p. 420). Financial controlling often already specifies materiality limits that can be adopted for risks with a financial impact. As part of the development of an ICS, the focus can initially be placed on reducing tax risks, for example by implementing tax compliance management. The time and personnel required for risk management should always be appropriate in relation to the significance of the risks. Although more complex approaches lead to more precise results, they place high demands on all those involved.

Integration into a management system

Integration into an existing management system is the second key factor for successful risk management. This can increase the effectiveness of methods and instruments. Risk management supports management in the decision-making process and establishes interfaces with controlling. As possible deviations from plans and targets are risks, it makes sense to realise synergy potential, which can be achieved, for example, by optimising processes and the automated exchange of data. Every uncertain assumption results in opportunities and threats that can be recognised as risks as part of the budgeting process. It is also possible to integrate risk-relevant information and key figures into controlling and reporting. However, this presupposes that the controllers have the necessary qualifications, in particular that they are able to recognise and assess risks.

Risk culture and 'tone from the top'

Transparent risk presentation and communication often means a paradigm shift. The development of an appropriate risk culture often requires a transition process lasting several years. As part of the organisational and administrative culture and thus as the third key factor of risk management, the risk culture is a central success factor (Romeike, Hager 2020, p. 135). The aim is not to avoid all risks, which is impossible anyway. An excess of control measures with a multitude of instructions only leads to a false sense of security. A constructive risk culture should promote dialogue about risks. If, for example, risks are concealed in a municipality instead of dealing with them transparently and initiating countermeasures, successful risk management is not possible. Weaknesses should be addressed and eliminated as part of a continuous improvement process instead of being covered up. It is important to learn from mistakes and continuously develop the organisation.

Risk management is an effective and useful management tool for monitoring uncertain situations and initiating countermeasures in the event of imminent deviations from objectives (Brauweiler 2018, p. 7). However, whether risks materialise is sometimes a matter of chance and should not automatically be seen as a personal failure. It is important to make well-considered and well-founded decisions, even if they may turn out to be unfavourable or erroneous in retrospect. A positive learning and error culture is essential for this.

Management and executives play a central role in the implementation, promotion and further development of the organisational and risk culture. They determine the direction and are often the driving force behind change. A clear commitment to risk management is essential ('tone from the top'). Management and executives should share the conviction that appropriate structures, working methods and management competences are required to overcome future crises and challenges. Systematic risk management is essential. The management emphasises the importance of risk management by formulating risk policy principles, for example in a risk management manual. To ensure a transparent presentation of risks, the risks associated with important administrative objectives, for example, can be the subject of regular discussion at management conferences or in the Board of Directors. If the risks and their potential impact are presented more frequently in draft resolutions or council proposals, this can contribute to better decision-making and a broader political discussion.

Qualification and communication

The need for information and knowledge arises from the use of new management tools. The fourth key factor is the need for training measures in the area of risk management. The effort required for this training is often underestimated. Employees must have the necessary skills to deal with risks, as they play a central role in prevention. This applies in particular to operational areas that are familiar with the

processes in their area of responsibility and have the necessary expertise to assess risks, report impending deviations from targets and initiate countermeasures. The resources for further training must be provided in line with requirements. However, this alone is not enough. Training measures are only successful if the need for and acceptance of systematic risk management are recognised. Workshops that are perceived by participants as too time-consuming or even unnecessary do not always achieve the desired effect. In most cases, the transfer to day-to-day business is also not immediately successful. Ambiguities and uncertainties in practice can be resolved through continuous counselling by the risk controlling department as well as through training and follow-up training (Fally et al. 2014, p. 45).

The qualification measures should be supplemented by suitable communication and participation processes. These support those affected in recognising and accepting the need to deal with risks systematically. The objectives pursued with risk management must be communicated in a comprehensible manner. One way of reaching large sections of the workforce is to hold a staff or works meeting, for example. The importance of the project is emphasised by a policy statement on risk management by the management. Lower-level managers must also be involved. They are responsible for ensuring that their employees are well informed and are aware of the risks. Risk management documents and materials can serve as reference works and are permanently available if they are distributed via the intranet or a newsletter. It is advisable to develop a communication concept for the targeted use of communication measures. Reporting on the current status and what has already been achieved should also not be forgotten.

Participation ensures acceptance

Participation and involvement measures are another important building block in the introduction and further development of risk management. Both middle management and employees are sometimes sceptical about the changes. However, as they have to put the control and risk management concept into practice, they have an important role to play in its implementation. Risks arise to a large extent at the operational level and must be managed there. For this reason, those affected should be involved at an early stage. There should be a balanced presentation without distortion. It is important to use precise technical terms if they convey the meaning more accurately than a similar non-technical term. To achieve greater acceptance, the rules for recording, assessing and monitoring risks should be simple, practical and understandable for everyone. It is important that risk management is perceived as a supportive management function and not as a bureaucratic burden (Hahn 2020, p. 148). Employees at operational level should contribute their knowledge and experience to the design of the risk management system. This can be done, for example, in the definition of relevance classes, tolerance thresholds and the design of risk reports.

RESULTS

The article discusses the implementation of systematic risk management in local authorities. It emphasises that in the face of challenges such as pandemics, extreme weather events and cyber attacks, effective risk management is becoming increasingly important. Four key factors are identified as decisive: prioritising significant risks, integrating them into existing management systems, promoting an open risk culture and continuously training employees. In future, risk management will be increasingly focussed on sustainability and digital transformation in order to utilise new technologies such as AI.

CONCLUSION

Risk management will increasingly have to deal with sustainability risks in the future. The opportunities and risks of the digital transformation will also come into focus. This includes issues such as data protection and IT security. But also the failure to recognise the opportunities offered by digitalisation. At the same time, new avenues for further development are opening up: artificial intelligence (AI) and machine learning are creating opportunities for proactive risk management. Digital tools make it easier to identify and assess risks and communicate with the right people.

Risk management and controlling are closely linked. Controlling can serve as a catalyst for taking risks into account when making decisions and integrating recurring risk analyses into the management concept. It is crucial to gain the necessary acceptance for systematic risk management.

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ПРИЛАГАНЕ НА УПРАВЛЕНИЕ НА РИСКА В ОБЩИНИТЕ

Резюме: *Статията се занимава с прилагането на системно управление на риска от местните власти. В нея се подчертава нарастващото значение на това управление особено в условията на събития като пандемии, екстремни метеорологични условия и кибератаки. Една от основните трудности е внедряването на управлението на риска в ежедневните дейности, тъй като много местни органи се фокусират върху малки нередности, вместо да приоритизират по-големите рискове. В статията се посочват четири ключови фактора: определяне на приоритети, интегриране в съществуващите системи за управление, насърчаване на културата на риска и обучение и комуникация. Системното управление на риска следва да се съсредоточи върху ключовите рискове, които могат да имат значително въздействие върху общината, като например щети върху инфраструктурата или финансови загуби. Освен това се подчертава значението на прозрачната култура на риска и откритата комуникация, за да се насърчи осведомеността и приемането на системата за управление. Накрая се подчертава, че в бъдеще управлението на риска следва да се съсредоточи по-силно върху устойчивостта и цифровата трансформация, за да се използват и новите технологии, като например изкуственият интелект. В обобщение, призовава се за по-голямо интегриране на управлението на риска в общинските процеси на вземане на решения и се подчертава необходимостта от широко приемане и непрекъснато обучение на служителите.*
Ключови думи: *рискове, система за управление на риска, интеграция, култура на риска, община*

Йонас Хеш, докторант
Университет по библиотекознание и информационни технологии
E-mail: JonasHeesch@web.de

URANIUM MINING IN CZECHOSLOVAKIA, BULGARIA, ROMANIA, HUNGARY AND POLAND 1945–1990

Reiner Brumme
University of Library Studies and Information Technologies

Abstract: *This article describes uranium mining in the Central and Eastern European countries of Czechoslovakia, Bulgaria, Romania, Hungary and Poland from 1945 to 1990 as part of the Soviet nuclear weapons complex during the Cold War period of the global conflict between the USA and the USSR. Original language sources from the individual countries and international organisations were examined and evaluated. The results obtained were previously unknown even to the leading uranium mining specialists in the other countries studied, as the extremely strict secrecy surrounding the Soviet nuclear weapons programme also largely prevented the exchange of information between experts involved on the Soviet side. In the article, the individual countries' share of uranium deliveries to the Soviet Union as the basis for the smelting of nuclear weapons-grade uranium concentrate and plutonium in the Soviet Union is specified, whereby the sometimes contradictory and unclear information due to the secrecy of the time is critically examined. The overall assessment is that uranium mining in the countries analysed served at least objectively to conserve the Soviet Union's own uranium deposits at the expense of the countries under investigation.*
Keywords: *uranium mining, Czechoslovakia, Bulgaria, Romania, Hungary, Poland*

INTRODUCTION: URANIUM – STRATEGIC RAW MATERIAL IN THE COLD WAR

Uranium gained global strategic importance in 1938 when the German nuclear physicists Otto Hahn and Fritz Straßmann proved that uranium fission was possible. Uranium became the world's most political raw material when the USA dropped two atomic bombs on Japan in August 1945. Uranium was discovered in 1565 during silver mining in the Ore Mountains as a black, useless mineral, which was called 'pitchblende' because of its appearance and the absence of the hoped-for silver (René 2018, 1). Uranium is the heaviest naturally occurring element in terms of atomic weight. Natural uranium consists predominantly of 238U and only 0.72% of 235U – this low proportion of 235U is increased to 3.5–6% for nuclear fuel rods for civilian use in nuclear power plants and to over 90% for nuclear warheads for military use. The Soviet Union did not have many components for nuclear weapons, but especially no immediately degradable uranium reserves as a raw material for the production of nuclear weapons-grade uranium concentrate.

RESEARCH METHOD

Due to existing secrecy regulations, publications on uranium mining in the respective countries were only published after 1990. Moreover, these publications were only sporadic, in some cases only for certain regions and only for individual branches of uranium science and uranium mining. In addition, the publications are regularly only in the respective national language. The current reintroduction of confidentiality regulations against the background of the reassessed strategic relevance of uranium is also an obstacle. Original sources from the various countries were therefore analysed and experts in uranium science and uranium mining were consulted to interpret unclear and contradictory information.

URANIUM MINING 1945 TO 1990

Czechoslovakia

From 1820 onwards, the three mines of Svornost (Unity), Werner and Stola saskych šlechticu (Table

of the Saxon Nobles) produced over 200 tonnes of uranium per year. In 1945, the USSR and Czechoslovakia agreed on the exploitation of radium-containing uranium and its supply to the Soviet Union. In 1946 and 1955, exploration for uranium focused on the veins in the Bohemian Ore Mountains around Jachymov and Horni Slavkov and the Příbram ore deposit. Further investigations revealed hydrothermal uranium deposits in mineralized shear zones at Rožna Olši, Okrouhla Radouň, Zadni Chodov and Vitkov II. Other sandstone deposits in Northern Bohemia were found at Hamrožňov, Břežněžnoče, and at Renevel (2018: 7). As a result of this work, uranium ore was also mined at Straž pod Ralskem and Hamr na Jezeře from the 1960s onwards. Uranium mining in the Jachymov region culminated between 1955 and 1958 and ended in 1964 with an annual production of 750 tonnes of uranium. By 1962, 6,800 tonnes of uranium had been extracted from the mines in the Jachymov region. Extraction in the Horni Slavkov region continued until 1961/1962 with 2,600 tonnes of uranium. The region around Žadni Chodov produced around 4,000 tonnes of uranium between 1952 and 1992 (Velfl a kolektiv 2007, 127). The uranium deposit in St. Joachimsthal in Bohemia was the only one in the entire Soviet sphere of influence that could be mined immediately in 1945. The average uranium content of the ore was 0.17% or 0.77 kg/m2 of vein area. The ore was present as pitchblende in the carbonate fissure veins and contact metamorphic schist rocks occurred as secondary rock. A total of 107 Soviet mining specialists worked in Jachymov in 1946 and 720 in 1955. Between 1949 and 1953, a total of around 54,000 Soviet military personnel were employed in the Jachymov mining region for security and mining specialists for extraction (Lepka 2003, 47). Until 1989, Czechoslovak uranium production took place in the four regions of West Bohemia, Přibram in West Bohemia, Rožna 130 km south-east of Prague and Hamr (Straž) in North Bohemia near Liberec. There were 46,000 employees at the height of the 1950s and 34,000 in 1989 (Lepka 2003, 18).

In the whole of Czechoslovakia, around 112,250 tonnes of uranium were extracted between 1945 and 2007, of which:

- a total of 6,873 tonnes in the Jachymov ore field from 1945 to 1962,
- a total of 2,668 tonnes in the Horni Slavkov ore field from 1948 to 1962,
- a total of 48,432 tonnes in the Přibram ore field from 1948 to 1992,
- a total of 4,066 tonnes in the Žadni Chodov deposit in the West Bohemia ore field from 1952 to 1993 and 3,973 tonnes in the Vitkov II deposit from 1960 to 1990
- a total of 16,734 tonnes in the West Moravia ore field from 1959 and,
- a total of 22,233 tonnes in the North Bohemia uranium region from 1967 to 1993 (Lepka 2004, 44).

According to the genetic type of deposit, Czechoslovak uranium was extracted from vein and shear zone deposits in Přibram, Jachymov, Horni Slavkov, Rožna, Zadni Chodov, Vitkov II, Olši, Okrouhla Radouň, Dyleň with 82. 128 tonnes, in sandstones from the Cretaceous Straž, Hamr, Břevniště with 29,014 tonnes, from Carboniferous-Permian sediments with 608 tonnes and from Tertiary sediments with 289 tonnes, for a total of 112,039 tonnes (René 2018, 9). The uranium content was 0.18% in the Hamr deposit and 0.12% in the in-situ leaching process. In Jachymov, the uranium-bearing veins were mineralised with uranium on only 8 % of the vein area, in Přibram with 12% – in contrast to only 5% in the Schneeberg-Schlema-Alberoda district in Saxony (www.mineralienatlas.de/lexikon).

Bulgaria

Until 1944, the two ore deposits ‘Gotensko’ close to Buchovo near Sofia and the Strelka quarry in the Pazardshik region were known in Bulgaria. By 1939, around 60 tonnes of uranium ore with a very high U3O8 content of 18–21% had been mined from the Goten deposit (Aladshov, Krastev, Stefanov, Boshkov 2022, 80). As early as November 1944, a Soviet exploration team was sent to Bulgaria to search for uranium. Following a positive report, the uranium ore deposits were mined from 1945 onwards. Thus, the areas of Bukhovo in the Thrace region around Haskovo, in the south-west near Simitli, Momino north of Plovdiv, Maritsa east of Plovdiv and Eleshnitsa near Bansko became uranium mining areas. The German companies near Gotensko were transferred to Soviet ownership ‘as compensation for the destruction caused by Hitler’s army’ (Sanokojew, Zybulewski 1978, 386, 423). They were taken over and continued by the ‘Sovyetsko-Bulgarsko minno drushestvo’ (Soviet-Bulgarian Mining Company, SBGO) in 1946 under a Bulgarian-Soviet agreement (Mladenov 2008, 10 f.). After the dissolution of the SGBO in

1956, the Bulgarian administration “Redki metali” (= “Rare Metals”) took over the further extraction of uranium ore while retaining Soviet control (Mladenov 2008, 10 f.). The ore was the secondary uranium mineral tobernite in the form of small druses and crystals in the fissures of the surrounding rock (Boch, Karlsch 2011 vol. 2, 37 f.). The uranium content of the Buchowo gangerz deposit, with a total deposit of around 2,500 to 5,000 tonnes of uranium, was between 0.10–0.20% as of 1945. Most of the deposits occurred as irregular veins or in stockworks where pitchblende was deposited in breccia zones. Bukhovo had a conventionally operated uranium processing plant, which also served as a processing centre for a series of mines up to 100 km away in the Balkan Mountains. This plant was commissioned in 1949 and operated until 1956 using solvent extraction technology, and from 1956 to 1989 using sorption technology based on ion exchange (Normann 1993, 7 f.). According to disputed information, the uranium for the first Soviet atomic bomb came from Bukhovo – 272 tonnes of pitchblende had already been delivered to the Soviet Union from there by mid-1946. Uranium mining in the Eleshnitza uranium centre in Bansko, began in 1955 in an open pit mine, but was already exhausted by 1960. The production rate of this plant was 385 MTU (0.8 MlbU/year). Ore grades were generally below 0.10 recovery per cent uranium and the original resources of total uranium amount to almost 10,000 MTU (220 Mlb/U). Mining was carried out using conventional open pit and underground mining technology. Production in 1990 was approximately 345 MTU per year (0.8 MlbU per year) and the last production in 1992 was 90 tonnes of uranium. The other Bulgarian deposit, Haskovo, had deposits of 5,000–10,000 tonnes of uranium with uranium contents of less than 0.01%. The deposits in the Maritza Basin and in the Momino area were also sandstone deposits, each with 2,500–5,000 tonnes of uranium deposits with uranium contents of 0.01–0.05%. The first mines in Bulgaria were underground mines. From 1979, uranium was also extracted by means of in-situ leaching using sulphuric acid (ISL). From 1981, 23 deposits were mined by conventional underground mining, 17 by in-situ leaching from the surface and eleven by in-situ leaching in combination with conventional mining techniques. Bulgarian uranium mining reached its peak in the late 1960s and early 1970s with more than 13,000 employees in the two mining areas of Bukhovo and Eleshnitsa, a total of 48 mines and in-situ leaching near Plovdiv with a maximum annual output of 645 tonnes of uranium ore concentrate. In 1992, Bulgaria decided to end uranium mining by 1995. 21,000 tonnes of uranium were extracted between 1945 and 1991 and delivered to the Soviet Union. This was initially delivered as ore and, after the start of production at the Bukhovo and Eleshnitsa processing plants, as uranium concentrate (Diehl 1995, 6).

Romania

In Romania, the joint Soviet-Romanian company Sowrumquarz (SovRom Kuartit) was founded as reparations on the basis of the Soviet-Romanian treaty of 8 May 1945. This company carried out uranium exploration and mining in the Western Carpathians and also in north-west Romania. From 1951, Romania operated three uranium mining areas in the Braşov region in central Romania in a Permian sandstone formation and in the Bistritei Mountains in northern Romania as well as in the Almas Mountains in the south-west of the country (Ryabev 2005 Vol. II Book 5, 719). Baita in Bihor County was the largest deposit with 10,000–25,000 tonnes of uranium and uranium ore grades of 1.00–5.00% according to radiometric sorting. The other deposit, Tulghes-Grinties, had 5,000–10,000 tonnes of uranium with a uranium content in the ore of 0.10–0.20% (IAEA-TECDOC-650 1992, 33 f.). The Sovrum Quartz, like other Soviet-Romanian bilateral companies, was dissolved in 1956. Uranium ore was subsequently further mined by the purely Romanian state-owned company Compania Nationala a Uraniului (CNU). After 1956, Romania also independently produced nuclear fuel rods for its Cernovoda nuclear power plant. Until 1960, the uranium ore was exported exclusively to the Soviet Union, the total amount reached 17,288 tons between 1952 and 1960. The CNU was liquidated in 1961. In 1978 uranium ore mining from the Western Carpathians, Eastern Carpathians and the Banat Mountains was resumed. All the uranium ore was transported to the Feldiora uranium processing plant near Brasov, where the highest production of 290 tonnes of uranium was achieved in 1986. Production ended in 1992 with 120 tonnes of uranium. Total uranium production between 1950 and 1992 was 16,850 tonnes (Diehl 1995, 6).

Hungary

First surveys between 1947 and 1950 confirmed Hungarian uranium deposits. In 1953, significant results were obtained in the Permian sandstone of the Mecsek Mountains near Pecs (Fünfkirchen). After successful deep drilling, the Soviet-Hungarian company 'Bauxite Mining Company' was founded with the Kövagoszölös No. I mine (Matrei 2015, 2). In 1957, the company was renamed 'Pecs Mining Company' under Hungarian management (Berta 2013, 1). Between 1964 and the end of March 1992, the state-owned Hungarian company Mecseki Ercbanyaszati Vallalat (MEV) was responsible for uranium production (Diehl 1995, 5). The uranium deposit was located in the Permian sandstone formation and contained 25,000-50,000 tonnes of uranium. The uranium ore was not found in contiguous deposits, but in lenticular sections with irregular geological formations. The uranium-bearing sandstones could not be visually distinguished from the deposits (Matrei 2015, 3, Bela 2013, 2). By 1956, only around 16 quintals of uranium ore (1.6 tonnes) had been delivered to the Soviet Union. Uranium ore was not actually mined until after 1958 and the uranium ore subsequently extracted had average grades of 0.08% and, exceptionally, 0.20%. Mining was carried out along the productive lenses of the ore body, each extending 10–50 metres, by conventional mining through a series of five shafts along the ore body at depths of up to a maximum of around 1,100 metres. Mining in the lenticular ore deposit was difficult to mechanise (Bela 2013, 2). A total of 16,718 tonnes of uranium were extracted from the Hungarian mines at mining depths of 100-800 m until 1992 with 7,454 employees in 1985 and most recently, 1,855 employees in 1992, and delivered to the Soviet Union. The uranium ore processing plant, which went into operation in 1963, had a capacity of 700 tonnes per year. The processing initially sorted the uranium ore radiometrically and then processed it hydrometallurgically into calcium uranate Ca(U2O7) (Mraz, Wallner 2008, 16, Berta 2013, 1). The shaft for mine no. I, with proven reserves of 2,787,000 tonnes, was in operation from 1956 to 1972 and was able to extract 246,000 tonnes of uranium ore over a length of 154 km and at a depth of up to 320 m. Mine No. II produced 636,000 tonnes of uranium ore. The uranium ore reserves of Mine III were estimated at 4,028,000 tonnes. Although the profitability of the company was no longer guaranteed, a further mine No. IV was planned in order to bring new ore deposits into production. A depth of 1,089 metres had to be reached for the shaft of this mine. The 6,110,000 tonnes of uranium ore planned for the pit field of mine no. IV turned out to be 5,051,000 tonnes in reality. Despite the further rise in production costs and fall in the international sales price, the production potential was maintained at the level achieved up to that point. To offer further capacity, the shaft for the new mine no. V had to be sunk to a depth of 1,118 metres between 1975 and 1978. The new mining area was estimated to contain 9,180,000 tonnes of uranium ore at depths of up to 1,200 m but was no longer mined. The remaining uranium ore reserves in this area alone amount to around 7 million tonnes. The total reserves in the Mecsek Mountains down to a depth of around 1,300 m amount to around 39 million tonnes, of which 19 million tonnes have been preserved due to the cessation of mining (Matrei 2015, 2 f.). Until the mine was shut down, only half to a third of the uranium ore available in the region was mined (Bekas 2015, 1).

Table 1. Data on the Mecsek uranium mines in Hungary (Bela 2017, 74)

	Unit	1960	1970	1980	1990	1993	Around 1996
Rock mining	m^3	269.070	567.181	578.936	336.390	199.710	100.000
Ore (rock)	t	378.405	759.429	833.495	616.382	366.468	160.000
Uranium content	%	0,105	0,070	0,082	0,085	0,112	0,120
Export of enriched U	t	286,9	501,8	669,6	490,4	380,0	200,0
Employees	Number	4.797	7.915	7.188	4.517	1.755	1.200

In 1989, the Hungarian government decided to discontinue uranium ore production, as the extraction costs were many times higher than the world market price.

Poland

In present-day Poland, uranium deposits were known in the German-Silesian iron ore mines Wolnosc (Bergfreiheit), Redensglück, Bergwerk Rübezahl near Kowary (until 1945 German: Schmiedeberg) and near Walowa Gora (Ochsenberg) in the German-Silesian Giant Mountains (from 1945 Polish: Karkonosze), which had been in operation since 1925 (Gawor 2003, 1). 100 tonnes of uranium ore were mined there until 1942. In 1943/44, around 72 tonnes of uranium ore were mined for German nuclear research (Chajduk, Polkowska-Motrenko 2012, 4 f.). This was discontinued in 1945. Uranium ore mining was restarted in 1947. The Soviet side provided the technical and managerial staff, materials and equipment for exploration and mining. The Soviet Union undertook to purchase uranium ore with a uranium content of at least 0.2% at cost plus a profit of 10%. The costs of the exploration work were included in the costs of ore extraction (Narodowe Centrum Badan Jadrowych 2013, 1 f.). The Schmiedeberg (Kowary) deposit contained polymetallic ore deposits. From 1945, the camouflage designation there was 'Kopalnie Kowarskie' or 'Kusnetskiye Rudniki' (Kuznetsk Mining Companies) in Russian. Uranium ore was extracted from simple tunnels from 1947 and then from shafts up to 600 metres deep as mining progressed. Kowary was a vein deposit with deposits of 300-1,000 tonnes of uranium and uranium content of 0.2–0.5%. In the early days, uranium ore was extracted from the existing Wolnosc mine in Kowary and the Kopaliny mines in Kletno near Stronie Slaskie and in Miedzianka. In 1948 there were 2,651 employees working in the Kowary mines, including 43 Soviet specialists – by 1950 there were already 7,926 employees and by 1955 around 12,000 (Gawor 2003, 3). According to disputed information, the uranium for the first Soviet atomic bomb also came from there. The average uranium content in the R-1 mines was 0.08%, only in some cases up to 0.2 or 0.5%. In the later processing plants, the uranium ore was concentrated to a uranium content of up to 52% in some cases. All the uranium ore from R-1 was taken to an ore crushing and sorting plant in Kowary, from where it was transported to the Soviet Union after processing. Between 1948 and 1962, a total of around 704 tonnes of metallic uranium were extracted from the Polish uranium mines of R-1, Wolnosc, Kopalny, Miedzianka, Dziecmorawice, Mniszkow, Wojcieszyce, Podgorze, Radionow, Staszic and Inne (Regionalna Grupa Historyczna Stowarzyszenie Schondorf 2012, no page references). In addition, other mines (R-5) in Miedzianej Gorze and near Kielce yielded an average uranium content of 0.2% to a maximum of 2–4% (Kasza, Krol, Pabian 2018, 26).

Table 2. Exploitation of some Polish uranium ore deposits in the R-1 region 1945—1967 (Narodowe Centrum Badan Jadrowych 2013, 10 f.)

Name	Resources	Mined Uranium (t)	Mining Rate %
Freiheit Wolnosc	94	94	100
Miedzianka	14,7	14,7	100
Vorgebirge Podgorze	280	199	71,07
Rubezahl Rubezal	0,5	0,5	100
Mniszkow	4,5	4,5	100
Victoria Wiktoria	0,28	0,28	100

Majewo	0,96	0	0
Ochsenberg Wolowa Gora	2,5	2,5	100
Radionow	345	214	62,03
Wojcieszyce	14,4	12,3	85,42

The value of Polish exports of uranium ore rose from around 25 million transferable roubles in 1948 to 92 million in 1949, fell to 46 million in 1950, 20 million in 1952 and 11 million in 1953, before rising to 15 million in 1954, 30 million in 1955 and 32 million in 1956. This was followed by a further decline to 12 million in 1958, 9 million in 1959 and 8 million in 1960 due to the Soviet Union's withdrawal from subsidising geological search and exploration and the increasingly poor exchange rate between the rouble and the zloty, which was 1:1 in 1947, 1:3 in 1952 and 1:9 in 1960. As early as 1958, Poland's nationwide reserves of high-grade uranium were estimated to be low. The expected ores with uranium content of 0.12% were not acceptable to the Soviet Union, so extraction was restricted to richer parts of the deposits. In the 1960s, the uranium content fell from 0.07% to just 0.053%. In 1962, the deposits of rich uranium ore were exhausted and the export of uranium ore to the Soviet Union ended (Narodowe Centrum Badan Jadrowych 2013, 5 ff.). R-1, the main uranium mining operation in Poland, employed around 20,000 people over the period of its operation. The peak was reached around 1950 with just under 8,000, before the workforce was gradually reduced after 1951 to 880 people in 1962. The total number of employees in all Polish uranium plants, including those outside R-1, was 26,000 (Diehl 1995, 5). A special feature of the R-1 at Kowary was that in 1954, in addition to 800 civilian employees, two to three companies of the Polish military labour brigades stationed in Kamienna Gora were deployed in the shafts in a 3-shift system (CIA 26.1.1954 items 6, 8 and 14, no page references). Another special feature in Kowary was the work of German managers and specialists even after 1945. They lived with their families in flats, not in prison camps, and schools were also run in German. Gradually, newly trained Polish and seconded Soviet specialists replaced the German ones. Only a few remained on site and became Polish citizens (Gawor 2013, 2, CIA 20 November 1951 points 1 and 3, no page references). The OECD reported that Poland's total production of uranium amounted to 1,000 tonnes (OECD, Kersting, cited according to OECD 1992, 42).

COMPARISON AND CONCLUSION

The uranium for the first Soviet atomic bomb, detonated in 1949, is said to have come either from SAG Wismut in Saxony, Jachymov in the Bohemian Ore Mountains, the Polish R-1 or from Buchowo in Bulgaria. These claims by the uranium companies cannot be verified, as the various deliveries can no longer be distinguished after further processing and smelting in the Soviet Union. The Russian nuclear energy authority ROSATOM states that the uranium from SAG Wismut was the basis for the operation of the first industrial nuclear reactor 'A', in which the plutonium for the first Soviet atomic bomb was produced (there: Esakiya, undated, 2).

Table 3. Number of employees of the First State Administration of the USSR (PGU) for the foreign uranium objects of the PGU designated as such, as of 1 January 1952 (Ryabev 2005 Vol. II Book 5, 728)

Object	Total	Of which Soviet
Wismut (Germany)	151.000	10.500
Jachymov Mines (Czechoslovakia)	25.240	439
Kuznetsk mines (Poland)	8.689	312
Goten deposit (Bulgaria)	5.641	181
Total amount of mines	190.570	11.432

Accordingly, the production of the various qualities of uranium ore and uranium concentrate for the Soviet Union was also concentrated at SAG Wismut. This resulted in the fact that between 1945 and 1950 only around 1,072 tonnes of uranium were extracted in the Soviet Union and around 3,350 tonnes from the allied Central and Eastern European countries (Wismut 2002, Part 1.1.1: 2, no continuous page references). In 1946, the uranium reserves explored in the USSR itself were already as high as in the Soviet Occupation Zone, Czechoslovakia, Bulgaria and Poland together, but the uranium yield in these countries was higher than in the USSR itself. In fact, uranium mining in the countries allied with the USSR was objectively carried out as overexploitation in favour of conserving Soviet uranium deposits. Between 1946 and 1990, the primary production of the mining operations of the Wismut companies amounted to 231,490 tonnes of uranium. After deducting losses during mining, transport and processing, deliveries to the Soviet Union amounted to 216,350 tonnes of uranium (Paul 2021, interview with contemporary witnesses), which corresponds to 12.2% of global production of 1,769,000 tonnes (Müller 2021, 1). This means that around one third of the uranium mined in the Soviet sphere of influence outside the Soviet Union was supplied to the Soviet Union by Wismut during this period. The Soviet Occupation Zone/GDR and Czechoslovakia were the largest uranium producers in Europe outside the Soviet Union. Eastern Europe produced two thirds of the uranium utilised there. A total of 490,000 tonnes of uranium were extracted in Bulgaria, Czechoslovakia, the Soviet Occupation Zone/GDR, Hungary, Poland, Romania and the Soviet Union between 1945 and 1989, of which around 160,000 tonnes were extracted in the Soviet Union and around 330,000 tonnes in Central and Eastern Europe outside the Soviet Union. The three largest European uranium producers – the GDR, Czechoslovakia and France – together have produced 85% of European uranium (excluding the USSR) since the Second World War. The producers of the Eastern Bloc had achieved 83% of total European production. Of the 17% produced in Western Europe, 89% was produced in France (Diehl 1995, 3). Uranium production in Central and Eastern Europe for the Soviet Union as a monopoly customer essentially continued until 1990. With the political changes from 1990 onwards, the USSR ended its purchases and uranium production was not profitable for the previous supplier countries in view of the world market prices from the more favourable open-cast mines in Canada, Australia and Niger, which led to the cessation of uranium mining in Central and Eastern Europe outside the USSR.

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ДОБИВ НА УРАН В ЧЕХОСЛОВАКИЯ, БЪЛГАРИЯ, РУМЪНИЯ, УНГАРИЯ И ПОЛША ПРЕЗ 1945–1990 Г.

Резюме: *В статията се описва добивът на уран в страните от Централна и Източна Европа – Чехословакия, България, Румъния, Унгария и Полша – от 1945 до 1990 г. като част от съветския комплекс за ядрени оръжия по време на Студената война – глобалния конфликт между САЩ и СССР. Проучени и оценени са оригинални езикови източници от отделните държави и международни организации. Получените резултати досега не са били известни дори на водещите специалисти в областта на уранодобива в другите изследвани страни, тъй като изключително строгата секретност около съветската програма за ядрени оръжия до голяма степен е възпрепятствала и обмена на информация между участващите експерти от съветска страна. В статията се уточнява делът на отделните държави в доставките на уран за Съветския съюз като основа за претопяване на уранов концентрат за ядрено оръжие и плутоний в Съветския съюз, като критично се разглежда частично противоречивата и неясна информация, дължаща се на секретността по онова време. Общата оценка е, че добивът на уран в анализираните страни е служил поне обективно за запазване на собствените уранови залежи на Съветския съюз за сметка на изследваните страни.*

Ключови думи: *добив на уран, Чехословакия, България, Румъния, Унгария, Полша*

Райнер Бруме, докторант
Университет по библиотекознание и информационни технологии
E-mail: info@ra-brumme.de

АКТУАЛНО
CURRENT TOPICS

INTERNATIONAL RECRUITMENT AS AN OPPORTUNITY TO REDUCE THE SHORTAGE OF PROFESSIONALS IN THE HEALTHCARE SECTOR

Estella Francois
University of Library Studies and Information Technologies

Abstract: *This article analyses the problem of the shortage of skilled staff, as it occurs in many countries in the healthcare sector. As the structures of healthcare systems and their regulatory frameworks differ from country to country, the analysis focuses on the German healthcare system in order to obtain concrete and practical findings and recommendations for action. However, the statements can also be applied to the healthcare systems of many countries. The article focuses on the decisive factors that cause the shortage of skilled staff. Demographic developments, which are accompanied by an ageing society and lead to an increase in the need for medical and nursing care, are of central importance. In addition, the lack of junior staff in the medical and nursing sector would be called a significant influencing factor. As part of the measures to combat the shortage of skilled employees in the German healthcare system, international recruitment is seen as a key possible solution. This article therefore also describes the necessity and target groups for the recruitment of foreign healthcare professionals. It also analyses the motives of healthcare professionals from abroad for migrating as well as ways of recruiting these professionals. International recruitment is associated with numerous ethical requirements and challenges. In the context of the global recruitment of healthcare professionals, the World Health Organisation (WHO) has developed a code of conduct. One of the aims of this code is to ensure that medical care in poorer countries does not deteriorate significantly as a result of the demand for skilled labour from richer countries. Taking the code of conduct into account, this article looks at how ethically responsible procedures could be organised in the international recruitment of healthcare professionals.*
Keywords: *Shortage of skilled staff, care professionals, care crisis, healthcare, shortage of medical professionals (doctors)*

INTRODUCTION

There is an acute staff shortage in the healthcare sector in Germany, which is discussed extensively in politics and the public sphere with terms such as "doctor shortage" and "nursing and care shortage" (Görres et al. 2019, p. 138). This shortage is becoming increasingly serious. Many healthcare organisations are finding it progressively difficult to fill key positions with suitable employees. The shortage of personnel is most keenly felt in the healthcare sector, where there is a dearth of qualified professionals. These include those who have obtained a vocational qualification (skilled staff with vocational qualifications) or a university degree (skilled staff with academic and professional training) in the healthcare sector. In order to be eligible for employment in Germany, a qualification must be deemed equivalent or comparable to the German qualification (Hradecky & Sander 2024, pp. 28–31). The following section will examine the causes of the shortage of skilled staff and their effects on the healthcare sector, as well as the recruitment of skilled staff from abroad as a potential solution to the shortage of skilled staff. Additionally, the ethical aspects of the recruitment of foreign healthcare professionals will be briefly discussed. For a more comprehensive analysis of the ethical implications in relation to the countries of origin and the professionals to be recruited, it is recommended to refer to the relevant specialist literature (Angenendt et al. 2023, pp. 29–31; Oswald et al. 2023, pp. 96–98; Hradecky & Sander 2024, pp. 16–17).

RESEARCH METHODOLOGY

This paper is based on a comprehensive analysis of the relevant research literature. The research ranges from the causes and effects of the health workforce shortage to the need for and options for recruiting foreign health professionals. In particular, it draws on literature from the fields of human resource management, the care profession and health management.

The research and analysis also includes data from the Federal Statistical Office (Statistisches Bundesamt). This makes it possible to determine current data on the number of people in need of care and the number of care staff. The aim is to compare the claims made in the literature with the actual figures from the analyses of the Federal Statistical Office.

RESULTS

Causes and effects of the shortage of skilled staff in the healthcare sector

One of the main reasons for the shortage of skilled staff in the healthcare sector in Germany is demographic change. As a result of increasing life expectancy and a generally declining birth rate over the decades the proportion of older population groups is steadily increasing, while the proportion of younger population groups is decreasing (Hradecky & Sander 2024, p. 5). This trend is leading to an increasing number of older people, whose need for medical and care services is growing. However, this is offset by a decreasing number of young people who can provide these services. Another factor is the increasing need for professional care employees, which is due to the fact that fewer and fewer older people are being cared for at home by their relatives. Many older people have no relatives who can provide them with care profession and more and more people within a family are working. Cultural perceptions regarding the obligation of relatives to care for older people have also changed (Hilbert et al. 2019, p. 192).

In addition to demographic change, there are several other factors that are responsible for the shortage of healthcare professionals. It can be stated that the federal and state governments have been aware of the existence of a shortage of doctors for decades. Nevertheless, the capacities for medical study places have not yet been adjusted accordingly, so that an insufficient number of doctors are still being trained in Germany (Robra 2023, p. 143).

This leads to an increase in the shortage of doctors over time. Therefore, waiting times for doctors' appointments are increasing on average and there are serious bottlenecks in medical care, particularly in rural regions. The low number of younger doctors entering the labour market is leading to a continuous increase in the average age of the medical profession. For example, the average age of doctors in private practice has risen from 51.9 years in 2009 to 54.1 years in 2023 (KBV 2023). As a result, the shortage of doctors will become even more severe as more and more older doctors retire from professional life in the future and this effect can no longer be offset due to an insufficient number of (younger) doctors coming in (Haring 2019, p. 563). In the non-physician healthcare professions, such as nursing, it is often the working conditions and pay levels that contribute to the shortage of skilled staff. Working conditions in the care sector place high demands on staff. Shift work, weekend work, on-call duty, frequently changing schedules in the event of staff shortages, tight time schedules, a high level of responsibility for the health of patients and constant confrontation with illness and dying mean a high level of physical and mental stress for healthcare professionals (Schmucker 2019, p. 50). In many healthcare professions, the level of pay is not adequate to do justice to the high level of responsibility and workload – especially in comparison to other professions (Schmucker 2019, p. 58). For these reasons, many care staff, for example, leave their jobs, take up employment in another industry or only work part-time, if they feel overloaded. In addition, the lack of attractiveness in the care professions means that not enough young people are being recruited from younger generations (Pöser & Bleses 2018, p. 9). The shortage of nursing staff in turn worsens the working conditions of the existing staff, so that this effect is reinforced (Pöser & Bleses 2018, p. 8). The problem of the shortage of skilled staff will generally become even more severe in the coming years – due to the insufficient number of young professionals – as the older age groups increasingly retire. But even without this effect, the shortage of skilled employees is already serious (Kirschten 2021, p. 238).

The need to recruit foreign healthcare professionals

The statistical evidence and forecasts demonstrate the critical shortage of nursing personnel in Germany. To illustrate, the number of individuals requiring care in Germany increased from approximately 2.6 million in 2013 (Statistisches Bundesamt 2015) to approximately 3.4 million by the end of 2017 (Statistisches Bundesamt 2018). This equates to an increase of approximately 30%. A forecast by the Federal Statistical Office indicates that the number of individuals requiring care in Germany may increase from approximately 3.4 million in 2017 to approximately 5.4 million by 2030 (Statista 2023). This represents a projected growth of over 58%. This would result in an additional increase in demand for care services in the coming years. It is projected that there will be a deficit of approximately 280,000 to 690,000 healthcare professionals in Germany by 2049 (Hradecky & Sander 2024, pp. 2–3). As the demand for healthcare employees in Germany – as in many other industrialised countries – cannot be met by domestic staff, it is considered necessary to recruit foreign healthcare professionals.

Target groups for the international recruitment of healthcare professionals

The target groups for international recruitment of healthcare professionals are, on the one hand, foreign nationals from European Union countries, plus nationals from Iceland, Liechtenstein, Norway and Switzerland. This is due to the fact that these individuals have unrestricted access to the German labour market, regardless of whether they are already in Germany or not. In addition, foreign nationals from countries outside the European Union (from third countries) are also eligible. However, the legal frameworks that apply to them are different, depending on whether they are already in Germany, such as asylum seekers, or living abroad. As there are extensive, complex and often changing legal framework conditions to be observed in this regard, and changes are currently planned, the organisations responsible for healthcare facilities should keep themselves informed in order to be able to take advantage of the new opportunities for employee recruitment associated with the changes (Hradecky & Sander 2024, p. 25).

Reasons why healthcare professionals from abroad choose to migrate

The push-and-pull model is typically applied to elucidate the underlying motivations that drive individuals to leave their country of origin and pursue employment and residence in a foreign land. This model assumes the existence of two distinct sets of factors: those that motivate individuals to emigrate from their country of origin (referred to as "push factors") and those that attract them to the destination country (referred to as "pull factors"). It is possible that both the country of origin and the destination country may exhibit repulsive and attractive factors. Examples of push and pull factors include the level of salary, the employment situation (e.g. unemployment), the quality of working conditions, career opportunities, security and quality of living conditions, political stability, opportunities and future prospects for children, etc. (Mosuela 2023, pp. 38–39).

Ways to recruit healthcare professionals from abroad

When recruiting healthcare professionals from abroad, employers generally have several options at their disposal. If the institution wishes to recruit healthcare professionals abroad on its own responsibility, it can do so through appropriate measures in the country of origin (e.g. through local information events, cooperation agreements with educational institutions) or from the home location of the healthcare institution. Suitable options for this are, for example, specially created websites (in foreign languages), internet advertising, social media advertising measures or online job exchanges that are used in the country of origin from which the healthcare professionals are to be recruited (Kochhan & Cichecki 2024, p. 51). Another basic option is to utilise the services of the Federal Employment Agency (Bundesagentur für Arbeit), which provides a "Central Foreign and Specialist Placement Service" (ZAV) for German companies specifically for this purpose. The "Triple Win" project was developed in cooperation between the ZAV and the "Deutsche Gesellschaft für Internationale Zusammenarbeit" (German Development Cooperation (GIZ) in order to recruit professionals in the healthcare sector from abroad in a fair manner. This involves concluding agreements with suitable countries that do not themselves suffer from an acute shortage of healthcare staff. Specialists are then selected in these countries who are prepared both linguistically and culturally for working in Germany. The placement process and the migration of skilled workers

to the German labour market are actively supported (Hradecky & Sander 2024, pp. 17–18). Another basic recruitment option for healthcare professionals from abroad is to commission private recruitment consultants or commercial recruitment agencies that place suitable professionals with employers in return for a commission. However, it should additionally be pointed out here that there are also non-profit agencies that are active in this function (Truchseß & Brandl 2021, pp. 8–9). In addition, the provider of the healthcare facility could also recruit healthcare professionals from abroad by using the services of a personnel service provider – e.g. a temporary employment agency – which provides healthcare organisations with the labour in the desired qualifications and, as an employer, recruits employees from abroad itself (Truchseß & Brandl 2021, pp. 21–22).

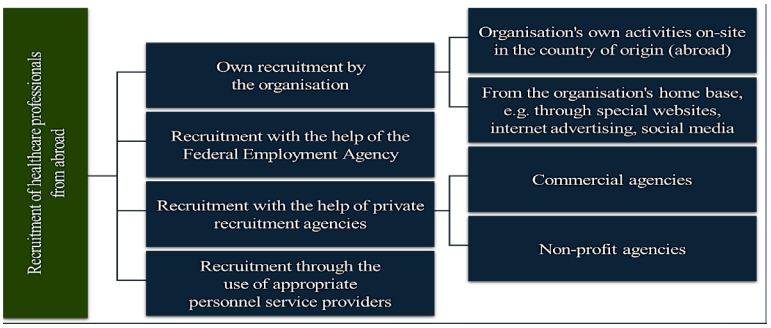

Fig. 1. Classification of alternative approaches to the recruitment of healthcare professionals from abroad (own illustration)

Ethically responsible practices in the international recruitment of health professionals

In 2010, the member states of the World Health Organisation (WHO) reached a consensus on a code of conduct containing ethical principles for the international recruitment of health professionals (WHO 2010; Pariyo & Lucas 2019, pp. 135–136; Yeates & Pillinger 2019, p. 96). The "WHO Code of Practice on the International Recruitment of Health Personnel" makes a number of recommendations, for example (WHO 2010; Berger & Herrnschmidt 2016):

- No healthcare staff should be recruited from countries that themselves have a significant staff shortage.
- Foreign staff should be treated equally to domestic staff in terms of employment conditions.
- Cooperation in the healthcare sector should be strengthened between the countries of origin and the destination countries.
- All countries are called upon to cover their personnel requirements with domestic staff wherever possible.
- International migration in the health sector should be regularly monitored with the help of data collection, research programmes and evaluations.

The Code of Conduct is not legally binding, but merely a recommendation that is accepted by the member states of the WHO. The Code is occasionally criticised for being contradictory (Angenendt, Clemens & Merda 2014, pp. 1–8), as it requires on the one hand that no staff should be recruited from a country that is understaffed in the health sector, but on the other hand it emphasises that the right of health professionals to international mobility must not be restricted (WHO 2010, 4, Artikel 3.4).

The author of this article is of the opinion that the WHO cannot be expected to succeed (in a code of conduct or in general) in resolving the conflict of objectives resulting on the one hand from the individual right to international mobility of individual healthcare professionals and on the other hand from the objective of the countries of origin that healthcare professionals should remain in their country of origin. It is untenable to suggest that a prohibition on the fundamental right to mobility could be a viable solution. Despite this limitation, the code of conduct presented by the WHO can be seen as a valuable approach to establishing ethical principles in the international recruitment of health professionals.

CONCLUSIONS/DISCUSSION

The shortage of skilled staff in the healthcare sector is one of the biggest challenges facing many countries, including Germany, and is expected to intensify in the coming years. The causes are diverse and

complex, with demographic change, too few trainees or junior staff and high workloads in the healthcare sector being key factors. The shortage of medical practitioners (doctors), particularly in rural areas, leads to longer waiting times for patients and makes access to medical care more difficult. The poor working conditions and inadequate pay in the care professions also contribute significantly to many healthcare professionals leaving the sector or only working part-time.

It may be necessary to recruit specialists from abroad in order to remedy this shortage. Germany has the potential to address the shortage of skilled personnel in the healthcare sector, particularly through initiatives such as the Federal Employment Agency's 'Triple Win' programme and other comparable endeavours that prioritise equitable and ethically sound recruitment practices. Considering that negative impacts on the countries of origin cannot always be completely avoided, recruitment should be designed to minimise the impact on the countries of origin, which themselves may be suffering from a shortage of health staff. The WHO Code of Conduct provides an important ethical framework to ensure that the international migration of health professionals is organised responsibly for both the countries of origin and the destination countries.

In the long term, however, international recruitment can only be one of several solutions to combat the shortage of skilled staff in the healthcare and medical sector. Further structural adjustments to the healthcare system are necessary, such as improving working conditions, appropriate remuneration and the promotion of young talent. A combination of national and international strategies can be the only way to reduce staff shortages and secure healthcare provision in the long term.

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МЕЖДУНАРОДНОТО НАБИРАНЕ НА ПЕРСОНАЛ КАТО ВЪЗМОЖНОСТ ДА СЕ НАМАЛИ НЕДОСТИГЪТ НА СПЕЦИАЛИСТИ В СЕКТОРА НА ЗДРАВЕОПАЗВАНЕТО

Резюме: *В тази статия се анализира проблемът с недостига на квалифициран персонал, който се среща в много страни в сектора на здравеопазването. Тъй като структурите на здравните системи и техните регулаторни рамки се различават в отделните страни, анализът се фокусира върху германската здравна система, за да се получат конкретни и практически изводи и препоръки за действие. Въпреки това твърденията могат да бъдат приложени и към здравните системи на много страни. Статията се фокусира върху решаващите фактори, които предизвикват недостиг на квалифициран персонал. Демографското развитие, съпроводено със застаряване на обществото и водещо до нарастване на нуждата от медицински и сестрински грижи, е от основно значение. Освен това липсата на млад персонал в сектора на медицинските и сестринските грижи би могла да се нарече важен фактор, който оказва влияние. Като част от мерките за борба с недостига на квалифицирани служители в германската система на здравеопазване, международното наемане на персонал се разглежда като ключово възможно решение. Поради това в настоящата статия се описват и необходимостта и целевите групи за наемане на чуждестранни здравни специалисти. В нея се анализират и мотивите на здравните специалисти от чужбина да мигрират, както и начините за набиране на тези специалисти. Международното набиране на персонал е свързано с множество етични изисквания и предизвикателства. В контекста на набирането на здравни специалисти в световен мащаб Световната здравна организация (СЗО) е разработила кодекс за поведение. Една от целите на този кодекс е да гарантира, че медицинските грижи в по-бедните страни няма да се влошат значително в резултат на търсенето на квалифицирана работна ръка от по-богатите страни. Като се има предвид кодексът за поведение, в настоящата статия се разглеждат начините за организиране на етично отговорни процедури при международното набиране на медицински специалисти.*

Ключови думи: *недостиг на квалифициран персонал, специалисти по здравни грижи, криза в здравеопазването, здравеопазване, недостиг на медицински специалисти (лекари)*

Естела Франсоа, докторант
Университет по библиотекознание и информационни технологии
E-mail: Estella.Francois@gmail.com

АКТУАЛНО
CURRENT TOPICS

КАЧЕСТВОТО НА ВЪЗДУХА И ПРЕЖДЕВРЕМЕННАТА СМЪРТНОСТ

Нено Димов
Университет по библиотекознание и информационни технологии

Резюме: *Замърсяването на въздуха е един от факторите, които според СЗО е причина за настъпване на преждевременна смърт. Съвсем естествено е да се предполага, че по-чист въздух и изобщо околна среда ще са благоприятни за по-продължителен живот. Въпросът, който трябва да си зададем, е до каква степен можм да обвържем замърсяването на въздуха с преждевременната смърт и има ли ясно изразена корелация между тях? За да видим това, трябва да разгледаме как изобщо се дефинира преждевременната смърт и на какво е основана тази дефиниция. Трябва да проследим и качеството на въздуха, и продължителността на живота за възможно най-дълъг период, за който разполагаме с надеждни данни. На тази основа трябва да се опитаме да изведем определени изводи, които да ни покажат доколко замърсяването на въздуха влияе на смъртността. Добре е и да видим дали не влизаме в омагьосана спирала – по-чистата околна среда води до по-дълъг живот; по-дългият живот води до повишаване на възрастта, при която смъртта се приема за преждевременна; повишаването на възрастта на преждевременната смърт води до повече случаи на такава. Резултатът ще се окаже, че при по-чиста околна среда нивото на преждевременна смърт нараства!*

Ключови думи: *замърсяване на въздуха, качество на живот, преждевременна смъртност, фини прахови частици, норми за замърсяване на въздуха*

ВЪВЕДЕНИЕ В ПРОБЛЕМА

Според Световната здравна организация (СЗО) 99% от населението на Земята през 2019 г. са живели на места, които не покриват препоръчителните стойности за качество на въздуха. Комбинираните ефекти от замърсяването на въздуха в околната среда и замърсяването му в домакинствата е причина за 6,7 милиона преждевременни смъртни случая годишно. Ако погледнем само замърсяването на въздуха в околната среда, то според СЗО през 2019 г. е причинило преждевременна смърт на 4,2 милиона души. Огромната част (89%) от тези преждевременни смъртни случаи са настъпили в държави с нисък и среден доход. Това обяснява защо в рамките на Европейския съюз ситуацията е значително по-добра в сравнение с данните за света.

Според Европейската агенция по околна среда (ЕАОС) в страните на ЕС лошото качество на въздуха, особено в градските райони, през 2020 г. е причинило най-малко 238 000 преждевременни смъртни случая поради замърсяване с прахови частици. Значително по-малко са тези следствие на азотния диоксид – 49 000, и на озона – 24 000 (EEA 2022). Данните на ЕАОС за България показват, че от замърсяване на въздуха с прахови частици през 2005 г. са умрели преждевременно 251 души, като нивото намалява и през 2021 г. те са 157 (EEA 2023). Основните замърсители, които причиняват преждевременната смърт, са праховите частици, въглеродният оксид (CO), озонът (O_3), азотният диоксид (NO_2) и серният диоксид (SO_2) (WHO 2024). Въпросът с преждевременната смъртност е изключително важен по няколко причини. На първо място, това са неблагоприятните условия, които влошават качеството на живот на гражданите. Освен това водят до съкратено време за трудова активност, заболявания и натоварване на здравната система и прочее. Доколкото задължение на държавата, включително като част от националната ѝ сигурност, е да гарантира живота на гражданите си, чистотата на въздуха е сред сферите на нейна ексклузивна отговорност. Две са определенията, които обаче трябва да се разгледат, преди да видим какво е развитието на ситуацията в България. От една страна, коя смърт се определя като преждевременна и от друга, какво е препоръчителното качество на въздуха.

Преждевременна смърт

Идеята за преждевременна смърт пряко навежда на това, че има възраст, на която смъртта е навременна. Колко точно ще продължи животът на даден човек, зависи от множество фактори и неговата кончина със сигурност не може да се определя като навременна или преждевременна.

Когато обаче говорим за национални и глобални измервания и сравнения, е необходимо да имаме някаква база, по която да ги извършваме. Такава ни дава концепцията за „преждевременна смъртност“. За такава се определя смъртност, която не би настъпила, ако е имало навременна и адекватна здравна грижа. Тоест става дума за ситуация, при която част от продължителността на живота е загубена поради събитие, което съкращава продължителността на живота и което води до загуба на няколко години живот и това не би се случило, ако смъртта настъпи по естествен път. Преждевременната смъртност е количествена мярка, която се използва за определяне на тежестта на дадена болест. Тя сравнява очакваната продължителност на живота с действителната възраст на смъртта и се изразява като „загубени години живот“.

Следващата задача, която трябва да решим, е как да я определим. Най-лесният и широко използван начин е фиксирането на конкретна възраст, под която смъртта да се класифицира като преждевременна. Сериозен недостатък тук е използването на уникален, произволен праг за различни модели на смъртност. По-комплициран подход може да се основава на специфичното възрастово разпределение на смъртните случаи в разглежданата държава или регион. Основният недостатък на този подход е, че неговата оценка на преждевременната смъртност силно зависи от това как е определено разпределението на смъртните случаи в напреднала възраст във всяка страна. Съвместяването на двата подхода вероятно може да намали влиянието на посочените недостатъци. Това би означавало разпределението на смъртните случаи в напреднала възраст да се поддържа постоянно за всяка страна като основна величина, а разпределението на преждевременната смъртност може да варира в различните страни. По този начин оценките на преждевременната смъртност стават по-сравними между страни с подобни характеристики (Mazzuco 2021).

Както отбелязах обаче, най-широко използваният подход е основан на фиксирането на конкретна възраст, като е естествено тя да е различна за различни изследователи, а и да се променя във времето. Пример за първото е, че за едни изследователи прагът е 65 години (Best 2018), а за други като ОИСР[1] (OECD) е 70 години. Последната е определена в индикатори на „Здравето с един поглед“ от 2009 г. (OESD 2009). Самата ОИСР през 2024 г. вече определя 75-годишна възраст за праг, на който се базират изчисленията и за преждевременна смърт, като години загубен живот (OESD 2024).

В Съединените щати и Европейския съюз, в частност и в България, към момента се приема, че смърт, която е настъпила преди навършване на 75-годишна възраст, е преждевременна.

Според СЗО един от много съществените фактори, които са причина за преждевременна смърт, е замърсяването на въздуха. Според доклад от 2024 г. през 2019 г. той е причинил 4,2 милиона преждевременни смъртни случая по света (WHO 2024). За България данните показват, че за 2021 г. финитe прахови частици са причина за преждевременната смърт на почти 11 000 души, а от излагане на високи нива на азотен диоксид починалите са около 2200 души. Тези високи нива на смъртност навеждат към задълбочаване на разглеждането на проблема и търсене на подход за тяхното намаляване.

Болести, причинени от замърсяване на въздуха

По данни на организацията излагането на фини прахови частици може да причини заболявания на сърдечно-съдовата или на дихателната система, които да доведат до инсулт, рак на белия дроб и хронична обструктивна белодробна болест. Според последни медицински изследвания излагането на замърсен въздух в ранна възраст може на по-късни години да причини психологически и поведенчески проблеми, включително депресии (WHO 2021).

Излагането на азотен диоксид може да доведе до възпаление на белите дробове и бронхите. Произведените от него свободни радикали могат да увредят епителните клетки на белия дроб, да причинят белодробно възпаление, да предизвикат симптоми на астма, да изчерпят антиоксидантната защита на тъканите и да доведат до астма (Khajeamiri 2021).

Излагането на серен диоксид причинява респираторни проблеми и промени във физиологията

на дихателните пътища. Продължителното излагане на този газ може да повлияе негативно на функционирането на бокалистите клетки, да доведе до епителната хиперплазия и хипертрофия на субмукозните жлези (Khajeamiri 2021).

Проучвания показват, че излагането на озон има неблагоприятен ефект върху дихателната система, като се наблюдават възпаления на белите дробове. Открита е и връзка между концентрациите на озон и епидемиологичните данни за респираторната смъртност (Bell 2004).

Обобщено, замърсяването на въздуха в краткосрочен план може да предизвика хронична обструктивна белодробна болест, кашлица, задух, хрипове, астма и респираторни заболявания. Дългосрочните ефекти основно са хронична астма, белодробна недостатъчност, сърдечно-съдови заболявания и сърдечно-съдова смъртност. Установена е връзка между замърсяването на въздуха и заболяването от диабет (Eze 2014). Експозиция на това замърсяване в ранна възраст може да доведе до хронични заболявания в зрелите години на човек (Kelishadi 2010).

За да си дадем сметка за нивото на риск, е достатъчно да посочим случилото се в Лондон през 1952 г., когато вследствие на високо ниво на замърсяване със серен диоксид в комбинация с дим (достигащо 1500 mg/m^3) смъртта си намериха над 4000 души. По същата причина през 1963 г. починалите в Ню Йорк бяха 400 (Kassomenos 2012).

Норми за замърсяване на въздуха

Анализът на качеството на въздуха и причинената от него преждевременна смъртност изисква да започнем с разглеждане на нормите за качеството на въздуха. СЗО е определила такива норми, чието постигане предполага, че преждевременните смъртни случаи, причинени от замърсяването на въздуха, ще бъдат значително намалени и дори преборени. Нормите са по две направления – стойности, които да не се превишават в рамките на денонощие (24-часови норми), и такива, които се отнасят за средните годишни стойности. Към 2021 г. 24-часовите норми, определени от СЗО по замърсители, са както следва:[2] фини прахови частици (PM_{10}) – 45 $\mu g/m^3$, фини прахови частици ($PM_{2,5}$) – 15 $\mu g/m^3$, NO_2 – 25 $\mu g/m^3$, O_3 – 100[3] $\mu g/m^3$, а за SO_2 – 40 $\mu g/m^3$. Определените годишни средни норми са: фини прахови частици (PM_{10}) – 15 $\mu g/m^3$, фини прахови частици ($PM_{2,5}$) – 5 $\mu g/m^3$, NO_2 – 10 $\mu g/m^3$, O_3 – 60[4] $\mu g/m^3$, SO_2 – няма (Franke 2024).

Тези стойности обаче се променят през годините. Първи определени норми за качество на въздуха са направени в Съветския съюз. През 1956 г. те изглеждат така: SO_2 – 0,15 mg/m^3 за 24 часа и 0,5 mg/m^3 за средногодишна норма, за NO_x (азотни оксиди) – 24-часовата норма е 0,15 mg/m^3, а годишната – 0,5 mg/m^3. Тук прави впечатление, че мерната единица е милиграм на кубичен метър, докато в днешно време нормите са микрограм на метър кубичен. Първи стъпки в посока определяне на връзка между замърсяването на въздуха и здравните рискове се появяват в доклад на СЗО през 1972 г. Препоръчаните тогава 24-часови норми за SO_2 е 200[5] $\mu g/m^3$, а средногодишната е 60 $\mu g/m^3$ (WHO 2017). Развитието следва с периодични доклади на СЗО, които определят конкретни замърсители на въздуха и целеви норми, с чието постигане да се постигне по-здравословна среда за живот. Първият доклад, предоставящ препоръки във формата на числови стойности за цели 28 замърсителя на въздуха, е от 1987 г. В него обаче ясно се подчертава, че стойностите са ориентировъчни и не трябва да се разглеждат като стандарти сами по себе си. През 2000 г. се появява втори доклад на СЗО, който включва нови 7 замърсителя, както и препоръки за замърсяването на въздуха в затворени помещения. Важен елемент в него е, че за първи път се разделя разглеждането SO_2 и финитe прахови частици.

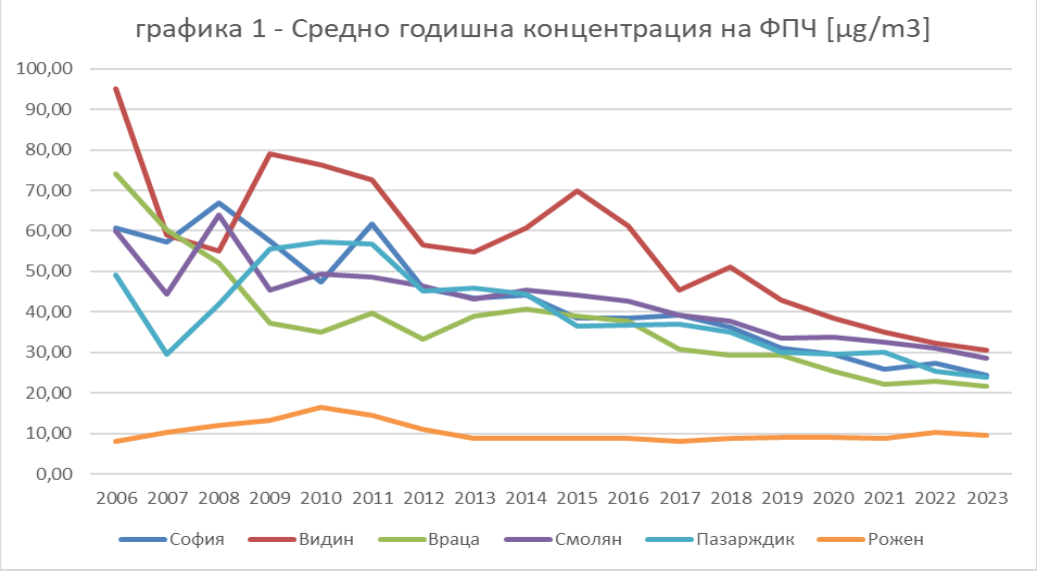
Насоките за качеството на въздуха от 2005 г. показват коренна промяна в сравнение с докладите от 1987 и 2000 г., тъй като се фокусират само върху четири класически замърсителя на въздуха: финитe прахови частици, озона, азотния диоксид и серния диоксид. Те са избрани въз основа на заключенията на проект на СЗО, наречен „Систематичен преглед на здравето – аспекти на замърсяването на въздуха в Европа“ (WHO 2017). Установените въз основа на тези последни проучвания норми са: фини прахови частици (PM_{10}) – 50 $\mu g/m^3$, фини прахови частици ($PM_{2,5}$) – 25 $\mu g/m^3$, NO_2 – няма, O_3 – 100[3] $\mu g/m^3$, а за SO_2 – 20 $\mu g/m^3$ (4-часови) и фини прахови частици (PM_{10}) – 20 $\mu g/m^3$, фини прахови частици ($PM_{2,5}$) – 10 $\mu g/m^3$, NO_2 – 40 $\mu g/m^3$, O_3 – няма SO_2 – няма (за годишните) (WHO 2021).

Продължителност на живота и замърсяване на въздуха в България[6, 7]

От 1974 до 1991 г. средната продължителност на живота в България е около 71 години, докато през 2021–2023 г. е 73,5 години. Това нарастване с около 3% не е съществено, за да се вадят кардинални заключения, но все пак периодът е достатъчно дълъг, за да покаже тенденция към повишаване на средната възраст, при която настъпва смърт. Тоест, ако приемем прага за преждевременна смърт на ОИСР от 75 години, излиза, че средностатистически в България всеки умира преждевременно. И също така, ако приемем, че преждевременна е онази смърт, която настъпва преди навършване на 65 години (Best 2018), то можем да кажем, че картината не е толкова плашеща.

Разбира се, добре е да видим къде продължителността на живота е по-висока и как това се съотнася със замърсяването на въздуха. Като цяло в градовете на България хората живеят по-дълго. Средно за големите градове продължителността е 75,3 години, докато средно за селата – 72,6 години или с 2,7 години по-малко. Ноторно известно е, че въздухът в селата е по-чист по показателите, които се следят, от този в градовете. Тоест факторът чистота на въздуха в този случай не е показателен. Нещо повече, за последното десетилетие средната продължителност на живот в градовете нараства с 2,8 години, докато в селата с 1,6 години – период, в който замърсяването на въздуха в градовете остава по-голямо от това в селата.

Статистиката ни показва и че столицата е с най-висока продължителност на живота (близо до 79 години), въпреки че е определена като един от градовете с най-замърсен въздух. Видин, със средна продължителност на живота от 74,9 години, и Враца – със 75,5 години, са на другия край от гледна точка на продължителност на живота, но и те са сред градовете със значително замърсяване на въздуха. В изследването ще добавя и два града с междинна продължителност на живота от около 77 години, тоест по-ниска от тази в София и по-висока от Видин и Враца. Нека да разгледаме замърсяването на въздуха в тези пет града на България. На графика 1 може да се види развитието на концентрацията на ФПЧ[8] за период от близо 20 години. Първото, което прави впечатление, е, че замърсяването значително намалява във всички обсъждани тук градове. Второто е, че София през целия период се позиционира между Видин и Враца като ниво на замърсяване на въздуха, но средната продължителност на живота по никакъв начин не корелира с това. Трето, замърсяването в Смолян и Пазарджик е близко до това на София и попада между нивата на Видин и Враца, но в тези населени места средната продължителност на живота е по-ниска от тази в София и по-висока от другите два града.



Според Националния център по обществено здраве и анализи към Министерството на здравеопазването (НЦОЗА 2024) средната продължителност на живота за същия този период от време не се е увеличил съществено – от 73 години през 2006 г. на 73,5 през 2023 г. – период, през който замърсяването на въздуха от ФПЧ е намалял много съществено – между 30% и 40% за различните разглеждани тук градове.

Липсата на надеждни данни за замърсяването на въздуха за по-дълъг период не позволява анализът да се разшири в годините назад. Но все пак разглежданият отрязък от около 20 години е достатъчен, за да могат да се правят определени предположения, а именно, че няма очевидна връзка между продължителността на живота и замърсяването на въздуха. Естествено е да се очаква по-голяма продължителност на живота при по-чист въздух и по-чиста околна среда изобщо. Но твърдението, че има определена преждевременна смъртност в България следствие на замърсяването на въздуха, може да се постави под съмнение най-малко защото статистическите данни не го потвърждават.

ЗАКЛЮЧЕНИЕ

Средната продължителност на живота зависи от много фактори. Едни са чисто генетични и наследствени, а втори могат да са свързани с качеството на живот. Чистотата на въздуха попада именно към тези, вторите.

Нека разгледаме най-общо един по дълъг период от време – последните 200 години. През 1800 г. средната продължителност на живота не е надвишавала 40 години в нито един регион на света, докато през 2021 г. тя е 70 години (Dattani 2024). За това трябва да има причина. Общото схващане е, че преди 200 години природата е била много по-чиста и че с индустриализацията ние я замърсяваме в значителна степен. Няма спор по това, че индустриализацията е допринесла за замърсяването на околната среда, но това не означава, че въздухът и водата са били чисти, преди да се появят фабриките.

Нашите предшественици са живели в ужасни условия на околна среда. Индивидуалното отопление с въглища води, в буквалния смисъл, до убийствено замърсяване на въздуха. Това са времена, в които няма тоалетни и бани, няма течаща вода и канализация, отпадъци, фекалии, всичко се изхвърля на улицата, включително карантии, умрели животни и прочее. Тоалетните ями са изкопани в близост до кладенци и замърсяват питейната вода. Починалите се изхвърлят в огромни ями, които се покриват с пръст едва след запълването им. Дотогава отровата и вонята на разлагащите се тела се разнася из въздуха. Храната е недостатъчна и гнила. Бактериалните и вирусните инфекции са ежедневие.

Всичко това се променя с навлизането на индустриализацията. Тя създава проблем със замърсяването, но решава значително по-голям проблем с друг вид замърсяване, а и с много други проблеми.

И нещо повече, промяната на възрастта за преждевременна смърт от 70 на 75 години показва, че животът продължава да се подобрява. А дали не се подобрява и чистотата на въздуха? Всъщност днес отчитаме, че преждевременната смъртност следствие замърсяването на въздуха се е покачила, но не е ли възможно това да е следствие от тези добавени 5 години? И не е ли възможно да имаме по-висока смъртност при по-чист въздух просто защото вдигането на границата от 70 на 75 години води по естествен начин до повишена смъртност?

Ако влезнем в спиралата, при която повишаването на средната продължителност на живота води до повишаване на възрастта за преждевременна смърт, то може да се окаже, че колкото по-добре и по-дълго живеем, толкова повече умираме преждевременно.

БЕЛЕЖКИ

1. Организация за икономическо сътрудничество и развитие.
2. Да не се превишава повече от 3–4 дни в годината.
3. Максимални дневни средни концентрации на озон за 8 часа.
4. Средна стойност на максималните дневни средни концентрации на озон за 8 часа в рамките на пиковия сезон. Пиковият сезон се определя като период от 6 последователни месеца с най-високи средни концентрации на озон.
5. 98% от наблюдаваните стойности не трябва да превишават тази норма.
6. Демографските данните са от Националния статистически институт и от Евростат.
7. Данните за замърсяването на въздуха са от Агенцията по околната среда.
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AIR QUALITY AND PREMATURE MORTALITY

***Abstract*:** *Air pollution is one of the factors that, according to the WHO, causes premature death. It is quite natural to assume that cleaner air and the environment in general would be conducive to a longer life. The question to ask is to what extent we can link air pollution to premature death and if there is a clear correlation between the two. To see this, we need to look at how premature death is defined in the first place and what this definition is based on. We should also track air quality and life expectancy for as long as possible for which we have reliable data. On this basis, we must try to draw certain conclusions which will show us to what extent air pollution affects mortality.It is also good to see if we are not entering an enchanted spiral – a clean environment leads to a longer life; longer life leads to an increase in the age at which death is considered premature; increasing the age of premature death leads to more cases of premature death. The result will be, with a cleaner environment, the rate of premature death increases!*
***Keywords*:** *air pollution, quality of life, premature mortality, fine dust particles, air pollution standards*

Neno Dimov, PhD
University of Library Studies and Information Technologies
E-mail: dimov.neno@gmail.com

АКТУАЛНО
CURRENT TOPICS

ЕФЕКТИВНОСТ И НРАВСТВЕНОСТ НА ЛИДЕРСКИТЕ ПРАКТИКИ В НЕПРАВИТЕЛСТВЕНИЯ СЕКТОР В БЪЛГАРИЯ

Стефан Методиев
Университет по библиотекознание и информационни технологии
Фондация „Щедрост и милосърдие – 2006“

Резюме: *Направен е анализ на развитието на неправителствените организации (НПО – над 16 000 организации са регистрирани официално) в България и тяхното влияние върху повишаване ефективността на процесите във всички сфери на обществения живот у нас. Обстойно са прегледани: принципите на ръководство на НПО; отношенията между хората и институциите в неправителствения сектор; плюсовете и минусите в развитието на неправителствения сектор; наличните ресурси на сектора за изпълнение на задачите и постигане на целите; предстоящите предизвикателства за успех на НПО в условията на динамично променящите се процеси на съвременния свят.*
Ключови думи: *НПО, гражданско общество, ефективност, лидер*

УВОД

Днес държавните институции в България започват да приемат НПО като важни структури в общия процес на развитие. Неправителственият сектор на национално ниво не е изследван задълбочено, особено в контекста на новите тенденции в обществените отношения. НПО успешно формират т.нар. „трети сектор“ и се налагат в живота на държавата. Защото тези организации са източникът на развитието и утвърждаването на нравствени междуинституционални отношения и постигане на положителен ефект от съвместните дейности в национален и глобален мащаб. Тези организации са важни не само от морална гледна точка, но и заради техния активен принос за решаването на обществени проблеми с траен характер.

За разлика от организациите със стопанска дейност, които са ясно дефинирани, за НПО има различни определения, но обобщено те могат да бъдат определени като: *юридически лица с нестопанска цел, които работят независимо от правителството за оказване помощ на различни социални групи и за постигане на желания краен резултат, който няма стопански характер.*

1. Ефективност на гражданските организации

Кратка ретроспекция на организациите с нестопанска цел

Въпреки че идеята за подпомагане на нуждаещите се съществува от библейски времена, организациите с нестопанска цел (НПО) имат по-кратка история. На всеки няколко десетилетия нова ера въвежда нов набор от идеи, принципи и практики, които влияят върху функционирането на нестопанския сектор. Какво можем да научим от историята на НПО? Без да бъдем твърде ретроспективни, можем да научим нещо от миналото, когато става въпрос за набиране на средства за НПО. Когато възникнат проблеми, трябва да се измислят нови и креативни начини за справяне с тях. Но защо да прекарваме часове в опити да проправим своя собствена пътека, когато други са го направили преди вас? Ще разгледаме някои ключови повратни моменти в историята на нестопанския сектор и какво можем да научим от тях.

1900 г.

От края на 1800 г. до 1920 г. светът навлиза в прогресивната ера – време на повишена социална активност и политически реформи. През това време се създава нова нормативна база, като закони за детския труд, избирателно право за жените и др. Това е и време на просперитет и успех на нацията. С увеличаването на богатството се увеличава и дарителската дейност. **Андрю Карнеги** е едно от олицетворенията на американската мечта. Публикуването на неговата статия **„Евангелие на богатството“** през 1889 г. насърчава идеята за дълг към обществото и даряването за каузи. В нея Карнеги разкрива водещите принципи в своя живот: *„Богатството означава отговорност“* и *„Който умре богат, умира позорно“.* Стоманеният магнат дарява голяма част от богатството си за строеж на библиотеки и университети. Между многото благотворителни организации, които създава, е и фондацията „Мир между народите“.

Друг пример в това отношение е организацията YMCA (Young Men‘s Christian Association) – международна организация, която обединява 120 национални организации. Основана е в Лондон през 1844 г. от сър Джордж Уилямс. Нейната цел е разпространение на християнските добродетели и здравословния начин на живот сред младите хора. Въпреки че организацията съществува от години, в началото на 1900 г. провежда първата значителна кампания за набиране на средства в САЩ по идея на Чарлз С. Уорд и Франк Л. Пиърс, двама от най-видните лидери на YMCA. Двамата разработват система за набиране на средства, която не е виждана дотогава: определяне на времеви лимит на кампанията им за построяване на нова сграда във Вашингтон, наемане на публицист, който да наблюдава кампанията, и търсене на платени реклами от корпоративни спонсори и знаменитости. Тяхното усилие става известно като „YMCA School“ за набиране на средства. Това превръща организацията от частен франчайз, фокусиран върху местни клонове, до такъв, зад който може да стои цялата нация и големите дарители. Днес YMCA се е доказала като една от най-големите НПО със свои представителства на всички континенти.

Какво можем да научим от Уорд и Пиърс? Дори ако сме малка организация с нестопанска цел, фокусирана върху нишова общност или кауза, можем да разширим усилията си за набиране на средства към всички. Необходимо е да създадем начин за дарение онлайн, кампания в социалните медии и популяризирането ѝ в национален и дори в международен мащаб.

1940 г.

С настъпването на Втората световна война САЩ се заемат да помогнат за преодоляване на негативните последици. За първи път в историята на нацията хора се събират, за да наберат средства в глобален мащаб. Те започват да пестят ресурси, да изпращат доставки на войски в чужбина и да разработват както цивилни програми, така и за подпомагане на бежанци. Много пъти набирането на средства и доброволчеството приемат формата на съвместни дейности. Американският Червен кръст също стартира несравнима кампания, в която успяват да съберат милиони долари, да наемат над 100 000 медицински сестри и да започнат първата по рода си програма за кръводаряване, свързана с войната.

Изводът от този период от време е как една организация с нестопанска цел може да работи с други организации за добра кауза, чрез сътрудничество да спестява разходи за неща като споделена инфраструктура и административни разходи, да популяризира мисията на другия на различни платформи и да увеличава максимално ефективността при изпълнение на задачите.

1970 г.

След масивната промяна на парадигмата, предизвикана от Движението за граждански права в САЩ, американците започват да се организират и работят заедно. Правителството също се ангажира в социални и културни програми за благоденствие. През 1969 г. Законът за данъчната реформа във връзка с Кодекса на данъчната служба гласи, че всяка благотворителна организация в САЩ, която отговаря на определени изисквания, е „частна фондация“, което означава, че има основен фонд, управляван от собствени попечители. Това дава на организациите статут на благотворителни организации и освобождаване от данъци на техните дарители.

Развитието на официален „сектор с нестопанска цел“ води до разработването на нормативни правила, разпоредби и политики. През 1976 г. Конгресът приема законопроект, който позволява на организациите с нестопанска цел законно да харчат до 1 милион долара годишно за лобистки усилия. Това им дава по-голям глас в правителството. Секторът с нестопанска цел е наречен „трети сектор“ и започва да оказва влияние върху света на бизнеса.

След 2000 г.

Точно преди светът да навлезе в новото хилядолетие, се появява интернет. През 1991 г. световната мрежа става достъпна за обществено ползване. Това завинаги ще промени света и ще принуди мнозина да се адаптират към технологията, за която дори не са мислили преди. За света с нестопанска цел това се превръща в още един начин за работа. Онлайн дарителството генерира 2,1 милиарда долара дарения за нестопански организации през 2012 г. и оттогава само расте. Затова днес всяка НПО трябва да е напълно оборудвана за онлайн дарения, с което тя улеснява дарителите да знаят къде отиват парите им. След като социалните медийни платформи като Twitter и Facebook набират много последователи, през 2006 г. се появява друга нова технология, достъпна за промоционална употреба.

Като използва социални медии, НПО може да разгласи своята мисия. Пример в това отношение са кампании като:

– **ALS Ice Bucket Challenge** – *„Леденото предизвикателство“, или на английски Ice Bucket Challenge, има за цел да подкрепи Асоциацията за борба с амиотрофичната латерална склероза (**ALS** – невродегенеративно заболяване, изразяващо се в бавното и прогресивно отслабване на функцията на периферните нерви). Подкрепата се осъществява по два начина – единият е заливане с ледена вода, което цели да привлече вниманието към болестта, а другият – чрез дарение, което се осъществява, когато номинираният откаже да бъде залят с ледената вода, да дари 100 долара за Асоциацията;*

– **Black Lives Matter** *(„Животът на чернокожите е от значение“) – движение, което се противопоставя на социалната несправедливост срещу чернокожите, както и на социалните институции и закони, поддържащи тази несправедливост. Движението е насочено към борба с полицейското насилие, прекомерното присъствие на полиция в техните райони и злоупотребите, извършвани в частните затвори, като се бори с расизма чрез ненасилствени протести.*

И двете кампании започват онлайн и се трансформират в гигантски социални движения. Изводът е, че винаги трябва да се възползваме от възможностите, които ни се предлагат. Интернет например може да обслужва толкова много цели за сектора с нестопанска цел. Така че зависи от нас самите да ги използваме в наша полза.

Съобразно изложените обобщения може да се приеме, че първото от тях се отнася до наличието на специфични изисквания към управленската система в нестопанските формирования поради потребността от измерване на социалното въздействие и одобрение. Второто обобщение е свързано с необходимостта от прилагане на оптимална методика, съчетана със съвременни управленски модели. А третото се отнася до практическите ползи от разработването на специфични иновативни модели за усъвършенстване на мениджмънта на НПО.

Третият сектор функционира в условията на редица особености и проблеми. Изследването им е първият етап от избора на оптимална методика и надграждането ѝ с подходящи управленски модели. Определянето на мисията, целите на дейност и основните функции на организацията е най-важната основополагаща задача, която трябва да бъде решена в рамките на организационното проектиране. Формированията с нестопанска цел се характеризират със специфична организационно-административна рамка. Тя се обуславя от редица фактори: нормативна уредба, направления при осъществяването на дейността, ограничени източници за привличане на средства, външни потребители на бюджетна информация, несъответствие между осигуреността с човешки и финансови ресурси и др. Те се явяват предизвикателства, които мениджмънтът трябва да преодолее, за да гарантира максимална ефикасност и устойчивост при постигането на социално въздействие.

Лобизмът и управлението в организациите с нестопанска цел

За ефективната дейност на НПО в България е важно да се вземе предвид как се използват **механизмите на лобирането в Европейския съюз** (ЕС) като организационна структура, методи и стратегии за ефективно лобиране.

Не съществува точна статистика за броя на различните организации, фирми и агенции, активно свързани с лобирането в Брюксел (и отчасти в Люксембург и Страсбург, както и в столиците на страните членки) и разделението им по сектори на осъществяваната от тях дейност.

Трябва да спомена, че според неофициални изследвания годишният оборот на индустрията на лобирането е между 60 и 90 млн. евро. Важно уточнение е, че около 70% от дейностите са свързани с бизнес сектора, 20% са под управлението на неправителствени организации и 10% са приоритет на региони, градове и международни организации. Не е изненадващо, че лобирането е концентрирано в ключови области на законодателството на ЕС и разпределянето на финансовите средства, предоставяни от ЕС. В много случаи лобирането е централизирано в т.нар. Евро групи (Eurogroups), в които организациите от страните членки, принадлежащи към един и същ сектор, са обединени и работят съвместно.

Интересното заключение е, че лобирането не се развива паралелно (или не е огледален образ) с икономическия потенциал или размера и броя на населението в дадена страна. Големите страни обикновено имат няколко канала, чрез които влияят върху процеса на вземане на решения, основно благодарение на влиянието си в Съвета на Европа и дългосрочното сътрудничество помежду си на високо ниво. В резултат на тези дадености малките страни имат възможност да се възползват в по-голяма степен от този начин на влияние върху процесите на вземане и привеждане в действие на решенията. Ирландия и Холандия са най-добрите и най-често цитираните примери за успешно лобиране на високо ниво. В този ред на мисли не бива да бъде подценявана ролята и на т.нар. „самостоятелни играчи“ („freelancers“), тъй като те могат да бъдат съществен източник на информация, чрез която косвено да се влияе не само върху решенията на ниво ЕС, но и на позицията на други страни членки и техните лобиращи организации. Още по-интересен и статистически подкрепен е фактът, че повечето страни членки поставят ударение при лобирането си на най-силните си сектори, в които чрез приети законови норми е заложена конкурентност за бъдещи периоди.

За да бъде ефективно и да постигне търсения ефект, всяко НПО трябва да познава **десетте златни правила** за ефективно лобиране, а именно:

1. Събери достатъчно информация за човека, вземащ решения.
2. Бъди добре подготвен и открит – веднъж загубеното доверие трудно се възвръща.
3. Представи себе си и институцията, която представляваш, достоверно и професионално.
4. Разисквай само един въпрос по време на една среща.
5. Обърни специално внимание на доводите и на отсрещната страна.
6. Представи своята позиция по ясен и разбираем начин.
7. Предложи реалистични решения и алтернативни опции.
8. Вземи със себе си добре подготвено обобщение на въпроса, за който лобираш.
9. Създай си лични контакти.
10. Продължавай да си служиш с тези лични контакти.

Резултатите от дейността на НПО в приоритетните области в България са налице. Икономическото развитие на макрониво у нас поддържа ръст от около 4% годишно. Появяват се нови сфери от първостепенно значение, които преориентират държавната политика в търсене на пътища за тяхното опазване, защита, развитие и модернизиране. Касае се за природните ресурси, околната среда, социалното развитие, бедността, образователната система и системата на здравеопазването.

Въпреки усилията, съществуват и обществени явления, които са обезпокоителни за НПО, а именно това са неефикасността и корупцията в работата на държавните институции. В тази връзка групите, които са най-потърпевши от влиянието на тези явления и които по тази причина са потенциални обекти на НПО, са младите хора и малцинствата. Основен акцент в работата на

НПО са и въпросите на бедността и възможностите за нейното минимизиране.

Може да се обобщи, че неправителственият сектор все още не е изградил ясна концепция за своето съществуване, развитие и доказване. Важно е да се отбележи, че фокусът е човекът с неговите потребности – материални и социални, които са в пряка връзка и зависимост от икономическото развитие.

2. Морални методи и нравствени принципи в дейността на неправителствения сектор

В днешния динамичен свят осезаемо се усещат ролята и значението на НПО. В условията на преход в различни обществени сфери като образование, здравеопазване, култура и социална политика е налице дефицит от координаторски организации, които да работят за решаването на редица социални проблеми. Това е и причината за създаването на организации с нестопанска цел.

У нас като синоними се използват термините „организации с нестопанска дейност“, „организации с нестопанска цел“ и „юридически лица с нестопанска цел“. Всички те се отнасят за организации с крайна цел: социалното подпомагане, овладяване влиянието на пазарната икономика и постигане на приемлив за обществото стандарт на живот на хората. В теоретичните анализи не се е наложило едно общо мнение за сектора от икономиката с нестопанска насоченост, но широко приложение и използване е получило понятието „неправителствена организация“ (НПО).

Тенденциите в света показват, че повечето страни се ориентират към насърчаване дейността на един стабилен, деен и независим сектор от организации с нестопанска дейност. За да се развиват, НПО са зависими от редица социални, политически и икономически условия. Обикновено водещи са политическите фактори. Съществуването и функционирането на сектора от организации с нестопанска дейност навсякъде са пряко зависими от идентични **предпоставки и причини.** По-значимите от тях са:

– свобода на сдружаване и на дейност;

– насърчаване на разнообразието в най-широк аспект, демократични толерантни взаимоотношения;

– социална справедливост и подкрепа от закона;

– ефективно решаване на различни социални потребности чрез прилагането на морални принципи и етични норми.

Анализ на схващанията за НПО

Направеният исторически обзор на НПО ни насочва към извода, че основа за дефинирането на понятието за организациите с нестопанска насоченост е концепцията за **„гражданското общество“** (Societé civile)[1]. Според нея *„гражданското общество е област, намираща се между домакинствата и държавата, в която е създадена възможност за социална организация и координирана и съгласувана дейност. Тя обхваща всички доброволни сдружения на граждани, независимо дали те са, или не са политически мотивирани и активни: сдружения от предприятия или синдикати, неправителствени организации, църковни организации, групи по интереси или частни цели. Тези сдружения са градивните елементи на „гражданското общество“, но нито едно от тях не може да бъде индивидуален представител на всички останали. Много често понятието „гражданско общество“ се заменя от понятието „неправителствени организации“.*

НПО се създават с цел подпомагане на обществото или отделни групи в него за постигане на общи цели, които нямат търговски характер, а тяхната дейност се подчинява на специален законодателен режим по Закона за юридическите лица с нестопанска цел. Този закон позволява създаване на нестопанска организация в няколко **правно-организационни форми:**

1. Сдружение в частна полза.
2. Сдружение в обществена полза.
3. Фондация.

Целта на учредителите е развитието на определени ценности в обществото. Едни от **основните цели** на НПО могат да включват (но не се изчерпват с посочените примери):

- *основополагащи човешки ценности;*

- *защита на човешките права;*
- *демокрация и гражданско общество;*
- *социално слаби и обществено изолирани групи;*
- *опазване на околната среда;*
- *образование и здравеопазване;*
- *изкуство и култура;*
- *други дейности, които не са забранени със закон.*

Характерното за всички НПО е, че извършват дейност за задоволяване на различни обществени нужди. Тези сдружения по правило **не извършват стопанска дейност** (дейност, насочена към реализиране на печалба). Важно е да се отбележи, че ако решат да извършват стопанска дейност, това е позволено само доколкото тази дейност е допълнителна и е свързана с предмета на основната дейност.

Като **добри примери** за извършване на позволена от закона стопанска дейност на НПО са:

- *изработване на приспособления за хора с увреждания, които да бъдат търгувани в магазин или в онлайн пространството, когато целта на НПО е подпомагане на хора с увреждания;*
- *продажба на копия на картини, пластики, скулптури в магазин на галерия, открита и управлявана от НПО с цел разпространение на културата и културните паметници.*

В крайна сметка извършването на стопанска дейност от НПО не ги прави търговци, тяхната цел е и си остава нестопанска. НПО не разпределят печалба – техните членове не получават дивиденти при реализирането на печалба от допълнителната стопанска дейност. Презумпцията е, че всички средства, които дейността на НПО носи, се изразходват за постигане целите на организацията.

За изясняване същността на НПО е важно те да бъдат **разграничени** от други форми на обединения на гражданите като читалищата, профсъюзите, вероизповеданията и политическите партии. Те също не осъществяват стопанска дейност, но тяхната дейност се регулира от специални закони, за тяхното създаване, управление и извършваната от тях дейност действат други правила.

Мотивация за дейността на НПО не е печалбата. Те се финансират от доброволни дарения. Затова и понятието **„трети сектор“** се е наложило като дефиниция за сектор, обхващащ различни социални цели между публичния и частния сектор, със собствени вътрешни правила и организация. Идеята да се създаде „трети сектор“ от икономиката предизвиква през годините оживени дискусии и страх. За да се избегне възможността този сектор да се превърне в събирателен такъв за индивидите и организациите, отхвърлени от публичния и частния сектор, не трябва да се допуска противопоставянето му с другите сектори. На него трябва да се гледа като на необходим елемент за общественото развитие години напред. Днес се появява и едно малко по-различно понятие, за което говори Европейската комисия, а именно **„трета система“** (tiers système). Това понятие обхваща кооперациите, организациите за взаимна помощ, сдруженията и фондациите, представляващи различни социални области, както и всички инициативи за създаване на дейности за осигуряване на услуги и стоки, за които нито публичният сектор, нито пазарът могат да намерят адекватно решение.

Тенденции в развитието на НПО

С развитието на обществото се увеличава и броят на различни кампании, които се провеждат в полза на социални каузи. Като всеки сектор, и неправителственият следва новите тенденции на усъвършенстване.

Една от най-забележителните новости е онлайн набирането на средства (online fundraising). Все по-често неправителствените организации използват различни платформи в интернет за набиране на средства, тъй като този начин е много по-бърз и достъпен за дарителите. Инициативи и портали за дарения в социалните медии са примери в тази насока:

– реклами в социалните медийни платформи и в глобалните програми за облекчаване на глада на *WFP* (*World Food Programme);*

– онлайн продажба на облекла и артикули със забавни и закачливи надписи от българската компания *Компоти.bg*. С парите от всяка тяхна продажба се осигурява безплатен обяд на един

възрастен човек от Северозападна България чрез фонд „Нашите родители“ на фондация *BCause.* Трябва да отбележим, че като равноправен член на Европейския съюз България може да кандидатства по различни програми за финансиране на НПО, в това число безвъзмездна финансова помощ, субсидия, с която се подпомага определена нестопанска дейност, и много други.

Тенденцията, която се забелязва в последните години сред българските неправителствени организации, е силното им присъствие в социалните мрежи. Причина за това е Ковид пандемията, която неотдавна завладя света и България. Този факт направи популярни т.нар. хибридни събития, които позволяват дистанционно (онлайн) участие, а това в повечето случаи е по-удобно за потенциалните доброволци, дарители и съмишленици на НПО.

Споменавайки доброволците, е редно да поясним, че **доброволческата работа** включва всякаква форма на доброволен труд, чрез който се даряват храни и други средства от първа необходимост на нуждаещите се от различни социално изключени общности. Доброволчеството в България се свързва с **ротари клубовете**. Това са международни организации за хуманитарни услуги. Първият ротари клуб е създаден в Чикаго в началото на XX в. Днес съществуват повече от 35 000 клуба в над 200 страни. В България има десетки ротари клубове, които участват в много обществено полезни проекти – от подкрепа на инициативи в областта на образованието и здравеопазването до насърчаване опазването и съхраняването на околната среда. Примери за проекти на ротари клубовете в България са:

– предоставяне на медицинско оборудване на болници;
– изграждане на училища и читалища;
– подкрепа на местни благотворителни организации;
– организиране на програми за лидерство и развитие на младежта.

Те предоставят ценни възможности за младите хора да развиват лидерски умения, да изграждат междукултурно разбирателство и да оказват положително въздействие в своите общности. Всичко това им дава стабилна основа за хуманитарни кариери.

3. Насоки за повишаване на ефективността и взаимодействието с държавата

В България вече има формирано положително отношение към дейността на НПО от страна на държавата и от тях се очаква да са връзката към посланията на техните целеви групи.

Българският неправителствен сектор в контекста на развитие

Направеният дотук анализ ни показва, че устойчивото развитие на неправителствения сектор се обуславя от три основни понятия – ефикасност (устойчиво развитие), непрекъснатост (с постоянни дейности) и самостоятелност (организации, които могат да разчитат на собствените си сили).

Неправителственият сектор трябва да е единен и последователен в своята дейност, комуникация и обмен. Той трябва да води продуктивен диалог с правителството и да получава ресурси от него. Положителният имидж на сектора е онази важна сила, която ще печели подкрепата на обществеността.

Сферата на социалните услуги и нейният значим принос, както и подобряването на отношенията между НПО и общностите са гарант за непрекъснатост и бъдеща устойчивост на сектора.

Необходимо е НПО да насочат усилията си към развитието на ресурсите, ефикасността на сектора и отношенията между НПО и общностите. Нужно е държавата да предоставя по-активна подкрепа на неправителствения сектор.

Основни насоки за развитие на сектора

а) вътрешно – структура, професионални компетентности, специализация, усъвършенстване;
б) отношения с общностите;
в) отношения с държавата – легитимност, автономия, партньорство;
г) определена финансова устойчивост;
д) взаимодействие с останалите субекти в социалната сфера.

Проектирането на ефективна организация изобщо означава да се определи такова състояние на нейните ключови елементи, при което най-оперативно и своевременно ще се изпълняват изискванията на субекта на управление в контекста на нарастващото практическо значение на модерното лидерство. В този смисъл много важна е ролята на лидера и ефективните средства за въздействие в различните етапи от организационното проектиране.

Съществуват **характерни черти,** които са част от описанието на която и да е неформална група и които трябва да отчита в своята работа всяко НПО. Те са:

1. Взаимодействие. Взаимодействието и комуникациите – вербални и невербални – са общи за всички групи. Те помагат на хората да установяват връзка помежду си и да се идентифицират с групата.

2. Дейности. Всички групи вършат нещо. При групите във формалните организации това е очевидно, но то се отнася с пълна сила и за всички останали – например съвместно прекарване на свободното време, изява на убеждения и любими занимания и т.н.

3. Норми. Определят се като установени стандарти на поведение и възприети модели на държание. Както всяко общество има свои закони за това какво е разрешено, желано, морално, недопустимо и т.н., така и по-малката структура – групата – има свои утвърдени (макар и неписани) правила.

4. Неформално лидерство. Появява се, когато ненатоварено с формални отговорности лице се окаже способно да насочва поведението на останалите. Често лидерските роли са няколко в групата. Възможно е един да представя групата пред мениджъра, друг да влияе при вземането на решения, а трети да организира социалните дейности. Но най-често изявеният лидер е една личност.

5. Свързване. Това е „лепилото“, което държи членовете заедно, обединяващата сила, даваща смисъл на групата. Най-силно привързани към общността се чувстват хората, които осъзнават, че членството им в нея позволява да удовлетворяват някакви свои потребности.

6. Социален натиск и конформизъм. Членството в групата носи някаква полза на членовете, но в замяна изисква от тях да мислят и действат по приетия в общността начин. Така се запазва устойчивостта във времето, независимо от натиска на външните обстоятелства, осигурява се реализацията на общите цели.

7. Групова култура. Групите имат свой почерк при извършването на дейностите, свои собствени обичаи и ритуали. Те създават свои думи, предписват облекло за различни случаи, налагат дисциплина.

8. Неформална структура. Подобно на формалните организации, неформалните също имат определени позиции и равнища. В центъра, естествено, е лидерът. Около него са уважаваните членове на групата, които имат по-силно влияние. Те формират т.нар. групово ядро. Следва вътрешната обвивка, която се състои от членове, активно участващи в дейността, но нямащи изявено влияние над останалите. Накрая е външната обвивка, която се състои от членове, участващи в дейността на групата поради влиянието на останалите *(вж. фиг. 1)*.

Фигура 1. Позиции в неформална организация

Избор на оптимална структура на управление на организацията

След разделянето на организацията на работни групи и разпределение на групите по равнища на управление е необходимо да се сформира оптимална структура на организацията. Трябва да се делегират пълномощията, което означава предаване на задачите на определено лице – лидер, което

поема върху себе си задължението за тяхното изпълнение. Пълномощията – това са ограниченото право за разпореждане с ресурси и определяне на действията на служителите на организацията. Делегирането на задачите и пълномощията поражда в организацията проблема за разпределението на отговорностите.

Следващата важна стъпка е изграждането на система за комуникации и информационно осигуряване на организацията. Комуникацията представлява обмен на информация между хората. В системата на комуникация на организацията разграничаваме външна и вътрешна комуникация. Главна задача на комуникационния процес в организацията е обезпечаването на ръководителите и служителите на всички равнища с необходимата за вземането и реализацията на управленските решения информация. Информационното осигуряване се заключава в изграждането на ефективна система за събиране, обработка, съхранение и предаване на информация.

В условията на съвременната пазарна икономика голямо значение за успешното функциониране и развитие на организацията, специализираща се в най-разнообразни сфери на дейност, имат не само икономическите и технологичните, но и социално-психологическите фактори. Сред тези фактори, наред с въпросите на кадровата политика и стратегия, все по-голяма роля играят аспектите, свързани с формирането и развитието на позитивния имидж на организацията от страна на нейните лидери.

Тъй като лидерството може да се определи като способност да се влияе върху индивидите и групите, за да се подтикнат те да работят за постигане на поставените цели, е необходимо да се отчете, че съществуват много и различни средства, чрез които може да се въздейства и да се водят хората при изпълнението на професионалните им задължения. Сложните въпроси, свързани с поведението на лидера, ефективните средства за въздействие и лидерския стил, са от изключително значение за насочване на усилията на индивидите при изграждане на организацията и реализиране на нейните цели.

ИЗВОДИ

Извършеният дотук анализ показва, че българските НПО се развиват устойчиво. Работещите в сектора са осъзнали значението, което устойчивостта в трите ѝ измерения (ефикасност, непрекъснатост и разчитане на самия себе си) има за успешното развитие и постигане на поставените цели и приоритети.

Анализът потвърждава също, че са налице необходимите условия за успешното използване на съвременни модели на НПО, както и за тяхното практическо прилагане. В изводна форма могат да се обобщят следните **приноси с теоретико-приложен характер:**

1. Водещите ценности в организационната култура на нестопанските формирования са фактори, обуславящи целите на управлението. Налична е тенденцията за повишаване на финансовия капацитет на организациите. Тази тенденция е предпоставка за необходимостта от усъвършенстване на мениджмънта, чрез който да се максимизират ефикасността и ефективността с оглед на отговорността към обществото.

2. Чрез систематизирането на особеностите в административно-организационната рамка и в дейността на нестопанските формирования се определят проекции и насоки за приложение на специфични за сектора методика и управленски модели, посредством които проблемите да бъдат ограничени.

3. Изследването и критичният анализ на приложимостта на различни иновации в управлението на нестопанските организации, сред които: модели за оценка на ефикасността и ефективността, бюджетни методики и съвременни управленски модели, води до успешно постигане на поставената организационна цел.

4. Разработването и използването на модели за управление на капитала, за планиране на приходи в условия на несигурност и за алтернативна последователност в зависимост от различните условия в нестопанските организации е необходимо условие за успехи в дейността.

ЗАКЛЮЧЕНИЕ

За да бъде едно НПО успешно, трябва да се има предвид, че обществата в отделните държави ще стават все по-фрагментирани по икономически, културни и политически въпроси. Хората ще се обединяват около познати и сходно мислещи групи по въпроси като **сигурност, етнически, религиозни и културни идентичности, както и групи около интереси и каузи, като например защита на околната среда**. Ще нараства песимизмът за бъдещето във всички страни по света; ще намалява доверието в правителствата и медиите; ще расте усещането за корупция в управлението.

Не трябва да забравяме, че в същото време обществата в по-голямата част от света ще стават по-просперииращи, образовани, осведомени, взискателни. Правителствата във всички региони ще бъдат изправени пред нарастващ натиск от икономически ограничения, демографски, екологични и други предизвикателства. Ще нараства напрежението в управлението поради несъответствието между очакванията на обществата и невъзможността на правителствата да ги изпълнят. Ще нараства и политическата нестабилност, рисковете за демокрацията и възможностите за алтернативно управление. До 2030 г. около 2,2 милиарда души (26%) ще живеят в държави със слабо управление и нестабилност (Субсахарска Африка, Близкия изток, Северна Африка, Латинска Америка, Азия). Като цяло нестабилността ще расте заради изменението на климата, продоволствената несигурност, младо и нарастващо население (в Африка) и бързата урбанизация.

Съобразно изложените обобщения може да се приеме, че поради потребността от измерване на социалното въздействие и одобрение в нестопанските формирования са налице специфични изисквания към управленската система. Второто обобщение е свързано с необходимостта от прилагане на оптимална методика, съчетана със съвременни управленски модели. А третото се отнася до практическите ползи от разработването на специфични иновативни модели за усъвършенстване на мениджмънта на НПО. Като цяло НПО сектора в България е сравнително добре развит и покрива повечето сфери на социално-икономическия живот у нас. Вече има изградени канали за комуникация между НПО и държавата, които и двете страни биха желали да запазят, но и да оптимизират. Предизвикателство пред НПО сектора е да остане в пряка връзка с гражданите, така че да може коректно и навреме да отстоява техните интереси в диалога с властта. Без съмнение, за това ще допринесе и създаването на граждански центрове на територията на цялата страна. Фундамент на НПО сектора са народните читалища, които през последните години допълнително разширяват дейността си и извън заложените по закон „културно-просветни задачи“ и се превръщат в единствени институции в редица малки населени места. Включването им към новосъздадената мрежа ще спомогне за тяхното по-добро и пълноценно използване в социално-икономическия живот на страната, както и към инициативи на ЕС.

В съвременните условия нараства значението на организациите с идеална цел за локалното, националното и международното развитие. Ролята на организациите с идеална цел през XXI в. са да бъдат основен партньор на държавата и на обществото. Дейността им влияе благотворно върху общественото развитие и спомага за изглаждане на социалните грапавини. Ефикасното реализиране на техните цели зависи от успешното прилагане на механизмите на тяхното функциониране.

В потвърждение на тезата за повишаване ролята на организациите с идеална цел за развитието на обществото е и изводът, направен при разработката на проекта „Третата система и заетостта“: *„дори една инициатива с идеална цел първоначално да е насочена към отделни индивиди или група хора и да е предназначена за покриване на техните индивидуални потребности, в крайна сметка „печели“ цялата локална общност“.*

В заключение, независимо дали току-що започвате или сте утвърден глас в общността си, помнете, че винаги можете да попаднете в ситуация, в която се чувствате изгубени. За щастие, пионерите и лидерите на мисълта на своето време са ни подготвили за всякакви проблеми. Така че нека историческите поуки бъдат пътна карта за вашата организация, за да можете да навигирате лекота във водите с нестопанска цел.

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EFFECTIVENESS AND ETHICALITY OF LEADERSHIP PRACTICES IN THE NON-GOVERNMENTAL SECTOR IN BULGARIA

Abstract: *The focus of the analysis is the role of the non-governmental sector (about 16,000 non-profit organizations registered since 1996) and its place in the development process in Bulgaria. An extensive review of the guiding principles and hypotheses of the various development sectors is provided; a general overview of the roles and relationships of development stakeholders; an analysis of the strengths and weaknesses of the non-governmental sector in the context of development; an assessment of the resources of the sector for the implementation of development (which are in the development period) tasks; an analysis of the future challenges and opportunities for sustainable development of the non-governmental sector in Bulgaria.*

Keywords: *NGO, civil society, effectiveness, leader*

Stefan Metodiev, PhD student
University of Library Studies and Information Technologies
E-mail: s.i.metodiev@rndc.bg; shtedrost@abv.bg

АКТУАЛНО
CURRENT TOPICS

AI-BASED CONFLICT MANAGEMENT TOOLS AS SYSTEMIC RISK MINIMISATION AND ECONOMIC SUCCESS FACTORS FOR SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN GLOBAL MARKETS

Yvonne Matthei
University of Library Studies and Information Technologies

Abstract: *Increasing conflict pressure due to the growing complexity of economic factual and relationship structures in extended corporate environments nowadays require for systemically flexible adaptation of traditional leadership and team competences. Thus greater willingness to invest in AI-supported conflict management systems (CMS) is needed. These transformative adaptations are therefore increasingly becoming a "must" for maintaining economic competitiveness, not only for large companies, but also for SMEs, which are increasingly operating on a global scale and are vital to the economy. Simultaneously, these requirements represent a challenge that is becoming increasingly difficult for them to master and is a strain of resources. Individually orientated adjustments to the legal-political and communicative framework are therefore necessary to lay the foundations and set the course for improved opportunities in the global marketplace. Continuous and systemically based learning, understanding and knowledge exchange processes between all relevant stakeholders and system owners are key success factors based on conflict theory and system theory.*
Keywords: *Small and medium enterprises (SMEs), global markets, Growing complexity, transformative adaptions, AI-supported conflict mamagement systems (CMS)*

INTRODUCTION

Wherever people act and interact in organisations, conflicts are omnipresent and tend to escalate and spread with increasing complexity, regardless of the size and structures of these dynamic "socio-technical systems" (Krems 2012).

Incisive and often lengthy cycles of change due to the increased use of supportive or generative AI-technologies also increase complexity and promote additional physical and psychological stress with new problem areas.

As a result, previously overt "hot" conflicts – motivated by achievement goals – c an quickly escalate into subliminal "cold" conflicts – motivated by prevention goals (Glasl 2004, pp. 77–84). At the same time, these are usually associated with the expansion of new emotion-based and thinking-based systems to explain subjective and destructive behavioural patterns. The well-known researcher on conflicts and organisations Friedrich Glasl therefore refers to so-called affect logics, associated with high levels of risk as to "social contagion" (Glasl 2014, p. 175).

Manifested affect logics can reveal themselves, for example, in exaggerated competitive or controlling behaviour, with lasting negative effects on the overall working atmosphere and external perceptions of a company.

On a structural level, disruptions can occur in systemic-cybernetically based information processing methods and communication contexts, whose regulation and control, as well as demarcation and exchange relationships, additionally fuel these phenomena (Brauchlin 2007).

On the other hand, tools such as AI-supported mediation, moderation or systemic-based models can also help to avoid these dynamics, resolve them more quickly or reverse their dysfunctional effects by utilising specialist and technical knowledge (Hubert 2014). One example of this is the St. Gallen management model (Brauchlin 2007).

RESEARCH METHODOLOGY

The degree of effectiveness of corporate conflicts and so-called "artificial intelligence" technologies therefore usually interact with each other in both positive and negative ways. This therefore requires a continuous and systemically based "keeping in balance" of the forces for a "more" synergetic and a "less" destructive interaction.

In contrast to many large companies, however, small and medium-sized enterprises in particular do not undertake to face these challenges, according to the EU definition (EUR-Lex). As a result, they are contributing to the exacerbation of a risk situation that already exists due to the pandemic and current wars. This is reflected particularly in the above-average increase in insolvencies compared to the previous year.

Table 1. Insolvencies in Germany 1st half-year 2024

Employees	Absolute number	% share	% change compared to previous year
up to 10	8,890 (7,010)	80,0 (82,8)	+ 26,8
11 to 50	1,670 (1,110)	15,2 (13,1)	+ 50,5
51 to 250	360 (310)	3,3 (3,7)	+ 16,1
more than 250	80 (40)	0,7 (0,5)	+ 100,0

During the years of the Covid-pandemic from 2020 to 2022, SMEs with fewer than 250 employees still employed almost 50% of all dependent employees in Germany. They also generated around 31% of total sales and around 49% of total net value added (Institut für Mittelstandsforschung (IfM) 25 October 2023).

In contrast, many internationally successful large companies, such as Siemens, SAP, Deutsche Bank and Lufthansa, which have already invested in CM and AI systems well in advance, are more resilient.

RESULTS

Consideration of systemic interactions and transformative risk minimisation as a key future task for companies

Paying attention to systemic exchange and demarcation processes alongside the original core business is increasingly becoming an important task for the future, even for SMEs.

In what specific form can these processes reveal themselves and have an impact?

From an individual perspective, the advancement of generative artificial intelligence has already had far-reaching consequences for the need to change communication and decision-making channels, hierarchical and role perceptions, as well as learning and error cultures.

Decision-makers and recipients become self-organised colleagues working on an equal level who seek for and demand open communication, cooperative working methods and modern management styles.

However, the resulting stress-related excessive demands on emotion-regulating limbic systems can also massively hinder these adaptations due to the anxiety reactions observed in others (Drimalla 2018). This is associated with aggression, escape and freezing strategies, right through to restrictions on creativity and performance that hinder innovation. Examples of this include increasing burnout, concerns about overall competitiveness and collective decline (Zeit Online 2024).

How can these risks be minimised at an early stage?

The results of the PWC-Viadrina long-term study from 2008–2016 and professionalisation efforts by over 80% of the now more than 60 globally active large companies of the Round Table for Mediation and

Conflict Management (RTMCM) have shown how the establishment of new ways of conflict resolution and prevention support a more efficient handling of their effects and follow-up costs (Gläßer et al. Study V 2016, pp. 57–81).

They value conflicts primarily as opportunities for optimisation potential, with the aim of tackling conflict situations more constructively while maintaining motivation and structures even over longer crisis-related dry spells (RTMKM 2024).

De-escalating measures by company ombudspersons, external and internal conflict contact desks and mediators have proven to be the most effective (Kulzer 2021). In addition, holistically orientated conflict cost calculations with listings of social costs, such as the Circle of Conflict model (Insam & Fischer 2013), are rated as efficient.

Fig. 1. Conflict costs 2.0 – the conflict cost calculator enabling conflict competence

At the same time, these corporate groups are also striving to strengthen their resilience in a dual sense and to have a long-term positive impact on their organisation by investing in AI-supported technologies. The first pioneering steps are demonstrated, for example, by the online CM process selection assistant and the Dispute Resolution Comparising Tool (DiReCT) for customised RTMCM process selection (RTMKM 2019).

Globally active insurance companies such as Allianz and ARAG AG have been using online process cost calculators as service portals for their customers for a long time (Allianz 2024).

SME-specific opportunities and risks on the path to transformation and structural change

Nevertheless, the benefits of these AI-based CM approaches have not yet been sufficiently recognised by SMEs.

Inessence, savings connected to prevention measures that have not been executed and the resulting consequences continue to be misaligned with the costs of the prevention, and transformations are missed out on.

This is mainly due to a continuing lack of "expertise about the relevance of new technologies" (Porschen 2022). A shortage of skilled labour is also hampering innovation (Knust 2023). On the one hand, this is reflected in the low overall affinity towards and use of AI by SMEs compared to the EU average (IfM 21.02.2024), as well as the low utilisation of resource-saving AI concepts provided, such as the Chambers of Industry and Commerce (IHK Handelskammer) (Deinert 2021).

Alternative conflict resolution skills would be particularly important for these groups of companies, most of which are still structurally disadvantaged, as increasingly necessary mergers through competition-securing and multinational joint ventures will cause transnational process costs to rise exponentially for them in the future (Zeuner 2024).

SMEs also usually operate as family businesses in the legal form of a limited liability company (GmbH). This usually quickly gives rise to profound conflicts of interest, such as disputed succession arrangements or asset distributions at several levels. For example, in corporate contexts from managing

directors and shareholders to family members and non-members.

These can escalate into irremediable "rifts" and, according to current case law, already constitute "relevant cause" for the dissolution of the company (OLG Naumburg 2012, Ref. 2U 106/11). They are therefore particularly likely to damage the company as a whole.

In addition, growing external pressure from new restrictive framework legislation, such as the Supply Chain Duty of Care Act (LkSG), the Stabilisation and Restructuring Act (StARUG) and the General Data Protection Regulation (DSGVO), is leading to new uncertainties due to increasing preventive pressure and bureaucracy.

Conclusions about existing problems can be drawn above all from the decline in business start-ups – especially in the self-employed and commercial sector – with stagnating forecasts for the future (IfM 28 May 2024).

What do these developments mean for existing corporate organisations and market positioning?

From a systemic perspective, companies that do not invest in AI or CM measures are therefore developing into increasingly rigid, i.e. closed, systems that only interact with their environment to a limited extent. In particular, if growing external pressure is not balanced out by internal changes (input performance) and the necessary external influences (output performance). Although their structures are therefore fundamentally more durable than active open systems, they are less able to adapt to changing environments and subsequently reorganise themselves and keep themselves lively (Wenzel 2012).

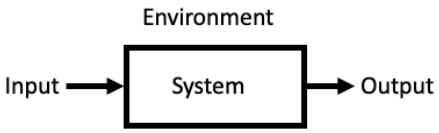

Fig. 2. System model (system concept and system model)

Conversely, companies that are open to these approaches not only contribute to their own balanced corporate identity, but also to a healthier overall economic and social balance.

This has an impact on direct company addressees, such as the long-term or short-term loyalty of employees, customers or managing directors, as well as the achievability of political goals that aim towards the common good, such as the preservation of jobs, pensions and gross domestic product.

What consequences do SME company managers fear in particular from the use of modern AI-based systems?

Innovations have always caused incomprehension and fear. Even the first electrified motor vehicles in the 19th century led to strong emotional and sensory overload, mainly due to perceived dangers such as rising accident rates and fatalities (Vattenfall 2020). Nevertheless, overall social and economic benefits have now led to widespread acceptance. The future of mobility is electric, digital and increasingly AI-connected, as already demonstrated by the successful use of self-driving assistants.

Similarly, the use and linking of so-called "prompt engineering" ensures that previous conflict management instruments can be optimised in favour of constructive, all-party communication. For example, through the digital creation of opportunity and risk analyses, as well as comparisons of suitable, cost-effective types of procedure (Weigel & Termer 2024, p. 22).

A first current example of this is Pega Smart Dispute AI, which is preferably used in complaint management and enables more intelligent dispute decisions through a combination of workflow, NLP and AI elements (IT Finanzmagazin 2024) .

Optimised humanity and AI-supported results efficiency as common systemic success factors

Nevertheless, it is particularly important to protect company employees from manipulative misuse of these exponentially growing technologies through a balanced systemic input-output ratio of influencing environmental conditions; realisable through jointly generated and supported communicative operations with value creation potential for companies and communities (Weiß 2007, p. 3).

Accordingly, AI-based conflict management should also primarily serve the common good for people and therefore enhance irreplaceable components such as trust, empathy and appreciation.

Today, SME representatives would also like to see something similar from power and process promoters relevant to corporate policy, such as legislators, government and academia, with the following motivational components being prioritised:

– Trust

– Practice-orientated relief instruments

– and an improved exchange of knowledge (IfM 25 March 2024).

Ethical regulations for trustworthy cooperation in CM and AI-supported systems, such as the Code of Conduct and Ethics for process and management executives, as well as the user-oriented European AI Act Ethics Guideline of 2024 are the first suitable steps in this direction (Die Bundesregierung 2024).

The same applies to the Mediation Directive of 2008, which has since been implemented throughout the EU to promote alternative dispute resolution procedures in civil and commercial matters. However, even state implementation regulations, such as the German Mediation Act (MediationsG) of 2012, still lack important utilisation aids, e.g. reimbursement of legal costs for companies or families with limited resources (see EU Mediation Directive 2008/52/EC).

In contrast, the provision of relieving state subsidies and long-term sustainable advisory formats from the EU structural funds to manage digital change and shape employee-oriented corporate cultures could represent more effective measures with a confidence-building character (Federal Ministry of Labour and Social Affairs n.d.).

However, it remains unclear how this support should work and be utilised. Many SMEs do not yet have suitable AI information systems and non-governmental interest groups such as chambers of commerce and craft chambers do not offer sufficient support, as demonstrated by the lack of online funding guides, regional representatives and unutilised EU funds in recent funding years (Bundesverband dt. Fördermittel-Berater 2018).

This means that ethically oriented guardrail regulations in particular, as well as state funding and knowledge exchange programmes, fulfil important door-opening functions for rethinking and adapting previous management models and flexibly realigning them with regard to AI-supported CM systems.

However, due to their lack of transparency and accessibility, they only serve to a limited extent to reduce perception-based access barriers for SMEs and thus a synergetic-systemic exchange.

Solutions to systemic dilemmas through competition-preserving cooperation and collaboration

More competition-preserving cooperation and collaboration could therefore respresent solutions to these dilemmas. This has already been demonstrated by strategies used to cope with the Covid-pandemic, such as the so-called “general practiotioner model” in Germany and Austria (Wagle 2020).

These can be realised primarily through an interdisciplinary and continuous science-practice transfer that uses both digital online communication and individual bilateral and person-to-person offline communication.

With the target agreements:

– Appreciative and trust-based communication on the same level

– Common openness to different self-images and needs structures

– Acceptance and willingness to mutually exchange knowledge, learning and understanding processes.

Above all, these results-orientated impact factors make it possible to reach, motivate and network all relevant target groups for transformation processes.

CONCLUSION

The synergetic interplay of input and output effects thus preserves the balance of power between systems that could otherwise be jeopardised by the parasitic spread of conflicts.

AI- and CM-capable large companies are already protecting themselves against these existentially threatening problems by sensitising themselves to preventive conflict management and resolution methods.

A failure to successfully transfer expertise and knowledge between all relevant economic policy players is therefore likely to further widen the gap between economically significant coexistents and pose a major threat to the overall social balance.

Therefore, actors within political systems in particular are required to take the opportunities and risks of introducing new management processes seriously. In particular, AI-supported conflict management systems should therefore be promoted in a more standardised and targeted manner at both European and national level.

Beyond this, however, holistic transformation processes of all corporate interest groups and managers are needed – from reactive contact partners to active ambassadors and "sparring partners" – in favour of fair entrepreneurial framework conditions and overall socio-economic success.

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ИНСТРУМЕНТИ ЗА УПРАВЛЕНИЕ НА КОНФЛИКТИ, БАЗИРАНИ НА ИЗКУСТВЕН ИНТЕЛЕКТ, КАТО ФАКТОРИ ЗА МИНИМИЗИРАНЕ НА СИСТЕМНИЯ РИСК И ИКОНОМИЧЕСКИ УСПЕХ ЗА МАЛКИТЕ И СРЕДНИТЕ ПРЕДПРИЯТИЯ (МСП) НА СВЕТОВНИТЕ ПАЗАРИ

Резюме: *Увеличаващият се конфликтен натиск, дължащ се на нарастващата сложност на икономическите фактологични структури и структури на взаимоотношенията в разширените корпоративни среди, днес изисква системно гъвкаво адаптиране на традиционните лидерски и екипни компетенции. По този начин е необходима по-голяма готовност за инвестиране в системи за управление на конфликти (СУК), поддържани от изкуствен интелект. Ето защо тези трансформационни адаптации все повече се превръщат в „задължителни“ за поддържане на икономическата конкурентоспособност не само за големите компании, но и за МСП, които*

все по-често оперират в глобален мащаб и са жизненоважни за икономиката. Едновременно с това тези изисквания представляват предизвикателство, което става все по-трудно за тях да овладеят и е свързано с натоварване на ресурсите. Ето защо са необходими индивидуално ориентирани корекции на правно-политическата и комуникационната рамка, за да се положат основите и да се определи курсът за по-добри възможности на глобалния пазар. Непрекъснатите и системно основани процеси на учене, разбиране и обмен на знания между всички заинтересовани страни и собственици на системи са ключови фактори за успех, основани на теорията на конфликтите и теорията на системите.

Ключови думи: *малки и средни предприятия, глобални пазари, трансформиращи адаптации, системи за разрешаване на конфликти, подпомагани от изкуствен интелект*

Ивон Матей, докторант
Университет по библиотекознание и информационни технологии
E-mail: ymatthei@yahoo.de

АКТУАЛНО
CURRENT TOPICS

ENERGY-EFFICIENT AND SUSTAINABLE RESIDENTIAL REFURBISHMENT IN TRANSITION

Marc Fischer
University of Library Studies and Information Technoligies

Abstract: *The dream of having your own four walls, a place to live all to yourself without having to pay rent later. Many people still have this dream. One way to make this dream come true is to buy a second-hand apartment or house and renovate it. However, buying a second-hand home has not only advantages, but also many disadvantages or potential hurdles. From a financial point of view, it may be an adequate alternative to building a completely new house, but problems usually arise during the renovation process. This is because used houses are only cheap because a lot of improvements have to be made to bring them up to current standards. Standards that can quickly turn into a buyer's nightmare on a micro level. Standards that can sometimes cost a lot of money and nerves. After all, modern renovations are supposed to be energy efficient and sustainable. Our federal government defines exactly what that means. Of course, such a system tries to take into account current problems and circumstances, but this can lead to problems in the procurement of materials and in the cost structure of the renovation process. In addition to these specifications, there are also the legal requirements in the general construction process, which must then run in harmony with the renovation process.*
Keywords: *Refurbishment, Energetic, Sustainable, Climate, Costs*

INTRODUCTION

In order to better understand the topic of residential refurbishment, we need to be clear about the definition of the term. Refurbishment is often associated with renovation or modernization measures. There are, however, binding differences between the individual processes. Of course, the different types can occur in combination. A renovation usually concerns individual measures that each private individual can usually carry out independently. This could be painting or wallpapering work. Modernization often occurs in conjunction with refurbishment, as the result is an increase in value or improvement in the quality of living and quality of life. A classic refurbishment includes things such as repairs, removing mold or other construction defects, i.e. many things that require a great deal of manual skill (cf. Schirmer 2024). The investment costs are just as varied. Even if the prices for materials such as laminate, tiles, etc. have also risen, refurbishments or modernizations result in significantly higher costs. Schulz (2024) lists the possible costs for home renovations in her current article. For example, the renovation process for a new building is calculated at around €600 per square meter. However, this is usually a simplified, standardized process in terms of definition, which really includes everything. This does not include a new roof, insulated windows or a new heating system. She explains that a sum of around €1,200 per square meter is usually required in the calculation for old buildings. And even here, the extent to which the current standards in terms of energy efficiency and renewable energy supply can be met in combination with the legal requirements of the development plan has not yet been fully taken into account. This means that private developers may incur additional costs that can have a significant negative impact on the financial aspect.

This is despite the fact that there are great hopes for sustainable, energy-efficient renovation. Not only is it more forward-looking, but retrofits are also steadily increasing in terms of revenue. For example, from 2021 to 2022 alone, sales of energy-efficient renovations will increase by more than €3 billion (cf. Scholle 2024). At first glance, a lucrative economic trend. But does this automatically mean that private

individuals and companies will renovate more? Not at all, as recent studies show that the renovation rate in 2023 will be only 0,83%. In 2022 it was 0,88% (cf. Trummer 2023). The rate was set by the federal government in connection with climate targets. Trummer goes on to point out that in order to meet the 2031 climate target for energy-efficient renovation in Germany, a factor of 2.5 would now have to be achieved, as more than 30% of all residential buildings are in need of renovation. Another challenge is that there is no current master plan with uniform standards for energy-efficient renovation, which in itself makes the process significantly slower, more complicated and, above all, more expensive. A comparison of the two figures confirms the statement that more turnover does not automatically lead to more renovation measures. This is supported by an expert opinion in the field. In addition to the current climate targets of the government, the extent to which the climate targets can be implemented in reality was also examined. The empirical results support the thesis that housing renovation is at a crossroads. More than 1,000 participants were surveyed (cf. Sagner et al. 2024, p. 27–28). While in 2019 almost 30% of respondents were planning to invest in a home in the short to medium term, by 2024 the proportion had already fallen to 16%, and of these only 53% were prepared to invest in an apartment or house in need of renovation. In other words, only about 80 out of 1,000 people could imagine investing in a home that needs renovation. The study also shows the reasons for this (cf. Sagner et al. 2024, p. 29). Multiple responses were possible. More than 53% said that the costs were too high for them. Overall, over 40% of respondents also indicated that the effort involved was too high. The respondents also felt that there was too little support, whether in the form of subsidies, which was cited by more than 26% of respondents, or cheaper loans, which was cited by almost 1/3 of respondents as an obstacle. These figures are corroborated by an additional study conducted by a climate and sustainability consultancy. Although the group of participants surveyed by Fjornes and Becker (2022, p. 11) was rather small at just under 60 people, the barriers to renovation are relatively congruent with the aforementioned study. More than 40% cited renovation costs as an obstacle, and another 30% saw them as a possible obstacle. The lack of funding opportunities or the funding process was cited as an obstacle by nearly 40% of respondents. However, issues such as regulatory requirements, payback, or lack of standards were also cited in this context, creating further uncertainty in the area of energy efficient retrofits.

RESEARCH METHODOLOGY

The challenges and opportunities of home renovation are outlined through a literature review. In order to do this, the introduction first outlines the main issues that are causing the industry to be at a crossroads. These issues will then be analyzed in more detail with the help of further source research. Topics such as building physics or what it means to renovate in terms of energy efficiency are considered, as well as the aspect of the right material or its relationship with hazardous substances. The pros and cons of remediation are then highlighted, as well as the possibilities for further development.

RESULTS

The information provided so far shows that the potential hurdles in the area of energy efficient and sustainable retrofits can be manifold. For this purpose, statistical evaluations in the form of investment theory are usually determined in advance using dynamic procedures. For this purpose, comparative calculations in the areas of profit and loss are made, evaluated and then a return on investment is determined. The results are then used to determine the point at which a refurbishment will pay for itself. In addition to the refurbishment or financing costs, the energy savings are also a fundamental factor in the calculations (cf. Hinz/Enseling 2018, pp. 60–61). The basic idea behind the process is that a house becomes a passive house or a low-energy house. The passive house system has not been around for very long, since around the early 1990s, but it is nevertheless becoming increasingly popular and supports the German government's climate target guidelines (cf. Sommer 2018, p. 17). The goal of the passive house is to do without standardized heating systems, but to use the raw materials of the house to generate energy, thus creating an energy cycle. Sommer's analyses from 2016 show that the system can establish itself on the market (2018, p. 255). In that year, the Federal Statistical Office recorded a housing stock of around 41 million. Around 80% of these require energy-efficient renovation due to outdated heating

systems. At the same time, however, not even 300,000 housing or building units were renovated. This means that in 2016, less than 1% of housing units were retrofitted for energy efficiency.

In order to benefit from the remediation concept in the long term, it is therefore advisable to use the coupling principle. This means that a synergy is created between the individual renovation measures. All materials eventually wear out or become outdated in terms of energy efficiency. For example, the exterior plaster would need to be replaced within 20-40 years, or the roof within 50 years. The coupling principle is then used to examine the energy and sustainability benefits of combining the renovation measures, i.e. also replacing the roof, even if it is only 20 years old, if this results in enormous savings in energy consumption (cf. Ebel et al. 2000, p. 39). This coupling principle is also advantageous in that the problem of thermal bridges can be addressed at the same time. A thermal bridge occurs when heated and unheated spaces meet. Humm already points out the most important thermal bridges and how important it is to take the right construction measures, regardless of whether it is a new building or a renovation (1998, p. 56–57): Basement ceilings, which are usually not insulated, exterior walls, lack of insulation in windows, transitions to balconies, attics in the roof, etc. The list is very long. If these thermal bridges are not taken into account, energy is lost and the energy required to keep the rooms warm is increased.

In order to implement the renovation concepts in the long term, the federal government has taken many different measures to support private households. In reality, however, these have only shifted the problem. This is shown, for example, by a study on the energy price brake. This was intended to protect consumers by only allowing energy companies to charge a maximum price for electricity, heating, etc. While this led to relief in 2022 and 2023, the whole thing was reversed from 2024 onwards. Companies were no longer bound by this limit. This was followed by a cost explosion (cf. Stefan et al. 2024, p. 13).

THE LEGAL SITUATION

Another challenge in the retrofit process is related to building codes. Unfortunately, there is a lot of potential for conflict here, as no distinction is made between old and new buildings when it comes to renovation. When the issue of historic preservation comes into play, it can be quite difficult to make progress with energy efficient retrofits. Historic preservation, in particular, essentially describes the issue of not changing the look and style of the building, which makes it difficult to use alternative materials or energy upgrades. A balance must be struck between cultural preservation and economic progress (cf. Hamesse 2001, pp. 85–86). Although some attempts have been made in the field of historic preservation to retrofit buildings energetically, for example by partially integrating a solar system or by cladding an older building so that it does not look too modern, buildings such as castles or even entire districts are rarely retrofitted energetically. The reason for this is that these buildings as a whole are legally considered cultural heritage and even UNESCO World Heritage Sites, i.e. buildings that should be preserved in their basic state (cf. Brockow et al. 2023, pp. 36–37).

But it's not just the legal system regarding building regulations that can slow down the process. The legal basis regarding species protection can also put a spanner in the works, especially in the case of older buildings. This is because the building owner is obliged to preserve the habitat of endangered species in accordance with Section 20 of the Federal Nature Conservation Act. Endangered animal species can nest in cellars, rooms or roofs of old buildings. Bureaucratic effort is therefore inevitable (cf. Stahr 2002, pp. 515–516).

Reorganization is also problematic from a landlord-tenant perspective. In addition to the potential hurdles already mentioned, companies face other challenges when it comes to shifting costs. This is known as the occupier-investor dilemma. To promote sustainability, buildings should be renovated with the tenants. In the long run, tenants save on heating costs. They therefore benefit from the renovation. Companies, on the other hand, can pass on some of the costs to tenants in accordance with § 559 of the German Civil Code (BGB), but they have to comply with laws such as the rent cap, special termination rights in the case of excessively high rents, or the rent cap, which considers only a certain percentage rent increase to be permissible in the area of refurbishment (cf. Beucker, Großmann 2023, p. 5).

MATERIAL AND CONSTRUCTION PHYSICS

In terms of building physics, there can be further challenges in the area of refurbishment. This often involves a combination with the legal situation. For example, if the law stipulates that only a flat roof is permitted in the building area, this requires particularly sustainable work. The major disadvantage of this design is that moisture from rain or snow collects on the roof and does not drain away or drains away poorly. The bitumen membranes used here are then sometimes subjected to heavy loads. The change in temperature can cause them to become brittle, which can lead to moisture forming in the underlying construction (see Grunau et al. 1998, pp. 49–50). Moisture and the resulting chemical compounds are a problem for all composite systems and materials. Even reinforced concrete, a combination of both systems, can become brittle. Although reinforced concrete is often used in the industrial sector rather than as a private house builder, refurbishment is still problematic. The basic challenge here is not the moisture itself, but the chlorides that are present in the environment. This then increases the corrosion process in the reinforced concrete. Here, too, large areas must be renovated, as the chlorides can spread widely through cracks in the masonry (cf. Grunau et al. 1992, p. 65). In order to prevent problems, it was decided in the course of many years of evaluation and analysis to divide building areas into stress groups. These are then assessed in terms of the amount of precipitation, wind effects or location, such as proximity to the mountains or coast. In the course of this, it was then determined which materials should be used during construction or renovation in order to ensure greater durability (cf. Willems et al. 2006, p. 433).

CONCLUSIONS/DISCUSSION

The pros and cons of sustainable, energy-efficient retrofits are currently undeniable. Statistically speaking, most renovations were started in the early stages, in the income bracket between €3,000 and €4,000. Households with an income of less than €1,500, on the other hand, hardly renovate at all, with less than 12% of all renovations taking place in this segment (cf. Stieß et al. 2010, p. 22). Pensioners are another socially disadvantaged income group. Studies have shown that it would cost more than EUR 8 billion to completely renovate the homes of pensioners alone by 2030 (cf. Schumacher et al. 2022, p. 29–30). If all low-income target groups were to renovate their homes, the costs would push them into poverty. The incentive to renovate and thus save on heating costs in the long term is therefore hardly an option in the wage sector (cf. Großmann et al. 2017, p. 612). Although there have been many different advisory services and support programs for years, they depend on financial support at the federal level in order to be marketed accordingly (cf. Schüle et al. 2011, p. 39). Looking at the current funding opportunities offered by the KFW in Germany, the funding pot is already very limited. Families with children can obtain loans at reasonably reduced interest rates, but single people without children are currently left empty-handed. With the KFW support program No. 261, one could take out a loan with an interest rate of 1,07%, but here too the phrase „under reserve“ in combination with additional conditions in the course of the renovation (cf. KFW 2024) is a deterrent. This is also confirmed by landlord surveys. As already mentioned, landlords carefully weigh up the extent to which renovation is worthwhile. Taking into account the economic situation, landlords criticize that the requirements of the subsidy programs are not very effective (cf. Renz, Hacke 2016, p. 79).

Although many of the figures and thoughts of the target groups studied were produced ten years ago, they can still be confirmed by current surveys and research. Despite the fact that energy efficient retrofitting offers opportunities for independence and possible long-term cost savings, people feel very much left alone with the issue. A lack of financial resources or information in the area of retrofitting alone creates economic challenges. If you also consider the aspect of the current legal situation, for example in the area of building fabric or monument protection, different legal requirements from different eras collide with each other, in which little seems to be happening at the moment. And this in the knowledge that there is a demand and a need, also in the employment relationship. There are already numerous staff shortages in the areas of building construction, energy processing and procurement management of raw materials (cf. Fries et al. 2024, p. 30). Thus, despite the many opportunities and benefits it offers, the 2030 renovation target currently appears to be difficult to achieve. This skepticism is also reinforced by the Building Energy Act, which came into force on 1 January 2024. Article 71 of the GEG stipulates that no

more fossil fuels may be used in heating systems by 2045 (see Höllen 2024, p. 1). To achieve this, various experts are calling for comprehensive measures and uniform standards in the area of thermal insulation, as well as realistic and binding climate targets (cf. Behr et al. 2023, p. 1).

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ЕНЕРГИЙНО ЕФЕКТИВНО И УСТОЙЧИВО ЖИЛИЩНО ОБНОВЯВАНЕ В ПРЕХОД

Резюме: *Мечтата да имаш свои собствени четири стени, място, където да живееш сам, без да се налага да плащаш наем по-късно. Много хора все още имат тази мечта. Един от начините да се сбъдне тази мечта е да се закупи апартамент или къща за обновяване и да се ремонтира. Покупката на жилище за ремонт обаче има не само предимства, но и много недостатъци или потенциални пречки. От финансова гледна точка тя може да бъде адекватна алтернатива на изграждането на напълно нова къща, но обикновено в процеса на обновяване възникват проблеми. Това е така, защото къщите за ремонт са евтини само защото трябва да се направят много подобрения, за да се приведат в съответствие с настоящите стандарти. Стандарти, които бързо могат да се превърнат в кошмар за купувача на микроравнище. Стандарти, които понякога могат да струват много пари и нерви. В края на краищата съвременните ремонти трябва да бъдат енергийно ефективни и устойчиви. Нашето федерално правителство определя какво точно означава това. Разбира се, подобна система се опитва да вземе предвид актуалните проблеми и обстоятелства, но това може да доведе до проблеми при снабдяването с материали и в структурата на разходите в процеса на обновяване. В допълнение към тези спецификации съществуват и законовите изисквания в общия строителен процес, който след това трябва да протича в хармония с процеса на обновяване.*

Ключови думи: *обновяване, енергиен, устойчив, климат, разходи*

Марк Фишер, докторант
Университет по библиотекознание и информационни технологии
E-mail: Marc-zur.Ostsee@gmx.de

АКТУАЛНО
CURRENT TOPICS

ТЕОРЕТИЧНИ ОСНОВИ НА ЛИДЕРСТВОТО И ЛИДЕРСКИТЕ ПРАКТИКИ

Стефан Методиев
Университет по библиотекознание и информационни технологии
Фондация „Щедрост и милосърдие – 2006“

Резюме: *Тази разработка е посветена на актуален и значим проблем. В процеса на обществената трансформация се появяват нови значими субекти на обществена дейност в лицето на т.нар. неправителствени организации, които поставят основите и формират неправителствения сектор като един от важните играчи на терена на социалното взаимодействие. За да функционира ефективно, неправителственият сектор се нуждае от хора с ярко изявени лидерски качества, които да представят на обществото необходимостта от неговото съществуване и да го наложат като неотменна част от системата на публичното управление. В този смисъл темата, посветена на лидерството и лидерските практики, е особено актуална днес, когато в условията на икономическа криза и непредвидимост на процесите, протичащи в обществената среда, нейното разработване е в състояние не само да отговори на значимите проблеми на нашето съвремие, но и да очертае насоките за тяхното решаване в близко бъдеще.*
Ключови думи: *лидер, теория, организация, практики, резултати*

УВОД

Ролята на неправителствения сектор в съвременни условия е обусловена от непрекъснато нарастващата роля на неправителствените организации в обществения живот в нашата съвременност, породена от невъзможността на държавата да се справи или да осигури обществено значими дейности поради различни причини (най-вече липсата на ресурси). За реализирането на новата роля на неправителствения сектор и успеха на инициативите, които той реализира, важно значение имат лидерите на тези организации и лидерските практики.

Актуалността на темата се определя от важната роля, която неправителственият сектор и неговите лидери играят в съвременното общество. В днешните условия лидерите са един от най-важните ресурси за развитието на обществото и задоволяването на неговите потребности, а от потенциала на този ресурс до голяма степен зависи ефективността на процеса на управление.

Интересът към проблема за лидерството възниква още в епохата на Античността, обаче дълго време няма холистичен[1] възглед за природата и същността на това явление. След победата на индустриалната революция в Европа и САЩ (втората половина на XIX в.), в ситуация, в която пазарните отношения завладяват всички сфери на социалния живот, новите големи компании и организации започват да изпитват нужда от лидери, които могат да вземат интелигентни и рационални решения, способни да работят както с малки групи, така и с големи екипи. Необходимостта от мениджъри с високо равнище на професионализъм, компетентности и способности се допълва от изискването те да притежават и изявени лидерски качества. Усложняването на системата за управление на обществото създава необходимост от теоретичен анализ на дейността, социалната роля и ценностните ориентации на лидера, а това се отразява в работите на авторитетни философи, социолози, психолози и политолози. Реформите, които започват в края на 80-те години на миналия век в рамките на постсоциалистическите общества, трансформират статута на фирми, организации и предприятия. Пазарът ги поставя в нова роля и връзка с държавните и частните организа ции и други партньори. Безспорен факт е, че лидерите имат съществено място в този процес и са тези,

които знаят как да формулират целите, да поставят задачи и да определят ефективните средства за тяхното постигане. В тази връзка уместността е придобила и социокултурна интерпретация на природата, теорията и практиката на лидерството, както и на анализа на теориите, които оказват влияние върху развитието на процеса на социално управление.

В съвременните условия очакванията спрямо лидерите се формират в контекста на високо ниво на индивидуално развитие, организационни умения, но и способност за генериране на нови идеи, подходи, създаване на напреднали технологии, способност за актуализиране на вътрешния потенциал на последователите, иницииране развитието на личността им, освобождаване на творческа енергия. Затова е разгледана теорията и практиката на лидерството, психологическите, организационните и методическите особености на формирането и развитието на феномена лидерство в обществени и социални организации. Направен е опит за цялостен анализ на един от актуалните и социално значими проблеми – формирането и развитието на лидерските практики в неправителствения сектор и техния институционален компонент.

1. Анализ на проблема

Проблематиката, посветена на лидерството, е сравнително добре изучена и разработена, което е белег, че тематиката е значима както от гледище на организационния, така и на обществения интерес.

В западната литература е налице значителен принос в изследването на проблемите, посветени на лидерската тематика (З. Фройд, А. Адлер, К. Юнг) и факторите, които влияят върху процеса лидерство. Yale School (G. Lasswell, B. Skinner, W. White) изследва особеностите на съзнанието на политическите лидери. Франкфуртската школа (Т. Адорно, Г. Маркузе, Е. Фром) развива концепцията за „авторитарната личност“ и анализира проблема за взаимоотношенията между харизматичните лидери и техните последователи. Проблемът за лидерството привлича вниманието на много изследователи през последната третина на XX в., когато започва изследване и в най-пълна степен се проявява интерес към проблемите на социалното управление. Предмет на изследванията е влиянието на личностните черти на лидера, неговите позиции, идеали и мотиви на поведение за властване. Лидерството започва да се изучава от философска гледна точка. В теориите за лидерството, появили се през 80-те години на XX в., можем да говорим за проникването на хуманистични идеи, за демократизиране на организационния стил на поведение и делегиране на отговорности, за инвестиране в човека като основен капитал, за многофункционални работници и управление на екипи.

При цялото многообразие от подходи и интерпретации на феномена лидерство днес не е формиран единен подход, в рамките на който да се даде цялостен поглед върху природата на лидерството като феномен, да формира изводи за еволюцията на подходите към феномена на лидерството в контекста на философската и културна традиция. Това несъответствие на съществуващата нужда от философско и културно изследване на лидерството като феномен и наличните научни анализи за лидерството като социокултурен феномен идентифицира проблема на темата.

Краят на първото и началото на второто десетилетие на XXI в. са белязани от събития с глобално значение, които оказват силно влияние върху цялостното развитие на света. Тези събития са избухването на епидемията от Ковид-19 и свързаните с нея мерки, както и започналата с отшумяването на пандемията война в Украйна. И пандемията, и войната имат разнопосочно влияние върху развитието на гражданското общество и гражданските организации. Тези форсмажорни явления са свързани със сериозни социално-икономически сътресения, растящи цени, проблеми с доставки на стоки и услуги, социална изолация, разломи и конфронтации в обществата. Но те водят и до намирането на нови източници за финансиране на граждански организации и каузи, насърчават съпричастността, дарителството и доброволчеството, ускоряват навлизането на нови технологии наред с други позитивни и негативни въздействия.

Въпреки тези значими разлики трябва да се отбележи, че гражданският сектор далеч не е хомогенен и включва хора с най-различни, често дори противоречащи си ценности и възгледи,

макар и в различни съотношения спрямо други групи и спрямо характерните за цялото население.

От казаното дотук могат да се определят обектът, предметът и целта на разработката:

Обект е лидерството като феномен.

Предмет: социокултурните основи на лидерството в неправителствените организации.

Целта е да формира и интерпретира идеята за природата на лидерството и неговата роля като социокултурен феномен за развитието на неправителствените организации.

Извършен е концептуален анализ на лидерството от гледна точка на философската и културна традиция. Систематизирани са исторически и хуманитарни знания по проблема с лидерството, разгледан е проблемът с лидерството в историческо развитие, в динамично променящи се социокултурни условия, интерпретирайки явлението лидерство в един семантичен контекст. Аргументирана е тезата, че проблемът за лидерството в историята на социокултурната традиция отразява проблема за властта. Представено е лидерството като власт, подкрепена от правни механизми, морал, религия или чисто емоционални механизми.

Множеството подходи към анализа на лидерството създават предпоставки за изграждане на цялостна изследователска програма, насочена към анализ на лидерството. В същото време сложността на подхода действа като проява на определена методическа нагласа, причинена от усложняването и диференциацията на структурните връзки в системата „общност – лидер“.

2. Теоретични основи на лидерството

Значимостта на темата е продиктувана от социалната практика на днешния ден, което прави тази разработка необходима.

Същност и характеристики на модерното лидерство

Целта е:

• да се представят основните дефиниции на понятието „лидерство“;

• да се анализират съвременните теории за лидерството;

• да се изследва природата на лидерството, връзката между лидерството и управлението, лидерите и последователите.

В общоприет контекст **ЛИДЕР** (от англ. leader – водач, лидер) е човек, зад когото стои определена общност, която признава правото му да взема отговорни решения, които са най-значими от гледна точка на груповия интерес,[2] а **ЛИДЕРСТВОТО** е процес на социално влияние, при който лидерът получава подкрепата на другите членове на общността за постигане на целта. Лидер и лидерство са думи от английски произход, произлизащи от англосаксонския корен lead („път, начин“) и глагола leaden („пътувам, отивам“)[3].

Дълго време лидерството се разглеждаше от гледна точка на индивидуалната роля на личността, защото от времената на древните общества се е формирал такъв подход, при който водещата роля са играли опитни, силни, интелигентни хора, които са получили признание и авторитет сред своите съплеменници, членове на общността и др. Древногръцкият философ Аристотел смята, че в ранните етапи от развитието на обществото по-възрастните и по-опитни глави на семействата стават лидери.

В същото време привържениците на теорията за личностните черти, датираща от Аристотел, твърдят, че не всеки може да стане лидер, защото това е природен дар. За да си лидер, трябва да притежаваш такива черти на характера като интелигентност, енергия, воля, смелост, самочувствие и др. Широко разпространената гледна точка е, че лидерът винаги е продукт на определено време, място и обстоятелства и че лидерското поведение на личността се определя от потребностите на актуалната ситуация и спецификата на предизвикателствата пред обществото.

Американският политолог Ю. Дженингс пише: *„Няма съмнение, че когато ситуацията е била узряла за Наполеон, тогава и Наполеон е бил узрял за ситуацията. Великият лидер усеща ситуацията и знае как може да я използва. Великите лидери са способни да превърнат ситуацията в свое предимство“.* Лидерството е присъщо на всеки от нас по един или друг начин. И то може да се прояви на различни етапи от живота или в определени специфични ситуации. Важно е да разберем, че харизмата на лидера е нещо напълно управляемо и подлежи на тренировка.[4] Това е

потвърдено от множество научни и практически проучвания, описващи различните роли, задачи и функции на лидера.

Но има и доста разпространени мнения, че лидерството е продукт на мит, който се налага в съзнанието и който след това влияе на хората.[5]

Лидерът е преди всичко човек с авторитет, способен да взема решения в интерес на общността, към която принадлежи и която го издига напред в ролята на неин лидер, способен практически да контролира всяка ситуация и да взема бързи решения. Лидерът е уверен в себе си и в своите способности, притежава емпатията (като способност да разбира хората, умение да се настройва на вълната на човека, с когото общува, и стои в основата на градивното социално общуване) на победител, знае как да сплоти около себе си екип от последователи и поддръжници на определена кауза. Лидерските качества на такъв човек се проявяват като правило както в мислите му, така и в неговите действия: той умее да мисли бързо при вземането на важни и съдбоносни решения, деен и разумен в идеите и действията си, убедителен и влиятелен като силна и независима личност. Често синоними на понятието „лидер“ могат да са такива общоприети социални понятия (особено в определена професионална среда) като „вожд“, „глава“, „гуру“, „фронтмен“, „център“, „шампион“ и др. За по-задълбоченото разглеждане на особеностите при формирането на основите и развитието на лидерството и на технологиите за работа с общности в неправителствения сектор е необходимо да се определи каква точно е същността на лидерството и по какъв начин то се адаптира, отчитайки психологическите и възрастови особености на дадена социална категория. В този процес на помощ идват определени **личностни качества на истинския лидер:**

Физиологична група качества: приятни външни черти и глас, отлично здраве, висока работоспособност, представителен външен вид, активност.

Психологическа група: интерес към властта, високо ниво на амбиция, здравословна агресивност, чувство за превъзходство над другите, балансирана психика, независимост и смелост при вземане на решения, творчески потенциал и креативност, желание за самоутвърждаване, постоянство и смелост.

Интелектуална група: лидерът трябва да има комбинативен ум, добра памет и отлична интуиция и да бъде на високо интелектуално ниво. Теорията за лидерските качества предполага, че лидерът е логичен, ерудиран, образован, разумен, има оригинално и бързо мислене и вижда бъдещето.

Група на личните делови качества: според теорията за личните качества на лидера човек трябва да бъде организиран, дисциплиниран, надежден, дипломатичен, гъвкав, независим и отговорен. Лидерът трябва да притежава качества като доброжелателност, тактичност, състрадание, честност, благоприличие, бдителност, убеденост, внимание, комуникативност и адаптивност.

„Лидерството е определяне на пътя. Или Мениджмънтът е наука за това как да правим правилното нещо“, заключават изследователите В. Бенис и Б. Нанус.[6] Р. Гандапас от своя страна вярва, че лидерът е човек, който успешно съчетава лична харизма и управленски умения. „В същото време спецификата на разбирането на лидерството в социалната психология в мнозинството от случаите ясно разделя два феномена: лидерство и управление.“[7]

Лидерството е психологически феномен по своята същност, но лидерството е и социално понятие. Всъщност в действителност те са допълващи се системи за действие. Често се прави разлика между управление и лидерство. Първото се характеризира с властови отношения, докато второто се разглежда от гледна точка на лично влияние. Управлението е система от директиви, то е формално институционализиран авторитет, докато лидерството разчита на мнението на групата и зависи от това дали групата приема лидера. Истинският лидер вдъхновява своя събеседник и последовател и може да накара човек да се чувства уверен в собствените си способности.

Ако някои автори (А. Кох и др.) разглеждат категориите „лидерство“ и „мениджмънт“ като синоними, то други, приемайки общите характеристики, разглеждат съществуващи според тях разлики между тези категории. А. Залезник разграничава лидерството и управлението по следния начин: *„Лидерството е набор от действия, основани на използването на предварително определени техники и средства. Лидерството може да се определи като изкуство, основано*

на личностните особености на лидера. Мениджърите и лидерите се различават по отношение на личностните си характеристики, отношението към груповите цели, представите за работата, отношенията с подчинените и представите за себе си. Ръководителите контролират изпълнението на задачите, базират дейността си на постоянни методи и доказани реакции, невинаги се фокусират върху иновациите и тестването на нови идеи. Лидерите, за разлика от тях, правят постоянни опити да намират нови решения на проблемите, мотивират другите да работят повече за превръщането на новите идеи в реалност. Източник на влияние за лидерите върху другите хора е авторитет, който се утвърждава с лично обаяние, преданост към целите на групата, предприемчивост, професионално умение и богатство от идеи"[8].

Практиката показва, че мениджър, който се явява и лидер за подчинените, ползва се с уважение и авторитет, служи като модел на поведение и професионални ценности, е в състояние да повлияе конструктивно на социално-психологическата атмосфера в екипа и да формулира желани професионални и морални стандарти на поведение за служителите. Освен това само в лидерска роля мениджърът успява да действа като проводник на промени. Управлението, основано на лидерството, позволява да се формулира визия за бъдещето сред служителите и да бъде поставен фокус върху създаването на необходимото ниво на мобилизация на служителите и на условия те да бъдат част от професионалната система, а не само да работят за тази система.

3. Лидерски практики

Кой казва, че лидерът трябва да се роди? ЛИДЕРСКИ РЕСУРС МОЖЕ ДА РАЗВИЕ ПОЧТИ ВСЕКИ ЧОВЕК!

Проблемът с лидерството и отношенията между лидери и подчинени се корени в човешката история. Още в праисторическия период е имало йерархия във взаимоотношенията, в която се разграничават лидери и подчинени. От времето на древните държави е имало формална структура, в която лидерите са ясно разграничени – фараони, императори, крале, генерали, военачалници, губернатори и др. Това е най-високият ешелон на ръководството, водещ държавата или към прогресивно развитие и просперитет, или до разпад и пълен крах.

Един от първите, който разглежда теоретически проблема с лидерството, е Платон, който в своята „Република" предлага три вида лидерство:

а) философ – държавник, който управлява републиката чрез разум и справедливост;

б) военачалник, който защитава държавата чрез подчиняване на други хора на неговата воля;

в) бизнесмен, който осигурява задоволяване на материалните нужди.

Изучавайки генезиса на лидерството, можем да отбележим, че важно влияние върху съвременните изследвания в областта на лидерството са изиграли изследванията на Монтескьо, Плутарх и Макиавели. Теорията за лидерството на Макиавели (1522) съдържа четири основни положения:

1) властта на водача се корени в подкрепата на неговите поддръжници;

2) подчинените трябва да знаят, че могат да разчитат на лидера си и да разбират какво очаква той от тях;

3) лидерът трябва да има воля за оцеляване;

4) владетелят винаги е модел на мъдрост и справедливост за неговите поддръжници (Stogdill 1974).

Голямо влияние върху анализирането на феномена лидерство имат също и трудовете на учени като: Т. Карлайл (1840), К. Ломброзо (1863), Г. Спенсър (1880), А. Джоли (1883), Г. Тард (1886) и Г. Льо Бон (1895). Те разглеждат лидерството като героизъм; лидерски талант; лидерство, в което лидерът има свои собствени изключителни качества: чар, сила, умение да влияе върху другите и харизма.

Английският психолог и антрополог Ф. Галтън обяснява феномена лидерство, основано на наследствени фактори. Неговата работа „Наследствеността на таланта, неговите закони и последствия", публикувана през 1869 г., стимулира редица изследователи да заключат, че всички ефективни лидери споделят общ набор от качества (черти), които им позволяват да заемат ръководни позиции (Emelin 2012).

Фройд (1927) представя произхода на лидерството като примитивната форма на човешкото общество – ордата, над нея „силният мъж“ царува неограничено сред тълпата. Той вярва, че само изключителни личности могат да принудят масите да се насочат към полезен труд. Според Фройд историческият процес се развива под определящото влияние на великите лидери. Той гледа на лидера като на хипнотизатор, който влияе на последователите. Фройд вярва, че основата на лидерството лежи в потиснатите и тяхната неудовлетвореност. Подчинението на лидера се залага от детството, когато детето се нуждае от авторитета на родителите си. В този смисъл авторитетът на държавния глава е равен на авторитета на бащата (Фройд 1925).

Английските учени М. Удкок и Д. Франсис (1918–1920), разглеждайки ролята на лидера и мениджъра, отбелязват, че лидерската функция невинаги се възлага на едно и също лице. Лидерството се променя, когато се появят хора, чиито качества са най-необходими в даден момент (Удкок 2000).

Сред първите изследователи на психологията на лидерството през XX в. е Кърт Левин. Той идентифицира обща психологическа характеристика на действията на всички лидери, обозначавайки я с понятието лидерство (1937). Оттогава тази концепция се появява в социалната психология и става често използвана.

Първото използване на термини, свързани със стиловете лидерство, е заимствано от К. Левин от областта на публичната администрация – авторитарен, демократичен, анархичен, разрешителен стил (Кунц 1981).

Американският психолог Р. Стогдил (1948), след като анализира различни подходи, разкрива, че в повечето случаи лидерството се разглежда като същност на груповите процеси или като способност за получаване на одобрение по отношение на диференциацията на ролите във властови позиции (Stogdill 1974).

През 40-те години на миналия век учените започват да изучават връзката между личните качества и лидерството. Мескон, Алберт и Кедури определят лидера като човек, който играе ключова роля в групата във връзка с насочването, контрола и промяната на действията на други членове на групата за постигане на групови цели (Мескон 1997).

В. Кац и Л. Едигер (1948) дефинират лидерството като влияние, което се характеризира с последователност, въздействие върху цялата група, недвусмислена посока на въздействие, признаване от групата на легитимността на лидерството.

Според Б. Калоф и С. Седерберг (70-те години) лидерството е комплексна концепция, която включва следните компоненти:

1) асоцииране с човешки качества;

2) резултат от човешка дейност (Karlof 1996).

Популярният американски психолог Дж. Кенджеми (80-те години) смята, че силата на авторитета е способността да събужда, мотивира и убеждава хората да бъдат използвани за постигане на съвместни цели (Кенджеми 1997). От психологическа гледна точка с помощта на силата на авторитета лидерът може да мотивира хората. Такива лидери имат високо самочувствие и високо ниво на стремежи (Росанова 2000, с. 181–182).

За изследванията на лидерството интерес представляват произведенията на В. М. Бехтерев (1928). Той идентифицира два основни начина, по които някои хора влияят на други: внушение и убеждаване. Бехтерев подчертава реципрочността на процеса на внушение – взаимно внушение. Той посочва и начини за контрол на тълпата. Според него лидерството е една от най-важните детерминанти на груповата интеграция, чрез които трябва да се постигнат груповите цели с най-голям ефект (Бехтерев 2007).

Направеният дотук теоретичен анализ в изследването на генезиса на лидерството показва, че има достатъчен брой исторически източници, посветени на управлението, лидерството, властта. Въпреки това феноменологията на лидерството като обект на научно изследване започва да се изучава задълбочено в началото на XX в., когато управлението се превръща в научна дисциплина. Изучаване на лидерството систематично и в голям мащаб се развива през 30–50-те години на миналия век. Тези проучвания имат за цел да идентифицират свойствата и личните характеристики на успешните лидери.

Темата за лидерството се разработва активно от психолози, социолози, специалисти по

управление. В това отношение единствено призната, приета или универсална теория за лидерството, която би отразявала общата визия на теоретиците и практиците за феномена на лидерството и фигурата на лидера, не съществува.

Ние обаче ще се опитаме да рационализираме нашите виждания по този проблем. Лидерът е авторитетът на групата, чиято сила и власт се одобряват от другите участници, които желаят да го следват. Лидерството е процес на управление на социална група, влияещ върху постигането на съвместни цели в оптимално време и с оптимален ефект. Ефективното лидерство е процес на взаимно влияние с цел самоуправление, което най-добре отговаря на нуждите на участниците. Лидерството в организацията е ефективното влияние на хора върху другите членове на екипа, което ги насърчава да действат по определен начин.

Обобщено лидерството може да се разглежда като една от формите на междуличностно взаимодействие, която включва пет основни елемента:

1) групата, в която се осъществява взаимодействието;

2) задачи, които групата се стреми да реши;

3) лидер – индивид с определени личностни качества, способности и възможности, ориентирани за постигане на значими за групата цели;

4) последователи – членове на групата със собствени качества и възможности за постигане на общи цели;

5) ситуации, характерни за взаимодействието в групата.

Т.е. лидерството като социално-психологическо явление включва набор от основни компоненти: процеси, структура, функции, лидери, последователи, принос към съвместната работа, цели и задачи, групова работа, процеси на възприемане на хората един от друг, личен принос на всеки член на групата, междуличностни процеси, комуникация.

В различните източници откриваме множество интерпретации и характеристики на феномена лидерство. Но общото е да работим с хората, да ги убеждаваме, вдъхновяваме, емоционално да ги заразяваме и да ги насочваме към оптимален, печеливш за всички резултат. А основните качества и характеристики за лидера са предприемчивост и ефективна комуникация; решителност, постоянство, лична сила, компетентност и психологическа балансираност; критично мислене, лична активност и инициативност.

Проблемът за лидерството е от особено значение в междуличностните взаимоотношения и затова търсенето на „идеалния лидерски стил“ все още продължава. Разглеждайки лидерските стилове, трябва да се отбележи, че те оказват решаващо влияние върху работещите лидерски практики. Стилът е тип лидерско поведение и взаимоотношения с подчинените в процеса на постигане на съвместни цели. Обобщеното описание на основните стилове показва, че прилагането им трябва да бъде съобразено с групата, защото резултатите могат да са много различни от очакваните, като: намаляване ефективността на труда, нарушаване на производствената дисциплина, ниска инициативност, влошаване на социално-психологическия климат в екипа, увеличаване текучеството на персонала, липса на интерес към работата, тъй като прекомерните дисциплинарни мерки предизвикват страх у хората, недоволство и унищожаване на стимулите за работа. А целта на управлението е то да има положителен ефект върху резултатите от труда, инициативността на служителите, тяхната удовлетвореност от работата на екипа. Това е възможно само при висок авторитет на лидера, интелектуална, организационна, психологическа и комуникативна способност.

4. Стилове лидерство и тяхното приложение

Обобщавайки казаното, отбелязваме, че лидерството е сложен социално-психологически феномен. Генезисът на лидерството има дълбоки исторически корени. В съвременния свят съществува достатъчно разнообразие от подходи за идентифициране на различни лидерски стилове. Тяхното изучаване дава възможност да се види разнообразието и сложността на функциониране на лидерството и на тази основа да се определи важността на прилагането на различни стилове в зависимост от конкретната ситуация.

От значение за успешните лидерски практики е да се разпознава и използва една често срещана

класификация на лидерите в зависимост от възприемането им от групата:

1. „Един от нас“ – този тип лидери не се открояват особено сред останалите членове на групата. Той се възприема като „пръв сред равни“ в определена сфера.

2. „Най-добрият от нас“ – лидерът, принадлежащ към този тип, се отличава от групата по много показатели (бизнес, морал, комуникация и други параметри) и обикновено се възприема като модел за подражание.

3. „Добър човек“ – този тип лидери се възприемат и ценят като реално въплъщение на най-добрите морални качества: благоприличие, добронамереност, внимание към другите, желание да помогне и др.

4. „Слуга“ – този тип лидери са ориентирани към мнението на групата и винаги се стремят да изразяват интересите на своите последователи.

Появата на лидера е резултат от време, място и обстоятелства. По принцип лидерът, който е надарен с определен набор от характеристики, поставен в определени условия, осъществява процеса на лидерство според конкретната ситуация. Не трябва да забравяме, че ефективността на лидера зависи от неговото влияние върху мотивацията на последователите, върху способността им да бъдат продуктивни за завършване на задачата и върху удовлетворението, което изпитват в процеса на работа.

За да се осъществяват успешно лидерските практики, трябва да се решат следните задачи:

– създаване на гъвкава и надеждна система за набиране на персонал;

– трансформация на квалификационната система;

– подобряване на системата за изпълнение на решенията;

– подобряване на системата за обучение и развитие на служителите;

– осигуряване на равни възможности за всички работещи служители;

– намаляване на хартиените потоци;

– партньорство между служители и мениджъри.

Всички подходи, теории и концепции за лидерство, които анализирахме, водят до извода, че темата за лидерството не е на ниво край на изучаването и претърпява постоянни промени.

Един от пътищата и същевременно актуална задача е да се съсредоточат усилията за намиране, изграждане и развитие на лидери от съвременен тип, които да поемат ръководството на всички равнища. Основното предизвикателство пред съвременните лидери е да освободят интелектуалната сила на подчинените си и ефективно да управляват стабилността и промяната на ръководените от тях единици. Това, което лидерите трябва да се научат да правят, е да развиват такава среда, организационна култура и социален климат, които да насърчават хората да работят успешно заедно, да разгръщат и прилагат собствената си креативност, да стимулират иновациите, да прилагат съвременни и доказано ефективни управленски практики.

Правейки анализ на казаното, може да се обобщи, че лидерството не е онова, което върши лидерът, а онова, което правят заедно лидерът и колективът, защото съществува само един начин да накараш някого да направи нещо – да го убедиш той сам да поиска да го направи. Римският поет Публилиус Сирус казва: *„Ние се интересуваме от другите, когато те се интересуват от нас!“*. Затова, ако искате хората да ви харесват и да ви следват – винаги се интересувайте от тях.

НЕКА ДРУГИЯТ ЧОВЕК ЧУВСТВА, ЧЕ ИДЕЯТА Е НЕГОВА. Лао Дзъ: *„Причината, че моретата и океаните прибират водата на хиляди реки и потоци, идващи от планините, е, че те са по-ниско от тях. Именно по този начин те могат да управляват планинските ручеи. Затова мъдрецът, който иска да бъде над другите хора, се слага под тях, който иска да бъде пред тях се слага зад тях. Така, макар и неговото място да е над хората, те не чувстват неговата тежест, макар неговото място да е пред тях, те не възприемат това като нараняване“*.

Запомнете, че другият човек може да мисли и действа погрешно. Но той фактически не мисли така. Не го осъждайте. Опитайте се да го разберете. Само мъдрите и толерантни хора правят това. Опитайте се искрено да се поставите на неговото място. Така ще спестите много време. И като допълнение рязко ще увеличите вашите умения в човешките взаимоотношения. Тогава вие ще разберете, че успехът в работата с хората зависи от съчувствието към тяхната гледна точка.

Вероятно има причина, караща човека да мисли и да действа по определен начин. Изровете тази скрита причина и ще имате ключа към неговите действия, може би към неговата личност.

Истински великите хора по цял свят са твърде велики, за да си губят времето, злорадствайки над победените от тях. Ето един пример: 1912 г. Векове след силен антагонизъм турците са решени завинаги да изгонят гърците от тяхната територия. Мустафа Кемал държи наполеонова реч пред армията и заявява: „Целта ви е Средиземноморието“. Започва една от най-тежките войни за времето. Турците победили и когато довеждат в щаба на Кемал двама гръцки генерали – Трикулис и Дионис – шпалирът от турци е бил изключително злобен. Но Кемал ги посрещнал с думите: „Седнете господа. Вероятно сте изморени“. И след като обсъдил с тях в подробности битката, им казал като войник на войника: „Войната е игра, в която и най-добрите понякога биват побеждавани“. Винаги е по-добре да поощряваме, отколкото да корим. Необходимо е да поощряваме и минималното подобрение. Това подтиква хората да продължават да се стараят. Откритото изискване на правилната оценка на усилията на хората осигурява по-големи резултати в стремежа към спечелване на тяхното сътрудничество и разширяване на цялостната им реабилитация, отколкото острата критика и осъждането на техните недостатъци.

ИЗВОДИ

1. Генезисът на лидерството има дълбоки исторически корени. Интересът към това социално явление, наблюдавано в цялата история на човечеството, все още е актуален на съвременния етап.

2. През 90-те години на XX в. на лидерството се гледа в широк мащаб, като феномен, който включва процеси, структура, лидерски функции, личност на лидери и последователи, принос към съвместни работни дейности, цели и задачи на груповата работа, процеси на възприемане на хората един от друг, изображения на идеи за личността на лидера, видове лидери, идеи за индивидуален принос на всеки член на групата, процеси на междуличностна комуникация и др.

3. В психологията няма общи гледни точки по въпроса за лидерските практики. Те са в пряка зависимост със стиловете лидерство, които са свързани с дейността на групата и индивидуалните типологични характеристики на лидера. Лидерството дава възможност да се види разнообразието и сложността във функционирането на групата и на тази основа определя важността на прилагане на различни стилове в зависимост от конкретни ситуации.

4. Въпросите за видовете и функциите на лидерството разграничават по вид: формално и неформално лидерство; авторитарно, демократично и либерално лидерство; в зависимост от съдържанието на лидерската дейност – бизнес лидерство, емоционално лидерство, ситуационно лидерство; в зависимост от възприемането на лидерите от групата и др.

5. Функционалното проявление на лидерството до голяма степен се определя от лидерските качества. Те най-често включват: самочувствие, енергия, добросъвестност, емоционална стабилност, доверие, любопитство, вътрешна страст, решителност, способност за управление на себе си и групата, умения за решаване на проблеми.

ЗАКЛЮЧЕНИЕ

Традиционният научен подход към изследването на лидерството се допълва от метафоричните модели и стратегеми на лидерството. Защото би било неграмотно да се говори за лидерство, да се разглеждат различните техники и стратегии на лидера, без да се изучават научните идеи за този феномен. В същото време, когато се запознаваме с научните модели за лидерство, е необходимо да не изпускаме от поглед естеството на човешките взаимоотношения между лидера и неговите последователи, което по правило остава извън рамките на традиционния научен подход. Изучавайки анатомията на жабата, можете да получите отговори за нейния начин на живот. Но за да опознаете навиците ѝ, трябва да наблюдавате нейното поведение докато е жива и скача в естествени условия. Тази метафора ни показва, че традиционният научен подход описва някои фрагменти от лидерството, извлечени научно чрез изследователски инструменти, а моделите и стратегемите на лидерството ни дават примери за природните прояви на лидерството в техните различни метафорични описания.

Метафоричното разглеждане е насочено преди всичко към личността и нейната интуиция.

Всеки лидер има свой собствен път. Копиране на лидерското поведение на другите хора не води до положителни резултати. Можем да кажем, че лидерството е изкуство, което до голяма степен се основава на жизнената активност и творчеството на човека. В същото време произходът на лидерството е скрит в индивидуалната философия на лидера. Поведението е само отражение на фрагменти от тази философия, която, за съжаление, дори самият лидер не може да предаде точно.

Малко са хората, които се съмняват, че лидерският ресурс допълва официалния авторитет на лидера и повишава успеваемостта от изпълнението на управленски функции. Лидерът има възможност да влияе върху процесите на самоорганизация на екипа, да обединява индивидуалните и груповите интереси на своите членове, както и да представлява по-пълно интересите и нуждите на служителите във външни органи. Това от своя страна се отразява положително на емоционалната атмосфера, в която отношенията между подчинените спомагат за увеличаване на сплотеността на екипа, прави мениджъра по-успешен при разрешаване и предотвратяване на междуличностни конфликти.

В същото време липсата на лидерски качества у мениджъра има демотивиращ ефект върху служителите и се отразява негативно на психологическия климат в екипа и на ефективността на съвместната дейност на неговите членове. Изследванията показват, че подценяването ролята на колективното настроение и сплотеност води до загуба на до 15% продуктивно използвано работно време. Ако морално-психологическият климат е лош, ефективността на труда пада от 15 до 40%, а ако е добър, напротив, се увеличава от 10 до 20%. Изследването на лидерството в системата на вътрешноорганизационните отношения е насочено към получаване на отговори на важни въпроси от приложен характер. Всъщност, ако чрез лидерството се регулира системата от неформални отношения, докато управлението действа като фактор в организацията на официалната структура, тогава естествено възникват следните въпроси: каква е оптималната комбинация от тези явления за подобряване на управленското представяне и успешното функциониране на групата? Как действията на мениджър и организационен лидер са свързани едно с друго? Какви лидерски функции, кога и в каква степен изпълнява мениджърът?

Отговори на тези въпроси могат да бъдат намерени, като се изследва опитът на древните китайски императори и пълководци, които са имали неоспорима власт и с достойнство са реализирали лидерските си качества в много войни. Техният успех до голяма степен се дължи на способността им да мотивират войниците и да поддържат морала им. Техниките и хитростите, които използват, и които са описани в древните китайски трактати „Тридесет и шестте стратегии“ и „Изкуството на войната“, са част от изкуството да командваш армия и изкуството да управляваш организация. В крайна сметка всичко се свежда до изкуството да се управляват хора и в много случаи то се основават на подобни техники и хитрости. Следователно изучаването на тези техники е полезно за лидера и допринася за развитието на неговото управленско мислене.

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[1]Холистичен означава цялостен. Думата идва от гръцки и holos значи цял, цялостен, интегрален. Според холистичния подход човекът се разглежда в неговата цялост – емоции, енергия, физическо тяло, душа.

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THEORETICAL FOUNDATIONS OF LEADERSHIP AND LEADERSHIP PRACTICES

Abstract: *This work is dedicated to a relevant and significant problem. In the process of social transformation, new significant subjects of public activity appear in the so-called non-governmental organizations, which lay the foundations and form the non-governmental sector, as one of the important players in the field of social interaction. In order for the non-governmental sector to function effectively, it needs people with clearly expressed leadership qualities who can present to society the need for its existence and impose it as an indispensable part of the public management system. In this sense, the topic dedicated to leadership and leadership practices is particularly relevant today, when in the conditions of economic crisis and unpredictability of the processes taking place in the public environment, its development is able not only to respond to the significant problems of our time, but also to outline the guidelines for their solution in the near future.*

Keywords: *leader, theory, organization, practices, results*

Stefan Metodiev
University of Library Studies and Information Technologies
Foundation “Generosity and Charity – 2016”
Plovdiv, Bulgaria
E-mail: s.i.metodiev@rndc.bg; shtedrost@abv.bg

АКТУАЛНО
CURRENT TOPICS

ЕЛЕКТРОННО УПРАВЛЕНИЕ И ГРАЖДАНСКИ ВЪЗПРИЯТИЯ: РЕЗУЛТАТИ ОТ ЕМПИРИЧНО ПРОУЧВАНЕ

Катерина Трифонова
Университет по библиотекознание и информационни технологии

Резюме: *Статията анализира възприятията на гражданите за електронното управление, фокусирайки се върху неговата достъпност, сигурност и ефективност. Основните му предимства са удобството, бързината и намаляването на административната тежест, което води до по-лесен достъп до публични услуги и намаляване на бюрократичните процеси. Въпреки тези ползи съществуват бариери като технически затруднения, липса на дигитална грамотност и недоверие в сигурността на данните, които могат да ограничат активното участие на гражданите. Доверието на потребителите зависи най-вече от защитата на личните им данни, като основните притеснения са свързани с възможността за кибератаки, неправомерен достъп и злоупотреба с информация. Препоръките за подобряване на електронното управление включват усъвършенстване на потребителския интерфейс за по-интуитивна навигация, по-строга правна регулация за защита на личната информация, засилване на информираността чрез образователни кампании, повишаване на киберсигурността чрез модерни технологии и осигуряване на цифрово обучение за различни социални групи с цел по-широко и ефективно използване на електронните услуги.*
Ключови думи: *електронно управление, граждански възприятия, сигурност, дигитализация и правна рамка*

ВЪВЕДЕНИЕ

Електронното управление осъществява все по-ключова роля в съвременното общество, като предоставя нови възможности за достъп до административни услуги, оптимизира бюрократичните процеси и насърчава прозрачността и ефективността в управлението. Чрез дигитализацията на публичния сектор се намалява административната тежест за гражданите и бизнеса, ускорява се обработката на документи и заявления, а комуникацията между институциите и обществото става по-бърза и удобна. В този контекст социално-правните аспекти на електронното управление засягат както защитата на личните данни и правната сигурност на потребителите, така и равнопоставения достъп до цифрови услуги, което е особено важно за групите с по-ниска дигитална грамотност или ограничен достъп до технологии. Въпреки предимствата си електронното управление среща предизвикателства, свързани с доверието на гражданите в сигурността на системите, сложността на някои платформи и необходимостта от усъвършенстване на законодателната рамка, регулираща електронните административни процеси.

Настоящото проучване има за цел да анализира възприятията на гражданите спрямо електронното управление, като се фокусира върху социално-правните аспекти, които определят неговата ефективност и достъпност. Изследването е базирано на анкетно проучване сред 100 респондента от различни демографски и социални групи, което осигурява ценни данни за степента на използване на електронните услуги, бариерите пред достъпа и доверието в дигиталните платформи. Методологията включва анализ на възрастовата, образователната и професионалната структура на участниците, както и оценка на тяхното мнение относно сигурността, правната регулация и удобството на електронните административни услуги. Въпреки ограничения мащаб на извадката, резултатите от изследването предоставят полезна информация за текущото състояние на електронното управление и възможностите за неговото подобряване.

Демографски профил на респондентите

Демографският профил на респондентите в проучването разкрива различия в степента на използване на електронното управление според възрастовите групи. Най-активни потребители са хората на възраст между 25 и 44 години, които съчетават висока дигитална грамотност с честа необходимост от административни услуги. Младите хора между 18 и 24 години също демонстрират значителен интерес към електронните платформи, докато възрастните над 65 години са най-слабо представени, което може да се дължи на по-ниска технологична компетентност и предпочитание към традиционните методи на комуникация с институциите. Тези резултати подчертават необходимостта от целенасочени усилия за подобряване на достъпа и повишаване на дигиталните умения сред по-възрастните граждани.

Образователното ниво на респондентите показва ясна връзка с използването на електронните управленски услуги. Лицата с висше образование са най-активни в дигиталната среда, като 65% от анкетираните попадат в тази категория, което е очаквано предвид тяхната по-добра технологична подготовка и по-голяма нужда от административни услуги. Хората със средно образование също проявяват значителна ангажираност, докато тези с основно образование са слабо представени сред потребителите на е-услуги. Това потвърждава, че образователното ниво е ключов фактор за дигиталното включване и че хората с по-ниска образователна степен могат да срещат повече затруднения при използването на електронните платформи.

Разпределението по местоживеене показва, че гражданите в градските райони са значително по-ангажирани с електронното управление в сравнение с тези от селските райони. Градската среда осигурява по-добър достъп до интернет, по-високо ниво на дигитална грамотност и по-голяма информираност относно електронните услуги. В селските райони използването на електронно управление е по-ограничено, което може да се дължи на по-слабата инфраструктура, по-ниската технологична достъпност и по-консервативните нагласи към цифровите услуги. Тези различия подчертават нуждата от политики, насочени към подобряване на интернет достъпа и дигиталната грамотност в малките населени места.

Професионалният статус също има своята важна роля за активността при използване на електронното управление, като най-голям дял сред потребителите заемат работещите лица. Тази група използва е-услугите най-често за административни, финансови и правни въпроси, свързани с тяхната заетост. Студентите също са значително представени, което отразява тяхната висока дигитална компетентност и необходимостта от електронно взаимодействие с различни институции. В същото време пенсионерите и безработните използват електронните управленски услуги в по-малка степен, което може да се обясни с по-ниската дигитална грамотност и по-ограничените им нужди от административни услуги.

Използване на електронни управленски услуги

Честотата на използване на електронните управленски услуги варира сред гражданите, като мнозинството от респондентите ги използват редовно, но все още има значителен дял инцидентни потребители. Най-често срещаната честота е месечното използване, което показва, че електронните услуги се възприемат като полезни за периодични административни нужди, но не са интегрална част от ежедневието на повечето хора. По-малка група от респондентите използват е-услугите ежедневно или седмично, което вероятно се дължи на професионални ангажименти или активна комуникация с институциите. В същото време значителен дял от гражданите рядко или никога не използват тези услуги, което сигнализира за наличие на бариери пред пълноценното им прилагане.

Основните предимства на електронното управление според гражданите са свързани с удобството, бързината и намаляването на административната тежест. Потребителите оценяват възможността да извършват различни административни процедури дистанционно, без да се налага посещение на институции, което спестява време и усилия. Друг важен фактор е достъпността на услугите по всяко време, което улеснява работещите граждани и тези с ограничена мобилност. Освен това дигитализацията допринася за повишаване на прозрачността в управлението, като позволява по-лесно проследяване на статуса на заявления и достъп до информация за административните процеси.

Независимо от предимствата, редица бариери възпрепятстват широкото използване на електронните управленски услуги, като основните сред тях са липсата на дигитална грамотност, техническите затруднения и недоверието в сигурността на системите. Някои граждани срещат трудности при навигацията в онлайн платформите поради сложния интерфейс или липсата на ясни инструкции. Техническите проблеми, като затруднен достъп, системни грешки и недостатъчна поддръжка, също създават пречки пред потребителите. Освен това недоверието към сигурността на личните данни и ефективността на електронните услуги възпрепятства пълната дигитализация на административните процеси, като част от гражданите предпочитат традиционните методи за комуникация с институциите.

Достъпност и удобство на електронните услуги

Достъпността на електронните управленски услуги е ключов фактор за тяхното успешно внедряване и използване, но възприятията на гражданите относно сложността са разнопосочни. Докато част от респондентите намират онлайн платформите за лесни и удобни, значителна част изпитват затруднения, свързани със сложен интерфейс, неясни инструкции и необходимост от допълнителна регистрация или верификация. Средната оценка за сложността на достъпа показва, че въпреки полезността на дигиталните услуги, те все още не са напълно интуитивни за всички потребители. Това подчертава нуждата от опростяване на процесите, по-ясни насоки за навигация и подобряване на потребителското изживяване.

Техническите проблеми, с които се сблъскват потребителите, също оказват значително влияние върху ефективността на електронните услуги. Голяма част от респондентите съобщават за затруднения, като забавяне в зареждането на страниците, грешки при вход в системите, прекъсвания по време на работа с платформите и неуспешно изпращане на документи. Липсата на адекватна техническа поддръжка допълнително утежнява ситуацията, като мнозина не намират достатъчно информация или помощ при възникнали проблеми. Подобни затруднения не само намаляват удовлетвореността на потребителите, но и възпрепятстват редовната употреба на електронните услуги, като някои граждани предпочитат да потърсят алтернативни, традиционни методи за административно обслужване.

Въпреки тези предизвикателства мнозинството от респондентите разполагат с необходимата технология и интернет връзка за достъп до електронното управление, което е положителен индикатор за неговия потенциален обхват. Остава група граждани, които не могат да използват тези услуги поради липса на подходящи устройства или надежден интернет, особено в селските райони и сред социално уязвими групи. Това подчертава необходимостта от мерки за цифрово включване, като осигуряване на по-добър достъп до технологии, подобряване на интернет инфраструктурата и обучение на населението. Разширяването на тези възможности би спомогнало за по-голяма ефективност на електронното управление и за преодоляване на съществуващите бариери пред неговото масово използване (Стратегия за развитие на електронното управление 2014 – 2020 г.).

Сигурност и правна рамка

Сигурността на личните данни е един от основните фактори, които влияят върху доверието на гражданите в електронното управление. Въпреки че повече от половината респонденти се чувстват сигурни при използването на електронни административни услуги, значителна част изразяват притеснения относно защитата на предоставената от тях информация. Основните страхове са свързани с възможни злоупотреби, кибератаки и недостатъчно прозрачни механизми за защита на данните. Тези опасения показват необходимостта от по-ефективни мерки за сигурност, както и по-добра комуникация от страна на институциите относно предприетите защитни действия.

Информираността на гражданите за техните права при използването на електронни услуги остава сравнително ниска, като само половината от анкетираните се чувстват добре запознати с регулациите в тази сфера. Липсата на достъпна и разбираема информация относно защитата на личните данни, правата на потребителите и механизмите за подаване на жалби създава несигурност и може да възпрепятства използването на цифровите платформи. Въвеждането на по-достъпни и разяснителни материали, както и активна кампания за дигитална осведоменост биха могли

да увеличат доверието в електронното управление и да насърчат по-широкото му приемане. Подобряването на потребителското разбиране за правните аспекти е от съществено значение за изграждането на по-сигурна и ефективна дигитална среда.

Действащата правна рамка, регулираща електронното управление, е оценена от мнозинството респонденти като недостатъчно ефективна, което подчертава нуждата от актуализация и подобрение. Гражданите изразяват съмнения относно адекватността на законодателните мерки за защита на данните и осигуряване на прозрачност в административните процеси. Развитието на технологиите изисква гъвкава и адаптивна нормативна база, която да гарантира както сигурността на информацията, така и достъпността на услугите. В този контекст е необходимо засилване на регулациите, по-строг контрол върху обработката на лични данни и по-добра координация между институциите, за да се отговори на динамично развиващите се предизвикателства в сферата на дигиталното управление (Обща стратегия за електронно управление в Република България 2011 – 2015 г.).

Гражданско участие и прозрачност

Гражданското участие в онлайн обществени консултации и електронно гласуване остава сравнително ограничено, въпреки възможностите, които електронното управление предоставя. Въпреки че част от респондентите се възползват от тези инструменти за ангажираност в управленските процеси, мнозинството все още не участва активно, което може да се дължи на липса на информираност или недоверие в ефективността на подобни механизми. За да се увеличи гражданското участие, е необходимо подобряване на достъпа до тези платформи, по-добра комуникация от страна на институциите и повишаване на прозрачността на резултатите от обществените консултации.

Електронното управление има потенциала да улесни включването на гражданите в управленските процеси, но ефектът му все още не е напълно реализиран. Въпреки че мнозинството от анкетираните определят, че дигиталните платформи предоставят по-лесен достъп до административни услуги и информация, не всички усещат реално влияние върху вземането на решения. За да се засили тази роля, е необходимо да се изградят механизми, които да насърчават по-активното участие, включително чрез интерактивни форми на комуникация и по-достъпни инструменти за изразяване на гражданска позиция.

Прозрачността на информацията, предоставяна от държавните институции в електронен формат, е оценена неоднозначно от респондентите. Докато част от гражданите намират дигиталните ресурси за полезни и достъпни, други изказват мнение, че информацията е разпокъсана, трудна за намиране или недостатъчно изчерпателна. Подобряването на достъпността и качеството на публичните данни би повишило доверието в електронното управление и би насърчило по-активното участие на гражданите в демократичните процеси (Оперативна програма „Добро управление“ 2014 – 2020 г.).

Удовлетвореност и ефективност на електронното управление

Общата удовлетвореност на гражданите от качеството на електронните управленски услуги е разнопосочна, като най-голям дял от респондентите (30%) оценяват услугите като средни по качество. В същото време 30% от анкетираните изразяват ниска или много ниска удовлетвореност, което подчертава наличието на значителни предизвикателства в достъпа и използването на дигиталните платформи. Високата удовлетвореност (оценки 4 и 5) е споделена само от 35% от участниците, което показва, че има възможност за подобрение, особено в области като удобство, прозрачност и техническа поддръжка.

Сравнението между електронното управление и традиционните методи показва, че 70% от респондентите намират дигиталните услуги за по-ефективни. Въпреки това 20% не откриват съществена разлика между двата подхода, а 10% считат, че електронното управление е по-малко ефективно. Тези данни подчертават предимствата на дигитализацията, но и показват, че за част от населението традиционните административни канали остават предпочитани поради доверие, лесна достъпност или липса на технически умения.

Препоръките на гражданите за подобряване на електронното управление са насочени към улесняване на интерфейса, като 60% от анкетираните са срещали технически проблеми, свързани с достъпа и функционирането на платформите. Освен това 45% от респондентите изразяват притеснения относно сигурността на личните си данни, което подчертава нуждата от по-добра защита и информираност. Друга важна препоръка е разширяването на функциите и услугите, като 80% от анкетираните биха подкрепили тяхното развитие в повече сфери на управлението, за да се подобри достъпът до администрацията и да се намали бюрокрацията.

Предизвикателства и бариери пред електронното управление

Техническите и организационните препятствия остават сред основните предизвикателства пред ефективното използване на електронните управленски услуги. Повече от 60% от респондентите са се сблъсквали с технически проблеми като бавна работа на платформите, грешки при вход и липса на адекватна поддръжка, което създава неудовлетвореност и отказ от използване. Освен това сложният интерфейс на някои услуги затруднява потребителите, особено тези с по-ниска дигитална грамотност, което налага необходимостта от по-опростен дизайн и по-лесен достъп до помощна информация.

Недоверието към сигурността на личните данни и правната несигурност са друг съществен фактор, ограничаващ широкото възприемане на електронното управление. Близо 45% от респондентите не се чувстват защитени при използването на дигитални услуги, а 50% не са добре информирани за своите права, свързани с обработката на лични данни. Липсата на яснота и прозрачност относно защитните механизми и регулациите води до резервираност сред гражданите, което подчертава нуждата от по-добра комуникация, свързана с мерките за сигурност, и по-ясна правна рамка (ССЕВ – Система за сигурно електронно връчване).

Друг основен проблем са липсата на дигитални умения и неравномерният достъп до интернет, което засяга предимно възрастните хора и жителите на селските райони. Въпреки че 85% от анкетираните разполагат с необходимите технологии и интернет връзка, остава група от 15%, която е изключена от дигиталните услуги поради технически ограничения. За да бъде електронното управление достъпно за всички, е необходимо разработването на програми за дигитално обучение, подобряване на интернет инфраструктурата и осигуряване на алтернативни форми на достъп за уязвимите групи (Стратегия за развитие на електронното управление в Република България 2014 – 2020 г.).

ЗАКЛЮЧЕНИЕ

Проучването показва, че електронното управление има значителен потенциал за подобряване на административните услуги, но все още среща предизвикателства, свързани с достъпа, сигурността и дигиталната грамотност на гражданите. За повишаване на ефективността е необходимо опростяване на платформите, засилване на мерките за защита на личните данни и по-добра информираност относно правата на потребителите. Разширяването на достъпа до интернет и внедряването на образователни програми за дигитални умения могат да намалят социалното неравенство и да увеличат използваемостта на електронните услуги. Бъдещите изследвания в тази област биха могли да се фокусират върху дългосрочните ефекти от дигитализацията в управлението и възможностите за интеграция на иновативни технологии като изкуствен интелект и блокчейн за повишаване на прозрачността и ефективността на публичните услуги (Актуализирана Стратегия за развитие на електронното управление в Република България 2019 – 2025 г.).

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E-GOVERNANCE AND CITIZENS' PERCEPTIONS: RESULTS FROM AN EMPIRICAL STUDY

Abstract: *The article analyzes citizens' perceptions of e-governance, focusing on its accessibility, security, and efficiency. Its main advantages include convenience, speed, and the reduction of administrative burdens, leading to easier access to public services and a decrease in bureaucratic processes. Despite these benefits, barriers such as technical difficulties, lack of digital literacy, and distrust in data security may limit citizens' active participation. User trust primarily depends on the protection of personal data, with key concerns related to potential cyberattacks, unauthorized access, and data misuse. Recommendations for improving e-governance include enhancing the user interface for more intuitive navigation, implementing stricter legal regulations to protect personal information, increasing public awareness through educational campaigns, strengthening cybersecurity with modern technologies, and providing digital training for various social groups to promote broader and more effective use of e-services.*

Keywords: *e-governance, citizens' perceptions, security, digitalization, legal framework*

Katerina Trifonova, PHD candidate
University of Library Studies and Information Technologies
E-mail: k.trifonova111989@gmail.com

ИЗДАТЕЛ

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ДИРЕКТОР

доц. д-р Диана Стоянова
бул. „Цариградско шосе“ № 119,
ет. 2, стая 213
София 1784, България
тел.: +359 879 14 83 85
е-поща: d.stoyanova@unibit.bg

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Assoc. Prof. Diana Stoyanova, PhD
119, Tsarigradsko Shosse Blvd.
fl. 2, room 213
Sofia 1784, Bulgaria
tel.: +359 879 14 83 85
E-mail: d.stoyanova@unibit.bg

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