

NAVIGATIONAL DYNAMICS IN THE DIGITAL AGE: DIGITAL LEADERSHIP AND E-LEADERSHIP IN ORGANIZATIONAL TRANSFORMATION

Alexandra–Daniela SIVULCA¹, Maria-Madela ABRUDAN², Diana Claudia SALA³, Nicolae BIBU⁴

¹Doctoral School of Economics and Business Administration, FEAA, West University of Timisoara, Romania

²Department of Management-Marketing, Faculty of Economic Sciences, University of Oradea, Romania

³⁴Department of Management, FEAA, West University of Timisoara, Romania

alexandra.sivulca97@e-uvt.ro

m.abrudan@u.oradea.ro

diana.sala@e-uvt.ro

nicolae.bibu@e-uvt.ro

Abstract: *Today's business world is highly dynamic, volatile, uncertain, complex, and ambiguous (VUCA). It is driven by ever faster, more efficient, and more numerous technological advances. Digital technologies have a huge impact not only on how an organization works but also on its business model. This has led to fundamental changes in the nature of leadership as well, from the underlying traditional forms of leadership to modern forms of leadership. In this context, the ability to successfully navigate these new technological waves has become an essential challenge for leaders. The digital transformation of organizations in the digital era marks the need for a holistic and integrative approach to the concepts of digital leadership and e-leadership, which are becoming a priority for organizations in their desire to remain competitive and successful as long as possible. The leadership process itself is a predictor of how change is perceived, managed, and integrated within an organization, not just at the surface level but also deep into its structure. This paper explores in detail the concepts of digital leadership and e-leadership, examining their importance and how they act to ensure that organizations are effectively guided through the digital transformation process, advancing with digital technologies. The research method is bibliometric analysis to mark the synapses between the two concepts and their network with other key notions. The main conclusion of the paper is that digital leadership and e-leadership are integral and complementary; they act together, without putting a sign of equality between them, to ensure the success of organizations in addressing the new technological requirements and disruptions encountered in their business environment.*

Keywords: *digital leadership, e-leadership, digital transformation, bibliometric analysis*

JEL Classification: M0, M2, O3

1.Introduction

The digital age is a period when information technology and the Internet have become essential elements in our daily lives, transforming how we interconnect, work, and obtain information (Savastano, Amendola and D'Ascenzo, 2018).

The digital age propelled by technological waves has a double effect on the business environment; digital technologies are a catalyst for more innovation opportunities but also a generator of disruptions that require a high level of adaptability on the part of the

organization. In this era, the level of competitiveness has also increased significantly, and innovation has become a prerequisite for success (Bakshi, 2019).

Business models are upgrading because of the implementation of digital technologies, and digitization is part of the new era (Achar et al., 2022). Integrating digital technologies into a business organization's strategy starts the process of digitization. Therefore, classic business models are no longer relevant, and the way of relating to competitors and measuring performance has changed significantly (Matoušková, 2022). As Caar (2001) points out, the digital organization represents a new type of organization that is completely different from previous ones in terms of its structure, organization, and operation.

According to Akib et al. (2022), resilience is viewed as a crucial element for an organization's survival. This involves the organization's capacity to adapt to change by utilizing, promoting, and taking ownership of a range of variables, including leadership agility, digital skills, innovation, and digital technologies.

2. Digital leadership and e-leadership

There is an interconnectivity between the two forms of leadership in the digital age. Both have in common the use of digital technologies (Amorim et al. 2023). Torre and Sarti (2020) argue that leadership in the present context must navigate digital contexts and that there is a relationship between the two forms of leadership.

The research by Bauwens and Cortellazzo (2024) highlights the necessity of seamlessly integrating skills and behaviors associated with conventional, situational based leadership with the innovative requirements of digital age.

The evolutionary process of e-leadership has spanned over a decade and has involved a reorganization of organizational functions with information technology as the main tool used in this process (Avolio et al., 2014).

E-leadership is the process of guiding and directing teams in the digital age, which is shaped by the globalization of the contemporary world. E-leadership in a digitally transformative context is defined as the management process that provides guidance to individuals on how to use information technology in their work, with the goal of generating change that facilitates the achievement of a set of organizational goals related to digital organizational initiatives (Yudha, Herlambang and Susanto, 2019). From Pulley's and Sessa (2001) perspective, e-leadership is characterized by complexity. E-leadership is also a process of fostering a culture of digital innovation, according to Peixoto et al. (2022).

This new form, e-leadership, provides communication between leaders and subordinates via the Internet (Aggarwa, 2018). EU Leaders is a project that focuses the European Union's emphasis on the need to develop an organization's e-leadership skills, which are crucial to cope with the digital age (Amorim et al. 2023).

Digitization and the new changes it has brought to organizations have led to the emergence of digital leadership, as an evolved form from e-leadership. Digital leadership is based on a range of skills (both social and technical), making it necessary to update traditional leadership styles (Dorozalla and Klus, 2019). Digitization and the new changes it has brought to organizations have led to the idea that digital leadership involves an in-depth understanding of digital technologies and their impact on the whole system of the organization, playing a role in ensuring the digital transformation of organizations (Topcuoglu et al., 2023).

According to Eberl and Drews (2021, p.5): "digital leadership is a complex construct aiming for a customer-centered, digitally enabled, leading-edge business model by transforming the role, skills, and style of the digital leader, realizing a digital organization, including governance, vision, values, structure, culture, decision making processes, adjusting people's management, virtual teams, knowledge, and communication and collaboration on the individual level".

Digital leadership is a dynamic process, which consists in the power of social influence belonging to an individual (or a group of individuals) to engage other members of the group in the achievement of tasks and objectives established, over a period, in an organizational context specifically, a process based on the widespread use of digital technologies (Bibu, Abrudan and Sivilca, 2023).

E-leadership refers to the transformation of conventional leadership into a digital environment, concentrating on the proficient management of digital technology, digital reinforcement of employees' motivation, and digital transformation handling. On the other hand, digital leadership" involves a broader set of digital strategies and practices (Ahuja et al., 2023).

The concept of e-leadership is concerned with the phenomenon of leadership in electronic environments (Hensellek, 2020). Hensellek (2020) makes a delineation between the two notions of leadership and argues that digital leadership is a broader field of research, with a focus on cultivating a digital mindset and skill set that can facilitate successful digitization in both society and the economy.

3. Methodological framework of the research and results

The primary goal of this paper is to delve into the ever-evolving landscape of the digital world. In particular, this study aims to explore the multifaceted relationship between leadership and the digital era, examining how these two concepts intersect and interact to drive the transformation of organizations. The research methods are a literature review and the use of bibliometric analysis, which perfectly fits our goal. In addition, these reviews are objective, providing a broad perspective on the field of research. Furthermore, bibliometric analysis utilizes statistical methods to analyze data (Saputro et al., 2023).

The research questions are: What does digital leadership mean? ; What does e-leadership mean?; What is the relationship between the two concepts and what is the point of convergence between the two in ensuring digital transformation?;How digital leadership and e-leadership influence transformation?

The database was made up of 346 articles from the Web of Science. The type of analysis selected was co-occurrence and the unit of analysis was the authors' keywords and all keywords. The measurement method was full counting. The program used to view the data was VOSviewer because it provides an unparalleled ability to analyze large datasets, as noted by Sood, Kumar, and Saini (2021). In addition, Vosviewer has made it easier to monitor trends in sustainable organizational management according to Ogutu, El Archi, and Dávid (2023)

For the first bibliometric analysis, the minimum number of occurrences of a keyword was three, and 293 articles were selected for evaluation, out of a total of 184 author keywords. Six keywords were deemed the most significant, and the keywords with the highest impact were ultimately chosen for inclusion in our analysis.

For the second analysis 53 articles were extracted from the Web of Science based on two keywords (digital leadership and e-leadership). Despite the vast number of words available (329), only a mere 16 were deemed worthy enough to be included in the mapping process, meeting the stringent minimum occurrence requirement set at 5. The results about the e-leadership concept are presented in Figure 1, below.

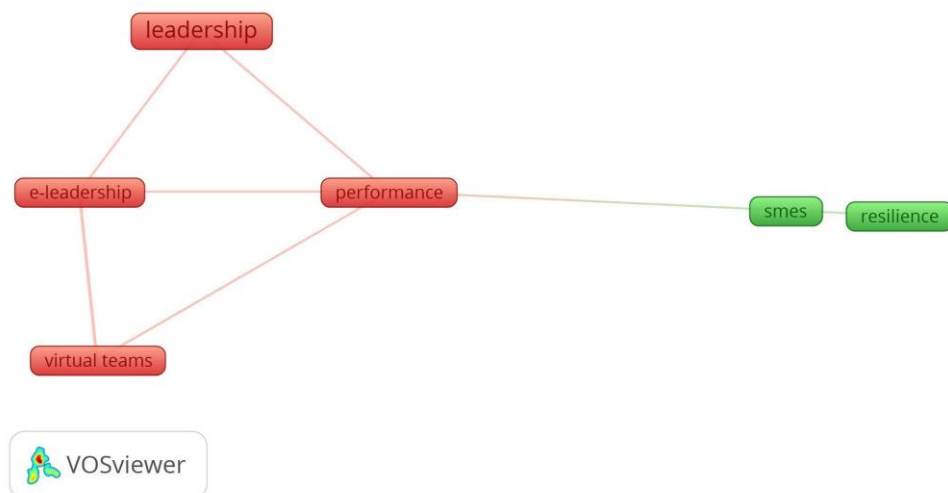


Figure 1: Bibliometric map of the e-leadership concept

Source: made by the author based on VOSviewer

The six items are thoughtfully and strategically divided into two distinct categories, each encompassing a unique set of concepts and qualities. The first category is made up of four words (e-leadership, leadership, performance, and virtual teams). The second category is comprised of two equally crucial items – SMEs (Small and medium-sized enterprises) and resilience. The word with the highest frequency is leadership with 10 occurrences. We found performance with 4 occurrences and e-leadership with 3 occurrences. E-leadership is directly linked to performance and virtual teams.

Recent studies have revealed that e-leadership not only plays a crucial role in enhancing organizational performance, but also has a significant influence on promoting innovation within the organization. A key role is played by employees and the improvement of their innovation behavior (Zhong, Sukpasjaroen and Pu, 2023).

E-leadership is also the process of guiding and directing teams in the digital age, which is shaped by the globalization of the contemporary world. E-leadership use by managers has a positive effect on the trust and commitment of members of virtual teams. This has the potential to enhance the performance of global business operations which utilize virtual teams (Vought, 2017). In this context, leaders may be geographically separated from their teams, yet they are able to maintain a sense of connection through the use of digital technology, such as computers and the internet (DasGupta, 2013).

By strategically implementing e-leadership within an organization, it enables the effective and efficient adaptation of that entity to the dynamic digital landscape, the ability to make informed decisions, and the identification and exploitation of growth opportunities (Gunawan et al., 2023).

The relationship between e-leadership and digital leadership is presented in Figure 2, below.

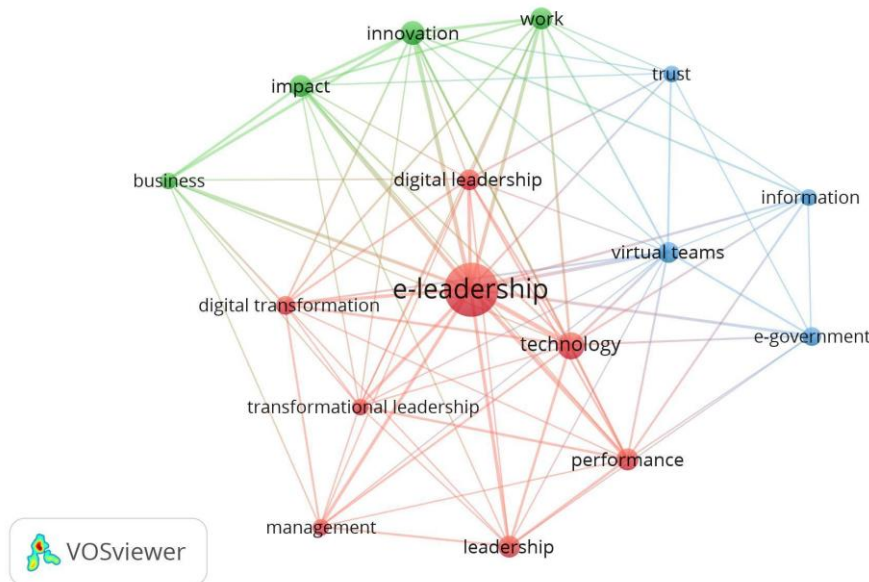


Figure 2: The relationship between e-leadership and digital leadership
Source: made by the author based on VOSviewer

Among the 16 items included in this distribution, the first cluster in red color is a highly captivating combination of keywords that encompasses the rapidly evolving and complex landscape of digital leadership (digital leadership, digital transformation, e-leadership, leadership, management, performance, technology, transformational leadership). The second cluster in green color is made up of business, innovation, and work. The third cluster in blue color has four items: e-government, information, trust, and virtual teams.

Both e-leadership and digital leadership have a direct connection with digital transformation, management, technologies, performance, transformational leadership, leadership, business, and innovation. Maria and Pedro Araújo Pietrafesa (2023) points out that e-leadership needs a transformational component to support innovation. The concept of transformational leadership is of paramount importance in enabling e-business analytics to gain and sustain a competitive advantage (Saleh and Auso, 2023).

The use by managers of the transformational leadership style is significant in the context of digital transformation projects, as it facilitates the enhancement and optimization of the dynamic capabilities of the organization (Huang, Jiang and Chang, 2023). Ly (2023) validates through his research the impact that digital transformational leadership has on the digital transformation process, the working tool being the agility of the organization. Management plays a key role for both leadership styles (e-leadership and digital leadership) and to ensure the digital transformation it is necessary that the applied management models be as innovative as possible (Maria and Pedro Araújo Pietrafesa 2023).

Some authors (Karakose et al., 2022; Cortellazzo, Bruni and Zampieri, 2019) argue that e-leadership is a component of digital leadership, while others (Kalashnikov, Peredreeva and Katarína Hercegová, 2019; Tigre, Curado and Henriques, 2022) argue that digital leadership includes e-leadership. Digital leadership is a more complex and comprehensive concept, which includes e-leadership as a starting point. E-leadership applies to virtual environments, but digital leadership ensures digital transformation by managing digital technologies (Telli, 2022).

4. Conclusion

Upon closer examination, it becomes evident that a profound correlation exists between digital leadership and e-leadership. While these two concepts may appear similar on the surface, they possess distinct characteristics that set them apart. Both stem from a foundation rooted in traditional leadership styles, yet they seamlessly merge into the larger realm of digital transformation. This integration of traditional and digital elements highlights the dynamic and ever-evolving nature of effective leadership in today's rapidly changing technological landscape.

Our opinion is that e-leadership represents a first step in the process of digital transformation of an organization (surface level), and that digital leadership happens in the more advanced stages of organization's digital transformation and, therefore represents a major in depth change of the organization.

In the context of an increasingly digital world, businesses are under pressure to remain competitive. In this environment, the managers' ability to implement and apply e-leadership and digital leadership in an effective and efficient manner in their activity is essential for the success of their organization.

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