

DIGITIZATION OF SMALL ENTERPRISES – DIGITAL LEADERSHIP

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Purpose: Ubiquitous digitalization requires the management of companies to develop a special type of leadership - digital leadership. It involves holistically combining human and technological aspects. The article aims to present theoretical and empirical research on digital leadership in small enterprises in their innovation contexts.

Design/methodology/approach: The study is based on two research methods. The first was the literature critique method, the application of which made it possible to develop the methodological assumptions for the research. The second is the diagnostic survey method, a questionnaire technique used to conduct empirical research on a sample of 131 small enterprises. The results made it possible to assess the digital leadership level of the surveyed units regarding their innovation.

Findings: Digital leadership was assumed to consist of activities from three leadership concepts: transactional, transformational and authentic leadership. Research has shown that the digital leadership level in small enterprises is low. Their leaders undertake few actions from each of the three leadership concepts, the worst situation being for transformational leadership. This negatively affects the enterprises' innovation.

Research limitations/implications: The research conducted brought closer the digital leadership issue in small enterprises and allowed verification of the adopted research assumptions. Further research will compare digital leadership levels in enterprises by size, age and industry.

Practical implications: Research has revealed that a low digital leadership level may be responsible for the problems associated with digitizing the operations of small enterprises. Based on them, many recommendations for leaders can be developed.

Originality/value: The survey's originality lies in the development of a concept for assessing the digital leadership level, considering the small business specifics.

Keywords: digitization, small enterprises, digital leadership.

Category of the paper: Research paper.

1. Introduction

Today's organisations and their leaders must operate in a turbulent, non-linear and unpredictable socio-economic environment. Change has become a regular part of everyday business life. Dynamic technology development, ubiquitous digitisation and working in a virtual environment require the permanent development of digital competences by managers and employees of all spheres and levels of management. The challenges of digitisation in today's economy are particularly difficult for small enterprises without sufficient financial, technical, time and competence resources (Mieszajkina, 2020; Mieszajkina, Myśliwiecka, 2022). Their leaders, who are most often business owners, are required to have many skills. In addition to the traditional, business-related aspects, they should learn to manage distributed, remote, multicultural and generationally diverse teams. Increasing expectations both internally and externally require leaders to be highly flexible and able to deal with a variety of leadership situations. All this emphasises the need to master new leadership competences to respond effectively to the challenges of today's digital economy.

The MSME (micro, small and medium-sized enterprises) sector constitutes the overwhelming majority of enterprises in Poland – 99.8%. In the overall structure of Polish enterprises, the share of microenterprises is 97.2%, small enterprises – 2.1%, medium-sized enterprises – 0.6%, large enterprises – 0.2%. Slight fluctuations in this structure have been noted over the last decade. Since 2013, there has been a steady increase in the share of micro and large enterprises. However, the share of small and medium-sized units is declining, with the largest decline in small enterprises (PARP, 2024). Therefore, it is important to consider what exogenous and endogenous barriers small enterprises encounter, which hinder their effective functioning and development.

Globalisation and digitalisation processes are opening up a wide range of opportunities for small enterprises to strengthen and expand their operations. Whether they notice them and use them effectively depends to a large extent on their leaders. Therefore, the presented research aims to assess the level of digital leadership in small enterprises in the context of their innovation.

2. Digital leadership

Burns (1978) wrote almost fifty years ago that leadership is one of the most frequently observed yet most poorly understood phenomena in the world. Although much research has since been conducted to establish its essence, no consistent definition has been developed. Stodgill (1990) stated that there are almost as many different definitions of leadership as there

have been people trying to formulate them. In the digital leadership case, the history of explaining its nature is much shorter.

The term digital leadership refers to leaders taking the right actions to manage the digitisation of an organisation (El Sawy et al., 2016). In general, digital leadership is about holistically combining human and technological aspects, creating a clear vision of how information and communication technologies (ICT) can support the organisation's business goals. In the already quite extensive literature on management in the digital era, various definitions of digital leadership can be found. According to Ordu and Nayr (2021, p. 69), it is “creating an innovative vision by using technology effectively in managerial processes to create a sustainable change culture in the organization”. Zhu et al. (2022, p. 2) define digital leadership as „the leaders’ ability to create a clear and meaningful vision for the digitalization process and the capability to execute strategies to actualize it”. However, Oberer and Erkollar (2018) describe digital leadership as transcending traditional hierarchies, focusing on teamwork, and striving to increase organizational innovation. Tabrizi et al. (2019) emphasize that digital transformation requires leaders to understand its key processes and adapt organizational solutions to them. To develop and implement a digital business model, they need to focus on changing systems, processes, organizational culture, and the mindset of employees. Promsri (2019) believes that digital leadership envisions a shift in the leaders' mindset about connecting people and digital technologies for organizational benefit.

As Kane et al. (2019), emphasize, in times of digital transformation, strong leaders are needed who are not only charismatic visionaries, but who can lead organizations toward digital maturity. Their tasks include finding and attracting talent, motivating employees to continuously learn and step outside their comfort zone. They must be excellent organizers creating conditions for experimentation and cooperation across all boundaries, even remotely. In addition, they should mentor and support employees in difficult situations. The goal that leaders strive for remains unchanged: long-term value growth for the business they lead.

A digital leader must be aware of the latest technological developments; decide which are threats or opportunities; manage their impact on internal processes, products and services; provide employees with the necessary digital knowledge and support them through change and uncertainty (Gilli et al., 2024; Kane et al., 2019). The broad set of competencies that a “traditional” leader should possess is being expanded in the digital age. Among them, the most frequently mentioned are (Avolio et al., 2014; De Neve et al., 2013; Leavy, 2020):

- having the digital knowledge to develop vision and digital business models;
- becoming a role model in finding oneself in the digital reality;
- exerting a positive influence, especially on the attitudes and behaviours of employees who are influenced by digital technologies;
- developing the organization's members' cooperation in the digital environment and their ability to use digital technologies creatively;
- motivating digital behaviour.

Phakamach et al. (2023) believe that a digital leader should have competences in the following areas:

- 1) Communication/Collaboration.
- 2) Vision and Focus.
- 3) Digital Literacy.
- 4) Strategic Thinking/Planning.
- 5) Technology and Innovation.
- 6) Think Critically and Risk-Taking.
- 7) Adaptability and Responsibility.
- 8) Talent Identification.

Summarizing the consideration of digital leadership, it can be said that its essence is not fundamentally different from leadership in “traditional” business. Similarly, it is about strategically using the organization's resources and influencing the behaviour of its members to achieve business goals. The difference involves learning an additional competency: acquiring the knowledge, skills and attitudes necessary to use ICT in responding to endogenous and exogenous changes. Digital transformation of leadership is less related to technical-technological aspects, it is mainly related to strategy, structure, culture, cooperation, employee and stakeholder behaviour. A digital leader doesn't need to understand the intricacies of how technology works, they should focus more on where and how to use it to gain a competitive advantage (Carvalho et al., 2022; Leavy, 2020).

3. Digital leadership model

Many theories have emerged in leadership research and have changed over time. Digitization of business processes creates new approaches to define the essence of leaders' work and their role in the organization. Modern leaders are developing dynamic, flexible leadership styles based on collaboration and the opportunities provided by ICT. Dinh et al. (2014) conducted an extensive qualitative review of 66 leadership theories presented in 10 leading academic publications. Their research indicates that all approaches are interrelated through three macro theories: transactional, transformational and authentic leadership. These findings were used by Prince (2018) to develop a digital leadership research model. She assumed that in the digital age, a leader should flexibly combine three types of leadership, adapting to the situation faced by one's organization (Figure 1).



Figure 1. Complex Digital Leadership Framework.

Source: Prince, 2018.

Transactional leadership involves the leader cooperating with subordinates, clarifying their roles and tasks. Leaders engage in a transactional relationship with members of the organization, which involves mutually setting expectations and possible gratification for task completion. Use a system of rewards and punishments to achieve goals, control, strive to minimize mistakes and prevent undesirable behaviour (Prince, 2018; Bass, Riggio, 2010; Stoner et al., 2011; Yukl, 2013). Transactional leadership assumes that employees' interests can be aligned with those of the organization if they are properly motivated (Hutama et al., 2024; Santosa et al., 2023). Therefore, for transactional leadership to be effective, it is necessary to constantly monitor and meet the evolving needs of subordinates, as well as skilfully influence their behaviour (Czermiński et al., 2001). According to Santosa et al. (2023, p. 2), the relationship between a transactional leader and an employee manifests itself in three situations: „the leader knows what employees want and explains what they will get if their work follows expectations, the leader exchanges the efforts made by employees for rewards, and the leader is responsive to the personal interests of employees as long as those interests are proportional to the value of the work the employee has done”. Therefore, the achievement of the organization's goals mainly depends on the employees' effectiveness in achieving predetermined personal performance goals (Santosa et al., 2023).

The transformational leadership theory involves activating employees, encouraging them to think about the interests of the organization, transcending formal requirements, personal and professional development (Griffin, 2005; Jemielniak, Koźmiński, 2011; Karaszewski et al., 2019; Potocki, 2005; Türk, 2023). Transformational leaders are characterized by charisma, empathy and intellectual stimulation (Makin et al., 2000). They analyse development trends and work proactively to shape the organization's future (Wu, Wang, 2015). They strive for real transformation of the organization by implementing sustainable, self-perpetuating changes that stimulate further growth (Kozioł-Nadolna, 2022; Andoko et al., 2024). Transformational

leaders help employees solve problems, encourage them to look at them from a new perspective. In this way, they motivate members of the organization to undertake creative activities beyond their duties leading to the achievement of the organization's vision (Saleh et al., 2018; Qaradaghi Ahmed, 2024; Andoko et al., 2024; Pradhan Pradhan, 2015).

Authentic leadership is understood as „a vocation to serve and be useful to others through the privileged position that you have” (Calderon-Mafud, Pando-Moreno, 2018, p. 48). Walumbwa et al. (2008) identified five dimensions: self-awareness, relational clarity, cognitive flexibility, self-control, and a high moral compass. The leader sets a good example for subordinates and also helps them achieve authenticity. Is transparent in relationships, open to cooperation, ethical, and moral. In the organization, a climate of compliance is created between beliefs, actions and actual achievements. This encourages the emergence of trust, has a positive effect on improving relationships, increasing productivity, willingness to act creatively and innovatively (Avolio, Gardner, 2005; Baczyńska, 2018; Wong, Cummings, 2009; Sohail, 2024). Authentic leadership is enhanced by transferring new knowledge, creativity, developing innovative ideas and strategic transformation (Sow, Aborbie, 2018; Tung, 2016). Leaders create a climate of compliance between the beliefs, actions and achievements of individual employees, which fosters trust, improves relationships and increases productivity (Avolio, Gardner, 2005; Baczyńska, 2018; Mockało, 2013; Wong, Cummings, 2009).

Analysing the approaches of various authors, Prince concludes that in the digital age, digital leadership consists of activities from all three concepts discussed above: transactional, transformational, and authentic. The model presented in Figure 1 includes pure and mixed spheres. This means that each type of leadership can either exist in its pure form or overlap with one of the others. It also happens that all three types of leadership coexist and overlap. For a leader, this means that he should deepen his competencies resulting from each leadership concept. The principle of the systemic approach should be considered: it is easiest to acquire competences in pure areas, and the most difficult is to create a set of them in a situation where all three concepts are combined (Prince, 2018).

For analysing digital leadership, a holistic approach that considers both technological and human aspects needs to be applied. Schiuma et al. (2021) created a digital leadership compass that shows the key competencies of a digital leader (Figure 2).

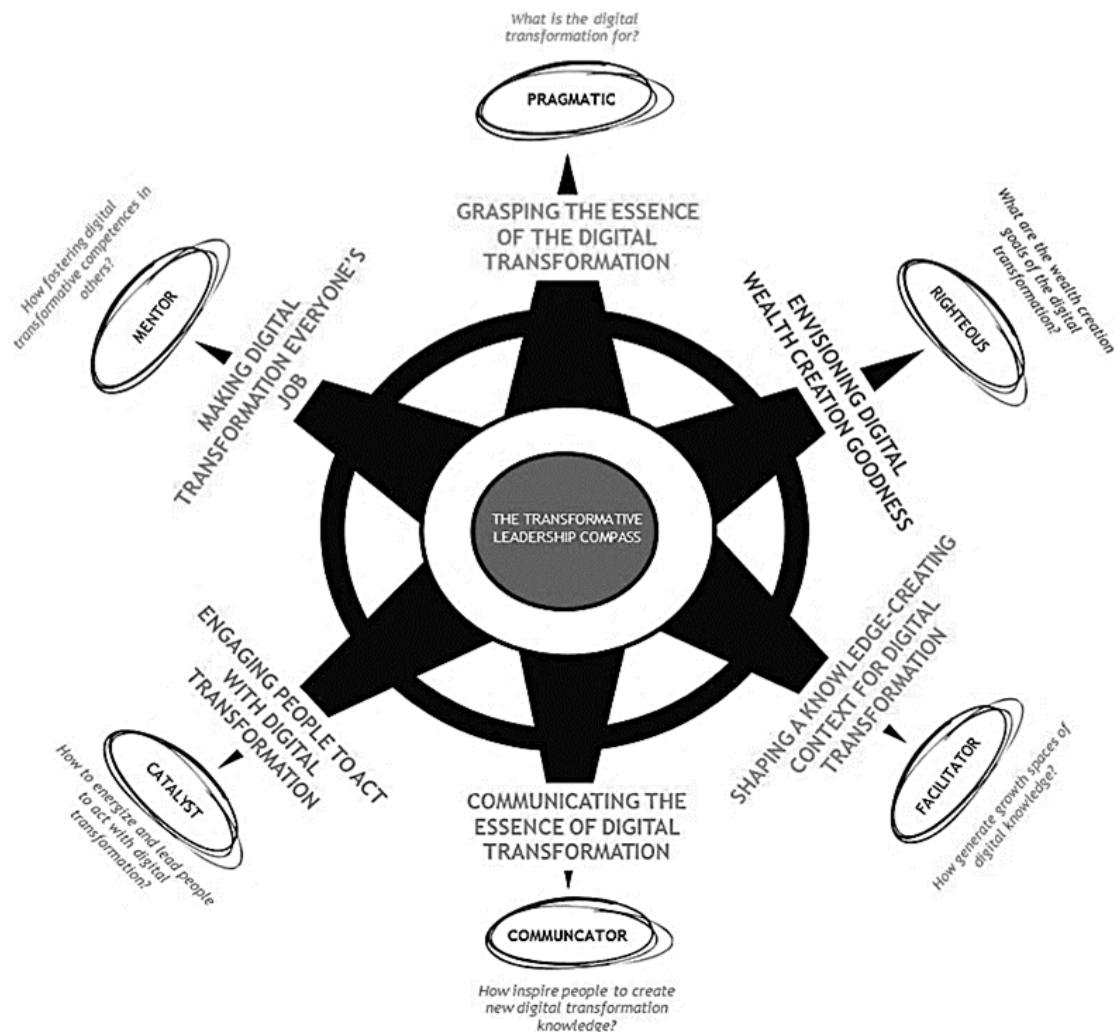


Figure 2. The transformative leadership compass. Complex systems of polygamous holes made from one cluster to several coal deposits.

Source: Schiuma, Schettini, Santarsiero, Carlucci, 2021, p. 127.

The six key competencies that a leader leading an organization through digital transformation should possess are:

1. Grasping the essence of digital transformation – the ability to integrate digital knowledge with business challenges, enabling effective problem solving. The leader understands the purpose of digital transformation and has at least basic technological knowledge.
2. Envisioning digital wealth creation goodness – the ability to make decisions to achieve positive results from digitization, while considering the principles of organizational sustainability.
3. Shaping a knowledge-creating context for digital transformation – the ability to create an environment conducive to acquiring digital knowledge by the organization's employees. Ability to connect virtual and real workplaces and facilitate knowledge exchange.

4. Communicating the essence of digital transformation – the ability to communicate the essence, goals and objectives of digital transformation to employees in an understandable, inspiring way.
5. Engaging people to act with digital transformation – the ability to engage all employees in the organization's digital transformation process and overcome barriers caused by differences in generations, cultures and professional roles.
6. Making digital transformation everyone's job – the ability to promote digital transformation and support the development of employees' digital competencies.

In today's rapidly changing business world, adopting digital leadership is essential for organizations aiming to grow and strengthen their competitive position. This also concerns small enterprises, which often have to balance the demands of digitization with limited resources. This requires their leaders to possess a variety of competencies, including digital.

4. Research Methodology

The research procedure comprised several stages. Firstly, an in-depth analysis of Polish and foreign literature on digital leadership was conducted using the literature criticism method. It was established that research in this area mostly refers to large business organizations. Considering that management processes, including leadership, in small enterprises have distinct characteristics (Mieszajkina, 2018), a perceived research gap has been identified. The following research problem was formulated: whether and to what extent the leadership activities of small enterprise leaders are consistent with the concept of digital leadership and whether they contribute to strengthening the innovativeness of the unit? In the next stage, the research goal was defined: assessing the digital leadership level of small enterprises in their innovation context. The following hypotheses were formulated:

H1: Small enterprise leaders show the least action in transformational leadership, the most in authentic leadership.

H2: The level of digital leadership in small enterprises is low.

H3: Small enterprises with higher levels of digital leadership prove to be more innovative.

The empirical research was conducted using a diagnostic survey method, an online survey technique. The author's questionnaire contained 25 questions, divided into a substantive section (22 questions) and a metric section (3 questions). The survey was conducted on a random sample of 131 enterprises employing between 10 and 49 people. Data were collected using the CAWI method. The survey questions were answered by leaders owning small enterprises. Table 1 presents the structure of the survey sample by number and percentage of the total sample. In this table and the subsequent ones, the following designations are adopted: NO is the total number of respondents; NG is the number of people in each group; N is the number of people who indicated a given answer.

Table 1.
Structure of the research sample

Specification	Total sample NO = 131		Number of people employed in the enterprise							
			10-19 (NG = 36)		20-29 (NG = 40)		30-39 (NG = 30)		40-49 (NG = 25)	
	N	%	N	%	N	%	N	%	N	%
<i>Age of enterprise</i>										
15 years and more	61	46.57	19	52.78	18	45.00	8	26.67	16	64.00
9 - 14 years	40	30.53	8	22.22	12	30.00	12	40.00	8	32.00
3 – 8 years	24	18.32	9	25.00	7	17.50	8	26.67	0	0.0
less than 3 years	6	4.58	0	0.0	3	7.50	2	6.66	1	4.00
<i>Industry</i>										
Production	26	19.85	9	25.00	8	20.00	6	20.00	3	12.00
Trade	26	19.85	7	19.44	6	15.00	7	23.33	6	24.00
Services	70	53.43	16	44.44	22	55.00	17	56.67	15	60.00
Construction	9	6.87	4	11.11	4	10.00	0	0.0	1	4.00

Source: own research.

5. Research results and analysis

Achieving the research objective required determining how to assess the digital leadership level. The Prince model concept was used (Figure 1), combining three macro leadership theories: transactional, transformational and authentic. The original survey instrument from this model could not be used because the survey was conducted on a sample of CEOs of Australian corporations. Leadership in small and large businesses differs significantly in many ways. In small enterprises, leaders are involved not only in establishing a vision and development strategy but also in day-to-day operations. They have direct contact with employees and stakeholders, which facilitates the building of trust relationships and allows them to make quick decisions and respond flexibly to changes. In corporations, leadership is distributed, this function is performed by leaders at different levels of the organizational hierarchy. Corporate CEOs focus on strategic and developmental aspects and have limited contact with employees, making it difficult to form relationships. Significantly less often than in the small business, the organization is identified with the person of its leader.

An in-depth analysis of the transactional (TL), transformational (TFL) and authentic (AL) leadership theories allowed the authors to prepare a survey questionnaire adapted to the specifics of small enterprises. Each of the three leadership types is described by seven questions. Respondents were asked to indicate whether they took the actions specified in the question (1 - yes, 0 - no). This research uses a nominal scale, which allows the set of results to be divided into separate subsets based on having or not having a given characteristic (Encyklopedia Zarządzania, 2024).

To verify hypothesis 1, respondents' answers regarding the undertaking of specific digital leadership activities were analysed. Questions regarding each leadership type, are presented in Table 2. Respondents' answers are presented numerically (N is the number of people who answered YES to the given question) and as a percentage of the total sample.

Table 2.

Activities undertaken by small enterprises leaders in TL, TFL, AL

Type of leadership	Leader's activities	Responses			
		Yes		No	
		N	%	N	%
Transactional Leadership (TL)	TL1: I motivate employees to take action in the field of digitization	19	14.50	112	85.50
	TL2: I encourage employees to strengthen positive attitudes toward digitization	36	27.48	95	72.52
	TL3: I support employees in reporting and implementing their own digital initiatives	63	48.09	68	51.91
	TL4: I provide employees with opportunities to regularly update digital competencies through a formal learning and development program	15	11.45	116	88.55
	TL5: I make employees aware that digital solutions contribute to the company's revenue, which affects their compensation	19	14.50	112	85.50
	TL6: I follow employees' activities related to their digital initiatives	19	14.50	112	85.50
	TL7: I explain to employees what they can expect as a result of expanding their digital competencies	25	19.08	106	80.92
Transformational leadership (TFL)	TFL1: I regularly identify enterprise development opportunities that result from digitalization	46	35.11	85	64.89
	TFL2: I systematically and actively seek and implement product/service innovations based on digital technologies	36	27.48	95	72.52
	TFL3: I actively cooperate with stakeholders in the implementation of digital technologies	15	11.45	116	88.55
	TFL4: I make sure that the enterprise has a coherent strategy based on digital solutions	19	14.50	112	85.50
	TFL5: I prioritize initiatives related to digitalization	18	13.74	113	86.26
	TFL6: I empower employees to experiment with and implement digital initiatives	12	9.16	119	90.84
	TFL7: I aim to digitize most internal processes and interactions with external partners	37	28.24	94	71.76
Authentic leadership (AL)	AL1: I encourage employees to develop and implement digitization ideas	67	51.15	64	48.85
	AL2: I make sure to update and develop digital competencies of employees	42	32.06	89	67.94
	AL3: I systematically analyse and adjust the enterprise business model to take advantage of new digital revenue-generating opportunities	15	11.45	116	88.55
	AL4: I make sure that the enterprise invests in digital technologies in a systematic and planned way	38	29.01	93	70.99
	AL5: I provide employees with the information necessary to increase the effectiveness of their work related to the digital technology use	61	46.56	70	53.44
	AL6: I analyse and update the enterprise's strategy in terms of digitalization of specific areas and activities	42	32.06	89	67.94
	AL7: I constantly analyse and develop the enterprise's presence in the digital space and I create the digital culture of the enterprise	32	24.43	99	75.57

Source: own research.

Table data indicates that few leaders engage in most digital leadership activities. In the case of TL, about half of the respondents support employees in reporting and introducing their digital initiatives (TL3). Nearly a third of them encourage employees to strengthen positive attitudes

toward digitization (TL2). The remaining five questions were answered positively by less than 20% of enterprise owners. The results regarding TFL are even more pessimistic: only slightly more than a third of respondents confirmed having regularly identified enterprise development opportunities that result from digitization (TFL1). Two activities: I systematically and actively seek and implement product/service innovations based on digital technologies (TFL2) and strive to digitize most internal processes and interactions with external partners (TFL7) were confirmed by about 28% of respondents. The remaining 4 activities were declared by approximately 10% of them. Activities regarding AL are confirmed by the majority of respondents. About half of them activate employees to develop and implement digitization ideas (AL1) and provide employees with the information they need to make their work related to the use of digital technologies more efficient (AL5). The remaining activities are declared by about one-third of the leaders, except for activity AL3: I systematically analyse and adjust the enterprise's business model to take advantage of new digital revenue-generating opportunities. Perhaps such a low rating was due to the reference to a business model that enterprises do not have.

Following this, it was summarized how many activities in each type of leadership are undertaken by the leaders of the surveyed enterprises. The summary is presented in Table 3.

Table 3.

Total activities undertaken by small enterprises leaders divided into TL, TFL, AL

Type of leadership	Number of activities undertaken															
	0		1		2		3		4		5		6		7	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Transactional Leadership (TL)	30	22.90	45	34.35	30	22.90	17	12.98	7	5.34	0	0.00	2	1.53	0	0.00
Transformational leadership (TFL)	65	49.62	23	17.56	15	11.45	10	7.63	4	3.05	5	3.82	4	3.05	5	3.82
Authentic leadership (AL)	14	10.69	29	22.14	31	23.66	29	22.14	21	16.03	7	5.34	0	0.00	0	0.00

Source: own research.

None of the respondents engaged in all seven activities listed in the survey for the TL and AL. In the case of the TFL, only 5 such people, but at the same time almost half of the respondents do not undertake any such activities. Lack of activities was reported by the fewest people in the area of AL (14), in the area of TL - 30 people. A summary was made of how many leaders report taking more than half of the actions (4 or more) in each leadership type: TL - 9 people (6.87%), TFL - 18 people (13.74%), AL - 28 people (21.37%). The total number of activities undertaken by all leaders is as follows: TL - 196 (average 1.5); TFL - 183 (average 1.4); AL - 297 (average 2.27). Therefore, hypothesis 1 in part one was rejected: the least action small enterprise leaders show in the area of transactional rather than transformational leadership. Whereas it is accepted in the second part: most activities show in the authentic leadership area.

To verify hypothesis 2, it was verified whether respondents took action in each type of leadership: TL, TFL, AL. The maximum they could mark 21 answers to YES, i.e. score 21 points. Table 4 presents leaders' activity - taking or not taking action - in each leadership type.

Table 4.

The activity of small enterprise leaders regarding TL, TFL, AL

Specification	Number of respondents	
	N	%
Leaders with points in each leadership type	56	42.75
Leaders with 0 points in one leadership type, including:	51	38.93
0 points in TL	6	4.58
0 points in TFL	45	34.35
0 points in AL	0	0.0
Leaders with 0 points in two leadership types, including:	14	10.68
0 points in TL and TFL	10	7.63
0 points in TL and AL	4	3.05
0 points in TFL and AL	0	0.0
Leaders with 0 points in three leadership types	10	7.63

Source: own research.

An analysis of the results presented in the table indicates varying activity levels among small enterprise leaders regarding TL, TFL and AL. Less than half of the respondents (42.75%) implement the full range of leadership activities. Leaders who received 0 in one leadership type account for 38.93% of the total research sample, with the majority (34.35%) not active in the TFL and only 4.58% in the TL. In this group, no one received 0 points in AL. One in ten respondents reported being inactive in two leadership types. Among them, 7.63% are not implementing both TL and TFL activities, another 3.05% are not implementing both TL and AL activities. Leaders who did not obtain points in TFL and AL failed to have them in TL simultaneously. Respondents who do not take action in any of the three leadership types account for 7.63% of respondents. A detailed analysis of the responses revealed an apparent problem with TFL, small enterprise leaders are not prepared to involve their team members in the operation digitization process.

According to the Prince model, digital leadership consists of activities from TL, TFL and AL (21 in total). For further analysis, three digital leadership levels were distinguished: low: 1-7 points, medium: 8-14 points, high: 15-21 points.

Table 5.

Digital leadership level in small enterprises

Specification	Digital leadership level					
	low (1-7 points)		medium (8-14 points)		high (15-21 points)	
	N	%	N	%	N	%
Leaders with points in each leadership type	23	17.56	33	25.19	0	0.0
Leaders with 0 points in one leadership type	48	36.64	3	2.29	0	0.0
Leaders with 0 points in two leadership types	14	10.69	0	0.0	0	0.0
Total	85	64.89	36	27.48	0	0.0

Source: own research.

None of the respondents declared enough activities to rate their digital leadership highly. Less than half of the respondents (42.75%) were active in each leadership type. In this group, 33 leaders reached the medium level, and 23 the low level. The maximum number of points obtained in this group is 13, obtained by 4 leaders. In the group of respondents, who did not show activity in one leadership type, only 3 people obtained a medium level, and 48 - a low level. The maximum number of points in this group is 7, this applies to 6 leaders. In the group of respondents, who did not declare activities in two leadership types, 14 people have a low leadership level.

When analysing the leadership level, it is important to consider the systemic aspect, i.e. the interaction of individual TL, TFL and AL activities. A complete lack of activity in one of the leadership types does not allow for achieving synergy effects. Therefore, there is no reason to reject the hypothesis that digital leadership is not high in small enterprises.

To verify hypothesis 3, respondents' answers regarding their companies' approach to innovation were analysed. Respondents' responses are shown in Table 6. Innovation activities are divided into 5 levels, where level 1 means no innovation, and level 5 means having an innovation-based strategy.

Table 6.

Innovative activities of small enterprises

Activities for introducing innovations		Number of respondents	
Level	Activities	N	%
1	We have not introduced any innovations in the last two years	25	19.08
2	We are technologically ready for innovation, but we are not implementing it due to competence shortages	24	18.32
3	Over the past two years, we have introduced or attempted to introduce innovations	46	35.11
4	Over the past two years, we have been systematically implementing the innovation process	24	18.32
5	For several years now, we have been implementing a strategy based on innovative activities and systematically introducing innovations	12	9.16

Source: own research.

Respondents' analysis of their responses indicates that small enterprises are not very active in innovation. Over the last two years, 37.4% of entities have not introduced any innovations, with almost half of them being technologically ready but lacking competences. The largest group of entrepreneurs (35.11%) claims to be involved in innovation activities, but on an irregular basis. Another 18.32% of respondents are systematically implementing the innovation process, and 9.16% are pursuing a strategy based on constant innovation activities. Thus, almost 63% of enterprises demonstrated some degree of engagement in innovation, while the rest had difficulties in implementing it.

For further analysis, digital leadership levels were compared with small enterprises' innovation levels (Table 7).

Table 7.
Innovation level vs. digital leadership level in small enterprises

Digital leadership level	Innovation level										Weighted average
	1		2		3		4		5		
	N	%	N	%	N	%	N	%	N	%	
Low: 1-7 points (NG = 85)	15	24.71	22	27.06	36	45.88	10	11.76	2	2.35	2.46
Medium: 8-14 points (NG = 36)	4	11.11	1	2.78	7	19.44	14	38.89	10	27.78	3.69

Source: own research.

In the group of enterprises with low digital leadership levels, the largest number of entities (45.88%) are at the third innovation level, with significantly fewer at the fourth and fifth levels (11.76% and 2.35%). The weighted average innovation rate for this group is 2.46. In enterprises with a medium digital leadership level, most entities present the two highest innovation levels (fourth - 38.89%, fifth - 27.78%). Only 10.87% of them have not introduced innovations in the last two years (first and second innovation levels). The weighted average for this group is 3.69. Therefore, it can be concluded that small enterprises with a higher digital leadership level demonstrate greater innovation, confirming hypothesis 3.

6. Conclusions

The considerations presented in the article on digital leadership confirm that it is essential for organizations willing to survive and thrive in the digital transformation. Digitization is revolutionizing small enterprises and leveling the playing field against larger competitors. Implementing advanced ICT allows small enterprises to cope with limited resources, enable streamlined processes, increase productivity and deepen customer relationships. Consequently, they can respond quicker to environmental changes, strengthen their strategic flexibility, and ultimately deliver greater value to their customers. However, this is achievable, provided small enterprise owners understand the need to digitize their operations and become genuine digital leaders.

Digital leadership, a concept that seemed like a distant future just a few years ago, is now an integral part of everyday business operations. It brings with it tremendous opportunities and at the same time poses enormous challenges, especially in a small business. In enterprises of this size, the owner should skilfully combine the roles of leader and manager, which in a large business are fulfilled by a multi-person management team. To become a digital leader, he needs to enrich his leadership and managerial competencies with a set of various digital competencies.

Polish small enterprises are characterized by relatively low digital activity, and their employees do not have sufficient advanced digital competencies. Therefore, they are not fully exploiting the opportunities provided by ICT (Mieszajkina, Myśliwiecka, 2022). Therefore,

digital leaders are necessary for planning and implementing systematic activities related to operations digitization, strengthening employees' digital skills, and designing a strategy that balances people and technology potentials. Their priority should be the systematic development of a digital learning culture across the enterprise.

The article discusses the digital leadership concept and its key features in the existing literature. The concept of assessing the digital leadership level and the research results conducted on 131 small enterprise units sample are presented. As assumed, the digital leadership level is low: small enterprise leaders take little action regarding transactional, transformational and authentic leadership. Among the owners, none have reached a high level, 27.5% present a medium level, 64.9% a low level, and 7.6% have not shown any digital leadership activity. This is a major obstacle to innovating and orienting the business model towards digital solutions.

The study contributes to the literature on the subject by increasing awareness of the influence of the owner-leader on the success of digitalization of business activity. Although the digitization subject is increasingly appearing in academic journals, there is little research on digital leadership. It is therefore worthwhile to broaden and deepen scientific inquiry related to this topic. It is worth citing here a quote from Marc Benioff at the World Economic Forum in 2016: "Technology is neither good nor bad – it's what you do with it that makes the difference. As in previous eras, new technologies also carry negative consequences. AI and genetic engineering in the wrong hands could alter our future in undesirable ways. For too long we have done our work in isolation, unaware of the effects our innovations have on societies and environment as a whole. As business leaders, government officials, educators and citizens, we need to create a common set of principles and values that take us to the future that we all want together" (Benioff, 2017).

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