CORVINUS UNIVERSITY of BUDAPEST

Doctoral School of
Business and Management

SUMMARY OF THESIS

Kitti Dióssy

From Youth Perspectives to Leadership Influence

Does the act of shaping the leadership context of digital transformation lead to superior operational performance?

for her Ph.D. thesis

Supervisors:
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habilitated university associate professor
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habilitated university associate professor

Budapest, 2025

Department of Innovation and Business Incubation

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1. Research background and research relevance

The principal objective of the research is to contribute to the corpus of knowledge on the role of digital transformation in organisations of SMEs, with a particular focus on the manner in which it interacts with leadership styles and affects operational performance. The research aims to provide practical guidance for organisations striving to exploit the benefits of digital transformation while effectively managing human resources and leadership skills. The dissertation is comprised of three research papers; consequently, the body of the summary is structured around the same theme. The research papers can be found in Chapter 5.

Organisations can tailor their talent acquisition and recruitment campaigns by understanding the confidence, motivation, and interest of Generation Y and Z economists in connection to AI with the expectations and aspirations of younger professionals, ensuring a more engaged and motivated workforce by prioritising the integration of AI in those areas. The multidisciplinary perspective of these professionals can provide a comprehensive range of perspectives on the ideal approach to digital transportation.

Companies can also use the findings to design management development programs that emphasise the leadership styles most conducive to successful digital transformation. This could include management training that proves more effective in driving digital initiatives. Understanding how different leadership styles affect digital transformation can also help companies refine their digital strategies, ensuring that management teams are equipped to lead successful digital transformations. This could lead to more efficient production processes, reduced downtime, and improved productivity. Consulting firms can use the research to advise clients on best practices for digital transformation tailored to their management styles and organisational culture. By understanding how digital transformation mediates the relationship between leadership and operational performance, companies can optimise their leadership practices and digital strategies to achieve better operational outcomes.

Leaders can use the results to shape their company’s digital strategy, ensuring that it aligns with the workforce’s expectations and the prospective domains where AI can benefit most. They can then adapt or modify their management approaches to endorse digitalisation efforts, leading to smoother transitions and more effective implementation of new technologies. Leaders can be trained to recognise the critical role that digital transformation plays in operational success, adjusting their leadership styles to support digital initiatives that lead to measurable performance improvements. It is incumbent upon leaders to develop a more profound comprehension of their employees' attitudes towards digitalisation.

Figure 1: Connections of the research papers

Chapter	Main topic	Key points
Chapter II 1st Paper	Youth's opinion on AI, robotics, skills, and HR relationship	- AI, robotics and digitalisation are expanding internationally, putting pressure on Hungarian SMEs. - Young economists (employees) have an ambitious, positive attitude towards AI. - **Need to explore managerial perspectives on AI.** - **Implementing digital opportunities for better performance. What outcomes are expected from these changes?**
Chapter III 2nd Paper	Leadership styles' effect on digital transformation	- **Hungarian manufacturing SMEs need digital transformation to remain competitive.** - Digital transformation affects complex organisational transformation: strategic planning, organisational structure, resources, culture, and technology. - Change must come from top management; leadership style is crucial. - Leaders mainly focus on performance and colleagues, but goals and implementation are also important. - **If digital transformation improves operational performance — what factors are key?**
Chapter IV 3rd Paper	Leadership's role in the connection between digital transformation & operational performance	- **Leaders play the most critical role** in transformation. - Task-oriented leadership yields the best transformation results in this context. - Relationship-oriented leadership has direct adverse effects on operational performance. - Digital transformation is a mediator between leadership styles and operational performance. - **Benefits**: **Cost improvement** and **flexible servicing (no quality effects), but relationship-oriented leadership is less effective.**

Source: Author's work, 2025

Overall, the research provides practical insights that industries can use to enhance their digital transformation efforts, optimise the development of leadership styles, and better align their workforce strategies with the expectations of younger generations. These findings offer a roadmap for companies seeking to stay competitive in an increasingly digital marketplace, ensuring they can attract top talent, effectively manage change, and achieve operational performance excellence (see Figure 1).

The *bottom-up approach* was employed to study the opinions of young generations about AI and robotics and ascertain their potential impact on the future workforce and HR

practices. The approach emphasises organic growth and innovation from the employees themselves.

The *top-down approach* is typified by strategic decisions that originate from higher levels of an organisational structure. This study examines the role of leadership styles in driving digital transformation within Hungarian SMEs and investigates how leadership styles influence operational performance improvements through digital transformation.

The central concept connects these two approaches, suggesting that the inevitability of digital solutions may depend on how the *digital* and *human* factors interact and complement each other within an economic or organisational context. The interplay between the bottom-up and top-down methods may determine the effectiveness and acceptance of digital transformation efforts and company competitiveness through *operational performance*.

1.1. The human, the digital, and the operational performance factors

It is of paramount importance to gain an understanding of the perception of this relationship from the perspective of *Generation Z and Y*. This generation will constitute the future managerial class and form the opinion on the acceptance of digitalisation.

Generation Y is the first to mature in an era characterised by digital technologies and can rapidly adapt to and excel in using new IT tools. This generation is distinguished by a proclivity for embracing change, a tendency to prioritise the present, and a reluctance to engage in long-term planning. Their social interactions frequently occur in virtual spaces, and they are typically receptive to cultural differences (Bencsik & Machova, 2016).

Generation Z, in contrast, is characterised by robust career aspirations and professional ambition, coupled with advanced technical and linguistic abilities, rendering them highly proficient in their roles (Yılmaz et al., 2024). Employers shall prepare themselves to engage with this generation effectively, integrating them into the organisation's culture and supporting their transition into productive employees (Elmore, 2014). They are intuitive, expect rapid responses, are proactive, and demonstrate a fast pace in information processing and content research. They seek instant gratification and resist long-term commitments. Generation Z also embraces the principle of "living for today," often blurring the lines between work and leisure (Törőcsik et al., 2014).

These generations, born into a digital age, possess a substantial knowledge of technology and are expected to shape the future of digital transformation (Bencsik & Machova, 2016). The

study explores new sociological aspects of generational issues focusing on the relationship between human and digital factors, as they will be the leaders of the future (Yılmaz et al., 2024).

It is crucial to examine *leadership* from the perspective of its styles, as distinct approaches to leadership profoundly impact how leaders interact with, inspire, and direct their teams (Frank et al., 2024). The different *leadership style* presents a distinct pattern of skills and behaviours (Lovelance et al., 2019) that managers apply to influence their subordinates in order to achieve goals (Hersey et al., 2001; Weber et al., 2022). Managers are key people in the company's change management process (Teece, 2016).

Effective leadership is the linchpin of organisational success. Different leadership styles shape a company's culture, decision-making processes, and overall functioning (Berman et al., 2020). Traditional *task-oriented styles*, characterised by top-down decision-making, hierarchical organisational structures, and a rigid chain of command, have been replaced by more collaborative approaches and efficient monitoring processes (Fiedler, 1971; Mikkelson, 2019; Tabernero et al., 2009). *Task-oriented leadership*, for instance, emphasises inspiring and motivating employees to exceed their anticipated performance. Relationship-oriented leaders focus on building strong connections and fostering collaboration among team members to align organisational culture (Fiedler, 1971; Mikkelson, 2019). They create a collaborative work environment ensuring that digital strategies are developed with input from various stakeholders, leading to more comprehensive and effective plans (Imran et al., 2021).

The impact of AI and robotics on decision-making and productivity is irrefutable (Zhong et al., 2017). However, this raises the question of job displacement (Frey & Osborne, 2013), which in turn gives rise to ethical considerations regarding data protection and fairness, further complicating the landscape (Farina et al., 2025).

Digital transformation involves not only the digitisation of processes but also utilising AI and AI tools to enhance business competitiveness. This holistic approach can be understood as a continuous change, focusing on the creation of a digital culture through the application of digital technologies and organisational practices (Westerman et al., 2012). It is indisputable that digitalisation's core is around technology. However, successful organisational turnaround requires firms to approach it as a complex organisational phenomenon (Erboz et al., 2022). The main components of the organisation-wide digital transformation are widely recognised (Erboz, et al., 2022; Karippur & Balaramachandran, 2022). Namely, besides the technology (Gill & VanBoskirk, 2016; Heini & Heikki, 2015) a successful digital transformation also requires a digital strategy (Gill & VanBoskirk, 2016; Matt et al., 2015), a significant change in the

organisational structure and resources (Ivan et al., 2019; Karippur & Balaramachandran, 2022) and cultural adjustments (Gill & VanBoskirk, 2016; Ivan et al., 2019).

Operational performance is critical for measuring the effectiveness and competitiveness of an organisation's core business processes. It involves a comprehensive evaluation of performance that should include a balanced mix of financial, customer, employee, and strategic metrics. Operational performance offers a more controllable and actionable set of metrics that directly influence the efficiency, cost-effectiveness, and quality of a company's output. It is often a superior indicator for optimising internal processes (Chikán et al., 2022). It comprises quality of products/services, new product development, customer satisfaction, employee retention, and speedy delivery (Tortorella et al., 2023). Operational performance is a critical aspect of a firm's overall outcomes (performance) (Chikán et al., 2022) such as cost, reliability, flexibility and services, speed, dependability and quality (Teece, 2016) that positively impact business performance (Chahal et al., 2020).

1.2. The relationship between human and digital factors

Industry 4.0 is a shift towards a collaborative relationship between humans and machines, facilitated by cognitive technologies (Frank et al., 2024). Intelligent machines will use speech recognition, computer vision, machine learning, and advanced synchronisation models to perform their tasks with greater autonomy (Frank et al., 2019). This necessitates the development of sophisticated learning models for machines, such as robots, in order to ensure that humans and machines develop mutually beneficial skills in all work settings (Lemaignan et al., 2017; Zhong et al., 2017). To remain competitive in the context of Industry 4.0, companies must adapt to new structural interactions among employees, focus on additional qualities for human capital, and recognise different ways of assessing workforce competencies (Semeraro et al., 2023).

Recent technological advancements have automated manufacturing processes previously conducted by human operators. The attainment of efficient manufacturing is contingent upon the efficacious interaction between machinery and human operators (Semeraro et al., 2023). The utilisation of machinery facilitates the execution of specific technological processes, thereby rendering the efficient operation of such machinery a crucial aspect of the manufacturing process. The effective operation of a company is contingent upon the synergy between human work and machine operations (Culot et al., 2020).

1.3. The relationship between leadership styles, digital transformation, and operational performance

Examining the interrelationship between leadership, digital transformation, and operational performance reveals ample evidence of the significant impact of digital manufacturing on improvements in operations performance (Felsberger et al., 2020). The interdependent relationship between leadership styles and digital transformation significantly influences operational performance. Organisations that align their leadership styles to meet digital transformation requirements are better positioned to thrive in the digital age. Results show that task-oriented leadership fosters a culture that is favourable to innovation and adaptability, which are crucial factors for achieving success in today's dynamic business environment (Imran et al., 2021). However, our knowledge about how leadership drives digital transformation and operational performance is limited (Tortorella, et al., 2023).

The positive impact of digital technologies on various operational performance measures was argued. Manufacturing firms pursue digital transformation to provide better services (products), gain competitive advantage, and increase profitability (Westerman et al., 2012). Managers' contribution to digital transformation and higher operational performance is also acknowledged, at least in the case of having a defined digital strategy (Hess et al., 2016). Digital solutions with substantial leadership help manufacturing companies improve quality and provide more responsive operations (Akçay Kasapoğlu, 2018). Leaders shall proactively incorporate digital technologies into their business processes to overcome technology limitations, enhance collaboration, and foster innovation. Digital tools, such as the Internet of Things (IoT) can streamline production processes. Integrating advanced digital technologies through a knowledge-oriented leadership paradigm can enhance operational performance. This integration offers practical perspectives to managers on managing digital transformation within organisations (González-Mohíno et al., 2024). The ability to construct and leverage AI is paramount, and environmental dynamism can significantly influence the adoption of AI and organisations' operational performance (Dubey et al., 2020).

Different leadership styles adopt distinct approaches to digital transformation and operational performance, assigning varying ratings to specific leadership styles (Tortorella et al., 2023). A recent study by Tortorella et al. (2023) analysed leadership's moderating influence on the relationship between digital transformation and performance. It found a positive influence on task-oriented behaviours (moderating the impact of technology) and a negative influence on relationship-oriented behaviours (moderating the impact of employee and culture).

It examined moderating implications of leadership; however, we believe that leadership does drive digital transformation. Furthermore, they did not consider the aspect of resources (especially organisational issues) in their paper.

In Weber et al.'s (2022) empirical study, it is revealed that although the combination of the two styles does not give the highest efficiency, task-oriented leaders and relationship-oriented skills cannot be ignored since they soften the downsides of the task-oriented style. Studies (Tortorella et al., 2019; 2023) also show similar results, although they mainly focused on lean management in a digital environment: managers can achieve greater efficiency with task orientation, but with their relational style traits, they can achieve more favourable results in the long term. Müller et al. (2024) identified that the digital transformation leadership competency portfolio is contingent upon analysing the transformation drivers and goals. A comprehensive exploration of market innovation, operational efficiency, active stakeholder involvement, and enhanced competitiveness is imperative to ensure the efficacy of the portfolio.

Whilst there has been some research into the effectiveness of task-oriented and relationship-oriented leadership styles separately (Tortorella et al., 2018; 2019; 2023; Mikkelson et al., 2019), there has been little research into their integrated application. It is possible that leaders will be able to apply different styles at different stages of digital transformation, but it is not yet clear what combinations work best. It is also unclear how each leadership style specifically affects innovation and employee engagement during digital transformation (Henkel et al., 2019). Digital tools, such as AI, robotics and automated systems, play an important role in digital transformation (Chu & Kurup, 2025). However, the operational performance outcomes (Akçay Kasapoğlu, 2018) and successful adaption depend on how well they can align human leadership with technological tools (Lemaignan et al., 2017). The paucity of research in this area, particularly concerning the optimal integration of technology systems and human resources in the light of operational performance (González-Mohíno et al., 2024), is a glaring lacuna in the extant literature. The challenge for future leaders will be to find the right balance between leveraging digital tools and maintaining human-centred leadership in a rapidly evolving technological environment.

2. Research methods and research setting

In my doctoral dissertation I used quantitative research methods. I chose a questionnaire survey to collect the data as it is the most frequently used primary research technique because it furnishes the researcher with a plethora of objective data. (Mikkelson et al., 2019).

2.1. The first article: Youth's opinion on AI, robotics, skills, and HR relationship

I utilised the data obtained from the questionnaire survey, comprising a 252-item cleaned sample from the USA and Hungary. Both developed countries have prioritised investment in digitisation, although the approach and level of digitisation differ. The data were subjected to an association test, correlation test, a difference between variables test ($\chi 2$ test), categorical principal component analysis (CATPCA), homogeneity test and ordinal logistic regression (o-logit) study following pre-tests and examinations. With the homogeneity test, I examined the difference between the thinking of generations Y and Z, as well as Americans and Hungarians. As the result of the aforementioned $\chi 2$ tests, there was no significant difference between the generations' opinions or the nations' thinking. I used CATPCA for the purpose of attitude investigation. With regression analysis, I managed to determine the function-like positive or negative relationships of the variables in a multivariate approach and the relationship between AI and HR. Results indicated that young economists support the use of AI in their workplace.

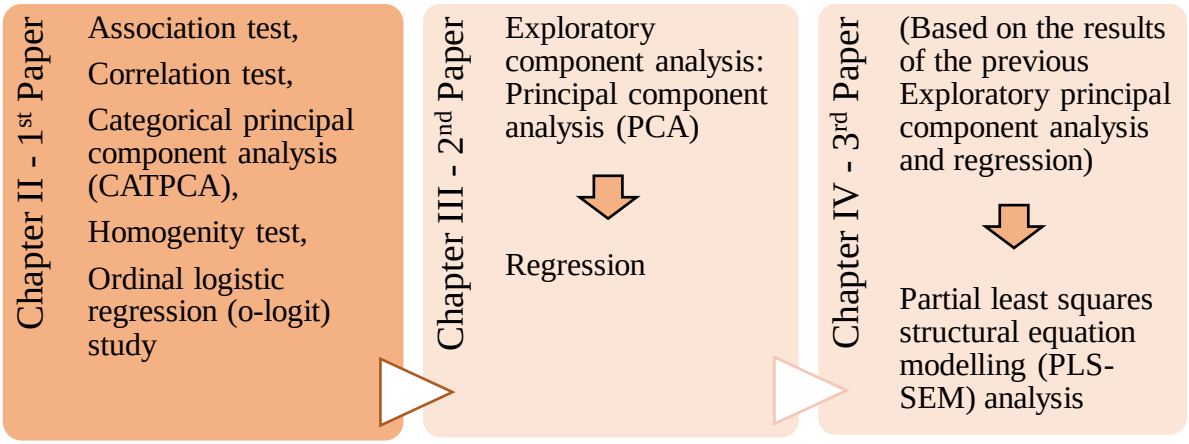
2.2. The second and third articles: connection between digital transformation, leadership & operational performance

The two papers are based on the identical database obtained from TÁRKI during the period of 2018-2019. The survey was focused on Hungarian SMEs. The largest proportion of respondents were from the manufacturing sector (51%), followed by trade (24%). The sample also included companies from a range of other sectors, including construction, transport, storage, catering, and information and communication. The majority of these enterprises are headquartered in Budapest and Central Hungary. A total of 234 companies completed the questionnaire. As a result of subsequent data cleaning the final sample comprised 209 companies. The sample processed during the research was limited to companies operating in Hungary, and only manufacturing companies were included in the analysis. The rationale behind the data reduction was to concentrate the research efforts, and one of the most effective methods for achieving this was to focus on the manufacturing sector during the data collection period. Prior research has demonstrated that the manufacturing sector is a significant area of focus in the context of digitalisation. In addition to its status as a significant contributor to the Hungarian economy in 2018 and 2019, the manufacturing sector represents the largest segment of the industrial sector (Központi Statisztikai Hivatal, 2021). In total, 113 manufacturing firms were included in the database. However, this was subject to further data cleaning, resulting in a final sample of 94 items.

In the second paper, I used the SPSS system and exploratory component analysis: principal component analysis (PCA) to identify the digital transformation pillars and the leadership style groups. Moreover, I used regression to analyse the relationship between the two digital transformation pillars and two leadership attributes.

The third paper builds on the previous quantitative research data using partial least squares (PLS) as a more complex statistical method. This approach provides a graphical user interface for variance-based structured equation modelling (SEM) utilising the PLS path modelling method (Wong, 2013). PLS involves multiple ordinary least squares (OLS) sequential regressions and is suitable for small samples. Given that PLS does not estimate parameters using maximum likelihood, a normal distribution is not a prerequisite. It is based on variance and can be efficiently employed when the sample size and measurable factors are limited, and the distribution of variables is uncertain. The PLS employs multiple regression, whereby the coefficient R, the t-value and the coefficient R^2 are calculated for each regression model component (Saghafi, 2016). The figure illustrates the extent to which the variance of the latent variable is explained by the other latent variables. Furthermore, it elucidates the strength of the effect of one variable on another. The relative statistical importance of the different path coefficients can be determined by their respective weights. These determine the strength of the effect of each item on a given variable (Wong, 2013). Figure 2 shows the research methods.

Figure 2: Research methods and their connection



Note: the lighter orange cells are based on the same database, and the dark orange cell based on a different database were analysed with different statistical approaches.

Source: Author's work, 2024

3. Results and conclusion

In the below subsections I summarise the results of the three research papers.

3.1. The first article: Youth's opinion on AI, robotics, skills, and HR relationship

- In the short term, the opinions of American and Hungarian economists were found to be largely concordant and diverse motivations among the participants. The respondents expressed optimism regarding the impact of AI on economic, labour market, and social issues. Additionally, they demonstrated high confidence in their abilities, which employers should endeavour to support.
- According to the young economists, human work will not completely disappear. It will only be transformed, and they will not feel threatened by AI. It is thought-provoking that, according to young economists, a company can be functional in the long-term without AI and that AI and robotisation have no motivating effect on human work.
- The sectors most likely to be impacted in the near future were telecommunications and transport. In the longer term, the areas of health and space were identified as the most concerning. A significant proportion of respondents, particularly those of younger age groups, indicated that opportunities for learning and professional growth served as key motivators in their work.
- Both groups of young people concurred that soft and hard skills would be significant in the era of AI, affording them a competitive advantage. My long-term observation was that these young economists did not foresee the disappearance of jobs but rather their evolution, with robots assuming a more significant role in tasks and becoming increasingly human-like.
- The findings of the study indicated that the general perception of AI and robotics among young economists is predominantly positive. Despite the uncertainties that the future might hold, it was evident that the majority of respondents, irrespective of age or geographical location, espoused an optimistic outlook on these subjects. This was arguably one of the most significant findings and a key takeaway for leaders (see Figure 3).
- It was, therefore, imperative for companies to retain their workforce, with a particular emphasis on providing training and education, as indicated by the respondents. Education also served as a valuable tool for modern youth, who tended to pursue it as a personal endeavour. Although the respondents demonstrated a limited understanding of the subject matter, they exhibited the potential to achieve notable outcomes if they were to expand their knowledge base.

Figure 3: Results of the first research

Nationalities	**Hungarian economists**		**American economists**	
Generations	**GenZ**	**GenY**	**GenZ**	**GenY**
Economists are **confident** in the labour market	**57%**	39%	36%	**50%**
More **motivated** by new technologies (no diff. in gens)	38%		42%	
Areas affected by AI **short** term	telecommunications, transportation, logistics, VR and AR games, robots			
Areas affected by AI **long** term	space research, healthcare, **education**, logistics, transportation, telecommunications		healthcare, transportation, **engineering**, telecommunications, space research, logistics	
Both **soft- and hard skills** are **important** (equally)	54%	55%	54%	**73%**
Both **soft- and hard skills** can be **developed** by AI	**only hard skills** can be developed		**both** can be developed	
Human work will not completely disappear but will be transformed (no diff. in gens)	**74%**		59%	
There will be **tasks** or parts of tasks that will be **performed by robots** (short- and long term)	34% short term: 27% and long term:53%		43% short term: 15% **long term: 59%**	
Young economists have **positive opinion** on the new technologies (no diff. In gens or nations)	American youth depicted a more positive vision of AI's social effects and social responsibility than Hungarians, but both nations have **positive attitude** towards AI			
People personally **support the application of AI in the workplace** (no diff. In gens or nations)	They support the application of AI in the workplace, but mostly, they are willing to work for a company that uses AI			

Source: Author's work, 2025

3.2. The second article: Leadership styles' effect on digital transformation

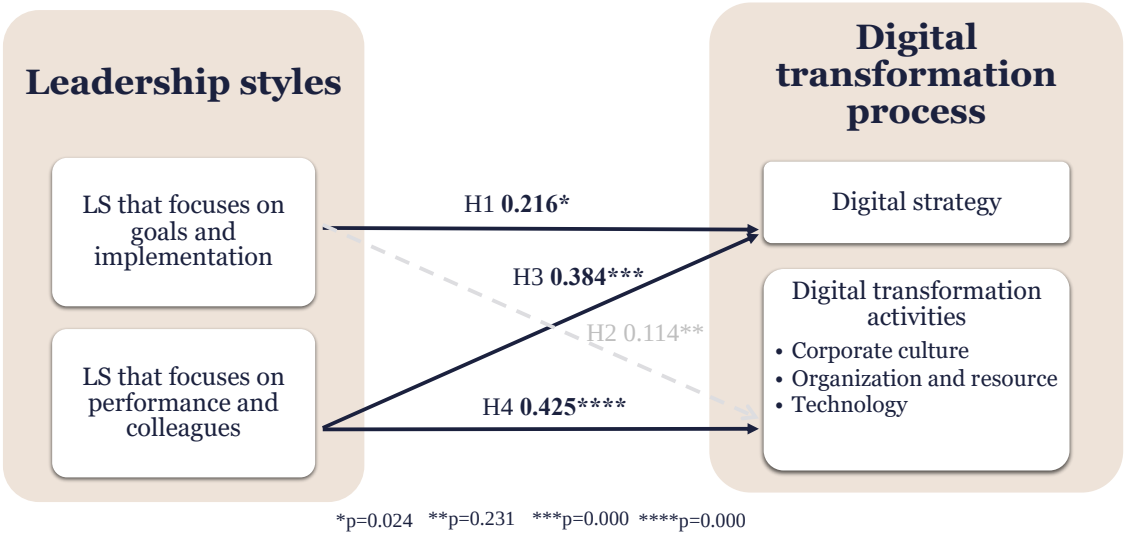
This study examined the digital transformation and its potential for enhanced effectiveness and success. It also investigated the impact of leadership styles (relationship- and task-oriented styles) on the transformation process. In order to ensure that companies applied the most appropriate management style during digital transformation, it was necessary to discuss which style was most effective.

- The concept of digital transformation was founded upon four principal pillars: well-defined

(I) digital strategy, the proper (II) organisational structure, resources, (III) corporate culture that supported digitalisation within the manufacturing companies and, the (IV) existing technologies that could be the base of the digital transportation (Galbraith & Kates, 2010; Heini & Heikki, 2015; Gill & VanBoskirk, 2016; Ivan et al., 2019; Móricz & Drótos, 2019; Karippur & Balaramachandran, 2022). However, my research indicated that these four pillars could be grouped into two principal categories in SMEs: (I) digital strategy and (II) activities related to digital transformation.

- Several studies highlighted the importance of having a well-defined strategy in place during the process of digital transformation (Matt, 2015; Teece, 2016). However, the empirical evidence of our research did not consistently support this view (Avella et al., 2001).
- Teece (2016) emphasised the pivotal function of leadership style in influencing strategic orientation, a perspective mirrored in the model. Based on previous research, a task-oriented leader was more efficient in the initial stages of the digital transformation, and a relationship-oriented leader had better results in the more advanced stage (Henkel et al., 2019; Tabernero et al., 2009). Given that, based on domestic research, digital transformation is still in its infancy (Demeter et al., 2021), our results are in line with these international results. It can also be seen that a pure task- or relationship-oriented leadership style is not usual, managers like to combine them (Gelei et al., 2015). As a result of our research, we can argue that by supplementing task-oriented leadership style traits with relationship-oriented style traits, the leader can achieve the greatest results in the process of digital transformation.
- The findings demonstrated that leadership styles were pivotal in propelling digital transformation. The transformation is mainly supported by a leadership style that focuses on performance and colleagues, which is closer to classic task-oriented leadership styles (see Figure 4). Therefore, it is worthwhile for managers to focus on the formulation of performance goals that support both strategy and implementation, and their communication and acceptance. However, it was important to consider the long-term relationship attributes too.

Figure 4: Results of the second research



Source: Author's work, 2025

3.3. The third article: Leadership's role in the connection between digital transformation & operational performance

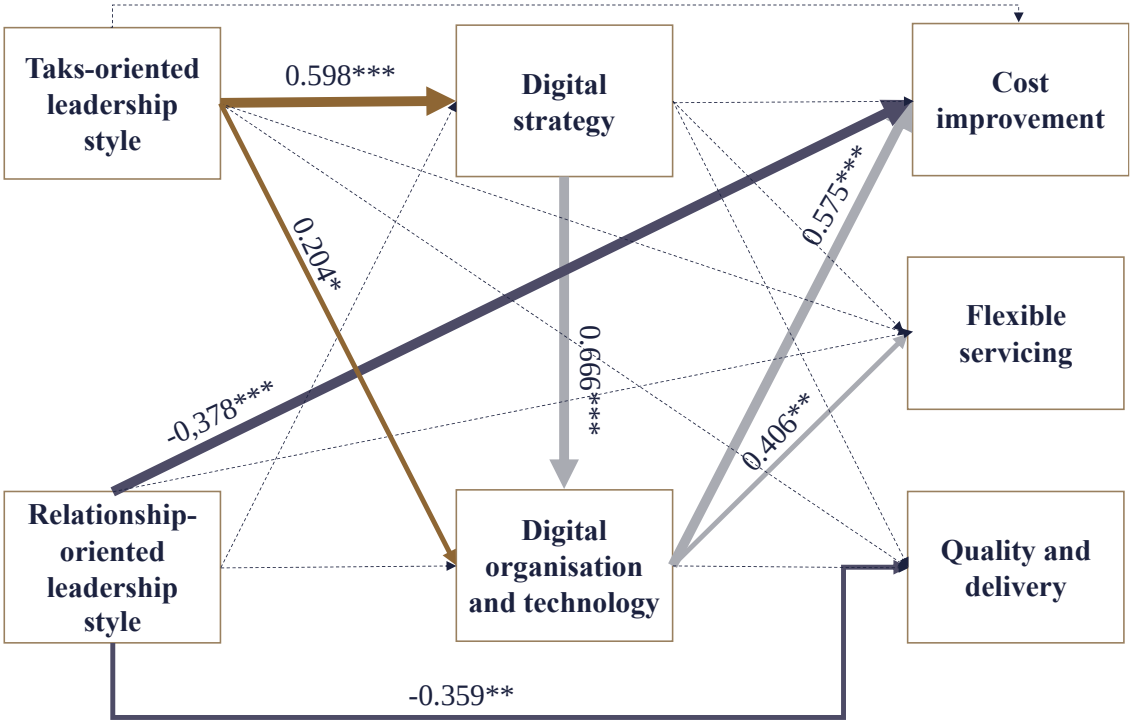
The paper is directly connected to the second one. This study offered a critical examination of how digital transformation served to mediate the relationship between leadership and operational performance outcomes.

- The initial and most significant conclusion was the phenomenon of the complexity inherent to digital transformation. The concept of digital transformation was approached as a complex socio-technical system that extends beyond the technology domain.
- The findings of our study highlighted the pivotal role of leadership in managing SMEs' digital transformation. Despite the international literature indicating that the two leadership styles would have a similar positive effect on digital transformation (Tortorella et al., 2019), our findings did not align with this expectation. The task-oriented leadership style is demonstrated to be of particular significance in the context of digital transformation, particularly in the domain of strategic planning. Conversely, the evidence did not bear out the anticipated effects of relationship orientation on digital transformation. Furthermore, influenced by their cultural context, Hungarian leaders adhered to the efficacy of task-oriented strategies. These strategies offered a defined vision and delineated tasks instrumental in facilitating digital transformation and its successful implementation.
- Implications for operational performance were pivotal. The findings of our study emphasised the significance of the role of leadership and the impact of digital

transformation on operational management innovation in manufacturing firms. The model generally affected the operational performance indicators, although the specific effects were not uniform.

- The influence of digital transformation extended well beyond operational measures. The concept of digital transformation was primarily associated with financial measures, such as improved return on sales and return on investments (Dubey et al., 2020; He et al., 2023). Additionally, studies emphasised the pivotal role of cost reduction in the Central and Eastern European region (Chahal et al., 2020) and globally (Berman et al., 2020; Dubey et al., 2020). Conversely, enhancements in quality and greater flexibility in services and delivery were equally crucial in the context of manufacturing. The results of our study did not align precisely with the direct positive outcomes on operational performance improvements that the literature suggests. Digital transformation activities had a direct positive impact on operational performance indicators such as cost efficiency and flexible services, a conclusion that was also supported by the literature. However, the results indicate that digital transformation did not affect quality and delivery, contrary to most international literature on the subject. A digital transformation strategy guided the implementation of digital transformation activities. However, the influence of this strategy on performance outcomes was not direct, representing a previously unanticipated connection. The absence of a direct positive impact of strategy might be attributed to a reactive (leadership) approach in contrast to a more proactive stance.
- The findings of this study revealed a leadership paradox. This finding underscores the notion that relationship orientation influenced pathways distinct from digital transformation-associated pathways. However, it also revealed a direct and adverse impact on operational performance. The relationship orientation did not yield the anticipated results concerning its impact on operational performance. This was contrary to the literature, as evidenced by the studies of Akçay Kasapoğlu (2018) and Dubey et al. (2020), which suggested that quality should have been positively affected. The results demonstrated the disparate effects of the two styles on the firm's performance. In addition to the positive and indirect impact of the task-oriented style, there was a negative and direct effect of the relationship-oriented style (see Figure 5).

Figure 5: Results of the third research



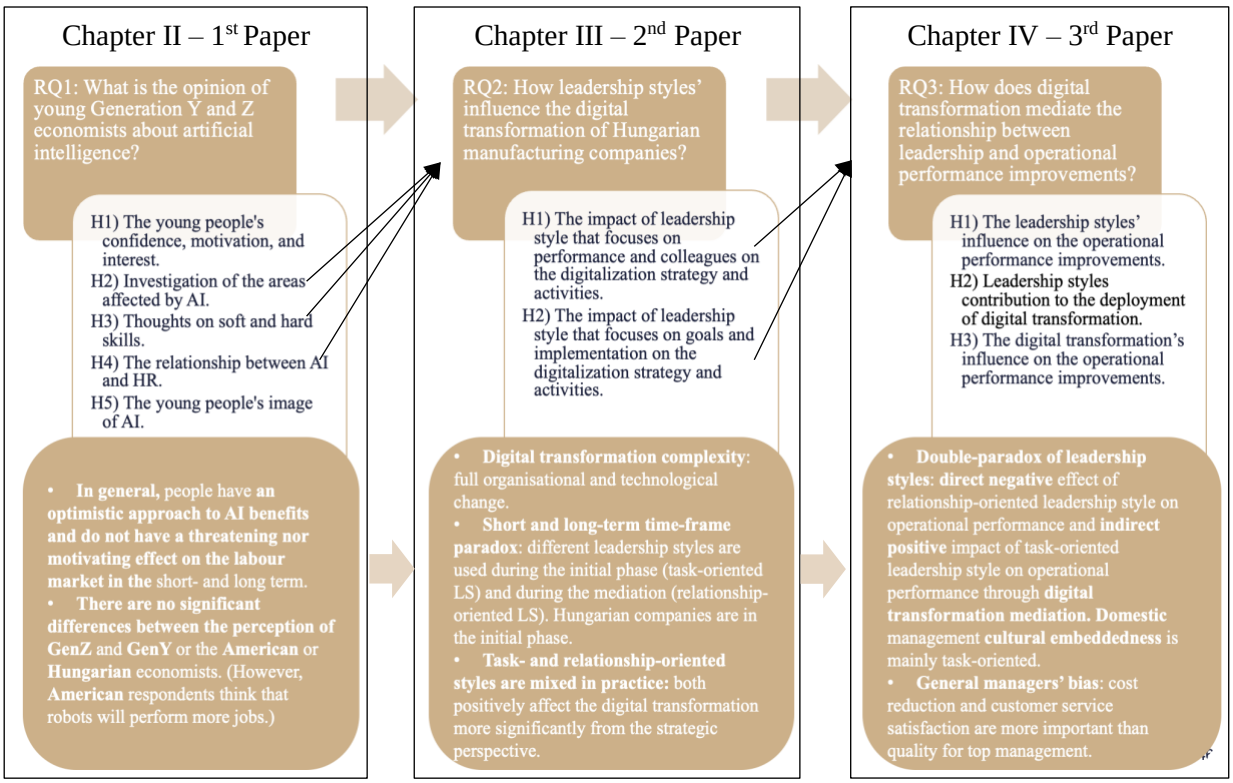
Note: path coefficients displayed above the arrows, *** p < 0.01; ** p < 0.05; * p < 0.1; dashed lines represent nonsignificant paths

Source: Author's work, 2025

3.4. Conclusion

In conclusion, the dissertation demonstrates a cohesive narrative, beginning with the evolving perspectives of young economists regarding the interrelationship between AI, robotics and HR. It also highlighted these factors' pivotal role in formulating leadership and digital transformation strategies within Hungarian manufacturing SMEs. Integrating these elements enables companies to address key workforce insights, select leadership styles that foster innovation, and guide digital transformation efforts with greater efficacy. These factors combined a comprehensive strategy that ultimately resulted in enhanced operational performance. The overarching theme that united the various elements was that of leadership styles, which were seen to significantly impact employees' views, the process of digital transformation, and the overall operational performance improvement of a manufacturing organisation. Figure 6 summarises the research questions and answers.

Figure 6: Research questions and answers



Source: Author's work, 2025

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5. Own relevant publications

The dissertation consists of the following three research papers:

Dióssy, K. (2024). Y és Z generációs fiatal közgazdászok vélekedése a mesterséges intelligenciáról, *Köz-Gazdaság – Review of Economic Theory and Policy*, *19*(1), 114-131. https://doi.org/10.14267/RETP2024.01.08 (Category: Hungarian C)

Dióssy, K., Losonci, D. I., & Városiné Demeter, K. (2023). Vezetési stílusok hatása a digitális transzformációra, *Vezetéstudomány / Budapest Management Review*, *54*(10), 2–14. https://doi.org/10.14267/VEZTUD.2023.10.01 (Category: Hungarian A)

Dióssy, K., Losonci, D. I., Aranyossy, M., & Városiné Demeter, K. (2025). The role of leadership in digital transformation – a paradox way to improve operational performance, *Journal of Manufacturing Technology Management*, *36*(9), 88-113. https://doi.org/10.1108/JMTM-07-2024-0386 (Category: International Q1 (D1))

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