

New traits to open up the gates: What traits and activities does leadership in small and medium-sized enterprises (SMEs) need to drive digitalization?

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Abstract: The purpose of this research work is to create an overall picture of the leadership traits and activities that have been recognized in recent literature as necessary to promote and support digitalization in SMEs. Furthermore, this research work also aims to review the overall picture created for completeness and to identify any research gaps.

The chosen research methodology follows in its approach a systematic literature analysis. The findings of this research lead to an overall view of the most important traits and activities of leadership to promote and support the digitalization process in SMEs. Moreover, this work also leads to the assumption that the topic of trust has been insufficiently considered in the literature studied, both in terms of traits and activities.

The limitations of this research work are mainly justified by the chosen research methodology, but also by the fact that the literature analysis was conducted only on the basis of one literature database.

The value of this research work lies in particular in the fact that an overall view of the traits and activities of leadership has been created from the recent literature. This overall view can serve as a basis for future research projects. In addition, the topic of trust was identified as an important aspect that should encourage future research to examine this aspect more deeply in the context of leadership traits and activities to positively influence digitalization development in SMEs.

Keywords: Traits, Activities, Leadership, SMEs and Digitalization

JEL Classification: M12, M51, O32

1 Introduction

Digitalization continues to gain momentum, and the use of a wide variety of digital technologies are now available to companies to manage their business tasks. In addition, the interfaces to the market and to business partners, for example, are becoming increasingly digital. Of course, this development does not go unnoticed by the responsible leadership teams either (Gilli et al., 2023). However, there is no exclusivity on the path to digitalization. This means that this path is not only reserved for certain companies, but can be followed by large as well as small and medium-sized enterprises (SMEs) (González-Varona et al., 2021; Lee et al., 2021).

The question therefore arises: What can leadership contribute to successful digitalization in SMEs? This not entirely insignificant question acquires substantial relevance through the fact that, according to the view of (Gamache et al., 2019) the topic of digitalization now plays an essential role in the overall context of the global economy. There still seems to be a lack of clarity, especially among SMEs, about the best way to implement the process of digitalization. These ambiguities appear very worrying in view of the fact that ongoing digitalization is ultimately about nothing less than securing competitiveness and thus also one's own economic survival (Azevedo & Almeida, 2021). These concerns are reinforced by the very high importance of SMEs for the global economy. According to the World Bank, at least 9 out of 10 companies worldwide are SMEs. Moreover, they represent the majority in the area of employment of workers with over 50% and are therefore among the central economic factors (The World Bank).

However, the process of digitalization presents SMEs with a wide variety of different challenges that they must overcome in the course of digitalizing their companies. In the context of SMEs from the manufacturing sector, (Elhusseiny & Crispim, 2022) identified several challenges, which were summarized into the following four main groups: Technically driven challenges, organizationally driven challenges, technologically driven challenges, and legally driven challenges. Following the argumentation of (Kautsar et al., 2018), the leadership of a company is the most important factor to bring about change. In particular, leadership performance plays a prominent role in overcoming digital challenges (Luo & Yu,

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2022). One possible reason for this could be that the use of digital technologies in everyday work is very different from previously known business practices (Strilets et al., 2022).

In the following, the three major topic areas of digitalization, SMEs and leadership will first be specified in the context of this research work. Since these topics are areas of research that have been studied very comprehensively and in various sub-aspects in the respective literature, further delimitation is absolutely necessary for understanding this research work and its theoretical framework (Denning & Liyanage, 2022).

1.1 Digitalization

What understanding of digitalization actually exists in the literature? Different sources use different terms for digitalization, for example. In addition to the various digital technologies, terms such as "digitization," "digitalization," or "digital transformation" exist in English-language literature. Due to the fact that, to the best of the author's knowledge, there are no generally valid definitions for the mentioned terms, they will first be explained on the basis of individual definitions from the literature. Subsequently, the understanding of digitalization in the context of this work will be explained.

The term "digitization" is interpreted by (Ritter & Pedersen, 2020) as "... the transformation from analog to digital data ...". A slightly different explanation with "Digitization involves standardizing business processes and is associated with cost cutting and operational excellence." comes from (Ross, 2017), which refers more to the economic aspects of "digitization". "Digital technologies", according to (Bharadwaj et al., 2013), are understood "...as combinations of information, computing, communication, and connectivity technologies...". Furthermore, the consequences of the use of "digital technologies" are assessed by (Martínez-Caro et al., 2020) as "...the introduction of digital technologies implies profound changes in the ways of working and interacting with the environment in organizations." For further classification, according to (Govers & van Amelsvoort, 2023), the understanding of "digitalisation" refers to "...adapting digital technology to business processes." A slightly broader definition of "digitalisation" from (OECD, 2019) is: "Digitalisation is the use of digital technologies and data as well as interconnection that results in new or changes to existing activities." This definition expresses the fact that digitalization also entails a process of change. (Maltaverne, 2017) interprets "digital transformation" very broadly, describing it as "...a digital-first approach that encompasses all aspects of business, regardless of whether it concerns a digital business or not. It leads to the creation of entirely new markets, customers, and businesses (people, capabilities, processes, operating models,...)." Meanwhile, (OECD, 2019) makes reference to "digitisation" and "digitalisation" in its conception of "digital transformation": "Digital transformation refers to the economic and societal effects of digitisation and digitalisation."

The understanding of digitalization used in this research work is based on the last two explanations of "digital transformation".

1.2 SMEs

Following the argumentation of (Alraja et al., 2021), there is no generally valid definition of SMEs. Most national attempts to classify SMEs are often based on individual measures such as the number of employees, the sales volume or the amount of assets, or on a combination of measures (Haider et al., 2019). The European Commission, for example, recommended in its 2003 document that SMEs be defined according to the following criteria: "The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million." (European Commission, 2003). According to (Haider et al., 2019), the criterion of a number of 250 employees corresponds to one of the most commonly used thresholds to describe SMEs worldwide. In contrast, the U.S. Small Business Administration, Office of Advocacy uses a threshold of under 500 employees for SMEs in the U.S. (U.S. Small Business Administration & Office of Advocacy, 2023). In China, conversely, companies with fewer than 2.000 employees are also counted as SMEs (Heinrich, 2018).

However, it is fair to assume that SMEs are an integral pillar of the economy for many developing countries (Belitski & Liversage, 2019) and also in many developed countries (Bokša et al., 2020). (Tewari et al., 2013) even goes one step further in its comments and describes SMEs as an important economic factor for growth and employment. Therefore, the fact that according to (Bellakhal & Mouelhi, 2020) it can probably be assumed that digitalization has positive influences on the economic outcome of companies plays an essential role in the question of the significance of digitalization of SMEs. This is because, although they have great potential, most SMEs have a considerable backlog when it comes to digitalization, which they should catch up on as soon as possible in order to be able to live up to their social and societal responsibility in addition to their economic importance, which has already been addressed (OECD, 2021).

Due to the differences in the definition and delimitation of SMEs described above, no explicit delimitation or definition of SMEs is used for the purposes of this research work.

1.3 Leadership

Following (McKinsey & Company, 2022), leadership is not a kind of gift we come into the world with, but rather a skill that can be learned and improved. Consequently, the view of leadership according to (McKinsey & Company, 2022) is as follows: "Leadership is a set of behaviors used to help people align their collective direction, to execute strategic plans, and to continually renew an organization."

However, the increased use of digital tools has initiated fundamental changes in companies and has also had an impact on the way employees are led, for example (Bersin et al., 2016). In the context of leadership requirements in the digital age, (Diamante & London, 2002) consider the necessary skills that leadership should possess to manage a successful transformation. They come to the conclusion that, on the one hand, the ability to involve all stakeholders, both internal and external to the company, is required in order to operate successfully in the long term. On the other hand, this necessitates a focus of leadership activities on both technological development and people. A study by (Harvard Business Review Analytic Services, 2017) names the ability of leaders for their employees to be prepared to drive digitization in the company, to create images of the future and to depict what new forms the company can take as a result of digitization as an important factor for successful digital transformation. In a paper by (Wakefield et al., 2016), the need to change the development of future leaders has already been recognized by companies, and in this context the need for new leadership traits in particular has also become clear. In addition, the paper also pointed out that the new leadership traits are so urgently needed because the organizational structure in companies is also changing. Companies are moving away from a vertically integrated corporate structure to a networked one that focuses on collaboration with different stakeholders inside and outside the company.

Therefore, the understanding of this research work focuses less on leadership theories or concepts, but rather on the traits and activities of leaders and leadership as a whole that can help to successfully drive digital transformation in SMEs.

2 Research Methodology

The main purpose of this work is to review the literature of the recent past and to identify the main traits respectively activities of leadership that are necessary to support and further drive the digital transformation in SMEs. The research methodology used follows the approach of a systematic literature search, which was chosen primarily to provide a general overview of the existing literature of recent years and to ensure the neutrality of the researcher in the inclusion of literature in the framework of the study (Nightingale, 2009). Furthermore, according to (Mallett et al., 2012), a major advantage of this research method is the disclosure of all steps related to the literature search as well as selection, which makes it possible to ensure the traceability of the research method in this way. Moreover, literature analysis in general also offers the possibility to identify research gaps in existing research and thus the opportunity to pave the way for new research questions (Palmatier et al., 2018).

2.1 Research Questions

The aim of this research work is to explore which leadership traits and activities can contribute to initialize the digitalization process, if not already done, respectively to support or promote it in the context of the digitalization of SMEs. In order to assist and structure this research process, the overall objective of this research is divided into two research questions, which are to be answered within the scope of this research work (Denning & Liyanage, 2022).

Research Question 1: What is the current state-of-the-art in the literature regarding leadership traits and activities to drive and support the digitalization process of SMEs?

Research Question 2: Do the traits and activities of leadership identified in the literature cover the necessary requirements of SMEs in order to drive and support the digitalization process in these companies?

2.2 Literature Search and Selection Process

The literature search for the systematic literature analysis is based exclusively on the literature database of Elsevier's trademark Scopus®, which started its operations towards the end of 2004 (Elsevier B.V., 2023a) and which, according to its own information, is the largest data collection for citations in terms of peer-reviewed publications (Elsevier B.V., 2023b). The search terms used in the literature search aimed to cover the literature sources sought as comprehensively as possible. For this purpose, the following key terms were used: "small and medium size enterprise*"; "small and medium-size enterprise*"; "small and medium-sized enterprise*"; "sme*"; "small and medium size compan*"; "small and medium-size compan*"; "small and medium-sized compan*"; "small and medium size firm*"; "small and medium-size firm*"; "small and medium-sized firm*"; "digit*"; "lead*". The mentioned search terms were combined and summarized to the following search path:

(TITLE-ABS-KEY ("small and medium size enterprise*" OR "small and medium-size enterprise*" OR "small and medium-sized enterprise*" OR sme* OR "small and medium size compan*" OR "small and medium-size compan*" OR "small and medium-sized compan*" OR "small and medium size firm*" OR "small and medium-size firm*" OR "small and medium-sized firm*")) AND (TITLE-ABS-KEY (digit*)) AND (TITLE-ABS-KEY (lead*)).

This led to a total of 704 results in the Scopus® database. In the following, the large number of search results was reduced by further restrictions. Firstly, only articles that were openly accessible were considered within the search. This reduced the number of results to 264. In order to take into account the fact that digitalization is a rapidly progressing process (Albukhitan, 2020), the search was limited to the last five years. Consequently, only results from the years 2023, 2022, 2021, 2020, and 2019 were considered in the search in order to thereby ensure the greatest possible topicality in the literature search. This reduced the results to 189. In addition, the search was restricted with regard to the type of literature. The search therefore only considers research from articles or accompanying volumes of conferences. This further reduced the number of results to 177. Furthermore, for practical reasons, the results were limited to the languages English and German, which reduced the number of search results to 172. In the last step, only those results were considered whose publication process was finally completed. In consequence, the number of results was reduced to 164. Due to the restrictions made, the search path changed and finally looked like this:

(TITLE-ABS-KEY ("small and medium size enterprise*" OR "small and medium-size enterprise*" OR "small and medium-sized enterprise*" OR sme* OR "small and medium size compan*" OR "small and medium-size compan*" OR "small and medium-sized compan*" OR "small and medium size firm*" OR "small and medium-size firm*" OR "small and medium-sized firm*")) AND (TITLE-ABS-KEY (digit*)) AND (TITLE-ABS-KEY (lead*)) AND (LIMIT-TO (OA , "all")) AND (LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "German")) AND (LIMIT-TO (PUBSTAGE , "final"))

The remaining 164 articles were then evaluated on the basis of the following evaluation criteria. In the first step, the articles were analyzed with regard to their headlines and the key terms specified in the article. This procedure excluded a total of 68 articles from further investigation, reducing the number of articles to 96. In the second step, the remaining 96 articles were analyzed and selected with regard to their abstracts. This approach reduced the number of articles by an additional 67 articles, bringing the total number of articles under investigation down to 29. The remaining 29 articles were subjected to detailed analysis. This led to the result that, for reasons of relevance, the investigation was reduced by a further 16 articles, so that finally the remaining 13 articles were included in the literature analysis.

3 Analysis of Results

The analysis of the traits and activities of leadership to promote and support the digitalization process of SMEs brought to light the following traits and activities, first discussing traits and then activities.

3.1 Traits

(Yela Aránega et al., 2023) identified a new type of leadership style in their research work, which has developed as a result of increasing digitalization and which they refer to as the "Kinder Leadership style". This leadership style is characterized above all by the following leadership features: "teamwork," "motivation," and "risk-taking". However, (Yela Aránega et al., 2023) go one step further and see the development of additional traits as necessary. In particular, they count "innovation" and "creativity" among these. The research by (Lashitew, 2023), among others, looked at the influence of leadership experience and in this context pointed out that leadership with an intermediate level of experience is more likely to advance digital technologies.

Referring to the insights gained from their research, (Ahmad et al., 2022) consider the following trait of leadership to be conducive to digitalization. In their opinion, leadership should have the trait of being able to form visions. According to their view, this quality would not only promote the formation of novel solutions, but also the establishment of a creative corporate philosophy, which could have a motivating effect on the employees. Further leadership aspects came to light in the work of (Rusly et al., 2021). Their study, which among other things explores SMEs' adaptation strategies with regard to digital transformation, found that leadership has a significant impact on the digitalization process. In their view, this type of leadership should include the following traits: "technology-foresightedness", "technology passion", "technology openness", "digital content knowledge" and "broad view perspective of IR4.0".²In addition, the study by (Rusly et al.,

² Industry Revolution 4.0

2021) identified a correlation between the age of leaders and the speed with which leaders can adapt to digital tools. The study came to the conclusion that younger leaders need less time to adapt to new digital realities and that this trait has a positive effect on employees as well as on the entire digitalization process.

The research work by (Ötting et al., 2021) assigns particular importance to the leadership trait "openness for the new" in the context of digitalization. This openness refers to two aspects. First, it refers to the thematic openness in which the leadership should be interested in various topics, such as further technological developments, but also in cultural changes in the organization. The second aspect relates to the leadership itself, which in the age of digitalization should have the willingness to permanently develop itself further. This in turn presupposes a continuous learning process on the part of the leadership in order to keep pace with the latest developments. (Canhoto et al., 2021) names similar leadership traits as (Ötting et al., 2021) based on the findings from their study. However, the starting point for this assessment is the fact that SMEs have fewer resources than large companies. Consequently, leadership requires traits that can help compensate for this imbalance. Therefore, on the one hand, the trait of openness of leadership is emphasized, which should contribute, for example, to being able to recognize market or technological developments at an early stage. On the other hand also the willingness to continue to acquire new knowledge in the interest of the company.

The paper by (Abdallah et al., 2021) argues that leadership should have different traits to support the progress of digitalization within the organization. These traits include "Flexibility", with which a certain openness to progress is required, similar to (Ötting et al., 2021) and (Canhoto et al., 2021). However, according to the study, the prerequisite for this is an entrepreneurial personality. A further trait required is "Diversified Knowledge", by which is meant the ability to identify and evaluate developments in other industries and, if possible, to adapt them to one's own industry. The third trait is "Priority and Results Focus". This trait is intended to express that great importance is attached to the digitalization process, since this process will ultimately determine the company's success on the market. The last trait, "Ownership and Responsibility," is meant to express that these traits could represent a kind of guiding function for the employees.

In line with (Ahmad et al., 2022), (Jäckli & Meier, 2020) also consider the trait of leadership to form visions to be an essential factor in the digitalization of the company. One other leadership trait that, according to (Jäckli & Meier, 2020), is needed to implement digitalization is a firm will. (Horváth & Szabó, 2019) consider openness and creativity to be important traits of leadership in the course of digitalization. Moreover, the willingness to enter into cross-company collaborations is required as a further trait. In the research work of (Gamache et al., 2019), the following traits of leadership are considered crucial for digitalization. In addition to personal commitment, these also include the will to lead by example.

3.2 Activities

Following the reasoning of (Brink et al., 2023), the assumption is made that it is conducive to the digitalization of SMEs if the individual steps towards digitalization are linked to personal appointments. In this way, it is assumed, the use of cross-divisional competencies could strengthen the understanding of value creation through the progress of digitalization. However, according to (Brink et al., 2023), a basic prerequisite for this is that the leadership changes its previous way of leading and moves from a leadership that is oriented from a top down to a cross-departmental leadership that takes place at one level.

According to (Ahmad et al., 2022), the likelihood of success in the area of digitalization increases if the leadership in the company is prepared to improve and further develop its entrepreneurial leadership skills. In addition, another important activity of the leadership on the way to digitalization of the company is to communicate the process openly and transparently within the company in order to be able to efficiently involve the workforce in the overall process. The study by (Ötting et al., 2021) sees the leadership, in its efforts to drive forward the expansion of digitalization in the company, as being challenged above all in the areas of communication and strategy. The digitalization process requires clear and unambiguous communication from leaders, which should ideally extend across multiple communication channels in the company. Another key aspect that is highlighted in the study by (Ötting et al., 2021) is the need for greater action on the part of leadership with regard to strategic orientation in the context of digitalization. This means, on the one hand, that leadership should pay more attention to the timing of its decisions and that it needs to make decisions more frequently. In addition, on the other hand, leadership should steer its activities to show the company various ways of dealing with the changes initiated by digitalization and cultural progress. One further point raised by (Ötting et al., 2021) in connection with strategic orientation calls on leadership to focus on innovation not only on the pure creation of results in the sense of products, but also to actively contribute to promoting innovation in the area of collaboration.

For (Bueechl et al., 2021), employees are a central factor on the company's path to digitalization. For this reason, the leadership of SMEs should gear their activities toward involving their employees in the process of digitalization. Among other things, this also requires the leadership to address the specific needs or concerns of their employees. One of the measures to involve the workforce in the digitalization process could, for example, be to provide training opportunities

for employees. In addition, the study recommends that the digitalization process be carried out carefully in order to avoid overburdening employees. Furthermore, leadership should lead by example in the use of digital tools as part of the digitalization process. Finally, the organization of the individual digitalization steps is the responsibility of the leadership. This includes both budget planning and cost-benefit analyses, as well as the continuous updating of digital products. According to (Okfalisa et al., 2021), in contrast, the main activities of leadership to support digitalization are to manage changes in corporate structure and culture and to promote the creation of networks.

The study by (Jäckli & Meier, 2020) essentially revealed two fields of activity which, in the view of the study, are elementary for the digitalization success of companies. First, leadership should ensure that the fundamental importance and scope of the digitalization process is anchored in the company and thus in all organizational areas and processes. The second field of activity concerns the explicit creation of structures and processes for more effective control, coordination and enforcement of digital initiatives in the company. In this context, (Jäckli & Meier, 2020) emphasize, analogously to (Ötting et al., 2021), that these efforts require a corresponding strategy. In the view of (Horváth & Szabó, 2019), the activities of the company and thus ultimately also of the leadership with regard to the progress of digitalization should first focus on creating a uniform understanding of change in the organization. Furthermore, it should also be one of the main activities to break new ground in the conception as well as in the provision of training opportunities.

4 Conclusions

The purpose of this research work is to provide an overall picture of the leadership traits and activities that are considered necessary in recent literature to promote and support digitalization in SMEs. From the literature review, it became clear that digitalization itself and also the understanding of digitalization in SMEs have still not reached a satisfactory level (Gamache et al., 2019) and there is clear potential for improvement. For this reason, this research work makes a valuable contribution to the successful progress of the digitalization process in SMEs. In the framework of research question 1, which was adequately answered in chapters 3.1 and 3.2, a systematic literature analysis was conducted and an overall picture of the most essential leadership traits and activities was created. Moreover, research question 2 examined the completeness of the overall picture created. According to the author, this analysis led to the conclusion that not all required leadership traits and activities considered to be necessary for the digitalization progress were fully depicted in the overall overview created.

In the author's opinion, the topic of trust, for example, was insufficiently considered in the literature examined, both in terms of traits and activities. Although trust-building activities were listed in some cases, such as the creation of transparency (Ahmad et al., 2022), an overall concept or a systematic approach to the formation of trust as a promoting and supporting activity of leadership in the digitalization process of SMEs could not be found in the literature examined. This can also be applied analogously to the area of traits; here, too, no explicit study could be identified that systematically addressed trust-building leadership traits in the digitalization process of SMEs. Especially in view of the many uncertainties among employees caused by digitalization (Buechel et al., 2021), trust-building traits and activities of leadership appear to be urgent as well as necessary for promoting and supporting digital transformation within the organization. This assessment is in line with the research work of (Jäckel, 2020), which is of the opinion that the importance of the trust aspect between leadership and employees will become even more significant in the future in the context of increasing digitalization.

5 Limitations and Future Research

The research work is subject to various limitations. These are mainly due to the systematic literature analysis carried out, which is furthermore based only on the search results of one literature database. Future research can use the results from research question 1 as a basis for further research projects. In addition, the results from research question 2 in particular can be used to examine the trust factor in the context of the traits and activities of leadership to support and promote the digitalization process of SMEs in further research.

References

- Abdallah, Y. O., Shehab, E., & Al-Ashaab, A. (2021). Towards Managing Digital Transformation in Manufacturing Industry: Theoretical Framework. In M. Shafik & K. Case (Eds.), *Advances in Transdisciplinary Engineering. Advances in Manufacturing Technology XXXIV*. IOS Press. DOI 10.3233/ATDE210006.
- Ahmad, N. H., Teoh, M. F., Ramayah, T., & Halim, H. A. (2022). Digital Business Model Innovation in SMEs: The Roles of Entrepreneurial Leadership and Government Support. *Journal of Applied Structural Equation Modeling*, 6(1), 1–25. DOI 10.47263/JASEM.6(1)04.
- Albukhitan, S. (2020). Developing Digital Transformation Strategy for Manufacturing. *Procedia Computer Science*, 170, 664–671. DOI 10.1016/j.procs.2020.03.173.

- Alraja, M. N., Hussein, M. A., & Ahmed, H. M. S. (2021). What affects digitalization process in developing economies? An evidence from SMEs sector in Oman. *Bulletin of Electrical Engineering and Informatics*, 10(1), 441–448. DOI 10.11591/eei.v10i1.2033.
- Azevedo, A., & Almeida, A. (2021). Grasp the Challenge of Digital Transition in SMEs—A Training Course Geared towards Decision-Makers. *Education Sciences*, 11(4), 151. DOI 10.3390/educsci11040151.
- Belitski, M., & Liversage, B. (2019). E-Leadership in Small and Medium-Sized Enterprises in the Developing World. *Technology Innovation Management Review*, 9(1), 64–74. DOI 10.22215/timreview/1212.
- Bellakhal, R., & Mouelhi, R. B. A. (2020). WORKING PAPER: Digitalisation and Firm Performance: Evidence from Tunisian SMEs. https://south.euneighbours.eu/wp-content/uploads/2022/07/emnes_wp_036_digitalisation_firm_performance_tunisian_smes-1.pdf
- Bersin, J., Geller, J., Wakefield, N., & Walsh, B. (2016). *The new organization: Different by design*. Global Human Capital Trends 2016. https://www2.deloitte.com/content/dam/insights/us/articles/human-capital-trends-introduction/DUP_GlobalHumanCapitalTrends_2016_4.pdf
- Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly* (2013), 37(2), 471–482. <https://ssrn.com/abstract=2742300>
- Bokša, M., Šaroch, S., & Bokšová, J. (2020). Digitalization of SMEs. *International Advances in Economic Research*, 26(2), 175–177. DOI 10.1007/s11294-020-09777-1.
- Brink, T., Sørensen, H. B., & Neville, M. (2023). Small- and Medium-Sized Enterprises Strategizing Digital Transformation: Backend & Frontend Integration for Horizontal Value Creation. In A. J. Tallón-Ballesteros & P. Santana-Morales (Eds.), *Frontiers in Artificial Intelligence and Applications. Digitalization and Management Innovation*. IOS Press. DOI 10.3233/FAIA230007.
- Bueechl, J., Härting, R.-C., & Schröder, M. (2021). Influence of Digitization on Employee Satisfaction in Small and Medium-sized Enterprises. *Procedia Computer Science*, 192, 2753–2760. DOI 10.1016/j.procs.2021.09.045.
- Canhoto, A. I., Quinton, S., Pera, R., Molinillo, S., & Simkin, L. (2021). Digital strategy aligning in SMEs: A dynamic capabilities perspective. *The Journal of Strategic Information Systems*, 30(3), 101682. DOI 10.1016/j.jsis.2021.101682.
- Denning, J., & Liyanage, K. (2022). Systematic Literature Review of Industry 4.0 Implementation Frameworks Focusing on Applicability in Manufacturing SMEs. In M. Shafik & K. Case (Eds.), *Advances in Transdisciplinary Engineering. Advances in Manufacturing Technology XXXV*. IOS Press. DOI 10.3233/ATDE220559.
- Diamante, T., & London, M. (2002). Expansive leadership in the age of digital technology. *Journal of Management Development*, 21(6), 404–416. DOI 10.1108/02621710210430597.
- Elhusseiny, H. M., & Crispim, J. (2022). SMEs, Barriers and Opportunities on adopting Industry 4.0: A Review. *Procedia Computer Science*, 196, 864–871. DOI 10.1016/j.procs.2021.12.086.
- Elsevier B.V. (Ed.). (2023a). *Scopus®: Your brilliance, connected* [Content Coverage Guide]. https://assets.ctfassets.net/o78em1y1w4i4/EX1iy8VxBQKf8aN2XzOp/c36f79db25484cb38a5972ad9a5472ec/Scopus_ContentCoverage_Guide_WEB.pdf
- Elsevier B.V. (Ed.). (2023b). *What is Scopus about? - Scopus: Access and use Support Center*. https://service.elsevier.com/app/answers/detail/a_id/15100/supporthub/scopus/kw/Driving+research/
- European Commission (2003). COMMISSION: COMMISSION RECOMMENDATION of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (notified under document number C(2003) 1422) (Text with EEA relevance). [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003H0361\(\(2003/361/EC\)\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003H0361((2003/361/EC))).
- Gamache, S., Abdul-Nour, G., & Baril, C. (2019). Development of a Digital Performance Assessment Model for Quebec Manufacturing SMEs. *Procedia Manufacturing*, 38, 1085–1094. DOI 10.1016/j.promfg.2020.01.196.
- Gilli, K., Lettner, N., & Guettel, W. (2023). The future of leadership: new digital skills or old analog virtues? *Journal of Business Strategy*. Advance online publication. DOI 10.1108/JBS-06-2022-0093.
- González-Varona, J. M., López-Paredes, A., Poza, D., & Acebes, F. (2021). Building and development of an organizational competence for digital transformation in SMEs. *Journal of Industrial Engineering and Management*, 14(1), 15. DOI 10.3926/jiem.3279.
- Govers, M., & van Amelsvoort, P. (2023). A theoretical essay on socio-technical systems design thinking in the era of digital transformation. *Gruppe. Interaktion. Organisation. Zeitschrift Für Angewandte Organisationspsychologie (GIO)*, 54(1), 27–40. DOI 10.1007/s11612-023-00675-8.
- Haider, K., Khanna, M., Kotei, M., Kushnir, K., Singh, S., & Sridhar, T. (2019). *Micro, Small and Medium Enterprises - Economic Indicators (MSME-EI): Analysis Note* [December 2019]. <https://documents1.worldbank.org/curated/en/873301627470308867/pdf/Micro-Small-and-Medium-Enterprises-Economic-Indicators-MSME-EI-Analysis-Note.pdf>
- Harvard Business Review Analytic Services (Ed.). (2017). *Operationalizing Digital Transformation: New Insights Into Making Digital Work*. <https://hbr.org/resources/pdfs/comm/xl/HBRASOperationalizingDigitalTransformation.pdf>

- Heinrich, A. (2018). *Die Förderung kleiner und mittlerer Unternehmen in China: Eine wirtschafts- und rechtsvergleichende Untersuchung*. Springer Fachmedien Wiesbaden. DOI 10.1007/978-3-658-20011-4.
- Horváth, D., & Szabó, R. Z. (2019). Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities? *Technological Forecasting and Social Change*, 146, 119–132. DOI 10.1016/j.techfore.2019.05.021.
- Jäckel, A. (2020). Vertrauen und Führung im Kontext digitaler Arbeit. *Gruppe. Interaktion. Organisation. Zeitschrift Für Angewandte Organisationspsychologie (GIO)*, 51(2), 169–176. DOI 10.1007/s11612-020-00516-y.
- Jäckli, U., & Meier, C. (2020). Leadership in the digital age: its dimensions and actual state in Swiss companies. *Int. J. Management and Enterprise Development*, 19(4), 293–312.
- Kautsar, A., Asandimitra, N., & Aji, T. S. (2018). Financial Self-Efficacy and Entrepreneurial Leadership on SME Performance. *International Journal of Academic Research in Business and Social Sciences*, 8(12). DOI 10.6007/IJARBS/v8-i12/5326.
- Lashitew, A. A. (2023). When businesses go digital: The role of CEO attributes in technology adoption and utilization during the COVID-19 pandemic. *Technological Forecasting and Social Change*, 189, 122324. DOI 10.1016/j.techfore.2023.122324.
- Lee, Y. Y., Falahat, M., & Sia, B. K. (2021). Drivers of digital adoption: a multiple case analysis among low and high-tech industries in Malaysia. *Asia-Pacific Journal of Business Administration*, 13(1), 80–97. DOI 10.1108/APJBA-05-2019-0093.
- Luo, X., & Yu, S.-C. (2022). Relationship between External Environment, Internal Conditions, and Digital Transformation from the Perspective of Synergetics. *Discrete Dynamics in Nature and Society*, 2022, 1–12. DOI 10.1155/2022/6756548.
- Mallett, R., Hagen-Zanker, J., Slater, R., & Duvendack, M. (2012). The benefits and challenges of using systematic reviews in international development research. *Journal of Development Effectiveness*, 4(3), 445–455. DOI 10.1080/19439342.2012.711342.
- Maltaverne, B. (2017). *Digital transformation of Procurement: a good abuse of language?* <https://medium.com/procurement-tidbits/digital-transformation-of-procurement-a-good-language-abuse-bfcf565b957c>
- Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, 154, 119962. DOI 10.1016/j.techfore.2020.119962.
- McKinsey & Company (Ed.). (2022). *What is leadership?* <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-leadership#/>
- Nightingale, A. (2009). A guide to systematic literature reviews. *Surgery (Oxford)*, 27(9), 381–384. DOI 10.1016/j.mpsur.2009.07.005.
- OECD. (2019). *Going Digital: Shaping Policies, Improving Lives*. OECD Publishing, Paris. DOI 10.1787/9789264312012-en.
- OECD. (2021). *The Digital Transformation of SMEs: OECD Studies on SMEs and Entrepreneurship*. OECD Publishing, Paris. DOI 10.1787/bdb9256a-en.
- Okfalisa, Anggraini, W., Nawani, G., Saktioto, & Wong, K. Y. (2021). Measuring the effects of different factors influencing on the readiness of SMEs towards digitalization: A multiple perspectives design of decision support system. *Decision Science Letters*, 10(3), 425–442. DOI 10.5267/j.dsl.2021.1.002.
- Ötting, S. K., Masjutin, L., & Maier, G. W. (2021). The future of leadership—How is leadership in small and medium-sized enterprises going to change? *Gruppe. Interaktion. Organisation. Zeitschrift Für Angewandte Organisationspsychologie (GIO)*, 52(4), 639–647. DOI 10.1007/s11612-021-00610-9.
- Palmatier, R. W., Houston, M. B., & Hulland, J. (2018). Review articles: purpose, process, and structure. *Journal of the Academy of Marketing Science*, 46(1), 1–5. DOI 10.1007/s11747-017-0563-4.
- Ritter, T., & Pedersen, C. L. (2020). Digitization capability and the digitalization of business models in business-to-business firms: Past, present, and future. *Industrial Marketing Management*, 86, 180–190. DOI 10.1016/j.indmarman.2019.11.019.
- Ross, J. (2017). *Don't Confuse Digital With Digitization*. <https://sloanreview.mit.edu/article/dont-confuse-digital-with-digitization/>
- Rusly, F. H., Talib, Y. Y. A., Hussin, M. R. A., & Mutalib, H. A. (2021). Modelling the Internal Forces of SMEs Digital Adaptation Strategy Towards Industry Revolution 4.0. *Polish Journal of Management Studies*, 24(1), 306–321. DOI 10.17512/pjms.2021.24.1.18.
- Strilets, V., Frolov, S., Datsenko, V., Tymoshenko, O., & Yatsko, M. (2022). State support for the digitalization of SMEs in European countries. *Problems and Perspectives in Management*, 20(4), 290–305. DOI 10.21511/ppm.20(4).2022.22.

- Tewari, P. S., Skilling, D., Kumar, P., & Wu, Z. (2013). *Competitive Small and Medium Enterprises: A diagnostic to help design smart SME policy*.
<https://documents.worldbank.org/curated/en/534521468331785470/pdf/825160WP0P148100Box379861B00PUBLIC0.pdf>
- U.S. Small Business Administration, & Office of Advocacy (Eds.). (2023). *Frequently Asked Questions About Small Business, March 2023*. <https://advocacy.sba.gov/wp-content/uploads/2023/03/Frequently-Asked-Questions-About-Small-Business-March-2023-508c.pdf>
- Wakefield, N., Abbatiello, A., Agarwal, D., Pastakia, K., & van Berkel, A. (2016). *Leadership awakened: Generations, teams, science*. Global Human Capital Trends 2016.
https://www2.deloitte.com/content/dam/insights/us/articles/human-capital-trends-introduction/DUP_GlobalHumanCapitalTrends_2016_4.pdf
- The World Bank (Ed.). *Small and Medium Enterprises (SMEs) Finance: Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital*. <https://www.worldbank.org/en/topic/smefinance>
- Yela Aránega, A., Gonzalo Montesinos, C., & Del Val Núñez, M. T. (2023). Towards an entrepreneurial leadership based on kindness in a digital age. *Journal of Business Research*, 159, 113747. DOI 10.1016/j.jbusres.2023.113747.