

Twin transition in SMEs: Influence of espoused values, lived values, and leadership style on the transformation processes

2741296

Author: Carolin M. Arnsfeld
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,

In the evolving business landscape, companies face the dual challenge of digital and sustainable transformation, known as the twin transition. This study examines how organisational values and leadership styles influence these transformation processes for small and medium-sized enterprises. Nine semi-structured interviews with experts from different organisations were conducted and analysed using grounded theory approaches. The findings reveal that a fit of espoused and lived values is essential for driving successful transformations in small and medium-sized enterprises. Transformational leadership emerges as a second key factor, with authentic, fair, and communicative leaders significantly enhancing the transformation process. Expected benefits and applied practices showed the ability to fuel the twin transition. Different barriers may occur during this process calling for management attention and actions.

Graduation Committee members:

Dr. Pauline Weritz

Dr. Rashimah Rajah

Keywords

Twin transition, Digital transformation, Sustainable transformation, Espoused values, Lived values, Leadership styles, Barriers, Success factors

1. INTRODUCTION

In the rapidly evolving business landscape of the 21st century, companies are confronted with a dual challenge, digital and sustainable transformation. In order to face this challenge and to highlight potential synergies, the European Commission has started a mission leveraging digital technologies to advance environmental goals, introducing the concept of “twin transitions” (Christmann et al., 2024; European Commission, 2020). This concept entails the simultaneous and complex development towards both digital and sustainable transformation to reduce the carbon footprint of companies. Both transition processes are demanding for companies on a stand-alone basis. Hence the complexity levels up when both need to be implemented at the same time (Hofmann et al., 2023). Current research shows, that the twin transition has just started to become a field for studies. A holistic view is still missing (Diodato et al., 2023; Hofmann et al., 2023). Furthermore, the failure rate of change processes is considerable and there is not enough evidence of how the twin change process can be managed successfully in SMEs (Errida & Lotfi, 2021). This research aims to provide insights into this topic to make the twin transition process more manageable.

Digital transformation, as part of the twin transition, has become essential for improving business performance by increasing efficiency and productivity. This is achieved through digital tools like artificial intelligence and enhanced customer interaction. (Ribeiro-Navarrete et al., 2021). The transition to sustainability involves shifting systems and practices towards integrating environmental, social, and governance factors (ESG) into business practices and investment decisions. The European Union (EU) set up different laws and frameworks like the EU Taxonomy or the Corporate Sustainability Reporting Directive (CSRD) to boost the transition. The CSRD demands that large, capitalized companies with more than 500 workers to publish audited sustainability reports complying with the European Sustainability Reporting Standards (ESRS) and is a regulatory enforcement to progress sustainability transformation (EU Commission, 2024; Pantazi, 2024). Small and medium-sized enterprises (SMEs), representing more than 99% of all European companies (Eurostat, 2020), do not fall under this directive and therefore are not forced to progress. Their sustainable transformation can only be started or pursued due to internal motivations (Gallina et al., 2024).

Sources and success factors for starting and managing the change process of SMEs are organisational culture and leadership (Achaga et al. 2006; Anning-Dorson, 2021; Ates & Bititci, 2011; Serpa, 2016). The organisational culture has the potential to foster a shared understanding of purpose, drive organisational success, and facilitate change (Carvalho et al., 2023; Iivari, 2009; Saad & Kaur, 2020). Organisational culture serves as a set of organisational values (OVs) and expectations or beliefs shaped by the members of an organisation (Cooke, & Rousseau, 1998; Schein, 1992). Schwartz (2012) points out that OVs have an impact on the success and speed of change, by providing a stable foundation. Balanced values that incorporate both innovative and sustainability goals can drive the transition effectively by aligning organisational goals with the dual objectives, digital and sustainable transformation (Malbašić, 2020). OVs can be explicitly or implicitly codified (Dermol & Trunk Širca, 2018). A distinction between espoused values (explicitly stated) and lived values (actual behavior) is necessary because only lived values can drive desired organisational performance and change (Coetzee, & Veldsman, 2013). Espoused values such as fairness, honesty, respect, and responsibility need to be actively communicated and integrated into daily practices to be effective (Bourne et al., 2019). OVs,

leadership, and communication are proven to be success factors for organisational change for all company sizes (Errida, & Lotfi, 2021).

The important role of leadership in the transformation process is stated broadly (Braojos et al., 2024; Mento et al., 2002). Alavi et al. (2016) and Deschamps et al. (2016) stress the positive impact of the leadership style on the overall transformation process if it contains attributes like authenticity and fairness. Many different definitions and theories of leadership have been proposed, but there is no leadership style so far that is considered universal (Benmira & Agboola, 2021). Many leadership styles can act as promoters in change management processes like authoritarian, transactional, transformational, or democratic (Mansary, 2019), but it is unclear which one serves best in the twin transition.

Currently, there is a gap in the literature on the influence of OVs, consisting of espoused values and lived values, on transformation processes in SMEs, and even more on the influence of the twin transition process in SMEs. A clear distinction between espoused and lived values is missing (Coetzee & Veldsman, 2013). While the influence of organisational values has been studied on large corporations, these findings cannot easily be applied to SMEs as they are different (Gray & Mabey, 2005). These differences can be narrowed down to less established protocols and processes on the one hand (Gray & Mabey, 2005), and more flexibility and agility on the other, which influences their approach in adopting new technologies and sustainable practices (Gray & Mabey, 2005).

Moreover, SMEs have limited human and financial resources, which also makes the change process different from larger corporations (Alessandrini & Jondeau, 2019). Lastly, leadership styles are often more personal and less formal in SMEs, which impacts the changes, and the way transformations are implanted (Özer & Tinaztepe, 2014). Important to consider are certain barriers that hinder successful organisational change for sustainability and digital transformations in SMEs (Hanelt et al., 2021; Lozano, 2012; Orji, 2019). These barriers are among others poor leadership, dysfunctional values, communication, and resource limitations (Lorenzi & Riley, 2000). This research is specifically aimed at the influence of OVs, and leadership style on the twin transition because OVs are a trigger and a success factor for change processes (Anning-Dorson, 2021; Serpa, 2016). To advance research in this area, the following aspects should be examined. It is important to investigate how OVs drive or hinder transformation in digital and sustainable practices within SMEs. A clear distinction between espoused values and lived values and their influence on transformation processes is conducted. Additionally, the role of leadership in fostering a sense of change that supports the twin transition needs to be studied (Leso et al., 2022). Which leadership style is most helpful for SMEs in the twin transition? Lastly, the barriers which stop SMEs at the transformation process need to be investigated.

Therefore, the following research question emerges:

“How do espoused values, lived values, and leadership style influence the twin transition of SMEs, and what barriers do they face during that process?”

This research explores the influence of OVs on the twin transition process and examines how leadership styles promote this transition. Additionally, it identifies barriers for SMEs to increase theoretical understanding and provide practical insights.

For this research, a qualitative approach using semi-structured interviews, and inductive-based questions was applied. This allowed the researcher to be more exploratory and flexible (Corbin & Strauss 2015). Additionally, it helped to understand the status quo of the change process the enterprises are in, and its influence factors (Mbeba, 2018).

The researcher indicates the importance of espoused values, lived values, and the transformative leadership style for the transformation processes. The findings suggest that a gap between espoused and lived values has a negative impact on the transformation processes. A transformational leadership style, being authentic and fair, together with intense communication, provides a positive impact on the processes. A combination of espoused, lived values and transformational leadership style seems to have the ability to cultivate a sense of cohesion and direction among employees, helping them to navigate the complexities of the twin transition.

This paper is organised as follows: In section two, an overview of the theoretical background will be given. The methodological approach is explained in section three, followed by the presentation of the results in section four. Finally, the findings will be discussed in section five, the contributions to theory and practice, and the limitations of this research.

2. LITERATURE

2.1 Twin transition

This section examines the literature relevant for digital and sustainable transformation.

2.1.1 Digital transformation

Digital transformation refers to the integration of digital technologies across all sectors of an organisation. It is characterized by an integration of physical and digital systems, the creation of innovative business models and new processes as well as smart products and services (EU, 2019; European Commission, 2020). As digital transformation is complex and dependent on various factors like resource availability, skill sets, organisational structure, and organisational culture there is no single solution to it or one set of rules, not even one desired outcome (Jones et al., 2021).

Key drivers of digital transformation include technological advancement, digital leadership, expected improvements in efficiency and transparency as well as changing customer behaviour (Christmann et al., 2024; Omrani et al., 2024; Weritz et al., 2022). Additionally, digital transformation enhances business agility, innovation, and flexibility and could enable new revenue streams (McKinsey & Company, 2023; Weritz et al., 2024). At the same time, this transformation challenges organisations (Braojos et al., 2024). For enterprises to overcome these hurdles, it requires appropriate digital leadership, employee engagement, a digital learning environment, and alignment of the new technology with the business goals (Braojos et al. 2024; McKinsey & Company, 2023). Understanding the transformational concept will help organisations to navigate tough digital disruptions and seize new business opportunities for growth and innovation in today's business world.

Digital transformation and sustainable transformation can create synergies and can foster each other (Christmann et al., 2024). Digital transformation enables sustainability by making digital technologies more sustainable through concepts like green IT (Veit & Thatcher, 2023). Moreover, sustainability can be gained through digital technologies, which have a positive impact on organisational sustainability (Christmann et al., 2024). Artificial Intelligence, digital twins, and the Internet of

Things offer companies the option of processing and generating environmental data, by identifying new patterns, influencing sustainability design decisions, and generating new data streams (Christmann et al., 2024; Miranda et al., 2022). While digital transformation can be beneficial in fostering sustainability, some studies highlight potential drawbacks such as increased carbon footprints due to higher energy demands of digital infrastructures. This contrast can be explored to provide a balanced view (Fouquet, & Hippe 2022).

2.1.2 Sustainable transformation

Sustainability transformation refers like digital transformation, to an organisational change process with multiple dimensions (Christmann et al., 2024). Sustainable organisations can be defined as seeking a positive impact in relevant areas for the planet and society (Dyllick & Muff 2016). Sustainability efforts provide opportunities for new business models (Geissdoerfer et al., 2018), like the circular economy concept with the primary goal of minimizing resource input (Zeiss et al., 2021).

Different frameworks are discussed to incorporate the goals and initiatives into companies: The UN's sustainable development goals (SDG), the corporate social responsibility (CSR) or the ESG framework (Chen & Lee, 2017; Christmann et al., 2024; Lhutfi et al., 2024). Spataro et al. (2023) show how the ESG principles have to be integrated into business operations to master sustainable transformation for a business. Driving factors for sustainable transformation are regulatory requirements, and stakeholders' views (Samans & Nelson, 2022). Additionally, sustainable transformation can enhance customer engagement and employee satisfaction, and help thereby to obtain competitive advantage (Bocken et al., 2014). Managed successfully, it could find a balance between profit, social impact, and environmental stewardship, contributing to a sustainable future (Christmann et al., 2024).

Just like digital transformation can foster sustainability, sustainable transformation can guide digital transformation (Guandalini, 2022). Sustainable transformation helps to design digital transformation solutions that address organisational and cultural aspects (Acciarini et al., 2022; Christmann et al., 2024). Moreover, sustainable transformation can guide the organisation in changing its purpose and value creation, taking the circular economy into account and minimizing resource input (Christmann et al., 2024; Zeiss et al., 2021).

2.2 Success factors in transition management

The failure rate of organisational transition processes is high with an estimated failure rate of 60-70% (Errida & Lotfi, 2021; Jones et al., 2018). Various change management models have been developed in the literature and in practice to improve the success rate, identifying more than 75 success factors, OVs, leadership, and communication being some of them (Errida & Lotfi, 2021). Burke and Litwin (1992) developed a framework that establishes cause and effect relationships between 12 dimensions where transformational change evokes as a response to environmental changes and is directly related to organisational culture and leadership. Parry et al. (2013) differentiate two categories of models: descriptive and processual. Processual models define how the change process unfolds and name concrete steps in the process (see, for example, Kotter 1995). Descriptive models outline the success factors and variables that influence organisational performance and the success of organisational change projects (Knoster, 2000). Table 1 in Appendix 8.1 shows the success factors of the change management process in a descriptive model (Knoster, 2000) and three processual models (Errida & Lotfi, 2021; Kotter, 1995; Mento et al., 2002). They all stress the importance

of vision and communication. Knoster (2000) points out the significance of available resources. Mento et al. (2002) enlarge Kotter's model to a twelve-stage approach, incorporating the significance of leadership. Errida and Lofti (2021) contribute to Kotter's (1995) and Mento's (2002) findings, by stressing the significance of monitoring as a success factor and the significance of OVs in making change happen. Lastly, they point out that, as indicated by Mento et al. (2002), leadership plays a crucial role in the successful implementation of a change process (Errida, & Lotfi, 2021). As SMEs have more limited resources than large capitalized companies (Parker et al., 2009), identifying relevant success factors for the twin transition process is even more crucial for them.

2.3 Organisational values

The organisational culture can serve as a valuable resource in facilitating the attainment of objectives, employee satisfaction, and can help companies thereby to sustain or obtain their competitive advantage in organisational change processes (Christmann et al., 2024; Fonseca, 2023; Taheri et al., 2015). Following Cooke's and Rousseau's (1998) behavioural norm model, organisational culture is shared OVs and expectations. Expectations are non-codified OVs.

2.3.1 *Espoused Values*

Espoused values are OVs like attributed, shared, or aspirational values (Bourne & Jenkins 2013). They are the openly communicated principles and standards the company claims to uphold. They are displayed via the mission statement, codes of ethics, and other corporate communications (Bourne et al., 2019; Kabanoff & Daly, 2002). Typical espoused values are innovation, integrity, respect, excellence, community engagement, and a strong customer orientation (Bourne et al., 2019; Schwartz, 2012). Espoused values have a strong influence on a company, moulding its culture, from employee conduct to shaping leadership approaches (Bourne et al., 2019). The alignment between individuals and OVs can significantly influence employee dedication and satisfaction, as it influences how staff members view their roles within the company and their investment in their work (Dominick et al., 2020).

When addressing the dual challenge of digital and sustainable transformations, the twin transition, OVs offer a robust foundation for navigating change. By embracing values that balance innovation with sustainability, organisations can more effectively align their strategies with these dual aims, promoting a more seamless transition (Brown & Leite, 2022). Despite the recognised importance of espoused values, inconsistencies exist in their actual influence on employee behaviour and the rapidity and efficiency with which an organisation undergoes the twin transitions. It remains an area for further research, to understand the true impact these values have on the speed of an organisation's agility and proficiency in managing the complexities of both digital and sustainable evolutions (Lewis & Canary, 2019).

2.3.2 *Lived Values*

The terms 'lived values' or 'practiced values' are not very common in the literature. More often the match of espoused and enacted values is discussed, known as 'value congruence', a situation where the employee's values are in line with the OVs (Gopinath et al., 2018). Lived values are not only enacted or expressed by the employees but are practiced as well by the management in SMEs, very often to be the company owners. Different from espoused, lived values are not necessarily written down but broadly accepted and practiced (Murphy & MacKenzie Davey, 2006). Coetzee and Veldsman (2013) use this term to describe the discrepancy new employees notice between the espoused organisational values and the actual

practiced behavioural values (lived values). This research adopts Coetzee and Veldsman's (2013) definition, assuming that this difference between communicated or codified values and lived values is crucial for a successful transformation process.

2.4 Leadership traits, behaviour, and style

The leadership style applied in companies differs throughout size, industry, and time, entailing different degrees of precision, confidence level, sensitivity, care, and technical expertise (Dess & Picken, 2000). Various factors such as the environment, culture, and organisational complexities influence the leadership concept, making it adaptable to changing organisational dynamics (Amabile et al., 2004). Literature highlights the complexity of leadership theory (Alsarrani et al., 2021). Even though broad consent is missing, researchers agree on leadership involving several processes, starting with creating a vision and translating this into achievable goals (Alsarrani et al., 2021; Ullé & Kumar, 2014). The main categories of leadership theory encompass traits, behavioural, contingent, and new leadership theory (Benmira & Agboola, 2021). New leadership theories include among others, transformational and transactional theory (Khan et al., 2016). They vary in levels of direction and guidance, socio-emotional support, commitment, and competence in fulfilling a task as well as the relationship behavior (Khan et al., 2016; Ryan & Tipu, 2013).

Leadership traits are seen as the attributes of a leader which describe the personality and characteristics of leaders and encompass emotional, social, and intellectual capabilities to create a specific leadership style (Bolden et al., 2003). The term leadership behaviour can be derived from the behavioral theories of leadership (Bolden et al., 2003). Behavioural patterns are identified to describe a leader's behavior. In contrast to the traits, these patterns can be learned and developed. A leader's behaviour is the best determinant of leadership success (Alsarrani et al., 2021). Integrating these behavioral patterns builds several themes that establish different leadership styles.

Leadership styles can be regarded as a combination of traits and behavioural theories to construct an individual style which aims to influence followers for organisational success (Alsarrani et al., 2021). Modern leadership styles are distinguished into transactional and transformational leadership styles. The influence of those styles has a significant impact on employees' effectiveness and organisation's performance (Alimo-Metcalfe, 2013; Laohavichien et al., 2009). Transactional leadership styles use contractual agreements as principal motivators and extrinsic rewards to increase employees' motivation. They are associated with a loss of creativity and a negative impact on job satisfaction (Khan et al., 2016).

Transformational leaders encourage employees to achieve higher-order needs, like self-esteem and can influence employees to set organisational goals over personal interests. (Bass, 1995). Alavi et al. (2016) show how authentic leaders can influence followers, attitudes, and behaviors by demonstrating trust and optimism among others to increase readiness for change and change implementation. Deschamps et al. (2016) found positive motivational effects on employees in change processes if justice (fairness) is applied by leaders. Therefore, the transformational leadership style is associated with positive results on organisational levels as well as on individual levels.

2.5 Barriers to the transformation processes in SMEs

Certain barriers hinder organisational change in sustainability transformation (Jones et al., 2021; Lozano, 2012; Orji, 2019) and digital transformation (Jones et al., 2021). A literature review identified several barriers, concerning resources like funding or employees with the appropriate skills. Additionally, organisational, technological, structural, or environmental barriers were identified (Hanelt et al., 2021; Orji, 2019; Rupeika-Apoga & Petrovska, 2022). Meyer et al. (2021) found evidence that organisational barriers, regarding the organisational culture, encompassing OVs, and lack of competencies are among the biggest.

3. METHODOLOGY

3.1 Research design

This study adopts a qualitative, inductive research design to gain deeper insights into the way OVs, and leadership styles influence the twin transition in SMEs. This approach is well-suited for exploring complex dynamics that cannot be captured through quantitative measures (Creswell, 2013). Hence the researcher collected data seeking to find patterns and relationships. This data-driven approach is convenient for this specific research. It provides flexibility and allows the researcher to keep an open mind, to explore the data (Owa, 2023; Masud, 2024). Therefore, an interpretive and exploratory approach was chosen. Following this, in-depth research was conducted, using the interviews as a method. Nine different SMEs were contacted from different sectors to give the researcher insights (Eisenhardt, 1989; Weritz, 2022). Semi-structured interviews were executed. These interviews with open questions helped to fully explore the topic of the twin transition. Furthermore, it allowed focusing on the main research objectives, OVs, digital transformation, and sustainable transformation, and explore topics that might come up during the interview (Delve et al., 2023). Additionally, the interviews provided the possibility to conduct verbal and non-verbal responses of the interviewees to reveal deeper information (Ritchie & Lewis, 2003). The inductive approach additionally allows the exploration of multiple perspectives and viewpoints. It also provides a possibility for a deeper understanding of the connection between OVs, leadership style, and the twin transition (Delve et al., 2023.)

This research uses primary data collection; ethical approval was requested and given by the ethics committee of the University of Twente.

3.2 Sampling method

A purposive sampling method was used to select a diverse and representative sample of SMEs. This approach gives the researcher the freedom to choose a highly representative sample for the analysis. Together with an inductive approach, it offers in-depth data (Guest et al., 2006; Saunders et al., 2012). To choose the enterprises, it is important to have a diverse and possibly representative sample. Over 50+ SMEs were contacted. The selection was based on different sizes, ranging from small organisations with under 50 employees to medium-sized companies with more than 250 employees. Additionally, the researcher paid attention to different maturity levels, varying from young companies less than 10 years old to mature companies being more than 30 years old. Moreover, the industries in which those companies are should represent an industry mix, from production to car retailing and service industries like consulting.

Details of the key informants, the organisations, and the industries are given in Table 2 in Appendix 8.2. All organisations have started a digital and/or sustainable transformation, and some have combined aspects of both transitions. The sample size of nine conducted interviews is sufficient based on the principle of data saturation. In which no new themes emerged during the final interviews, indicating that sufficient depth and breadth of data had been collected (Guest et al., 2006).

The participants were selected based on the following criteria: 1) Having more than 10 years of working experience. 2) They must be part of the digital transformation process and/or in the sustainable transformation process. 3) A majority of the participants have decision-making power and authority in the company. Over half of the interviewees are on the C-level of the organisation. This provides the researcher with trusted data as they are more knowledgeable regarding the transformation processes (Weritz, 2022).

3.3 Data collection

Nine semi-structured interviews were conducted in May 2024. An interview guide covered topics related to the research question, without leading interview partners (Gioia et al., 2013). In the beginning, the relevance of the research topic was explained. The protocol included open questions on (A) values, (B) digital transformation, and (C) sustainable transformation. The first block addressed the qualification and experience of the interviewees, their role in the organisation, and their role in the twin transition process. The second block addressed questions regarding the company values and the espoused values. Are the values commonly known and communicated? Do those stimulate and/or support the change process of the twin transition? The third block focused on the state of the digital and sustainable transformation and on explicit activities that were taken. Each expert was asked to describe digital and sustainability initiatives by his company and to evaluate the change process compared to competitors. The intention here was to get a better understanding of the current transition status. In total thirteen open-ended questions were used to assist in addressing the research questions and to avoid biases. Follow-up questions were asked for clarification when needed.

The data collection took place via Microsoft Teams. The interviews were held in German and lasted approximately 30 min. Audio files were recorded and afterward transcribed and translated automatically using the software Sonix. The informants were provided with an information sheet and consent form outlining the study's aims, their rights, and the measures taken to ensure confidentiality and data security. Written consent was received before each interview.

3.4 Data analysis

Thematic analysis, using an inductive approach effectively explores patterns in the data. By applying this approach, to the data collected, themes naturally emerged. For the data analysis, the researcher applied the methodology of grounded theory (Gioia et al., 2013).

The coding process involved reading the transcripts multiple times to get familiar with the data, followed by line-by-line coding to identify relevant data. First-order codes were generated to capture initial patterns, which were then grouped into broader themes. These themes were revised and refined to ensure they accurately represented the data. After that, the aggregated dimensions emerged naturally (Braun & Clarke, 2006).

Atlas.ti software was used to analyse the transcripts and obtain a comprehensive understanding of the data. The software

simplified the coding process and organised the data to make it clearer for the researcher. The use of Atlas.ti also helped in checking interrelations among the findings. To ensure validity in the analysis strategies are applied such as using multiple data sources, cross-checking data, reflecting on biases, their effect on the analysis, and providing detailed descriptions of the data context and participants' perspectives (Braun & Clarke, 2006). Being aware of data protection, and anonymising participant's information, the data will be secured. Lastly, visual aids such as a thematic map was used to illustrate the connected themes (Braun & Clarke, 2006).

4. RESULTS

This research investigates how espoused values, lived values and leadership style influence the implementation of the twin transition in SMEs and whether there are barriers for them to be taken into account. Figure 2 in Appendix 8.3 illustrates the Data Structure following the Gioia method. It indicates five aggregated dimensions: The first three, the OVs, leadership style, and barriers are the moderating variables. The process of digital transformation and the process of sustainable transformation are mediators. The findings indicate that OVs are the starting point and a moderator of the twin transition process. It has to be distinguished between espoused and lived or practiced values.

4.1 Organisational values

4.1.1 Espoused Values

The interviews revealed differences in the espoused values, how they were identified or defined, and the manner of their communication. Espoused values, such as customer centricity, innovation, fairness, honesty, respect, and responsibility, were used by almost half of the companies (PA1, PA2, PA5, PA7) and showed influence on the transformation process.

Participant two emphasised the need for broader participation in value-setting: *"It makes more sense not to do it in a quiet room, but to involve employees in working on this mission statement"* (PA2).

There was a notable difference in how values were communicated. Active communication combined with respect was indicated to be more effective than passive communication. Participant six described an indirect communication style where everyone, regardless of background, is welcomed non-judgmentally. Conversely, Participant two doubted the effectiveness of passive communication, noting that values displayed on monitors or in social rooms did not translate into lived values. Participant seven highlighted the importance of direct and ongoing communication to reduce resistance and foster the transformation process: *"The more you communicate and the more you take people with you, the less the resistance curve goes up, and the faster the transformation process moves forward"* (PA7).

4.1.2 Lived Values

Participants indicated that values must be lived to be effective in the change process. Participant two noted the desire among employees to close the gap between espoused and lived values and stressed that additional engagement would be needed to get there: *"Even if the gap is not big, it will not be closed without further engagement"* (PA2). The significance of lived values for the transformation process was also pointed out by participant one. Participant one stated: *"First of all, it's a culture that has to live... If you as an entrepreneur are not behind it, then you don't even need to start with such a number. You can't play theatre either. And it has to be authentic."* (PA1)

and pointed out: *"We see change as an opportunity, not a threat"* (PA1).

Participant eight stressed that lived values created an atmosphere, where: *"..we are confident that we can solve any problem"* (PA8). Hence, the data shows the huge impact lived values can have on change processes.

4.2 Leadership style

The data indicated that leadership style is a good determinant of transformational success. Highlighted as important in the transition process were leadership roles that involved initiating new projects, leading by example, demonstrating authenticity and fairness, communicating intensively, making active decisions, and using Key Performance Indicators (KPIs).

Showing a transformational leadership style by pushing the transformation process forward was seen as crucial by participant one. This transformative leadership style helped reducing uncertainty among team members and provided confidence to pursue the road of change. Participant one stated: *"I am the driving force behind this transformation, both digitally and in terms of sustainability here at the company. Everything set in motion, I push and drive forward"* (PA1). Participant seven reinforced this by stating: *"For me, the role model character is quite clear"* (PA7). The findings indicated that leadership style is a good determinant of transformational success. Highlighted as important in the transition process were leadership roles that involved initiating new projects, leading by example, demonstrating authenticity and fairness, communicating intensively, making active decisions, and using Key Performance Indicators (KPIs). Showing a transformative leadership style by pushing the transformation process forward was seen as crucial by participant one.

4.3 Barriers to the twin transition adoption of SMEs

This research indicated barriers concerning the OVs and leadership style interfering with the twin transition and economic-related barriers especially relevant for SMEs

4.3.1 Values-related barriers

Values-related barriers make missing, not enough communicated, or not lived values transparent. The majority of SME-Representatives shared that company values are neither written down nor clearly defined (PA3, PA4, PA5, PA6, PA8, PA9). That does not necessarily mean that there are no lived values, (PA5) but these values were not espoused. This opens room for misunderstanding and misinterpretation, which can cause a barrier in the transformation process.

There appears to be a relationship between espoused company values and the transformation progress. Five of the six companies not having fixed values pointed out, that their progress concerning digital and especially sustainable transformation is limited. Too many values also seemed to cause problems. Participant five stated that too many values being communicated overstain employees, which could lead to a lack of acceptance and resistance.

Participant three expressed doubts that uncommunicated values reach the workforce at all. Even if values are broadly and intensively communicated, if they are not lived they do not favour the transformation process.

4.3.2 Leadership style-related barriers

Regarding leadership as a barrier, this research found that inappropriate leadership style is a strong barrier to transformation. Participant nine emphasized that: *"... the senior boss always put the brakes on it because we had never done it like that before"*. (PA9). Participant four gave an

example of missing leadership regarding sustainability transformation: *“And I would say that if we were to ban plastic, it would not only hinder our progress, but we would be going back to the Stone Age.”* (PA4).

4.3.3 Economic-related barriers in SMEs

Limited resources, particularly for SMEs, pose a significant barrier to transformation, too. Participant nine expressed doubts about the capacity of SMEs to undertake such transitions: *“whether small and medium-sized companies have enough power to make it at all”* (PA9). Participant eight also expressed concerns: *“So if you have such a big upheaval, then that means that four of the 20 people will certainly be tied up somehow and that means [lack of] capacity.”* (PA8). Participant four emphasized the priority of profitability as a company goal for SMEs *“...sustainability [...]. I think that's a topic you can drink three bottles of wine on. So the company's goals as such are of course primarily economic in nature, because otherwise the company would not be able to continue as a going concern.”* (PA4).

Participant four, showing resilience to sustainable transformation, emphasised that although the risk of some steps in digital transformation process are high, they are taken: *“These are therefore decisive steps for us, which also entail a real economic risk, because the implementation of these digital systems is also an intervention in the heart of a company. So if you make a mistake, it can be a dangerous challenge for the company and its continued existence.”* (PA4). Consequently, the limited resources of SMEs are a barrier to the twin transformation. Resources are more allocated to digital than to sustainable transformation

4.4 Process of digital transformation

The process of implementing digital transformation is a mediator, differentiating into expected benefits, practices, and initiatives. Research showed that digital transformation was started earlier and is more advanced than sustainable transformation.

4.4.1 Expected benefits

This research found several expected benefits coming from the digital transformation. Increasing efficiency and transparency were mentioned most often. Participant seven stated: *“Digitalisation usually helps us to become faster, better, more efficient, and more transparent”*. Participants three and eight added the effect of printing less and saving resources: *“... much less is printed”*. (PA8). *Ultimately, these digital processes are all aimed at saving paper, printing costs, and all sorts of other things. But it's not just costs that we're saving, it's also paper, so we're conserving resources”* (PA3).

Even more, benefits are noted by participant one who indicated that digital transformation should help to transform processes, *“many topics that were previously simply lived in the organisation, so to speak, are seen very differently digitally”* (PA1) to make them quicker and safer. Participant eight stressed the quality enhancement: *“Reporting that is posted online cannot be sorted incorrectly.”* (PA8) and participant seven stated: *“we just don't digitalise. Not just for the sake of digitization, but we digitalise so that you simply have less work.”* (PA7).

Participant one emphasized that by implementing an employee application, communication should be intensified in order to help company values' acceptance: *“We have our own employee app. Where we communicate a relatively large number of these values and do so in such doses that the employee can accept them as they wish and so on.”* (PA1). All these efforts could lead to a competitive advantage, which was noted by participant

one: *“Companies, who are in roughly the same sector as us or are working in the same field, they look up to us and say “Wow, how digitalized are you, how did you do it?”* (PA1).

Participant eight stressed the dual effect of using digital communication as benefits for both digital and sustainable transformation by saving time, and travel costs, and reducing the CO2 footprint at once:

4.4.2 Practices and Initiatives

Which practices and initiatives are applied by the different companies and are being named in the data, depends on the specific state of the digital transformation process. Companies with a bigger progress gave quantitatively and qualitatively more examples. Participant five described the steps from digitalizing single documents up to a document management system. Participant seven explained the ominous usability of a chat function for customers and suppliers. Employee apps are used by participants one and two to facilitate communication and help to facilitate processes like a digital holiday application. Additionally, their employees are provided with iPads and one company uses already ChatGPT to enhance customer communication (PA3). Another initiative put forward by three participants (PA1, PA5, PA4) is the use of an enterprise resource planning system (ERP), linked to customers and or suppliers: *“It's a superordinate software system where we are digitally networked with each other in all departments, where one department simply fulfills a need or a task or provides it to the next department.”* (PA4). An electronic data interchange system (EDI) is used by participant four to enhance communication: *“it's simply the networking of demand cases and our production planning, so that there is no longer an order to order confirmation, but our customers log directly into our system.”* (PA4). Two participants (PA8, PA6) named video conferencing and remote work as a digital practices to be more efficient. Three participants (PA8, PA4, PA6) described that they have a significant reduction of paper, which they stated after getting asked for practices in the digital transformation process and the sustainable transformation process: *“We have already made significant reductions. So that is certainly 50 %.”* (PA6).

4.5 Process of sustainable transformation

The process of implementing sustainable transformation is a mediator and covers two aspects: expected benefits as well as practices and initiatives.

4.5.1 Expected benefits

Expected benefits being named in the interviews provide an incentive to start sustainable transition. Findings indicate that this could be the aim of obtaining a competitive advantage, getting financial enhancements, making a difference, or matching customer expectations. Participant one stated that: *“...[a]company has much, much more value in doing something for society, culture, employees, etc. than just making profits”* (PA1), which could lead to a competitive advantage as it helps to attract young talents: *“that brings us a whole lot of new people, young people who want to work here”* (PA1). Participant eight named customer demand as a trigger *“...with institutional clients, the issue of sustainability is unavoidable”* (PA8).

A motivation put forward by participants four and five, is investments in green power generation up to a rate of 100% self-sufficiency to boost sustainability and become independent from increasing energy prices: *“In two or three years' time we are completely self-sufficient and only have green electricity that we produce ourselves.”* (PA4).

The positive effect of sustainable transformation on company ratings and thereby easier access to new loans with better conditions was indicated by participant one. Hence concrete benefits can make a start with the sustainable transformation easier or push it forward.

4.5.2 Practices and Initiatives

Reusable products, CO2 footprint calculations, investments in green power generation, and sustainability reports are the most common initiatives being applied by the interviewed companies. Participant one pointed out that: “*We produced our first sustainability report in 2015*” (PA1), and participant five puts forward that: “*we now produced a reusable cup ourselves*” (PA2). Participants four and five stressed the high rate of green electricity being produced. Hence different initiatives can enhance or support the transition process.

5. DISCUSSION, CONTRIBUTION, AND LIMITATIONS

5.1 Discussion of results

This thesis examined, how espoused values, lived values, leadership style, and barriers influence the twin transition process in SMEs. The findings of the research are presented in a conceptual model (Figure 1). Moderators in this model are the OVs, the leadership style, and the identified barriers for SMEs. The digital transformation and the sustainable transformation process are mediators.

Following the behavioural norm model (Cooke & Rousseau, 1998) OVs and expectations, have been identified. This research indicated that OVs must be distinguished between espoused and lived values. Expectations are expressed by the expected benefits of digital and sustainable transformation. Espoused values and lived values are the starting point of the conceptual model as they have the potential to foster a shared understanding of the organisation’s purpose and transformative direction (Saad & Kaur, 2020). The findings of this research support the OVs’ ability to promote the transformation process. Espoused Values identified are customer orientation, honesty, fairness, respect, and responsibility and support findings by Bourne et al. (2019). The way espoused values are communicated differs from mission statements on homepages to comic strips and wallpapers. All different manners appear to produce a positive impact on the change process, supporting findings by Amis et al. (2002) and Jonsen et al. (2015). No indication was gained if different communication manners have a different magnitude of impact.

The way espoused values are identified seems to affect whether they are communicated and lived within the organisation. The findings suggest that involving all employees in developing a shared vision, positively influences the acceptance of these values and enhances transformation processes. This supports findings by Chai et al. (2015), Doten-Snitker et al. (2021), Kotter (1995), and Knoster (2000) who pointed out the importance of developing a shared vision and its communication for the success of a change process. This translates into:

Proposition (P) 1: Employee participation in formulating company values has a positive impact on transformation processes and is a success factor.

This research indicates that values have to be lived in an organisation to be beneficial. This supports findings by Coetzee and Veldsmann (2013) as well as Khandelwal and Mohendra (2010), who claim that organisational leaders should strive for a closer alignment between espoused and lived values. If values are only written down, and not lived, they are not relevant for

the transformation process. These findings can be summarized by:

Proposition 2a: Espoused values and lived values have a positive impact on transformation processes and are a success factor for the twin transition.

Proposition 2b: A gap between espoused and lived OVs has a negative impact on transformation processes.

Communicating individual change achievements to third parties can serve as a ‘proof-of-concept’ from the C-level, helping to reduce doubts and increase conviction among employees. The findings suggest that intense communication can bridge the gap between espoused and lived values and motivate employees to embrace change. This supports results by Elving (2005), and Herald et al. (2008). Zareen (2013) as well as Errida and Lotfi (2021). Therefore, proposition three is:

Proposition 3: The intensity of communication has a positive impact on the success of the twin transition.

This research indicates that leadership style influences the twin transition process in different ways. The transformational leadership style has a positive impact on the transformation process, supporting findings by Bagga et al. (2023) and Herold et al. (2008). In this research, leading by example shows a strong impact on the change process by reducing uncertainty and encouraging employees to embrace change. This supports results by Mittal and Dahr (2015) and results in:

Proposition 4: Transformational leadership is a success factor for the twin transition.

Findings put forward that fairness and authenticity are important leadership traits of the transformational leadership style and create a positive impact on the transformation process. That suits to the conclusions of Alavi et al. (2016) and Deschamps et al. (2016). Hence, proposition six claims:

Proposition 5: Fairness and authenticity in leadership have a positive impact on the transformation process and are both success factors.

To manage progress and integrate digital and sustainable transformations into ongoing business operations, KPI management is used as an operational standard. Different KPIs are suitable for digital transformation (Mahboub et al., 2023) and sustainable transformation (Hristov & Chirico, 2019). This research supports the necessity of KPIs to be able to manage the process and achieve the intended goals and supports the findings of Burnes (2011), Fritzenschaft, (2014), and Oakland and Tanner (2007). This can be summed up as:

Proposition 6: Transformational leadership style should be combined with KPI-Management to be more effective. Applied KPI-Management is also a success factor.

Expected benefits can influence the mindset and openness for change processes. Expected benefits from digital transformation are a competitive advantage, ease of use, efficiency, and transparency, also stated by Christmann et al. (2024) and Fouquet & Hippe (2022). Expected benefits for starting sustainable transformation are either obtaining a competitive advantage or meeting customer expectations, described as well by Christmann et al. (2024). This also supports the research by Samans and Nelson (2022), which states that driving factors for sustainable transformation are the stakeholders’ views, especially customers. It also strengthens findings by Chistov et al. (2023), stressing that sustainable transformation could foster customer engagement. Therefore, proposition seven emerges:

Proposition 7: Expected benefits can enhance the willingness and openness for the transformation process.

Many different kinds of practices and initiatives were being used by the interviewed companies. This research indicates that the quality and quantity of the initiatives correspond with the transformation maturity status, which supports the findings by Christmann et al. (2024). Practices and Initiatives show the potential to support the transformation processes by providing perceived advantages and being a working reference. This supports the findings by Royo et al. (2020). Sustainability practices which were found are that some companies offer carbon footprint calculations to their customers, develop CO₂-reduced products, or publish voluntary sustainability reports. This supports the findings of the twin transformation butterfly (Christmann et al., 2024). Digital practices being applied are employee apps, digitalized communication, or ERP-Systems. Findings indicate that applying ERP systems appears to be a good way to boost digital transformation in SMEs, which supports results by Palade and Möller (2022). Hence, proposition eight is formulated as follows:

Proposition 8: Practices and initiatives have the potential to push the transformation processes by providing advantages and are success factors. The kind of practice or initiative and the quantity being used depends on the maturity status of the enterprise.

In this research, three types of barriers with different aspects were identified: value-related, leadership-related, and economic-related barriers. Each of them contributes a negative impact on the twin transition process. They are moderators in the transition process. The first type of barriers is values-related. This type indicates that values have to be espoused to be helpful for a change process. OVs not being written down or being published are not perceived as being relevant. This supports the findings by Bourne et al. (2019) and Gopinath et al. (2018).

If the vision is only defined and not developed in a team effort, it does not unfold its positive effect and might not be helpful at all. This goes in line with the findings by Chai et al. (2015) and Doten-Snitker et al. (2021). Another barrier is set if the espoused values are not lived by the entire team. The research suggests that when employees perceive a gap between espoused

and lived values, they may feel disintegrated, unappreciated, or disoriented. This can have negative consequences for their motivation and the overall transition process. These findings support the research by Coetzee and Veldsman (2013) as well as Khandelwal and Mohendra (2010).

A second type of barrier addresses the leadership style, as a transformative leadership style with appropriate leadership behaviour and leadership traits has a positive impact on the twin transition. On the other hand, inappropriate leadership behaviour or traits like being less than transparent or unfair, indicate a second type of barrier to the transformation process. Findings suggest that this is a problem for both, sustainable and digital transformation and support research by Schyns and Schilling (2013).

Finally, economic-related barriers have to be taken into account. This research indicates that they are especially relevant to SMEs due to their limited resources. Efficiency and efficacy are key aspects of allocating limited resources. Cost-benefit analyses or investment appraisals are not easy for a sustainable or digital change project and are often uncommon in SMEs (Zarwary, 2019). Therefore, it is not surprising that prioritizing profit as the primary company goal is emphasized, while sustainability is not given the same level of importance. This research also indicates that SMEs tend to allocate resources more to digital than to sustainable transformation, leading to a lower speed or even to a complete neglect of sustainable transformation. The negative impact of economic-related barriers fits to the results of Meyer et al. (2021) as well as Rupeika-Apoga and Petrovska (2022). Therefore, proposition nine is formulated as follows:

Proposition 9: Barriers can have a negative impact on the twin transition process. Important barriers are linked to the OVs, leadership style, and resource limitations.

It remained unclear in this research, how far the size of companies influences the organisational structure and the perceived importance as well as the status of digital and sustainable transformation. The transformational status of companies described by the participants suggests, that there might be a positive relationship between it, the perceived importance, and the size of the company, but it is too weak for a conclusion. Based on the findings and the formulated

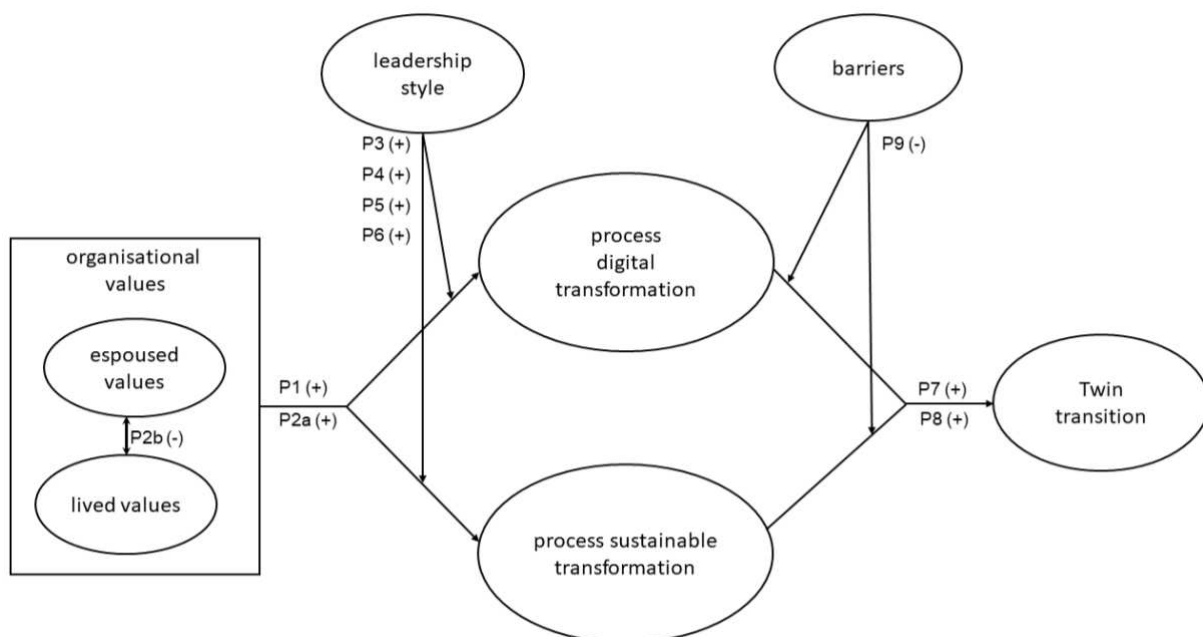


Figure 1: Conceptual model

propositions the research question, of how OV's, leadership style, and barriers influence the twin transition of SMEs, can be answered as follows:

The OV's are moderators of the twin transition process. Employee participation in formulating company values has a positive impact on the transformation processes (P1). If espoused values are lived values, they will have a positive impact and is a transition success factor. A gap between lived and espoused values has a negative impact on the transformation processes (P2). The intensity of communication provides a positive impact on the transformation (P3). Transformational leadership style, as a second moderator, is helpful in the twin transition (P4). Leading with fairness and authenticity enhances the positive impact (P5). Applying KPI-Management as a standard project management tool is another success factor (P6). Expected benefits as well as practices and initiatives are mediators in the twin transition. Expected benefits have the potential to increase the openness and willingness to pursue transformation processes (P7). Practices and initiatives can push the transformation process by creating advantages for the users or make developments perceivable (P8). The identified barriers have a negative impact on the twin transition (P9.)

5.2 Theoretical contribution

The first contribution enlarges Schwartz's theory of basic values (Schwartz, 2012) by identifying OV's as a starting point of the twin transition process. This research shows that specifically espoused and lived values are an important starting point to the twin transitions because they differentiate between organisations initialize different starting points and impact transformation speed. The second finding also contributes to Schwartz's theory of basic values as well as to the research about success factors in change management processes (Errida & Lotfi, 2021; Kotter, 1995; Knoster, 2000). Regardless of how espoused values are communicated or documented, their mere existence seems to positively impact the transformation process. This also supports findings by Amis et al. (2002) as well as Jonsen et al. (2015), thereby contributing to the discussion about the relationship between organisational culture and values. It also strengthens the research made by Bourne et al. (2019) in this research field, who stated that espoused values have a strong influence on a company by moulding its culture and supporting change processes.

Another contribution concerns change management theory and the significance of values. The findings of this research indicate that the impact of values on the transformation process can be even greater when espoused values, especially the vision and mission statements, are developed through a team effort. This goes in line with the findings of Chai et al. (2015) and Doten-Snitker et al. (2021), who stress the relevance of a shared vision for successful change. A second contribution to the change management theory, and probably the most substantial one, is the identified importance of 'lived values'. Lived values are different from the espoused values because they are not necessarily written down but broadly accepted and practiced. This difference is not intensively discussed in theory. The findings of this research help to fill this gap. In order to be effective and useful for the transformation process, OV's must be lived by employees and managers. This underlines and complements findings made by Coetzee and Veldsman (2013).

Findings in this research indicate that a transformational leadership style, leading by example, is a success factor for the twin transition as it provides a positive impact on the transformation process. This is a third contribution to change management theory and supports findings by Herold et al.

(2008), Mittal and Dahr (2015) as well as Bagga et al. (2023). The positive effect of a transformational leadership style can be boosted if it is authentic, fair, and honest. This underlines the findings by Deschamps et al. (2016) and Alavi et al. (2016). A fourth contribution to change management theory refers to the intensity of communication. Findings indicate that intense communication contributes to the success of the transformation processes. This supports the findings of Kotter (1995), Elving (2005), Zareen (2013), as well as Errida and Lotfi (2021), stating that communication is needed to implement change. The fifth contribution to this theory stresses the importance of using KPI-Management to track and being able to manage the change process. This goes in line with findings by Oakland and Tanner (2007), Burnes (2011) and Fritzenschaft (2014).

Hence organisations should define their values in a team effort, and communicate this throughout the organisations in order to make them live. This should be supported by leading transformative. communicating and managing the change process with KPI's.

The sixth contribution in context with change management theory relates to the identified expected benefits which have the potential to increase openness for the twin transformation and are an important success factor. This research found that to reduce resistance or drive transformation in organisations, the transformation goal must provide affected individuals with incentives and visible benefits, supporting findings by Fouquet and Hippe (2022), Chistov et al. (2023), and Christmann et al. (2024)

Apart from the expected benefits of digital and sustainable transformation, the practices and initiatives organisations take are prominent for the further implementation and success of the twin transition. This research indicates that practices can fuel the transformation process if they work as a proof of concept and facilitate the working life of employees. This supports and complements findings by Royo et al. (2020) as well as Christmann et al. (2024) and is a seventh contribution to change management theory.

A majority of the SMEs investigated suffered from barriers. The significance of these barriers for the success of the twin transition stands for a final contribution to change management theory. First and foremost, companies that do not have fixed values, neither written down nor lived hinder transformation processes from being successful. Missing guidance and communication implies a second barrier unfavourable for transformational success. The third barrier stresses the importance of limited resources, with direct consequences for the speed and success of a transformation process. Remarkably, a significant number of SMEs in this research decided against a fast start with sustainability transformation or even neglected to change at all, due to high costs and limited resources.

5.3 Practical implications

Companies of any size, especially SMEs, can benefit from this research. Change projects are complex and long-lasting. Two at a time, like the twin transition, increases complexity and resource consumption significantly. Therefore, a clear project structure, following change management concepts like Knoster (2000), Kotter (1995), or Mento et al. (2002) is helpful. This supports being able to manage resources and achieve the intended goals.

Furthermore, research indicates, that a broad employee participation in formulating OV's, notably the vision and mission, will have a positive impact on transformation processes. A distinction between espoused and lived value is helpful for management. This is even more important for

SMEs, as they have usually minor organisational structures and protocols than larger companies. The closer the gap between those two values, the more positive effects on employees' behaviour like motivation or performance can be expected. If the gap between espoused values and lived values can be closed, OVs have the ability to cultivate a sense of cohesion and direction among employees, helping them to overcome the complexities of the twin transition.

Leading by example is a helpful leadership behavior, characterizing the transformational leadership style in SMEs. Combined with leadership traits like fairness and authenticity, and intense continuous communication, the transformational leadership style has a strong impact on the success of the twin transition. A state-of-the-art project management, applying the 'plan-do-act-check-rule' and applied KPI-Management is helpful in change projects too, in order to obtain intended goals.

Various digital initiatives can help the twin transition in two ways. The research indicated that examples given like employee applications, a paperless office, or intensified customer communication using ChatGPT, increase efficiency and by reducing the CO2 footprint, they add progress to sustainable transformation. Furthermore, they function as a 'proof-of-concept' for successful change projects and can thereby fuel the transformation processes.

And finally, all kinds of barriers can endanger the success of a transformational process. Important barriers are linked to the OVs, leadership style, or limited resources. For SMEs, it seems probable that they will meet all of them during the transition process. Management attention and action are needed, in case they prevent any progress. Instead of investing too much time and money to avoid them completely, it appears to be better to strengthen the OVs and conduct a clear change plan.

Having espoused values being developed together and lived by the whole enterprise, combined with intense communication, and authentic and fair leadership seems to be a possible way of stepping over the barriers and managing the twin transition process successfully.

5.4 Limitations & Future research

This research has limitations just like any other study. Its first limitation is due to the researchers' lack of experience in executing qualitative inductive research. Additionally, the time frame for this study was limited, precisely there was a limited period for the data collection. Moreover, there is a limit to the breadth and depth of the interviews. This refers to the limited knowledge of the interviewees about the topic. The researcher noticed that the majority of the interviewees were not familiar with the term 'twin transition'. Moreover, the interviewees had different definitions for the term 'sustainable transformation'. An additional limitation is possible inaccuracies in the transcript., as the interviews were conducted in German and translated into English using the Software Atlas.ti.

In conducting similar research, future research on OVs and their effect on change processes like the twin transition should consider the difference between 'espoused' and 'lived' values and that they are not familiar in SMEs. Besides that, it could be helpful to concentrate on only a few companies and conduct a case study approach to better compare differences and understand correlations.

For future research, it is suggested to concentrate on only one industry with comparable market challenges and on companies with comparable sizes. It could be interesting to better understand the relationship between espoused values and lived values. A final suggestion is to examine if the leadership style

alone is sufficient to have a strong impact on the change process or whether it is always linked to the OVs.

6. CONCLUSION

This thesis explored the relationship of OVs that SMEs claim to uphold, the applied leadership style, and upcoming barriers in the twin transition to answer the question:

“How do espoused values, lived values, and leadership style influence the twin transition of SMEs, and what barriers do they face during that process?”

Applying qualitative research with an inductive approach, the researcher found that the success of the twin transition is impacted by the OVs, the leadership style, and different barriers. OVs that are truly practiced, developed in team efforts and communicated help the transformation significantly. A barrier is built, if espoused values are only stated but not lived. A transformational leadership style, characterized by role modelling and clear communication, is vital for success. Stressing the concrete benefits on an individual level and showing practices as a successful reference can reduce resistance and even boost the transformation processes. By focusing on these internal factors, SMEs can better handle the challenges of digital and sustainable transformation.

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APPENDIX

8.1 Change management steps

Table 1: Change management steps according to Kotter (1995), Knoster (2000), Mento et al. (2002) and Errida & Lotfi (2022)

Step/ model type	Kotter (1995)	Knoster (2000)	Mento et al. (2002)	Errida & Lotfi (2022)
	processual	descriptive	processual	processual
1	establish a sense of urgency	vision for change	determine idea and its context	clear and shared vision and strategy of change
2	creating a guiding coalition	availability of resources	define change initiative	change readiness and capacity
3	develop a vision and strategy	skills	evaluate climate for change	change team performance
4	communicate the change vision	change plan	develop change plan	activities for managing change management
5	empower broad-based action	incentives for motivation	identify a sponsor	resistance management
6	generate short-term wins		prepare recipients of change	effective communication
7	consolidate gains and produce more change		create small wins for motivation	motivation of employees and change agents
8			develop and choose a change leader	stakeholder engagement
9			create small wins for motivation	leadership and sponsorship
10			constant communication	reinforcement and sustainment of change
11			measure progress of change effort	approach and planning for change
12			integrate lessons learned	monitoring / measurement

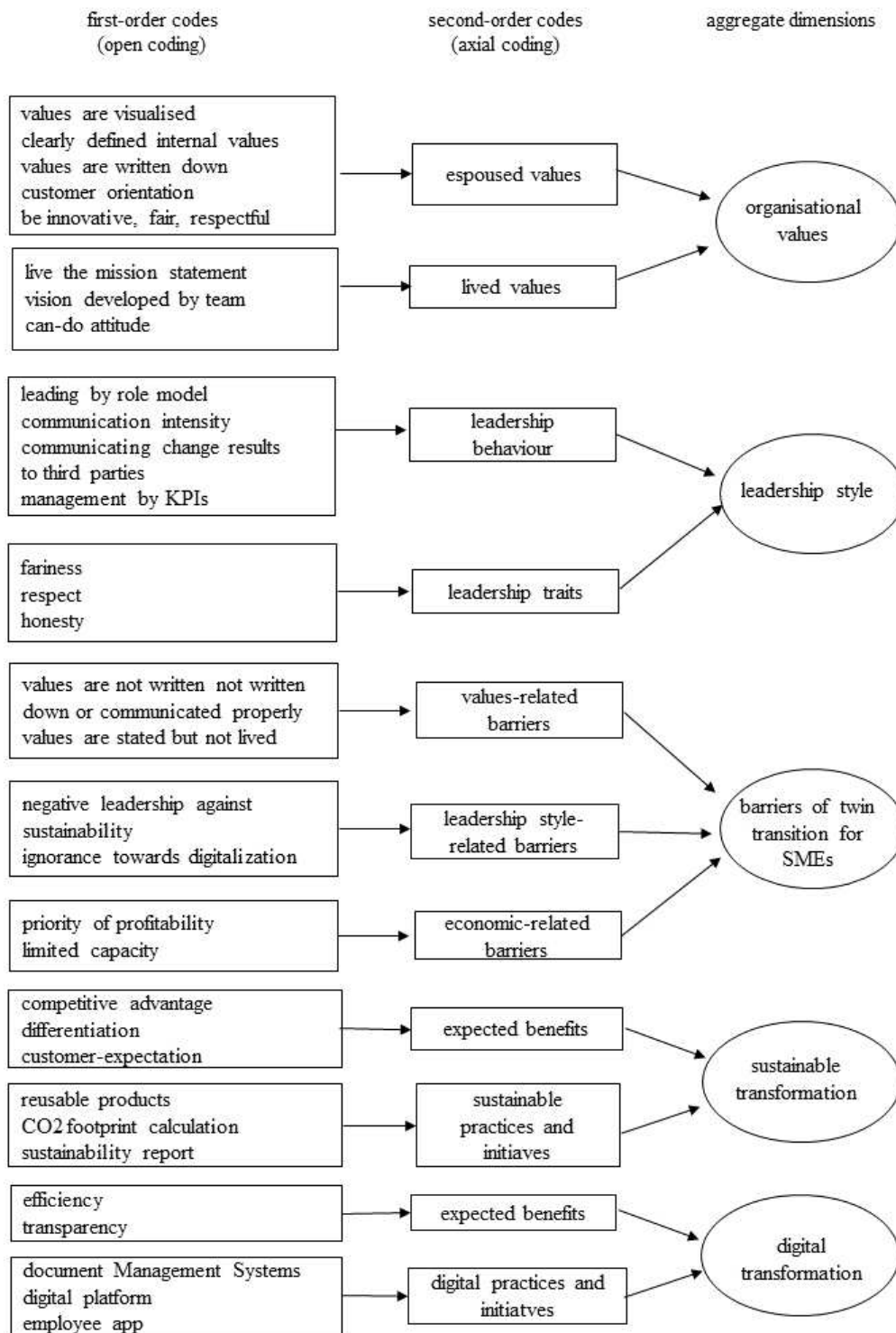
8.2 Participants Characteristics

	Participant Role / Tenure	Gender/ Age	Industry	Firm size	Function Title
P1	CFO, > 20 y	male, 56	Construction	< 250 medium	CFO
P2	CTO, 4 y	female, 39	Production	< 450 medium	Head of Transformation
P3	Co-CEO, 8y	female, 40	Car retail	< 450 medium	Co-CEO
P4	CEO, 20 y	male, 59	Production	< 250 medium	CEO
P5	CTO, 5y	female, 40	Packaging	< 250 medium	CTO
P6	CEO, > 20y	male, 69	Real estate Consulting	< 50 small	CEO
P7	CEO, > 4y	male, 48	online purchasing	< 50 small	Co-CEO
P8	CEO, > 3y	male, 50	Consulting	< 50 small	CEO
P9	employee, 15 y	female, 57	Plant construction	< 50 small	Engineer

Table 2: Participants Characteristics

8.3 Data structure

Figure 2: Data structure



8.4 Interview guide

Interview Guide

“How do espoused values, lived values, and leadership style influence the twin transition of SMEs, and what barriers do they face during that process?”

Warming-up Phase

- Allowance to record and transcribe the interview.
- Start recording and repeat the give allowance.
- Short personal Introduction.
- Introduction of the research topic.

1. Opening

1. Why did you decide to work for this company?
2. Could you describe your work experience in a few words and your current position?
3. What does the twin transition mean to you?
4. How would you describe your role in the digital and / or sustainable transition process in your company? On a scale from 1-10 where would you mark the status of your company's twin transition progress?

2. Espoused Values

5. What are the values of your company?
6. Which ones are openly communicated?
 - a. How does your company communicate these values to its employees or the outside world?
 - b. Are there maybe implicitly communicated values town hall meetings, regular virtual briefings/meetings, regular information via intranet or email, joint leadership understanding?

3. Sustainable Transformation

7. How would you describe the progress of your company in the digital transformation compared to your own goals? On a scale from 1 to 10, where would you mark your status?
8. Are your values supporting the transition? Which of them was most helpful in the change process?
9. What are you / your company doing right now to foster this transformation?

4. Digital Transformation

10. How would you describe the progress of your company in the sustainable transformation compared to your own goals? On a scale from 1 to 10, where would you mark your status?
11. Are your values supporting the transition? Which of them was most helpful in the change process?
12. What are you / your company doing right now to foster this transformation?