Implementing Hoshin Kanri in small manufacturing companies

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Abstract

Purpose – The purpose of the study is to develop knowledge on the implementation of Hoshin Kanri (HK) in small manufacturing companies. Two research questions are addressed: (1) what factors influence the implementation of HK in small manufacturing companies? (2) How do the factors influence the implementation of HK in small manufacturing companies?

Design/methodology/approach – The research presented in this paper is based on an extensive literature review and data from the implementation process in five small manufacturing companies. In the literature review, factors influencing the implementation of HK, lean production and total quality management (TQM) in small manufacturing firms are identified. Thereafter, five implementation cases are analyzed. Findings from the cases are then contrasted with the factors identified in the literature and further theorized.

Findings – Seven factors were found to either enable or hamper HK implementation in small manufacturing companies. Management involvement was identified as a critical factor. Management involvement can be typologized as collaborative or demanding, and the types of involvement is decisive in implementation processes within the small manufacturing company context.

Originality/value – In this paper, the authors focus on small manufacturing companies as the starting point and relate theoretical and practical results to the implementation processes in this defined target group. Conceptualizing implementation as a learning process, this research contributes to this emerging perspective on small firm development.

Keywords Implementation, Hoshin Kanri, Strategic management system, Small manufacturing companies, Management involvement, Learning processes

Paper type Research paper

Introduction

Small manufacturing firms with 10–50 employees are pivotal in the world economy (Johnson *et al.*, 2001) [1]. In Europe alone, there are approximately 250,000 small manufacturing firms (European Commission, 2020), which are crucial for the entire

industrial system (Gray and Mabey, 2005). However, small manufacturing companies often face a major challenge in terms of how to grow with sustained competitiveness (Phelps *et al.*, 2007). Often, this is expressed as a balance between their inherited flexibility and innovativeness and the implementation of more formalized managerial structures and systems to make it possible to benefit from economies of scale (Levie and Lichtenstein, 2010). The implementation of a more formal strategic management system represents one obvious example of this balancing act.

It is well-known that small manufacturing companies experience difficulties in adopting new and innovative management systems (Cagliano *et al.*, 2001). In addition to the conflict with the inherent flexibility in small firms, a second possible reason is that most strategic management systems are developed and implemented in the large organization context. Given that small companies in many respects are different from large companies (Welsh *et al.*, 1982), there is a need to revise our knowledge on the implementation of strategic management systems in small companies.

Hoshin Kanri (HK) is a strategic management system developed in Japan (Akao, 1991). HK is a flexible and innovative way of working with strategy deployment that makes everyone in the organization aware of the company's direction (Thürer *et al.*, 2019). HK has been developed and implemented mainly in large companies (Mothersell *et al.*, 2008), and even though companies that have implemented it have won many reputable awards, the system has not yet gained widespread popularity (Nicholas, 2016).

Research has thus far shown a potential positive impact of HK as the approach is inclusive in nature and integrates strategy into daily operations (Kondo, 1998; Kesterson, 2014). However, the implementation literature is still mainly conceptual (see, e.g., Giordani da Silveira *et al.*, 2017), and there is little empirical evidence of how HK can be successfully implemented (Nicholas, 2016).

Tennant (2007) and Melander *et al.* (2016) represent the only identified accounts that focus explicitly on the implementation of HK in small companies. Tennant (2007) reports on an action research project aimed at implementing HK in a manufacturing company with 20 employees and finds mainly that the match between HK values and the organizational culture is vital for successful implementation. Melander *et al.* (2016) emphasize how to adopt HK implementation tactics to the prevalent informality in the small company context.

Given the established importance of the implementation process when undertaking strategic changes and the few accounts of the implementation of HK, there is an apparent need for more research on HK implementation in small companies. The purpose of the study is to develop knowledge on the implementation of HK in a distinct setting: small manufacturing companies.

The study is divided into two phases, each of which addresses a research question. The first research question (what factors influence the implementation of HK in small manufacturing companies?) addresses the current knowledge frontier on the implementation process in small manufacturing firms with a systematic literature review. The second research question (how do the identified factors influence the implementation of HK in small manufacturing companies?) focuses on how the factors identified in the literature review affect the implementation process in small manufacturing firms. The results of these two analyses are theorized in the concluding section of the paper.

This paper contributes to research and practice on the management of small manufacturing firms as we develop knowledge that will enhance both researchers' and practitioners' understanding of HK implementation in small manufacturing companies.

The remainder of the study is organized as follows. First, we present an overview of managerial characteristics in small manufacturing firms and of HK, the concept implemented in the research project. This is followed by a systematic literature review of implementation processes in the small manufacturing context. In the following, we describe the research

method, the individual cases and our empirical findings. The last section focuses on the conclusions, limitations and implications of this study.

Theoretical considerations

Small manufacturing companies

Mazzarol and Reboud (2017) state that the plethora of definitions in small and medium-sized enterprise (SME) studies is highly unsatisfactory as the diversity undermines a clear understanding of SME characteristics, which limits the ability to make comparisons. Therefore, in this paper, we apply a more distinct unit of analysis, as we theorize about the implementation of strategic management systems in the small manufacturing firm context. Following the OECD (2010), we define small firms as employing 10–49 people and having a turnover or balance sheet of 2–9 MEuro. The exclusion of the service sector is motivated by the inherent differences in innovative behavior between service and manufacturing firms (Mazzarol and Reboud, 2017). As Coombs and Miles (2000) argue, a fundamental difference between product innovations and service innovations is that traditionally, product innovations focus on the artifact (the product) and technological dimension as the service innovation process starts and are intertwined with market relationships.

Next, we describe the managerial characteristics of small manufacturing firms reported in the literature. In small manufacturing firms, governance is often centralized as ownership is closely linked to management, and firms are often owner managed (Wang and Poutziouris, 2010). This implies an absence of a working board of directors and, consequently, no formal division of decision-making power. In most small manufacturing firms, one (or a few) individual takes on several managerial roles and makes many different strategic decisions (O’Gorman *et al.*, 2005). As a result, owner-managers are more self-sufficient and independent than contracted managers in large companies (Loecher, 2000), and the personality and previous experience of the manager are often closely related to the company profile (Wijewardena and Tibbits, 1999; Gibb, 2009). Consequently, personal change in management has a greater impact on small manufacturing firms than on large firms (Bluhm and Schmidt, 2008, p. 10).

Regarding leadership, Mendes and Lourenco (2014) argue that the leadership style in small manufacturing firms is task oriented and direct as the owner-manager is present in daily operations. This can be described as a form of personalized management, i.e. the ability, experience, knowledge and intuition of one person who manages the entire company (Cagliano and Spina, 2002; Hudson Smith and Smith, 2007). It follows that the manager is often the only leader of the organization. Hence, the organizational structure is informal and flat, with few hierarchical levels (Hudson Smith and Smith, 2007).

The decision-making process in small manufacturing companies is predominantly nonstructured, informal and centered on one person (Andersson and Tell, 2009; Hudson Smith and Smith, 2007), and strategies tend to emerge incrementally rather than being crafted through systematic strategic work (Cagliano *et al.*, 2001; Ekanem, 2005). This also implies that documentation is rare (Cagliano and Spina, 2002). Generally, small manufacturing firms are production oriented (Davig and Brown, 1992). Given this focus and general resource poverty, topics related to administration and strategic development tend to be disregarded (Tell, 2012, 2015, 2015). The operational focus often results in a firefighting mentality (Hudson Smith and Smith, 2007; Bridge *et al.*, 2009; Kumar *et al.*, 2009) and difficulties in managing time (Hankinson *et al.*, 1997).

HK

HK was first conceptualized in the 1950s (Tennant and Roberts, 2001) as a blend of Edward Deming’s lectures on the plan-do-check-act (PDCA) cycle, causes of variation and process control with Peter Drucker’s “management by objectives” philosophy (Drucker, 1954).

The next milestone was in 1962, when the Bridgestone Tire Company developed HK as a management system integrated with its total quality control (TQC) methodology (later TQM) (Akao, 1991). Since then, the links between TQM, lean production and HK have been strong (Ishikawa, 1985).

HK starts with a few strategic objectives that cascade downward in the organization and are evaluated from the bottom up (Tennant and Roberts, 2001; Kesterson, 2014). According to the seminal work by Akao (1991), HK provides an annual step-by-step planning, deployment and review process for managed change. Previous studies (Jolayemi, 2008; Nicholas, 2016) have identified PDCA, vision, strategy, long- and medium-term goals, cascading objectives, catchball, means/ends and targets, and objectives linked to daily work as the elements and steps commonly associated with HK processes. Even though there has been some diversity in applying HK, the common denominator is closely aligned (see, e.g. Akao, 1991; Kondo, 1998; Wichter and Butterworth, 1997; Tennant and Roberts, 2001).

Most HK reports have focused on describing the HK routine and analytical tools. In the following, we will review the scarce literature on HK implementation in small manufacturing firms. As a result of the scarcity of reports concerning this topic, we also review the literature related to lean production and TQM implementation in small manufacturing firms.

HK, TQM and lean production implementation process in small manufacturing companies

We used ProQuest to design the literature review. First, a broad search guided by the search words “Hoshin Kanri” and “implementation” in the period 1995–2020 resulted in 17 articles. A manual review of these resulted in only two articles that focused on the HK implementation process in the small firm context.

Tennant (2007) and Melander *et al.* (2016) both report case studies of implementation processes but are vague about the company-specific factors that influence the process of implementation. However, it is stressed that the level of formalization is important (Melander *et al.*, 2016) and that a cultural change may be needed (Tennant, 2007). Tennant formulates the need for a cultural match: “*Indications of culture change include: a clear linkage between strategic goals and daily work; personal development plans for every employee linked to strategic goals; improved communications throughout the company leading to a greater sense of involvement and greater participation in improvement activities*” (Tennant, 2007, p. 72).

To extend our understanding of the HK implementation process, we widened our review to include the implementation process in medium-sized and even large companies. Here, the pattern reflects an extensive focus on top management buy-ins in these mainly practitioner-authored books (cf., Cowley and Domb, 1997; Kesterson, 2014; Boisvert, 2017) and extensive lists of implementation-related factors based on literature reviews (Giordani da Silveira *et al.*, 2017; Nicholas, 2016; Silveira *et al.*, 2013).

Acknowledging the close link between HK, TQM and lean production (Staedele *et al.*, 2019), Nicholas (2016) related the factors influencing HK implementation to factors influencing the implementation of lean production. Given this approach, we decided to extend our literature review to include studies of lean production and TQM implementation processes in small manufacturing companies. When searching for “TQM” or “lean” and “implementation” in ProQuest, we identified 2456 articles. Given this result, we added “small firm” and “manufacturing” as search phrases, which resulted in 43 viable articles.

In Table 1, we present a list of 11 factors that were identified after two authors independently analyzed the identified papers to detect factors that influenced the implementation process. When the results of the two analyses differed, which occurred in three cases, the two authors involved a third author and jointly decided on the best categorization.

An important theme in the identified articles was that the degree of customer orientation, strategic work and long-term focus influenced LP and TQM implementation in

Table 1.
Eleven factors
influencing HK
implementation in
small manufacturing
companies

Proposed factors influencing HK implementation in small manufacturing companies	Main sources
Customer orientation and satisfaction	Kumar <i>et al.</i> (2009), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Lande <i>et al.</i> (2016), Nicholas (2016) and Singh <i>et al.</i> (2018)
Strategic work/goal setting	Alaskari <i>et al.</i> (2014), Achanga <i>et al.</i> (2006), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Nicholas (2016) and Singh <i>et al.</i> (2018)
Long-term focus	Hu <i>et al.</i> (2015) and Nicholas (2016)
Management involvement and commitment	Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Mendes and Lourenco (2014), Nicholas (2016), Pearce <i>et al.</i> (2018), Sahoo and Yadav (2018), Singh <i>et al.</i> (2018), Yusof and Aspinwall (1999) and Zhang <i>et al.</i> (2017), Yadav <i>et al.</i> (2019)
Leadership style	Lande <i>et al.</i> (2016), Nicholas (2016), Yusof and Aspinwall (1999) and Yadav <i>et al.</i> (2019)
Change acceptance	Achanga <i>et al.</i> (2006), Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Mendes and Lourenco (2014), Nicholas (2016) and Sahoo and Yadav (2018)
Communication	Achanga <i>et al.</i> (2006), Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Nicholas (2016) and Yadav <i>et al.</i> (2019)
Involvement, commitment and responsibility	Achanga <i>et al.</i> (2006), Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Mendes and Lourenco (2014), Nicholas (2016), Sahoo and Yadav (2018), Singh <i>et al.</i> (2018), Yusof and Aspinwall (1999) and Zhang <i>et al.</i> (2017)
Human and other resources	Achanga <i>et al.</i> (2006), Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Hu <i>et al.</i> (2015), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Mendes and Lourenco (2014), Nicholas (2016), Sahoo and Yadav (2018) and Yusof and Aspinwall (1999)
Measure/monitor/review	Alaskari <i>et al.</i> (2014), Nicholas (2016) and Yusof and Aspinwall (1999)
Skills and training	Alaskari <i>et al.</i> (2014), Dora <i>et al.</i> (2016), Knol <i>et al.</i> (2018), Kumar <i>et al.</i> (2009), Lande <i>et al.</i> (2016), Mendes and Lourenco (2014), Sahoo and Yadav (2018), Singh <i>et al.</i> (2018) and Yusof and Aspinwall (1999)

manufacturing companies (Knol *et al.*, 2018; Singh *et al.*, 2018). Most of the identified articles also highlight management involvement and commitment as critical factors (Alaskari *et al.*, 2014; Knol *et al.*, 2018; Nicholas, 2016; Pearce *et al.*, 2018; Singh *et al.*, 2018). Change acceptance is also described as vital for implementation (Zhang *et al.*, 2017) as is access to human resources (Kumar *et al.*, 2009).

Guided by our two research questions (what factors influence the implementation of HK in small manufacturing companies? How do these factors influence the implementation of HK in small manufacturing companies?), we first present our methodological considerations and then proceed with the empirical results and discussion.

Methods

The need for research focusing on SMEs has been well-established (Storey, D. J., 2016); but within this research, it is often noted that this analytical unit at the meso level (Klein and Kozlowski, 2000) is diffuse in nature (Mazzarol and Reboud, 2017). This limits research in

regard to both the problematization and generalizability of the results (Blackburn and Kovalainen, 2009). In this study, we aim to improve the research rigor by focusing on a more distinct sphere of application (Grünbaum, 2007), i.e. small manufacturing firms.

The results in this paper are based on five case studies in companies participating in a research project aiming to adapt the HK strategic management system to SMEs. An assistance support-based research design with multiple case studies (Gibb and Scott, 1985) was adopted as the research purpose was to develop knowledge on the process of implementing the HK management system. We used mixed research pairs when introducing the system to management in the participating companies. The research pairs came from a multi-skilled research team, consisting of university researchers and coaches from a regional trade agency devoted to developing small manufacturing companies. The research pairs consisted of two or three people from the team who were all present during all company workshops. In total, the project comprised 14 companies and a team of five researchers/coaches.

For this paper, with a focus on small manufacturing firms, we selected five privately owned small manufacturing firms for a more detailed analysis. The empirical data were derived from interviews with company CEOs (10 out of a total of 15 interviews) and representatives from the management teams (5 out of 15 interviews) as well as 31 implementation workshops (on average 2.5 hours long). The CEOs from the five case companies participated in the workshops, often accompanied by one or more senior managers. Additional data were collected through phone calls, email conversations and secondary sources such as internal company documents, web pages and annual reports. For more information about the data collection methods, see Table 2.

The research process

The research presented in this paper was conducted in four phases. First, as described above, a literature review was used to detect factors influencing the implementation of HK as well as TQM and lean production. The 11 identified factors were categorized (see Table 1).

In the second phase, the five empirical cases were analyzed. After each workshop, we conducted a 45–60 minute debriefing session, and notes from the workshops were shared by

	Company A	Company B	Company C	Company D	Company E
<i>Data collection</i>					
Main informant	Acting CEO	Owner-manager	Owner-manager	Owner-manager	CEO
Data collection					
Interviews	4	3	3	1	4
Participation at workshops	2	7	10	5	7
<i>Characteristics</i>					
Industry	Manufacturing	Manufacturing	Manufacturing	Manufacturing	Manufacturing
Company type	Sawmill	Supplier to sport and activity centers	Manufacturer of entrances	Manufacturer of building components	Manufacturer of houses
No of employees	15	36	21	22	27
Ownership	Family	Family	Family	Owner-manager	Private

Table 2.
Data collection and characteristics of the case companies

all researchers. The results of the debriefing sessions were further analyzed at weekly project meetings and longer learning meetings once every semester. Given the overall aim of understanding the implementation process, all five members of the research team at these meetings analyzed and jointly made sense of the developments. In total, we ended up with a 25–30-page narrative for each case.

In the third phase, the narratives from the case studies were compared with the 11 factors detected in the literature review. Here, we followed the same procedure as in the literature review. Two researchers independently read the case narratives and coded instances related to the eleven factors identified in the literature review. The researchers also noted instances that appeared to be relevant but were not covered by the predefined factors. The results of the coding were thereafter compared. When the results of the analyses differed, which occurred in 12 cases, the two authors involved a third author and jointly decided on the appropriate coding. Then, the results of the five cases were compared. The result of this analysis was that the list of factors was modified. Four factors from the literature did not surface in the empirical analysis. We also identified several new factors, but only one appeared in all cases. This factor (the management team) qualified for the final list of seven factors.

In the fourth phase, we discussed the conclusive set of factors and especially theorized about management involvement as a crucial aspect of the implementation of HK in small manufacturing companies.

Case descriptions

Company A is a niche-oriented sawmill employing 15 people. The company was owned and managed by the founder in a personalized way until 2012. After an unplanned succession, the two daughters became owner-managers. Together with their spouses, they constitute an informal management team. The management team had no prior experience with formalized strategy work or lean activities.

Company B is a niche-oriented wood supplier to sport and activity centers employing 36 people. The operations include production, sales, installation and safety control of sports facilities. The owner-manager, his daughter and her spouse compose an informal management team. The management team has no prior experience with formalized strategy work or lean activities.

Company C is a manufacturer of entrances employing 20 people. The company is owned by a father and his two sons, and the two sons are active in the management of the company. The three owners constituted an informal management team. None of them had prior experience with formalized strategy work or lean activities.

Company D is a manufacturer of (small) houses employing 22 people. The owner-manager is the founder and sole owner of the company. At the time of this study, company D was a young company with growth ambitions. The informal management team consisted of the CEO and a production manager.

Company E is a privately owned manufacturer of houses employing 29 people. The company has a management team that meets regularly but has no experience with strategic work or lean activities. During this study, the plant manager who initiated the HK project was officially promoted to the CEO.

Results

In [Table 1](#), we include eleven factors that could influence the implementation of HK in small manufacturing companies. These proposed factors were used in the first analysis of the empirical data from the five case companies. The results of this analysis of the entire sample of case companies revealed that five factors were of low importance in the focused

implementation process: customer orientation and satisfaction, measure/monitor/review, skills and training, involvement, commitment and responsibility and human resources. Returning to the reviewed literature, we realized that these factors are highly related to lean production and TQM initiatives. In lean production, a focus on customer orientation is essential to detect waste (Knol *et al.*, 2018), and continuous improvements in leanness need to be measured, monitored and reviewed (Mendes and Lourenço, 2014). Moreover, in TQM, there is a strong emphasis on employees' skills and training (Lande *et al.*, 2016). Finally, as lean production and TQM are closely related to the operational core, human resources, understood as the involvement and engagement of blue-collar workers, are essential for implementation success.

As discussed above, HK is a top-down concept that focuses first on the top management level as the initial organizational conversation should start at the top level and cascade down. Therefore, it is clear that managerial characteristics in the small manufacturing firm are more important in the initial HK implementation than the inclusion of the operating core. Consequently, unsurprisingly, the five excluded factors were replaced by a new factor, i.e. the management team, which emerged from the analysis of our case comparisons. In Table 3, we organize the results of the seven factors: the remaining six factors from the literature review supplemented by the new management team factor ($6 + 1 = 7$).

In Table 4, we detail our analysis and present the results at the company level.

Below, we discuss how the seven factors enabled, hampered or were neutral in the implementation processes.

Proposed factors influencing HK implementation in small manufacturing companies	Identified factors in the empirical data
Customer orientation and satisfaction	
Strategic work	X
Long-term focus	X
Management involvement	X
Leadership style	X
Change acceptance	X
Communication	X
Involvement, commitment and responsibility	
Human resource allocation	
Measure/monitor/review	
Skills and training	
Additional factor: management team	X

Table 3.
Factors influencing
implementation of HK
in small manufacturing
firms identified in
literature and in the
research data

Factors	Company A	Company B	Company C	Company D	Company E
Strategic work	N	N	N	N	N
Long-term focus	N	E	E	E	N
Management involvement	H	E	E	H	E
Leadership style	H	N	E	E	E
Management team	H	H	N	H	E
Change acceptance	H	N	E	E	E
Internal communication	H	H	E	H	E

Table 4.
Factors related to the
implementation of HK
in small manufacturing
companies (enabling
(E), hampering (H) or
neutral (N))

Strategic work

In previous studies in small firms, there are few indications of written strategy or systematic and inclusive strategic work (Cagliano *et al.*, 2001; Cagliano and Spina, 2002; Hudson Smith and Smith, 2007). The lack of strategic work corresponds to the findings in this study as none of the companies had a systematic strategic approach or a written strategy prior to the implementation of HK. However, we classify all firms as neutral in this respect as the CEOs communicated strategic awareness (Gibb and Scott, 1985) in interviews, and it was apparent that they performed some informal strategic analysis. However, these analyses did not involve coworkers nor were the results formalized, communicated or discussed beyond the owner-managers. Company B was interesting in this regard as prior to our first meeting, we identified a vision statement on its home page. However, during the meeting, none of the three managers interviewed remembered the content of the vision. Apparently, the vision was written by the public relations firm that designed the website.

Long-term focus

HK adoption takes time; if a company is devoted to the process, it may take four years or more, according to HK experts (Kesterson, 2014). It is therefore essential for the case company to have a long-term focus. Previous studies on small manufacturing companies have found that these companies often have an operational focus and a firefighting mentality (Cagliano and Spina, 2002).

In our analysis, we concluded that the long-term focus was enabling in three companies and neutral in two companies. Hence, overall, the planning horizon favored the implementation process of HK. In companies B-C, the present owners planned long-term owner-manager succession, signaling a future-oriented focus. In company D, the owner-manager in interviews expressed a long-standing urge for growth. Companies A and E, which were classified as neutral, signaled a long-term focus as the managers joined the research project, but this focus was endangered by other, shortsighted owner-managers in company A and immediate financial problems in company E.

During the implementation process, company C realized quite quickly that there was a need to develop a long-term focus that went beyond the prioritized succession issue. Company B addressed the succession issue in the project but had difficulties developing long-term strategies in other areas. Considering this, the findings show that companies with at least a partial long-term focus seem to experience a more successful implementation of HK. This finding is consistent with previous studies (Nicholas, 2016).

Top management involvement

Top management involvement is important for the implementation of HK, as the top manager sets the direction for the organization. Management involvement is considered critical in the reviewed literature, and some articles emphasize that it is the main barrier (see, e.g., Hu *et al.*, 2015; Kumar *et al.*, 2009; Lande *et al.*, 2016; Pearce *et al.*, 2018; Zhang *et al.*, 2017; Yadav *et al.*, 2019). Without involvement from both the CEO and top management, the true importance of the implementation will be in doubt. According to Ellen Domb in Kesterson (2014, p. 79), "It [HK] needs to be 'personally owned' by the CEO". It may be easier for a small company than for a larger company to adopt HK as management and decision-making are often synonymous (see, e.g. Hudson Smith and Smith, 2007; Yu, 2001).

This factor is crucial for the implementation process in our five companies as the level of management involvement varied over time in the case companies. In company A, management involvement was asymmetrical within the top management team due to internal conflicts. In company D, which prematurely ended its participation, management involvement was high at the beginning but faded after the first year. The reason given by the

CEO was operational challenges related to rapid growth. In successful company C, management involvement was more open-minded. Before entering, the managers' time was very limited due to operational challenges, but after entering, their involvement was high throughout the project.

Leadership style

Leadership style was identified in three research articles as being either an enabler or hamperer of the implementation of HK, lean production and TQM in small companies (Lande *et al.*, 2016; Nicholas, 2016; Yusof and Aspinwall, 1999, 2000, 2000). Several studies emphasize that personalized management in small companies is related to leadership style and influences decision-making (Cagliano and Spina, 2002; Hudson Smith and Smith, 2007; Mendes and Lourenco, 2014). However, none of them has detailed the appropriate leadership styles in the small firm context. According to Mothersell *et al.* (2008), HK encourages managers to use a participative leadership style. Participative leadership resembles a transformational leadership style that can be explained by words such as pride, confidence, respect, communication, coaching and adaptation (Saenz, 2011).

It is difficult to evaluate the participating managers according to leadership style as we observed them only during interviews and workshops. From their direct statements, however, it was clear that the dominant leadership style in company A opposed coworker participation. In one workshop, a manager in company A reported on a historical attempt to inform the employees about the company status. The absence of direct interest from the employees was interpreted as general laziness, and the result was that all further informational activities were canceled. In company C, on the other hand, the owner-managers openly declared their ambition to engage coworkers more in decision-making when the project started. A similar attitude was detected in companies D and E. The leadership in company B was classified as neutral because the researchers were unable to decide how participative the leadership style was on the basis of interviews and workshop participation.

Management team

HK is an iterative and structured process for working with strategic objectives (Tennant and Roberts, 2001) that starts with top management agreement on future ambitions, current conditions and challenges. In the small company literature, studies have reported that top management often consists of a limited number of managers, and there is often only one top manager due to flat organizations (Hudson Smith and Smith, 2007). Does this absence of a formalized top management team jeopardize the implementation of the HK management system?

Prior to the project, company E was the only case company that had organized formal top management team meetings. Over time, it became obvious that the lack of an organized top management team hampered the implementation process in companies A, B and D. Even though this issue was repeatedly addressed in workshops and interviews, the case companies hesitated to invite middle managers to participate in a formal top management team. In case company C, the initial lack of a top management team was addressed early in the process, and after a few workshops, a functioning top management team was at work.

Change acceptance

One of the main elements of HK is experimentation. The core idea is that coworkers should take ownership and experiment with strategic activities in operations (Tennant and Roberts, 2001; Kesterson, 2014). Both the acceptance of continuous experimentation and the involvement of coworkers are recognized by Tennant (2007) as being related to

organizational culture. Organizational culture and change acceptance are also emphasized in the TQM and lean production literature (cf., [Achanga et al., 2006](#); [Dora et al., 2016](#); [Sahoo and Yadav, 2018](#)).

The three CEOs of companies C, D and E were all open to organizational change and testing new ways of working. Given the financial stress in company E, management was very open to radical change. In company A, the informal top management team was divided when it came to change acceptance, and in company B, we classified the culture as rather resistant to what managers believed to be radical change, such as including employed managers in the top management team.

Internal communication

The importance of internal communication has clearly surfaced in the literature (see, for example, [Alaskari et al., 2014](#); [Knol et al., 2018](#); [Nicholas, 2016](#); [Yadav et al., 2019](#)). Communication is pivotal in HK as strategies should cascade down through the organization, and activities should be monitored from the bottom up. However, in HK, communication is not equal to informing. Rather communication can be characterized as an open-minded negotiation in the first planning phase (Hoshin) and learning-oriented reflections in the follow-up phase (the Kanri phase).

Prior to the implementation of HK, none of the case companies except company E communicated formally with the employees. Problems were generally solved during coffee breaks or informal meetings in the corridors. Early in the implementation of HK, the more successful companies, C and E, routinized short regular meetings with employees to identify and solve operational problems. The arenas created by the meetings in these two companies became essential as they opened up more extensive communication and a catchballing process of ideas and challenges. In companies A, B and E, the initial absence of arenas for communication gradually became a major obstacle in the implementation process.

The seven factors – in conclusion

From the extensive literature review on factors affecting the implementation process in small firms, eleven factors surfaced. When analyzing the five implementation processes in our five case companies, six of those factors plus one new factor (top management team) surfaced as being of importance when implementing HK. These seven factors have now been analyzed empirically.

The results of the analysis stress the importance of all seven identified factors for the implementation of HK in small manufacturing firms. However, the importance of the factors differs in a sometimes unexpected way. We conclude that the existence of antecedents such as organizational structures and systems that support the implemented change are important. This issue surfaced in factors such as strategy work, management team and internal communication structure. All three factors represented a cultural web in the five case companies ([Johnson, 2000](#)). Surprisingly, the initial lack of formalized strategy work over time was balanced by the CEOs' strategic awareness, making this initially hampering factor more neutral.

The initial status of internal communication that was of long-term importance during the implementation process was strongly related to the following more processual factors: the long-term focus, leadership style, management involvement and change acceptance. In particular, the existence of a participative leadership style, including communicative abilities, seems to be strongly related to internal communication.

Except for management involvement, all four factors were enabling in the case companies. However, management involvement is the most complex factor that surfaced in our data.

When comparing companies C and D, the initial involvement of management was very similar. However, over time, managers in company C involved themselves extensively, and managers in company D ended their participation in the implementation project prematurely. Therefore, in our analysis, management involvement was identified as the factor most strongly related to the implementation *process*. Consequently, we wonder whether management involvement (over time) represents the key factor that determines HK implementation success in small manufacturing firms.

Successful and failed implementation processes

Essential for the answer to this question is how success is defined. In a 25-year longitudinal study of 55 managerial decisions, [Miller *et al.* \(2004\)](#) concluded that even with a long-term perspective, it is difficult to evaluate performance outcomes in implementation processes. As years pass, the realized results are affected by a multitude of developments. For instance, how should we, in our study, interpret one of our more financially successful case companies, company E, changing ownership a year after the project ended? Does that represent a success or a failure? Is it a failure that the CEO of the same company resigned after another year and that most results of the implementation process therefore slowly evaporated?

In the sample of five case companies in this study, the choice was to apply a qualitative evaluation of the performance outcome. Two of the companies in the research project (A and D) ended their participation prematurely. When we contacted the CEOs a year after closure, few substantive effects from the implementation project remained in these companies. This led us to classify them as implementation failures. In evaluating the three remaining participants, we concluded, more than two years after the project ended, that company C stands out as having achieved a considerable improvement both financially and in further developing the HK management system. In company B, efforts to continue HK implementation are still ongoing, and in company E, as reported above, implementation efforts faded due to ownership and management succession.

Success and management involvement (over time)

Concluding that company C represented the successful case, and companies A and D represented the clear failures, we now return to the question stated above: is management involvement (over time) the key factor that determines HK implementation success in small manufacturing firms?

[Welsh *et al.* \(1982\)](#) argued that one vital condition that characterizes small manufacturing firms could be labeled resource poverty. This term encapsulates the loneliness of top managers in the small firm context. As CEOs of small firms suffer from resource poverty and, more precisely, a lack of managerial resources, this forces them to become generalists with broad knowledge on a wide array of topics and functions ([Tell, 2015](#)). This fosters independent and resourceful CEOs who are accustomed to making their own decisions. Given this condition, the implementation of a management system (HK) that limits the CEOs' scope and involves employees in the decision-making process represents a radical change. This radical change combined with the internal conflict explains the failure in company A.

However, in both companies C and D, top management recognized the need to undertake the major change represented by the implementation of HK, and management in both firms was initially involved. In [Pearce *et al.*'s \(2018\)](#) terms, both of these teams had decided on *what* they should engage in. Over time, however, the level of management involvement came to differ considerably, and eventually, company D abandoned the project. In analyzing the difference between the two companies, we conclude that it was not the intention or the initial level of management involvement that differed; rather, it was a question of *how* the

owner-managers involved themselves when entering the project. Theorizing on the differences in how owner-managers in companies C and D involved themselves, we propose two types of management involvement: the collaborative and demanding involvement types.

The collaborative involvement type, based on company C, is based on a partnership view. The internal and external participants are all engaged in the project together and strive to achieve joint ambitions. This type is based on curiosity, open-mindedness and eagerness to learn and explore. This curiosity drive is, however, balanced with a need for self-discipline. Hence, the experiments driven by curiosity should be organized and structured, building a foundation for systematized learning. This systematized learning is not limited to self-learning. The collaborative involvement expressed by the partnership involves important others. In the case of the small manufacturing firm, these important others are all employees. Therefore, a coaching attitude is linked to collaborative involvement. The core question repeatedly asked in the collaborative type is explorative: WHY?

The demanding type of management involvement, based on company D, is transactional in nature. For this type, we borrow the market model, where a small firm assumes the role of a customer in the process of buying a service. To be a successful customer, the owner-manager must economize with scarce resources. In this situation, the scarce resource is the owner-manager's time. To avoid wasting time, the owner-manager strives to evaluate the potential value added in the offered product or service (the HK strategic management system). Therefore, to gain the approval of the owner-manager, it is vital that the management system is carefully packaged, tested and evaluated. It follows that employees are not involved in this evaluative phase of the process. The evaluation process is eased if the product/service is functionally oriented, that is, addresses a clearly defined functional problem. In the case of the HK management system, this is problematic as the systemic qualities resist functional pigeonholing. In the demanding type of involvement, the core question asked is exploitative: WHAT?

Types of managerial involvement and learning in small firms

The present study of an implementation process illustrates a learning process. As such, this study contributes to a rather novel stream in the small firm research literature (Blackburn and Kovalainen, 2009). Reviewing the literature on learning in small firms, Jones and Macpherson (2014) conclude that the learning context represents a vital factor when the aim is to understand how learning processes develop. Following this, contextual differences between more inbound or outbound learning processes have been detected (Zhang *et al.*, 2006). Differences in the literature are often related to a firm's operational nature. Bell *et al.* (2004), for instance, argue that the operational nature of "knowledge intensive firms" and "small manufacturing firms" can be related to their learning nature. Knowledge-intensive firms practice open, strategic and forward thinking, whereas small manufacturing firms tend to be cautious, incremental and inward looking.

In the present study, the empirical data are homogeneous in this respect as all five case companies represent what Bell *et al.* (2004) classify as small manufacturing firms. Within this homogeneous context, we identify two distinct types of management involvement. Therefore, the results of this study question the assumed relationship between the operational nature of firms and *how* managerial involvement develops in implementation processes.

A further learning-oriented framework that could be more attractive, as it downplays the importance of the firm's operational nature, was introduced by Miles *et al.* (1978). This framework also contributes to our understanding of strategic behavior in the small manufacturing firm context (Davig, 1986; O'Regan and Ghobadian, 2006). In this framework, the prospector reminds us of the collaborative type in our study. However, an important difference is that the collaborative type in our study is not hampered by the low profitability

and overextension of resources characterizing Miles and Snow's prospector type. In contrast, the collaborative type secures implementation success by focusing organizational resources on a specific project and does not continuously explore change, like Miles and Snow's prospector type.

The similarities between the analyzer type in Miles and Snow's framework and the demanding type of involvement in this study are, however, more fruitful. According to Miles and Snow, the viability of the suggested change must first be proven before the analyzer makes a move. It could be argued that company D, representing the demanding style in this study, undertook such a validation process when entering the research project. The resulting "failure" (i.e. the abandonment of the project) should in this interpretation be the result of a negative outcome of the validation process. In this case, analyzers' inherent difficulty in continuously maintaining the balance between exploration and exploitation while validating opportunities in the environment in an ongoing manner is illustrated in the present study.

Considering the limited data in our study, we can only theorize on the relationships between types of managerial involvement and the small manufacturing firm's learning process. We hope these initial attempts encourage future research in this novel stream of the small firm research literature (Blackburn and Kovalainen, 2009).

Conclusions and contributions

The purpose of this paper was to develop knowledge on the implementation of strategic management systems (i.e. HK) in a distinct setting: small manufacturing firms. We formulated two research questions that guided this purpose: what factors influence the implementation of HK in small manufacturing companies? How do the identified factors influence the implementation of HK in small manufacturing companies?

Based on the literature review and analysis of the implementation process in five small manufacturing firms, we conclude that management involvement is essential for the successful implementation of HK in small manufacturing companies. However, we further propose that it is not a solely a question of the level of involvement but it is also a question of *how* top managers involve themselves. As a result of this finding, we theorize about two types of managerial involvement: the collaborative and the demanding type.

This paper makes three important contributions.

First, this study represents an attempt to delimit the study to a specific context, i.e. small manufacturing firms. Our aim was to make the results more applicable. The delimitation to a specific context (small manufacturing firms) was not without difficulties as most research to date has been rather vague in regard to defining the empirical context (Mazzarol and Reboud, 2017). As a result of this general vagueness, we were not as stringent in the design as we originally intended to be. However, even if this represents a limitation of this study, we believe the attempts set an example for future research in the SME sector. Following Blackburn and Kovalainen (2009), we encourage future studies investigating the SME sector to provide more detailed discussions regarding the empirical context and result applicability.

Second, in our analysis, we identified the managerial involvement factor as essential for the understanding of implementation processes in small manufacturing companies. With reservations owing to the limited data available in this study, we argue that managerial involvement is the most crucial factor when studying implementation processes in the small manufacturing context. Therefore, *we propose that managerial involvement represents a crucial factor for implementation projects in small manufacturing firms.*

Third, we theorize about the existence of managerial involvement types in implementation processes. We propose that there exist two distinct types, the collaborative and the demanding types. Relating these types to research on learning processes in small firms, we identify similarities but also important dissimilarities. Therefore, *we propose that two distinct*

Managerial implications

The results presented in this paper, which are summarized in two propositions, represent only one preliminary step in the building of knowledge concerning small manufacturing firms' behavior. Therefore, we encourage further studies to assume this task and test our propositions regarding both the importance of managerial involvement and the presence and role of the collaborative and demanding styles of involvement. Given that our findings are confirmed, the managerial implications are substantial.

When we turn to managerial implications, we first must underline that we in this paper made a deliberate decision to focus on small manufacturing firms as we believe this focus offers an opportunity to develop theories that are more adapted to the specificities of these firms. We believe a consequence of this choice is that the practical use of the results will improve.

One apparent specificity in small manufacturing firms is the managers' apparent need for prioritizations (Tell, 2015). This prioritization issue also surfaced when implementing HK. The main result in this study is, however, that the prioritization argument can be qualified and that it is not so much a matter of the amount of time spent on implementation. The issue is rather to decide on how to best invest the available time. Consequently, the efficiency gains can be considerable if managers in small manufacturing firms more closely evaluate *how* they should involve themselves in potential implementation projects. Given this conclusion, we suggest a brief checklist aimed at the evaluation and implementation of strategic management systems but perhaps also to be used more widely in implementation processes.

After evaluating the specific development need in question, we suggest that managers in small manufacturing firms should reflect on their favored style of management involvement. Here, we provide inspiration with our conceptualization of the collaborative and demanding styles. Where the collaborative style is based on a partnership view, curiosity, open-mindedness and an eagerness to learn and explore. This type also assumes the involvement of a wide array of organizational stakeholders. The demanding style, on the contrary, is more transaction- and functionally oriented. A type focused on a fast return of investment, and therefore see no need to involve more than the immediate stakeholders.

After these two initial steps, managers should carefully evaluate the congruence between available management systems on the market and their development needs. Fourth, they should pay due attention to the congruence between their preferred management involvement style (collaborative or demanding) and the suitable implementation process in the available options.

Fifth, they should evaluate the nature of both of these congruencies (available management systems versus need and suitable implementation process versus preferred managerial involvement style) when carefully selecting the management system. Given the results from this study, they should, in this selection, view both congruences as equally important. This is because the congruence between the suitable implementation process and their preferred style of management involvement has been shown to be crucial for implementation success.

Finally, we advise managers in small manufacturing firms to detail their learning from the steps above. As discussed, the two types of managerial involvement conceptualized in this study will most likely infer different learning processes and different learning outcomes. It is therefore important to develop and maintain a more general learning orientation within the entire implementation process so that managers can evaluate the results of their decisions. As previously concluded, one specificity of managers in a small manufacturing firm is that they must attend a wide array of work tasks (O'Gorman *et al.*, 2005), and as no one can be an expert

on everything, this will inevitably lead to decision-making mistakes. With a sincere learning orientation, the effects of these mistakes can be minimized and even transformed into valuable learning.

Note

1. Most statistical overviews focus on the entire small and medium-sized enterprises (SMEs) sector. In the literature, the reported importance of SMEs is undeniable. Karmel and Bryon (2002, p. 28) report, for instance, that SMEs make up more than 99% of all companies in the EU and the US. In addition, Storey (2016, p. 7) concludes that “small firms, however they are defined, constitute the bulk of enterprises in all economies in the world.” In this paper, we focus on one vital part of this sector: small manufacturing firms (10–49 employees).

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