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Making sense of lean implementation

Study of a manufacturing MNC

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ABSTRACT:
Lean is a key approach for companies seeking to improve efficiency, reduce waste, and increase customer value, particularly in global markets. Although lean operations have been widely studied, research gaps remain concerning how managers commit to lean implementation during its early stages. The initial phase of implementation is critical, as it shapes managers' perceptions of lean and significantly influences their commitment and the prioritization of implementation efforts. Identifying critical success factors helps clarify the prerequisites for commitment, such as top management support, increasing lean awareness, and defining a shared vision. Examining these factors in a multinational context where implementation is more complex due to cultural and environmental differences provides valuable insights into strengthening commitment across different organizational levels and units.

The results highlight the importance of a clear and effectively communicated lean vision for fostering managerial commitment in the early stages of the implementation. Furthermore, the research emphasizes the development of lean awareness and training at all organizational levels to deepen understanding of the implemented practices and reduce resistance to change. The study also identifies that organizational changes, such as mergers and leadership transitions, can act as catalysts for strengthening lean expertise and as opportunities to promote successful adoption.

KEYWORDS: lean thinking, realization (implementation), perceptions, committing oneself, international corporations

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TIIVISTELMÄ:
Lean on keskeinen lähestymistapa yrityksille, jotka pyrkivät parantamaan tehokkuutta, vähentämään hukkaa ja lisäämään asiakasarvoa erityisesti globaaleilla markkinoilla. Vaikka lean-toimintaa on tutkittu laajasti, on edelleen havaittavissa tutkimusaukkoja liittyen siihen, miten johtajat sitoutuvat leanin toteuttamiseen sen alkuvaiheissa. Implementoinnin varhainen vaihe on ratkaiseva, sillä se muovaa johtajien käsityksiä leanista ja vaikuttaa merkittävästi heidän sitoutumiseensa sekä implementoinnin priorisointiin. Kriittisten menestystekijöiden tunnistaminen auttaa ymmärtämään sitoutumisen edellytyksiä, kuten ylimmän johdon tuen, lean-tietoisuuden lisäämisen sekä yhteisen vision määrittämisen merkitystä. Näiden tekijöiden tarkasteleminen monikansallisessa kontekstissa, jossa implementointi on monimutkaisempaa kulttuurillisten ja toimintaympäristöön liittyvien erojen vuoksi, tarjoaa arvokasta tietoa sitoutumisen vahvistamisesta eri organisaatiotasoilla ja -yksiköissä.

Tutkimus tarjoaa käytännön näkökulmia johtajille ja organisaatioille, jotka jalkauttavat lean-käytäntöjä monikansallisissa ympäristöissä. Tulokset korostavat selkeän ja tehokkaasti viestityn lean-vision merkitystä johtajien sitoutumiselle jo prosessin alkuvaiheissa. Lisäksi tutkimus painottaa lean-tietoisuuden ja koulutuksen kehittämistä organisaation eri tasoilla, jotta ymmärrys implementoitavista käytännöistä syvenee ja muutosvastarinta vähenee. Tutkimus myös tunnistaa, että organisaatiomuutokset, kuten yritysostot ja johdonvaihdokset, voivat toimia kannustimena vahvistaa lean-osaamista sekä mahdollisuutena edistää sen onnistunutta käyttöönottoa.

AVAINSANAT: lean-ajattelu, käyttöönotto, käsitykset, sitoutuminen, kansainväliset yritykset

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1 Introduction

Manufacturing companies are constantly developing their production processes in order to make them more competitive and dynamic (Lodgaard et al., 2016). In hopes of reducing waste, increasing efficiency and improving customer value, many companies, especially in the manufacturing sector, have adopted lean practices in their processes (Sinha & Matharu, 2019). In addition to organizational interest in lean methods, the topic has also emerged rapidly in academic literature during the last decades (Sinha & Matharu, 2019). Even though lean practices and their implementation in various organizational contexts have been widely researched, some literature gaps still emerge.

Lean management is a methodology that originally stems from Toyota's production practices called TPS (Toyota Production System) (Bortolotti et al. 2015). It was successfully implemented by other Japanese manufacturing enterprises and later on spread out to western companies, drawing the attention of managers and scholars globally (Womack, 1996). Lean production is centered upon value creation and waste reduction (Heizer & Render, 2004; Pettersen, 2009; Wickramasinghe & Wickramasinghe, 2017). In lean, waste refers to everything that does not create value for the customer including "overproduction, waiting times, unnecessary movement of materials, inappropriate processing, inventory, defects, underutilization of people, environmental waste, and underutilization of facilities" (Wickramasinghe & Wickramasinghe, 2017, pp.532-533). Moreover, lean practices are based on a philosophy that focuses on the development and continuous improvement of business practices and processes: "At the heart of lean is its philosophy, which is a long-term philosophy of growth by generating value [--], with the objectives of reducing costs, improving delivery times, and improving quality through the total elimination of waste" (Wilson, 2010, p.59).

According to Pakdil and Leonard (2014), lean can potentially enable companies to attain competitive processes with high efficiency, productivity and quality as well as improved logistics regarding delivery time and stock management. However, Pakdil and Leonard (2014) also find that, in order for companies' lean efforts to be successful, the

implementation requires the practices to be applied across all organizational functions. Furthermore, as described by Januszek et al. (2024, p.54) “many organizations struggle to manage such programs, obtaining disappointing results and losing momentum in their implementation efforts”. Thus, while the relationship between lean and its effects on operational performance have been studied comprehensively, Januszek et al. (2024) state that understanding the link between organizational behaviors and the outcome of lean implementation requires further research. Moreover, Jurburg et al. (2019) also present that in many cases, existing literature finds that organizations abandon lean activities due to human factors such as change resistance and lack of incentives (García et al., 2014; Almeida Marodin & Saurin, 2015). Therefore, Jurburg et al. (2019) state that there is a significant research gap regarding understanding behavior determinants and decision-making processes related to the lean activities participation.

According to Mostafa et al. (2103, p. 59), lean implementation can be divided into stages that include “conceptualization, implementation design, implementation and evaluation, and complete lean transformation”. Similar definition of the lean implementation process is also found in other literature, for example, Belhadi et al. (2016, p.804) divide implementation into “pre-implementation, implementation, and post-implementation” stages. Therefore, lean implementation can be roughly divided into a preparatory or conceptualization phase, actual implementation phase, and finally a completion phase. By discussing the conceptualization phase of lean, it is possible to gain insight into the sense-making process of managers during the initiation of lean. Since we know less about managerial sense- and decision-making during lean implementation (Malik & Abdallah, 2020), there is even less knowledge about sensemaking in specific lean implementation stages.

Some stages are less explored than others, yet, are very important in the entire lean implementation process. For example, discussing the initial stages enables the exploration of lean success factors. To be more precise, the initial stages provide the structural framework for the exploration, whereas critical success factors constitute the essential

determinants of whether the actions and strategic decisions within the specific stage are successful. “While there is an expansive body of research that has studied various technical aspects of CI, there is only a limited research available on its critical success factors (CSFs)” (Sreedharan et al., 2018, p.3480). As Sreedharan et al. (2018) state, a literature gap emerges related to the critical success factors of continuous improvement (CI). Moreover, they conclude that “the CSFs of any organizational initiative helps managers realize their critical information needs, the management team to think about priorities for the information systems and as an aid in the implementation of the initiative” (Sreedharan et al., 2018, p.3482). Thus, understanding the critical success factors of lean implementation can provide insight into the managerial sense-making of critical needs and priorities during the conceptualization stage of lean. Moreover, by identifying critical success factors that shape managerial sensemaking, organizations can ultimately reduce implementation barriers and enhance the effectiveness of change initiatives.

In addition to the CSFs of lean initiation, even less is known about the successful lean implementation in the context of a multinational corporation (MNC). As companies internationalize, they face major challenges with transferring lean practices to their foreign operation sites that can possibly “differ widely in their implementation of lean practices” (Danese et al., 2017, p.468). As stated by Danese et al. (2017), existing literature considers the transfer of practices as a complex and multi-staged process, which complicates further when the transfer occurs in a multinational context. Also Lin and Hsieh (2010, p.52) mention that international strategy implementation in multinational corporations is a “critical strategic management issue for MNCs”. Furthermore, various literature emphasizes organizational capabilities, international coordination and configuration as important factors in the effective international implementation of strategies (Lin & Hsieh, 2010). Thus, exploring lean implementation in MNC context requires further attention and exploration.

1.1 Objectives and research questions

The thesis addresses a research gap in the existing literature by examining how managers make sense of lean during the early stages of its implementation in multinational corporations (MNCs). Since lean implementation often involves significant organizational and operational change, managers have a key role in interpreting and framing what lean means within their organization. As Malik and Abdallah (2020) argue, overlooking the socio-cultural dimension can undermine a sustainable transformation. Therefore, the thesis utilizes a sensemaking perspective, as it enables an exploration of how managerial perceptions shape the meaning and purpose of lean and how these perceptions affect the managers' intention and ability to commit to its implementation. In doing so, the thesis examines several interconnected themes, including how managers make sense of the early stages of lean, the factors regarded as critical for successful lean implementation and the challenges specific to multinational contexts. By linking these perspectives, the thesis seeks to provide deeper insight into why companies are hesitant of deeply committing to lean. Thus, the main objective of the thesis is to answer the following research question.

RQ: *How are managers making sense of lean during the initial stages of its implementation in MNCs?*

To examine the topic further, the thesis also aims to discuss the following objectives.

1. *To explore the initial phases of lean implementation in MNCs*
2. *To define the key success factors for lean conceptualization in MNCs*
3. *To identify the antecedents of managerial commitment to lean in MNCs*

1.2 Structure of the thesis

The thesis is structured into five main chapters. Chapter 1 introduces the research topic by providing a brief background into the topic and its significance to academics and practitioners. In addition, the introduction outlines the research questions and subsequent

research objectives. Chapter 2 presents the literature review, which establishes the theoretical framework for the thesis. The literature review first discusses lean implementation in MNCs, with particular attention to the initial stages of implementation. It then explores managerial sensemaking and the antecedents of management commitment. In doing so, the thesis further highlights the research gap that the thesis seeks to address. Chapter 3 describes the research methodology, explaining the qualitative research design, the use of semi-structured interviews for data collection and the application of abductive thematic analysis to uncover emerging themes and patterns. Chapter 4 presents and discusses the findings of the empirical analysis. The discussion is structured around three main themes including perceptions about lean, organizational motivation to implement lean, and managerial commitment to lean. Finally, chapter 5 concludes the thesis with the theoretical and practical implications of the findings, along with limitations and suggestions for future research on the topic.

2 Literature review

2.1 Lean implementation in MNCs

Lean strategies are becoming more and more utilized all over the world, and not just locally but also by international companies. According to Friel (2005, p. 50), “Multinational corporations are continually looking for best practices to implement at their facilities throughout the world”. However, not all companies that implement lean, are able to either gain significant improvements or sustain the results in long term (Mostafa et al. 2013). Moreover, Mostafa et al. (2013, p. 44) state that one of the main reasons for not being able to attain lean improvements, “is the incomplete understanding of the lean concept and the purpose of the lean practices”. Some companies are not fully aware of the long-term commitment to lean initiatives, while others have assessed the scope of implementation incorrectly (Baker, 2002). On the other hand, companies can also run into problems when applying the lean practices. According to Mostafa et al. (2013), misapplications are often related to using the wrong tools for a particular problem or using the same tools when solving a set of different problems. Furthermore, misapplying lean strategies often leads to wasting resources and ultimately reduces confidence in lean, across organizational levels.

In addition, as multinational companies implement lean, it is common for them to implement same strategies across their facilities (Friel, 2005). Nevertheless, this can hinder the lean initiatives implementation or even cause it to fail. According to Friel (2005, p. 50), “some problems in implementing such practices cross-nationally can be linked to differences in institutional environments”. Furthermore, they state that managers must understand how the different settings could affect the viability of lean strategies and their implementation. As the misunderstanding of lean restricts its implementation, it inherently reduces the organization’s outcome expectations (Mostafa et al. 2013). Thus, it is important to understand what the initial stages of lean are, before implementing the strategies in practice. By reviewing the conceptualization phase of implementation, it is

possible to gain insight into the steps companies and managers need to take when planning to initiate lean strategies, and what the prerequisites for that initial stage are.

2.1.1 Initial stages of implementation

Existing literature emphasizes comprehensive sequencing of initiatives during lean implementation (Mostafa et al., 2013). Furthermore, according to Mostafa et al. (2013), an inadequate sequencing of project elements has been even considered as one of the most vital barriers of successful lean implementation. Hence, it is important to understand the vital steps of lean implementation and their sequencing during the process. As the thesis focuses on managerial sense-making during the initiation of lean implementation, the objective is to gain insight into the very initial stages of implementation and understand what the success factors during the initial phase are. Moreover, understanding the sequencing of actions within the initial phase is also essential.

In their research, Mostafa et al (2013) present a framework for lean manufacturing implementation. The framework consists of four implementation phases, with proposed actions, tools and practices for each phase. According to Mostafa et al (2013), the framework is developed to achieve practicality in implementation and thus effective lean outcomes. Moreover, the framework is designed to establish implementation in sequences from conceptualization to complete transformation by utilizing the outputs of each phase as the inputs of the next phase.

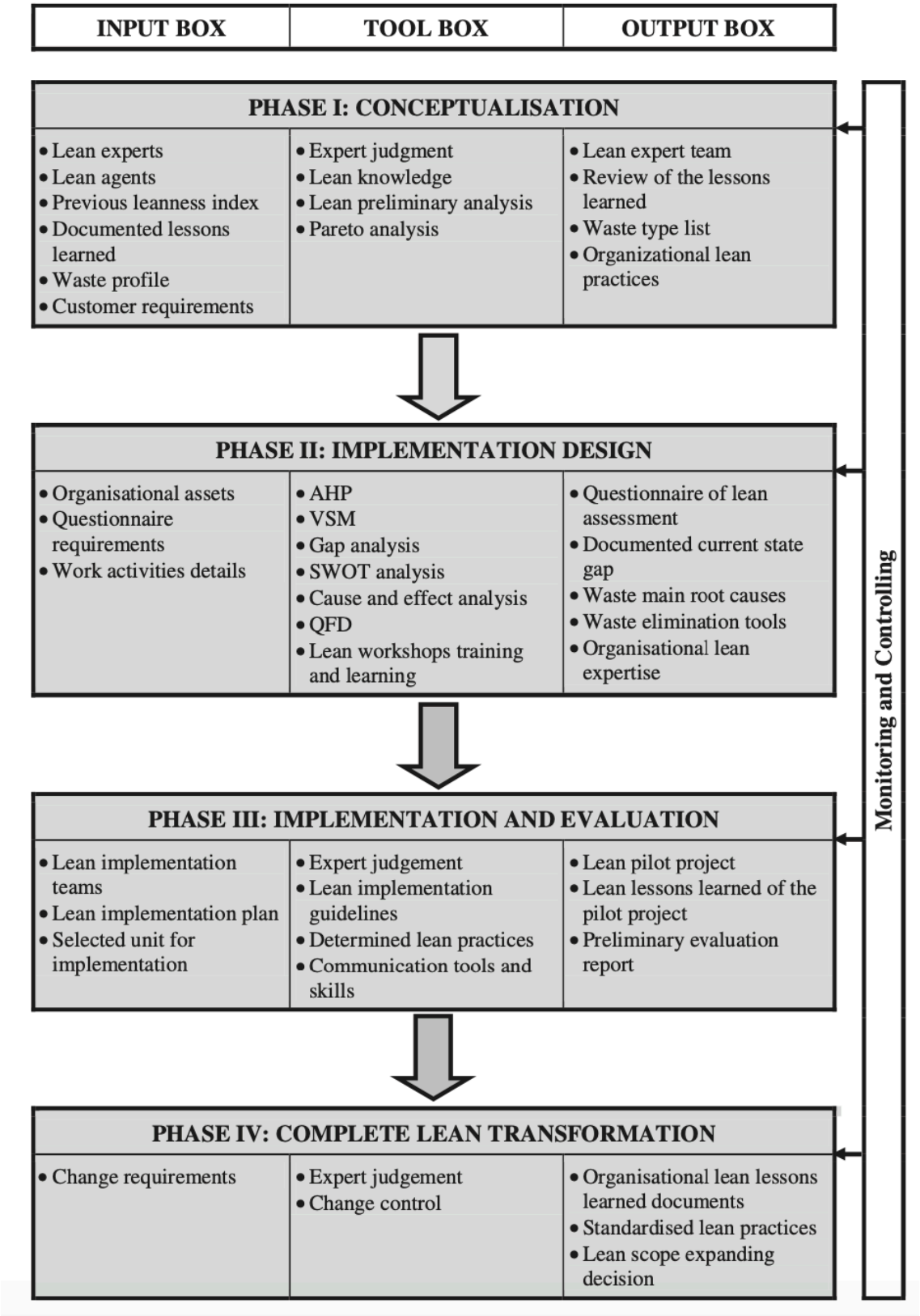

Figure 1. A framework for lean implementation (Mostafa et al., 2013, p.59).

The first phase in the framework presented by Mostafa et al. (2013, p.59) is conceptualization of lean, which starts off the implementation. It prepares the company and the team involved in the implementation by selecting the scope, training the personnel and bringing in expert knowledge. In addition to lean knowledge and principal data being transferred, the conceptual phase also urges the organization to explore lean benefits. By understanding lean concepts and its effects, the team can expect an enhanced mindset towards the implementation process (Mostafa et al., 2013).

In phase one, the framework (Mostafa et al., 2013) refers to lean experts and lean agents. According to Magnani et al. (2024), lean experts act as both technical experts as well as organizational influencers. In a technical aspect, lean experts configure and later on control processes, whereas "from a more interactional perspective, lean experts' roles are first and foremost about organizational change, followed by collective organizational learning" (Magnani et al., 2024, p. 1058). Hence, lean experts not only share knowledge and generate concepts but also act as change agents who drive the organization towards lean adoption. A change agent during lean implementation can also be addressed as a lean agent. Their role is to "introduce and trigger changes in the organization" (Cimermančič et al., 2022). According to Ulrich (1996) lean agents promote and sponsor change by taking initiative and supporting management in the implementation process. Moreover, lean agents moderate the change process and demonstrate the introduced change activities for the organization.

The framework also refers to terms such as previous leanness index, waste profile and pareto analysis. These tools are utilized to define the organizations current state before lean implementation. Leanness index measures "the degree of lean adoption or implementation in the organization" (Yadav et al., 2019). Moreover Yadav et al. (2019) determine that leanness index not only defines the current level of leanness in the organization but also provides guidance for managers on parameters that can be utilized in the upcoming phases of implementation. Another key element in determining the current state of the organization and its processes is defining the waste profile. It includes

identifying key waste types in the organization. As stated by Douglas et al. (2015, p. 974), “before waste can be removed it must be recognized”. They also conclude that in order to remove waste, its root causes need to be understood and addressed. Furthermore, when determining the organizations current state, lean tools such as pareto analysis can be utilized. Pareto analysis stems from the pareto principle. In essence, the principle suggests that “the majority of the quality losses are mal-distributed in such a way that a “vital few” quality defects or problems always constitute a high percent of the overall quality losses” (Karim & Rahman, 2012, p. 1727). Thus, the pareto analysis intends to distinguish the vital issues from the trivial ones. According to Karim and Rahman (2012, p. 1727), “the pareto analysis can assist to identify the most important effects and causes to stratify the valuable data which can be used to prioritize the product-process improvement efforts”.

The second phase is implementation design. This phase develops a plan for lean and further prepares the lean team for practical implementation (Mostafa et al., 2013). The phase includes identifying the current state of lean practices within the organization as well as identifying requirements or areas of improvement through different types of analysis. The implementation design phase utilizes a set of tools for the analysis, such as SWOT, value stream mapping and analytical hierarchy process. By using these tools, the framework aims to establish following outputs from the second phase: documented gap between the current and required state, discovered root causes for waste, established waste eliminations tools, and accumulated lean expertise within the organization (Mostafa et al., 2013).

The framework introduces a variety of lean tools that can be applied when designing lean implementation (Mostafa et al., 2013). Analytical hierarchy process (AHP) is a decision-making tool that utilizes multiple criteria and can be applied to both tangible and intangible criteria (Vargas, 1990). The model is “based on the principle that, to make decisions, experience and knowledge of people is at least as valuable as the data they use” (Vargas, 1990, p. 2). In lean implementation, AHP can be utilized to evaluate and

select lean concepts through multiple criteria decision making. In a case study conducted by Vinodh and Shivraman (2012, p. 134), it was concluded that AHP "enables decision makers to select the best lean concept for implementation which leads to business prosperity". Another tool presented in the framework is value stream mapping (VSM) (Mostafa et al., 2013). According to Seth et al. (2017, p. 1), VSM is "acknowledged as an important; enterprise improvement methodology capturing both inter- and intra-company level details in visualizing the entire process, apprehending material and information flows with the timeline". Moreover, VSM can be applied in lean facilitation as it enables the reduction of waste through its ability to detect "value-adding (VA) and non-value-adding (NVA) components of a process" (Seth et al., 2017, p. 1).

In addition to AHP and VSM, the framework mentions GAP analysis and SWOT as useful tools in the lean implementation design (Mostafa et al., 2013). As summarized by Wan et al. (2014, p. 14). "GAP analysis (which stands for 'Good', 'Average' and 'Poor') is a tool used to compare the actual performance with the expected or 'target' performance". The objective of the model is to identify the organization's current situation and needs, determine the organization's desired state, draw attention to the gaps that occur between the current and the desired state, and finally help managers to devise and implement actions to fill the gaps (Kim & Ji, 2018). SWOT analysis is a tool utilized in strategic decision making. It is used to analyze the strengths, weaknesses, opportunities and threats, thus providing a basis for an evaluation of the organization's internal and external environments (Benzaghta et al., 2021).

Moreover, the framework also refers to cause and effect analysis, root cause and QFD. Cause-effect and root cause analysis go hand in hand, as the purpose of both analyses is to examine and resolve the real causes of problems. The analysis relies on peeling away the layers of issues, with the aim of figuring out what are the symptoms of the issue and what is the real root cause (Gangidi, 2019). The key objective is to be able to address and prevent the root cause as "a corrective action for a symptom is not effective in eliminating the cause" (Gangidi, 2019, p. 299). QFD or quality function deployment, can be

utilized as a planning tool to translate “needs into technical specifications” (Reda & Dvivedi, 2022, p. 2). According to Reda and Dvivedi (2022), it can improve and ease decision making and can be utilized in lean implementation for example through lean enabler prioritization.

Phases three and four focus on final implementation and complete lean transformation. The third phase executes the designed implementation plan as well as evaluates the effectiveness of the plan (Mostafa et al., 2013). Womack and Jones (1997) suggest that the implementation should start from fixing the most obvious issues, thus beginning at the most troubled unit in the organization. Furthermore, it is suggested to carry out a pilot project to trial the implementation design (Mostafa et al., 2013). The objective is to ensure that the implementation strategies are effective and efficient. Moreover, preliminary evaluation should be conducted of the trial and reiterated during the final implementation to validate and standardize results. In the fourth and last phase, the framework focuses on completing the lean transformation by documenting lessons learned during the implementation, establishing lean standards and planning of expanding the scope of lean in the organization (Mostafa et al., 2013).

The framework presents lean pilot projects as one of the key outputs during lean implementation (Mostafa et al., 2013). Pilot projects are a way for companies to test out a new initiative in a more controlled and restricted manner. It allows management to learn key take-aways from a smaller scale implementation, before implementing the initiative company-wide (Davidson & Büchel, 2011). Moreover, it allows management to make necessary changes for the final implementation, regarding both design and execution. As mentioned by Davidson and Büchel (2011, p. 79),” if this pilot succeeds in demonstrating the value of the new practice, top management will roll out the initiative regionally or globally to realize its full economic and strategic value”.

Another key tool mentioned in the framework is change control (Mostafa et al., 2013). Change control is a necessary tool especially in the last phase of total lean

transformation, during which the scope of the implementation is broadened, and the chosen lean practices are implemented company wide. Change control refers to the process of adjusting control in corporations “to respond to changing corporate and subsidiary strategies” (Stendahl et al., 2021, p. 409). Moreover, according to Stendahl et al. (2021, p. 409),” to ensure the strategic alignment of foreign subsidiaries, headquarters need to select and use an appropriate mix of control mechanisms, or a control approach, to control subsidiaries, including the centralization of decision-making”. Thus, change control is essential in enabling successful lean transformation, especially in multinational corporations, as it helps the organization to align the whole company towards the same goal of lean implementation.

The framework presented by Mostafa et al. (2013) describes the key phases during lean implementation. Moreover, it provides clearly structured steps within each phase, including inputs, tools and outputs that are relevant at each stage of implementation. The framework provides input into the process of implementation and is thus beneficial in understanding what the initial steps of lean are and how companies start their lean transformation. Therefore, the thesis utilizes the framework with the objective of gaining insight into the conceptualization phase of the framework. Furthermore, the thesis aims to derive and conclude potential key success factors from the framework, in order to understand what factors affect the decision to implement lean as well as what are the prerequisites to lean transformation. Moreover, while all the excellent tools presented by Mostafa et al. (2013) exist, lean implementation still often fails (Januszek et al., 2024). Thus, it is essential to explore how managers make sense of the tools and what factors motivate or hinder their adoption.

2.1.2 Initial stage implementation challenges and success factors

Even though the framework by Mostafa et al. (2013) provides interesting and beneficial insight into the initial stages of lean implementation, it still has some deficiencies in the context of the thesis. The framework does not actively consider international business and its implications on lean implementation. According to Friel (2005), standardized

strategy implementation can be fatal in implementing lean within multinational organizations. As the cultural and organizational settings have great effect on the implementation, it is essential to take them into consideration when discussing the conceptualization and design of an implementation strategy. Additionally, the framework describes the phases in sequential order, however each individual phase is only described more generally and without sequencing. As mentioned by Mostafa et al. (2013), appropriate sequencing is vital for the implementation and thus it is important to understand the effective sequence of actions within the conceptual phase.

In a case study conducted by Belhadi et al. (2016), they explore the implementation process of lean production. In line with the research by Mostafa et al. (2013), Belhadi et al. (2016) also find that the implementation process can be divided into pre-implementation, implementation, and post-implementation stages. In the case study, all researched companies had similar processes and activities, especially in the pre-implementation or preparatory phase of the implementation. Moreover, Belhadi et al. (2016) derive a set of critical success factors for lean implementation from the activities and steps discovered during the case study.

The concluded success factors include strategic steps such as management commitment and support, alignment to the global strategy of the company as well as long-term vision (Belhadi et al., 2016). Moreover, the preparation stage's success factors also entail more practical steps such as training by a lean expert, proper methodology of implementation, proper selection of lean perimeter and proper planning before implementation (Belhadi et al., 2016). As stated by Belhadi et al. (2016) the concluded critical success factors should have a significant role in the decision-making process during the initial stages of lean implementation.

Derived from the critical success factors, Belhadi et al. (2016) develop a framework for lean implementation. The framework describes the whole implementation process from pre-implementation stage to implementation and further to post-implementation stage.

However, as the thesis focuses primarily on the pre-implementation stage, the framework figure is examined only partly, with the objective of gaining insight especially into the preparation stage. The framework (Belhadi et al., 2016) consists of steps, which are the concluded key actions during lean preparation, placed in a sequential order. Moreover, the framework also includes applicable tools as well as the critical success factors discussed above.

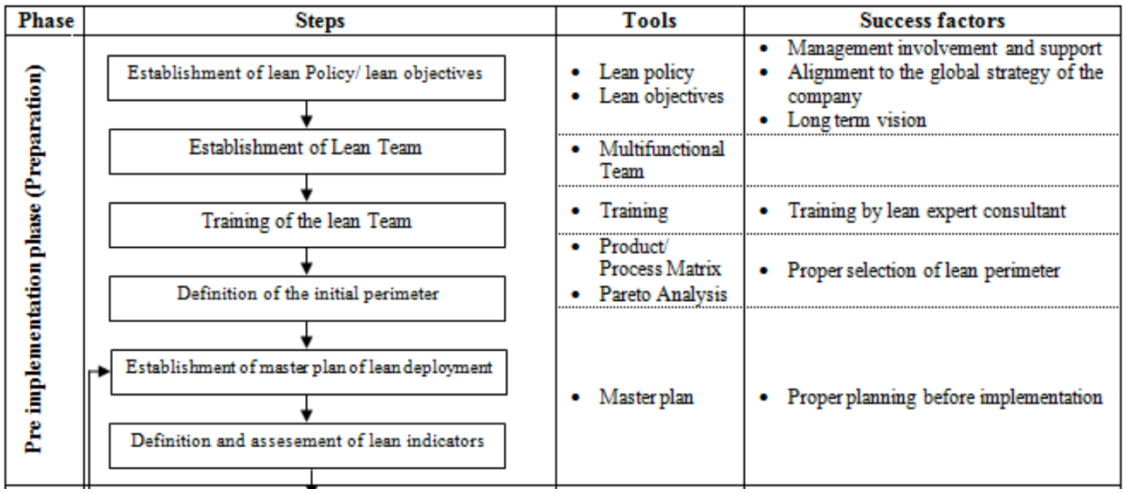

Figure 2. Proposed lean implementation framework in SMEs (adapted from Belhadi et al., 2016, p.804)

The framework by Belhadi et al. (2016) presents the pre-implementation phase through sequential steps. The presented actions are establishment of lean policy / objective, establishment and training of lean team, definition of the initial perimeter, establishment of master plan of lean deployment and definition and assessment of lean indicators. Compared to the framework presented by Mostafa et al. (2013), Belhadi et al. (2016) present additional actions for the preparation phase including establishment of lean objectives and lean team, as well as definition and assessment of lean indicators. Moreover, the framework presents a description of additional tools and critical success factors connected to each step.

Belhadi et al. (2016, p.803) emphasize management involvement during the pre-implementation phase, and according to them, “management must begin to show leadership

and demonstrate that it is committed to the project by elaborating the lean policy and setting up lean objectives". Moreover, they find that the established lean objectives must align with the company's global strategy. After the first action, the framework demonstrates the next step of establishing and training a lean team. According to Belhadi et al. (2016) the size of the lean team should be in relation with the size of the company, i.e. in for example small to midsize enterprises the lean team should only have the necessary number of individuals. Furthermore, they emphasize multifunctionality of the team. During training of the lean team, Belhadi et al. (2016, p. 803) find it important for the training to be conducted by lean experts in order to "provide an initial boost for the introduction of lean culture within the team".

Belhadi et al. (2016) describe the actions of the established lean team during the preparation phase, the first one being defining the initial perimeter of action for the implementation. The perimeter can be defined through a product / process matrix or Pareto analysis, with the objective of discovering the company's value stream with the highest priority. According to Belhadi et al. (2016), it is vital to conduct the initial selection of perimeter thoroughly, in order to utilize resources effectively as well as maximize the potential benefits. After the selection of the initial perimeter, the lean team should develop a practical plan for lean implementation, which includes a defined budget and schedule. The last step for the pre-implementation phase in the framework is measuring the current leanness level and situation of the company through lean indicators. Before the assessment is possible, the lean team must define and establish the performance indicators that can be derived from the lean objectives that the company established at the beginning of the preparation phase (Belhadi et al., 2016).

In comparison to the framework presented by Mostafa et al. (2013), Belhadi et al. (2016) adopt overall a more organizational perspective to lean implementation. Belhadi et al. (2016) provide insight for not only the key steps in the lean conceptualization phase but also define critical success factors for the process, whereas Mostafa et al. (2013) focus more on the practical perspective related to lean tools and their application in different

stages of implementation. On the other hand, the framework by Belhadi et al. (2016) mentions tools that could be utilized during the implementation, however the presented tools closely resemble the established key success factors. Thus, both the frameworks provide different approaches to the implementation process, and both frameworks have applications in different contexts. In the context of the thesis, the framework by Belhadi et al. (2016) is more relevant in discussing the organizational sense-making perspective and providing insight on the key success factors of lean during the conceptualization phase. Thus, the thesis bases the following discussion of key success factors on the framework by Belhadi et al. (2016), while the tool-based approach of Mostafa et al. (2013) is utilized later on in the thesis when discussing about the establishment of a practical implementation plan and selection of the lean scope.

2.1.3 Key success factors of lean implementation in initial stages

To deepen the understanding about the conceptualization phase of lean implementation, this section examines the key success factors that shape how lean is introduced and interpreted. The discussion emphasizes the preparatory actions that precede the actual roll-out of lean and establish the foundation for its subsequent implementation. In essence, the chapter explores factors that must be established in order for both the organization and management to engage with lean as well as for the efforts to be effective in the long term. Based on the lean implementation framework presented by Belhadi et al. (2016), the thesis identifies three key success factors of lean conceptualization: organizational involvement and strategic alignment, lean training, and finally, lean plan and selection of perimeter.

While the literature on lean implementation success factors is somewhat extensive, the aspect of success factors within the context of multinational corporations remains underexplored. Some literature exists on the transfer of lean practices within multinational organizations. For example, Danese et al. (2017) highlight that national environment has significant effects on the stickiness of lean transfers across subsidiaries. They demonstrate that implementation and integration phases are experienced very differently

depending on the national context, for example, Danese et al. (2017) find that US plants struggle typically most in the initial stages whereas Chinese plants struggle during implementation. Thus, they conclude that successful lean implementation in multinational contexts depends on combining global expertise with local knowledge, as well as on applying guiding principles rather than rigid standards which are often difficult to adapt across cultural settings.

On the topic of lean transfers, Demeter and Losonci (2019) also emphasize a balance between global coordination and local adaptation. They argue that subsidiaries require a central push towards the implementation during the initiation, however, over time the central unit should shift more towards a facilitator and leave space for the plants to adapt lean practices to their local context. On the other hand, while some literature exists on lean implementation across MNCs, a significant research gap still emerges. Existing research focuses more on transferring lean practices from a central unit where lean is already established, whereas the implications of multinational context on the initiation of lean implementation in MNCs remain widely unexplored. Moreover, the critical success factors specifically in multinational corporations, such as employee engagement across diverse units and cultures, or employee responses to global lean training, are yet to be demonstrated in literature.

2.1.3.1 Organizational involvement and strategic alignment

The first step in the framework presented by Belhadi et al. (2016), is the establishment of lean policy / lean objectives. The framework (Belhadi et al., 2016, p. 804) identifies three critical success factors for the step which are “management involvement and support, alignment to the global strategy of the company and long-term vision”. Furthermore, the finding is also supported by Januszek et al. (2024) as they find that in order to achieve lean alignment within an organization and across hierarchical levels, it is vital for companies to establish clear objectives. Moreover, they find that the objectives must then be broken down into specific and separate goals that align with the overall strategy of the organization.

According to Näslund (2013, p. 90) “Strategic alignment means both that the change initiative should be linked to as well as support the organization’s strategy, that the reason for starting the initiative should be based on substantive factors and that the organization has a long-term view of the effort”. Furthermore, they report that companies should examine if lean will contribute to the company’s global strategy before committing to it as their chosen improvement methodology. While the lean initiative should be in alignment with the strategy of the company, the decision to implement lean should also be based on relevant organizational factors, for example, a desire to develop and improve processes or an encountered problem that lean practices could help with (Näslund, 2013). Therefore, if the incentive to implement lean stems from other external factors, it might not be authentic and thus will not evoke long term commitment within the organization and its management.

Such external incentives include, for example, institutional and political factors. Institutional and political factors push organizations to implement certain change programs on inadequate basis or external pressure (Näslund, 2009). As stated by Näslund, (2009), organizations might be inclined to adopt solutions that are becoming a trend and are interesting due to their novelty, especially if the solutions are supported by scholars and experts. Furthermore, in many cases where companies have the incentive to implement change programs based on their novelty or convincing marketing material, the solutions are often perceived as quick and easy fixes (Näslund, 2009). In these cases, as the motivation for change is external, it creates many barriers for successful implementation. One of the most significant issues is the lack of strategic alignment and long-term vision (Näslund, 2009). As concluded by Näslund (2009), literature shows that such transformations can take several years to show tangible results and organizational improvements. Thus, they find that adopting change programs without a long-term view or alignment to the global strategies of the company, can be paralyzing for the initiative as it sets unrealistic expectations and can ultimately culminate in losing faith in the program.

As the strategic initiatives and long-term vision are defined by top management, their involvement and commitment are directly intertwined with how the organization aligns lean objectives towards their strategy. Mann (2009) states that lean is often equated with the tools that are utilized to improve and optimize processes. However, based on research, Mann (2009) finds that lean tools represent only a fifth of the efforts displayed in lean implementations. They find that the rest of the efforts in lean transformation constitute a change in managerial perceptions and further, in mindsets and behaviors. Moreover, Mann (2009) states that top management has a vital responsibility and role in establishing an environment that supports and enables the rest of the efforts, besides the lean tools, to succeed. This is supported by Netland et al. (2020, p. 546), as they also find that in many cases, "lean transformations fail already at the top-level of the company". Resistance at the top level is thus fatal for the lean efforts and according to Netland et al. (2020, p. 546), it can occur if there is a "lack of clarity and uncertainty about change, pressure and the challenges presented with learning something new".

To sustain a lean transformation, the top management and senior executives must be committed to the implementation and display their commitment through full support for the implementation program from the initiation (Netland et al., 2020). Moreover, top management must display their involvement through establishing guidelines, strategy, goals and vision (Netland et al., 2020). In addition, management involvement also includes "establishing governance arrangements that cross divisional boundaries, supporting a thorough, long-term vision of the organization's value-producing processes, and holding everyone accountable for meeting lean commitments" (Mann, 2009, p. 15). However, managerial commitment and involvement goes beyond drawing strategic guidelines and establishing long term objectives. Top management must also present their commitment to include lean in their strategy through allocating appropriate and sufficient resources to the transformation program (Netland et al., 2020; Näslund, 2013).

The importance of managerial involvement can also be seen in how the top-level management communicates the change to other hierarchical levels from middle to front-line

management and further all the way to the workers. As Mann (2009) describes, by setting an example, the top management can enable durable lean implementation and increase a mindset of lean leadership across managerial levels. Furthermore, top management can affect perceptions positively by communicating the lean transformation and its positive impacts on the organization (Näslund, 2013). According to Näslund (2013), encouragement can be communicated through inspiring, sending positive signals and motivating the different levels of the organization to understand why the company is implementing lean and why working towards it is important. Moreover, they find that in addition to leading the transformation and providing direction, top managers must also deal with individuals who might hinder or obstruct the implementation. By getting involved, the top management is able to influence critical factors of lean transformation, which include for example, organizational culture and engagement, manager and employee participation as well as overall morale related to lean (Näslund, 2013).

While top management's involvement is crucial for defining lean objectives and aligning them with company strategy, employee and middle-management engagement is essential in implementing the chosen strategy and achieving lean transformation. As stated by Abdul Hamid et al. (2020, p. 26), "The most important aspect for a solid foundation of every step in lean thinking is the need for a highly skilled employee that is able to learn advanced techniques and to build a more creative thinking". Therefore, employee participation and organizational engagement are some of the critical success factors of lean implementation and need to be considered from the very initiation of implementation efforts.

Employee participation in lean implementation is a fundamental factor as organizational engagement is a unique capability that creates value within an organization (Barrick et al., 2015). As lean is all about maximizing value creation while minimizing waste, employee engagement is thus highly relevant during lean implementation. Furthermore, employees are considered an asset in lean organizations as they not only execute processes day-to-day but also have first-hand knowledge on the weaknesses and potential

points of improvement within those processes (Abdul Hamid et al., 2020). As Abdul Hamid et al. (2020) state, experienced employees often have more experience and knowledge on the tasks that they carry out, which makes them equipped to participate in some of the decision-making processes related to process improvement and development practices. As they mention, employee participation allows employees to have control over their tasks by giving them the opportunity to raise issues with managers, thus having influence on decision-making regarding their work. Abdul Hamid et al. (2020) conclude that employee participation has direct and positive effects on the success of lean implementation.

In addition to employee participation, existing literature also emphasizes the effect of organizational culture on lean implementation. Pakdil and Leonard (2015) find that organizational culture affects performance due to the impact on individual behaviors within the organization. Moreover, they state that it is a critical success factor in lean organizations as it determines if a lean strategy or process improvement is accepted or not. In essence, organizational culture stands for a cumulated and shared belief system within an organization that includes for example, “ways of working, traditions, stories, and acceptable methods to achieve goals” (Pakdil & Leonard, 2015, p. 727). Organizational culture is a key factor, especially in the pre-implementation phase of lean, as it determines whether the organization supports the initiative and is willing to engage with it. Pakdil and Leonard (2015) state that it is vital to measure the strategic objectives against the organizational culture and the organization’s ability to sustain them, already at the conceptualization of lean implementation. According to them, it is key to understand whether the organizational culture supports lean processes, and alter the culture as needed, in order to ensure successful initiation and continuation of implementation.

As lean focuses on optimizing processes, it inevitably includes the creation of synergies between organization members. The synergies created not only contribute to the overall organizational engagement in lean implementation by facilitating cooperation between employees across organizational functions but also contribute to the leanness level of

the company by streamlining the flow of information (Friel, 2005). The finding is supported by Abdul Hamid et al. (2020), as they find that employee participation in lean has positive impacts on both organizational efficiency as well as organizational commitment. Furthermore, they conclude that organizational engagement has other positive effects not only for the organization but also for the employees, such as increased work performance, improved health for workers, reduced stress at the workplace, and enhanced skill development.

In terms of organizational benefits of employee participation in lean implementation, literature shows that employee engagement is one of the main drivers of a sustainable and successful lean transformation. Therefore, "there will be no quality improvement without ideas, effort and participation from all levels of employee" (Abdul Hamid et al., 2020, p. 24). Furthermore, employee participation has a significant impact on the outcome of lean implementation, especially on company performance and work quality (Abdul Hamid et al., 2020). In congruence, Jurburg et al. (2017, p. 1470) state that lean facilitates organizational engagement in order to achieve joint results, including "greater business productivity, quality, safety, ergonomics and competitiveness". As concluded by Jurburg et al. (2019), this definition implies that employee participation across the organization enables the lean implementation efforts to be successful.

As employee participation is a vital success factor, it is important to understand how it can be achieved and what are the most essential antecedents for it. Jovanović et al. (2023) state that resistance to participate in the change program hinders lean transformation. Moreover, they discuss the main causes behind resistance and find that lack of training, intensified tasks as well as increased workloads affect how employees perceive their personal efficacy and thus constrain their participation in lean efforts. Moreover, Jovanović et al. (2023) find that the feeling of success is also critical for employee participation, as it affects how interested and committed employees are. In a study by Jurburg et al. (2019), it is also found that empowerment and self-efficacy are critical for employees' intent to participate in lean practices. They find that organizational support as well

as employee empowerment are correlated positively to self-efficacy, which in turn determines how easy employees perceive the participation. Barrick et al. (2015, p. 129) support the finding by stating that it is vital for employees to feel “that they are working toward a common purpose that is meaningful and significant”.

In addition to empowerment, another factor in employees’ self-efficacy is organization support (Jurburg et al., 2019). Jovanović et al. (2023) also list management support as one of the key elements in achieving employee engagement. Roslin et al. (2019) report that in order to have total involvement from employees, it is crucial for organizations to enable and motivate employees to gain deep understanding and knowledge about lean. Moreover, Mostafa et al. (2013) find that lean communication, conducted by management, is one of the critical success factors in lean implementation. They state that appropriate communication across hierarchical levels and functions is an important factor in successful implementation, as it raises awareness of the implementation process as well as clarifies employees’ responsibilities and roles during the implementation. On the other hand, if management fails to communicate efficiently it might lead to a misunderstanding of lean concept and a misapplication of tools and practices (Mostafa et al., 2013). Additionally, Mostafa et al. (2013) conclude that communicating the success points of a pilot project increases both employee and management support towards expanding the lean transformation within the organization.

Amongst empowerment and organizational support, employees’ perceptions of their self-efficacy are also affected by training (Jurburg et al., 2019). Jovanović et al. (2023) state that to achieve employee engagement, organizations must provide appropriate and sufficient training to their employees. Abdul Hamid et al. (2020, p. 27) find that “in lean thinking, employees are considered as a resource that is needed to be developed through training”. Moreover, Barrick et al. (2015) also highlight the importance for companies to manage the development of employee capabilities in order to enhance employee participation. Lean requires creative thinking from employees as it enables them to identify value in business processes and “make appropriate improvement counter

measures to reduce waste in a process workflow" (Abdul Hamid et al., 2020, p. 27). Therefore, Abdul Hamid et al. (2020, p.27) find that employees must endure a paradigm shift in their minds, in order to achieve a "more systematic way of thinking".

2.1.3.2 Lean training

The next steps in the framework presented by Belhadi et al. (2016) are establishment and training of lean team. Moreover, Belhadi et al. (2016) conclude that the key success factor for these steps is for organizations to offer lean training through lean consultants. In accordance with Belhadi et al. (2016), Halling and Renström (2011) state that it is essential for the whole organization to have lean training as the skills and competencies of all employees are one of the key factors behind lean success in an organization. They conclude that "to be able to move towards the vision, professional development is needed and that is achieved by direct experience more than formal training and has to involve all workers" (Halling & Renström, 2011, p. 2).

Moreover, they emphasize that people development, and especially leader development, is at the core of successful lean implementation as it provides leaders with the right capabilities to deliver improvements within the organization. Yang et al. (2012) elaborate on the human factors of lean by dividing the Toyota production system (TPS) into human and technical elements. "The technical side, Toyota Production System, is designed to identify and highlight problems while the human side, Toyota Human System is designed to engage people who are willing and able to solve the problems" (Halling & Renström, 2011, p. 3). Thus, Halling and Renström (2011) conclude that people development is as essential to a successful lean transformation as the development of processes.

The first step is to establish an expert team (Belhadi et al, 2016). As Mostafa et al. (2013) state, the idea is to gather a team with experience and expertise to provide the management and the lean implementation team advice. Moreover, the expert team is a vital asset as it can help manage the implementation by sharing their knowledge as well as by promoting the change processes at the organization. "The expert team provides the

required training and consultancy to the practitioners" (Mostafa et al., 2013, p. 51). On the other hand, the lean implementation team can also include people with less expertise about lean. Näslund (2013) states that it is important to have a cross-functional implementation team. "The cross-functional team removes the project from any specific functions' domain and integrates a spectrum of members from throughout the various silos within the organization" (Näslund, 2013, p. 92). By having a team that is composed of people from different functions, the implementation is more likely to be successful as it is able to utilize a wide range of expertise about the processes that are being improved (Näslund, 2013).

In addition to establishing a lean expert team, it is critical for organizations to design and execute a thorough training process before starting to implement a lean transformation. According to Mostafa et al. (2013), resistance to adopt lean usually stems from a lack of lean knowledge and skills. Thus, they conclude that hesitation to commit to lean improvements is likely because of inadequate training. "To overcome these problems, the organisations should emphasise effective lean-related education and training programmes as well as establish training assessment to measure the training impacts" (Mostafa et al., 2013, p. 51).

Näslund (2013) also identifies lean training as an important critical success factor (CSF) for any continuous improvement efforts. As designing a training process is a complex issue, it is important to address all the elements before carrying out any training. According to Näslund (2013, p. 94), "training can include anything from general training such as the importance of change method and why it will improve organizational performance to specific tools for the actual method". In order for the training efforts to be effective, it is beneficial to establish who is the training for, what should the training include, and finally, when and how often is the training required (Näslund, 2013).

According to Näslund (2013), lean training is essential for both workers as well as top-management. Netland et al. (2020, p. 546) support this by stating that "top managers

cannot commit fully to something they do not understand and believe in" and that lean implementation should begin with extensive training for the top-management. Moreover, they state that it is not sufficient for the top-management to just symbolically commit to the initiative, but instead they must be active participators in the transformation (Netland et al., 2020). Even though lean transformation starts from top-management and it is vital to ensure that they have sufficient knowledge on the implementation, it is as important to gain the commitment of the rest of the organization as well.

Netland et al. (2020, p. 547) conclude that "although the difference between success and failure starts with top managers, middle managers (who have the role of directly managing the "value-adding employees") ultimately carry the process". They state that middle-management is often in a difficult position during lean implementation, as they must balance the new initiatives brought on by top-management as well as the requirements from front-line workers. Netland et al. (2020) find that the fundamental issue behind the phenomenon stems from insufficient information about the change. Moreover, also Näslund (2013, p. 94) supports this finding by stating that "many organizations reported that since managers failed to communicate with the employees in concrete ways, employees were not clear of their new responsibilities or changed roles", resulting in unpreparedness throughout the organization.

Sufficient training enables managers to be more committed to lean initiatives by enhancing their knowledge about lean practices and by encouraging them to generate ideas for continuous improvement. Moreover, training also enables employees to gain more knowledge about quality and improvement programs by providing "a platform for communication of new organizational strategy, new objectives, new guideline, new structure, new tools, and new processes of the operation" (Näslund, 2013, p. 94). Through extensive training, employees are able to understand the need for improvement, accept and commit to it, and be prepared for the change efforts (Näslund, 2013).

In addition to the question of who lean training should be provided for, another key aspect of lean training is what the training entails. Paneerselvam et al. (2025) state that lean training should be a structured process during which individual gain knowledge and a set of skills that serve a specific purpose. In other words, “it involves organized educational activities that enable members of an organization to gain and apply the necessary skills, knowledge, abilities, and attitudes required for the specific goals and objectives of the organization” (Paneerselvam et al., 2025, p. 1403). Lean training entails many components from human factors to technical tools, thus making it a complex process. Näslund (2013) concludes that training should enable employees to understand the change efforts, the impact on the organization, their own roles in the process, and the use of certain techniques and tools.

Näslund (2013) emphasizes that it is essential to put enough emphasis on human factors by focusing some of the lean training on building commitment and engagement for continuous improvement and change culture. Paneerselvam et al. (2025) also support the more comprehensive approach to lean training. They conclude that in lean literature, training is often examined as a means of knowledge transfer and cultural change. Moreover, they state that it is vital to communicate the purpose of the initiative and its methods already from the very beginning of the implementation and training process. In addition, Paneerselvam et al. (2025) also find that lean training has a positive effect on employee satisfaction, morale and comprehension level. They conclude that especially on-site long-term training programs have a positive impact on not only organizational learning, but also on management practices as well as overall business performance.

On the other hand, while human factors are a fundamental part of lean training, the technical aspects cannot be overlooked either. Näslund (2013) finds that lean implementations often encounter issues when lean teams are not familiar enough with the tools or terminology they are interacting with. Any confusion around the tools can reduce efficiency and potentially lead to unsuitable use of the tools in instances where they are not needed (Näslund, 2013). Moreover, Näslund (2013, p. 95) highlights that a “lack of

structure, understanding and training can make all tools seem equally valuable and applicable". Misunderstandings about the tools or their applicability can result in the use of tools that are easier to apply, and the dismissal of more complex tools even if they would be better suited for the project (Näslund, 2013).

According to Paneerselvam et al. (2025, p. 1403), lean training should be based on practicality, for example, through "training sessions, workshops, and hands-on exercises that focus on LSS concepts, tools and problem-solving techniques to enhance organizational performance and productivity". The abbreviation LSS refers to Lean Six-Sigma. Moreover, they conclude that the training curriculum should entail comprehensive guidance on the variety of lean tools and methodologies. Näslund (2013) also suggests that training should focus on the tools that are used most commonly and that are potentially suitable for the specific implementation.

Paneerselvam et al. (2025) divide lean training into structured and unstructured programs. Structured training entails more organized methods of educating and often follows a specific curriculum. The point of a structured approach is to move systematically from basic principles into more advanced topics, techniques and tools. Paneerselvam et al. (2025) find, that when the trainees start to examine the concepts more comprehensively, it is beneficial to utilize interactive training methods, such as simulations and workshops. The unstructured approach utilized a more flexible training style, often including more self-directed learning (Paneerselvam et al., 2025). The unstructured approach allows individuals to learn more through practical experience as it involves methods such as mentoring and coaching, on-site training, and collaboration amongst peers. The key advantages with unstructured training are improved critical thinking and problem-solving skills as well as the enhanced integration of lean principles and mindset into the organizational culture. However, Paneerselvam et al. (2025, p. 1404) highlight that while the unstructured approach enables practical learning, because of its less organized and unstandardized nature, it can also "result in variations in the depth of understanding and proficiency among participants". In accordance, Friel (2005) concludes that lean

initiatives provide the best outcomes when the training programs provide employees with a high-level and broad set of analytical skills. Moreover, they emphasize the importance of cross-functional collaboration as one of the key success factors for effective training. Thus, it would be beneficial to combine both structured and unstructured methods in lean training programs in order to achieve more comprehensive results.

Finally, in addition to the content of the training, it is important to address the timing and frequence of the training. As stated previously, it is vital for employees, and especially top-level managers to receive thorough lean training before implementing lean practices. On the other hand, it is not only the timing that matters but also the frequency of the training. Näslund (2013) emphasizes that the extent of the training can have direct effects on the results of the implementation. For example, one-time training does not provide employees and managers sufficient understanding on lean as a concept or how to implement it in multinational organizations. Moreover, it can leave employees in the perception that the implementation isn't a serious or a long-term initiative within the organization (Näslund, 2013). Through frequent and continuous training, it is possible to achieve a sustainable lean organization, that has the mindset of continuous improvement embedded in it (Näslund, 2013).

2.1.3.3 Lean plan and selection of perimeter

The thesis discusses the final steps from the framework presented by Belhadi et al. (2016) jointly, as the selection of lean perimeter can be considered as a part of implementation planning. Implementation planning considers factors such as when, how, and to what extent lean should be implemented in the organization. Naturally, the discussion also considers the scope of implementation, thus making it a part of the planning process.

As Alukal (2006) mentions, lean might not be suitable for all organizations, or at least in a full capacity. Therefore, it is important for companies to first understand their business processes, product families, operating environment, the market and competition as well as the customer needs, before implementing lean (Alukal, 2006). After there is sufficient

knowledge about both the current situation of the organization and the desired state the organization is aiming towards in the future, it is possible to assess whether lean is a suitable method for the organization. In case the company decides to pursue lean further, the next step is to plan for the implementation, or in other words, “select the right lean tool to use at the right time” (Alukal, 2006, p. 67).

Anvari et al. (2011) define the planning stage as creating a roadmap for the implementation. They emphasize that the purpose of planning is to “identify and address waste and its drivers, as well as understand how and when to apply the various “lean” approaches in the organization in order to achieve business excellence” (Anvari et al., 2011, p. 6729). In accordance with Alukal (2006), Anvari et al. (2011) also find that lean implementation plan cannot be addressed through a singular and universal model, but instead must be adapted to fit each organization’s context. Moreover, they find that the sequencing of actions within lean implementation plans are not standardized either, but rather depend and vary based on the organization’s culture, environment, processes, waste profile etc.

However, even though implementation plans must be adapted to fit the different organizations and their characteristics, a general roadmap to implementation design can be defined. While organizations have the ability to adapt their lean plan to fit their specific operations and environment, Anvari et al. (2011) state that when the plan has been defined, it is important for organizations to follow it in a systematic manner. The stages of the plan should be addressed as checkpoints as it is important not to move to the next stages before properly addressing the previous stages (Anvari et al., 2011). However, while they address lean implementation as a sequence of actions, Anvari et al. (2011) emphasize that instead of a project with an end state, lean should rather be considered as a journey towards lean thinking.

The process of implementation design has different forms throughout existing literature. Some scholars define the implementation plan through various tools that can be utilized

when planning the implementations, while others consider a more organizational perspective to implementation design. For example, Anvari et al. (2011, p. 6731) conclude the design phase to comprise of “mapping the value streams, analyzing the business for improvement opportunities, planning the changes, and finally, identify indicators to measure performance”. Correspondingly, Mostafa et al. (2013) emphasize the use of lean tools and frameworks during the design phase to assess the current and desired state of the organization, as well as identify key waste types and how to address them. Mostafa et al. (2013) suggest that in the design phase companies should utilize tools such as analytical hierarchy process, value stream mapping, GAP analysis, SWOT, cause and effect analysis, and quality function deployment.

In a contrasting approach, Hu et al. (2015) emphasize a more organizational approach to implementation design. They state that while a clear outline of the required steps is a necessity to achieve a successful lean implementation, the plan “should go beyond a direct plan to improve operational issues to also include the more strategic organisational factors needed to support lean implementation” (Hu et al., 2015, p. 996). Moreover, they find that implementation planning should address issues beyond the operational level, for example, creating a supportive organizational culture, developing a strategy that supports the lean initiative as well as defining an investment plan for the implementation.

In accordance with Hu et al. (2015) and their more holistic approach, also Mader (2007) supports the organizational perspective to lean implementation planning. While he supports the utilization of lean tools as a part of the implementation and more specifically its planning, Mader (2007) defines a more general approach to planning. While the planning process presented by Mader (2007) might require some specification depending on the organization, it provides a solid base on which companies can build their implementation design.

First, Mader (2007) defines the steps of a general strategic planning process. The process starts with “planning to plan”, which means that there should be a roadmap to follow during the planning stage in order to achieve a comprehensive strategy for lean implementation (Mader, 2007, p. 58). The next step is to carry out a values scan, which entails the assessment of stakeholder interest as well as assessing what factors provide added value to customers. After value-adding factors have been identified, there should be a performance audit. The purpose of the audit is to assess “the organization in terms of capabilities and financial strength” (Mader, 2007, p. 58).

When the interests of shareholders have been identified and the currect state of the organization has been assessed, it is important to conduct a gap analysis Mader, 2007). The analysis compares the current and desired state in order to identify a list of gaps which the organization should address in their lean efforts. Only after the gaps have been identified, are organizations able to start developing an action plan for lean implementation. The plan for implementation should not only define the selected strategies to close the identified gaps, but also address the contingency of the implementation (Mader, 2007). According to Mader (2007, p. 58), it is vital for organizations to “develop contingency plans to account for potential market changes, competitive pressures and other scenarios that might affect the strategic plan and the organization's ability to execute it”. Moreover, it is emphasized that the contingency plan should be a fundamental part of the overall implementation planning.

Lastly, Mader (2007) adds that before deploying the created plan, it is important to define performance measuring, clear owners for the implementation processes and finally a clear timeframe for the implementation. This finding is supported in existing literature (Belhadi et al., 2016; Garcia et al., 2012; Mostafa et al., 2013). For example, Garcia et al. (2012) find that objectives and their measuring is one of the key elements to successful improvements within organizations. Moreover, they emphasize that sustainable improvements are based on applying the correct metrics, and above all, learning from the obtained results. Mostafa et al. (2013, p. 52) also agree by stating that “lean monitoring

and controlling should be employed along the lean planning". They find that monitoring not only ensures the active following of the implementation plan, but also oversees that the organization does not return to familiar pre-implementation methods. Thus, active monitoring and measuring of implementation activities is a fundamental part of a successful lean transformation.

The selection of the perimeter for the implementation is also an essential step in the lean plan. The perimeter selection is a part of the general plan defined by Mader (2007), as it is closely related to the gap analysis. However, for the plan to become more practical, some more attention must be paid to the implementation scope. Belhadi et al. (2016) state that in order to focus resources effectively and thus maximize potential gains, the selection of lean perimeter is a vital step in implementation planning. Moreover, they find that the scope can be defined by identifying the value streams with the highest priorities, for example, through tools such as product matrix and pareto analysis (Belhadi et al., 2016). On the other hand, Mader (2007) supports the closer selection of the lean perimeter, however they present a more comprehensive approach beyond tools.

Mader (2007) refers to the subprojects within lean implementation as strategic thrusts. The thrusts are defined as strategic initiatives which are aimed to close the identified gaps in the organization's current and desired state. Moreover, Mader (2007) presents an approach for identifying the specific gaps or, in other words, process improvement opportunities. Similarly to the gap analysis, the process begins with a comparison of the current performance and the desired performance within the organization. However, as the purpose is to identify more specific and practical gaps, Mader (2007) suggests that it is beneficial to gain a better understanding of strategic goals on a more local level and in each business function. Mostafa et al. (2013, p. 51) agree by stating that the internal assessment of the current organizational capabilities should consider factors such as "personnel, facilities, location, products and services, in order to identify the organisation's strengths and weaknesses to apply lean". Moreover, they find that it is also essential to assess the external environment, including the "political, economic, social,

technological and competitive" context, in order to identify potential threats and opportunities regarding lean practices (Mostafa et al., 2013, p. 51).

After assessing the current and desired business settings, Mader (2007) suggests that it is key to identify potential improvement opportunities, by assessing the key business processes and their subprocesses through a risk-return-goal analysis. The purpose of the analysis is to evaluate opportunities while balancing the potential risks against the expected returns. After the opportunities are analyzed, they can be prioritized based on their expected return to risk ratio (Mader, 2007). After thorough analysis and establishing consensus amongst top-management, it is possible to select which improvement opportunities make sense for the organization and finally launch their implementation (Mader, 2007). Mostafa et al. (2013) emphasize that while the implementation efforts proceed, the need for the documentation of lessons learned is continuously heightened. They emphasize that systematic documentation of key learnings, either from internal or external sources, is essential for any subsequent stages of implementation. For example, establishing documentation for future review, is vital when the organization seeks to broaden the scope of implementation in the future.

2.2 Sense-making

While lean implementation and its key success factors are widely researched in existing literature, an extensive research gap still emerges regarding the sense-making perspective of managerial decision-making during lean implementation. A disregard of the socio-cultural perspective can hinder implementation efforts and thus restrict a sustainable lean transformation (Malik & Abdallah, 2020). Therefore, it is vital to understand how managers make sense of lean and how their perceptions can potentially affect their commitment during the initiation of lean implementation. Moreover, by understanding what factors might hinder managers from committing to a comprehensive lean transformation, it is possible to provide useful insight for companies that struggle effective implementation.

2.2.1 Managerial perceptions in lean implementation

Managerial perceptions are at the core of lean implementation, especially during the initial phases of it. As discussed in the previous chapters, managerial involvement and commitment are fundamental factors that drive successful lean transformation. Moreover, as top-level management ultimately makes the decision to implement lean within the organization, it is important to understand whether their perceptions of lean affect their decision-making process, and further, whether their perceptions affect their level of commitment towards any lean efforts.

There is an interest in the relation of organizational perspectives and lean practices in current literature as well. Malik and Abdallah (2020) find that scholars are beginning to take more interest in the organizational response regarding lean implementations. For example, Maalouf and Gammelgaard (2016) observe a negative reaction and even opposition to lean implementation from middle-management and employees due to top-management's inability to create a positive narrative of lean. As negative perceptions and confusion around the benefits of lean can create collective opposition and resistance for lean implementation, it could be derived that a similar phenomenon can also occur within top-management.

Moreover, Secchi and Camuffo (2019, p. 145) find that lean implementations can be characterized as "organizational change processes" that require management to shift their perceptions of lean. Malik and Abdallah (2020, p. 1717) also state that while process facilitators are a fundamental factor in lean implementation, they must be complemented by an organizational culture that enables an ownership of lean by the employees and the management. Moreover, they conclude that lean-enabling attitudes can be considered as one of the antecedents to a successful and sustainable lean transformation.

In order to explore managerial perceptions of lean, it is important to first understand how managers understand lean. In a study by Herrala et al. (2012, p. 6), they observed three prevailing perceptions of lean – "eliminating waste, improving efficiency and

implementing tools". This finding is supported by Thornton et al. (2019), who find that there still lacks a unanimous understanding of lean and what it comprises. They state that while some consider lean to be a philosophy that focuses on customer value and is incorporated with strategic thinking, others view lean as a tactical approach that reduces cost through waste elimination. In the study by Thornton et al. (2019), they asked managers to describe lean, and of the respondents over half mentioned efficiency followed by waste elimination. Less than twenty percent of the respondents mentioned continuous improvements, reductions of costs and customer value. Finally, less than ten percent mentioned customer demand and quality. In addition, none of the participants mentioned safety or employee satisfaction in their description of lean. Thus, their findings indicate that "managers' focus on quality is negligible, implying that they are unable to see the bigger picture of how quality influences customer satisfaction and retention while enhancing efficiency in production" (Thornton et al., 2019, p. 719). Based on the results, Thornton et al. (2019, p. 719) conclude that "lean is yet to be perceived as an approach that seeks to enhance value to customers".

Herrala et al. (2012, p. 6) conclude that as scholars and professionals often focus on the operational aspect of lean, it "shows the relative ease of implementing lean as a set of tools that improve the ways of working and the difficulty of seeing it as a value creation process". This finding is supported by Radnor and Johnston (2013), who also conclude that lean is perceived to improve internal processes with the agenda of increased efficiency rather than a customer-focused and market-driven approach. They argue that it is customers who define waste as lean is ultimately about maximizing customer value. Therefore, if companies are not able to identify what brings value to their customers, it is difficult for them to realize the full benefits of lean operations. Moreover, if companies implement different lean tools or change processes without understanding how they can bring customer value, the efforts can potentially be a waste of resources (Herrala et al., 2012).

On the other hand, Herrala et al. (2012) mention that lean implementations can still create customer value even though they are not considered as value adding operations within the organization. However, while value creation can occur even when it is not the main driver for the implementation, a tool-driven approach ultimately undermines the philosophy of lean (Herrala et al., 2012). Halling and Renström (2011) find that measuring lean implementation and its effects is extremely difficult if lean production (LP) and its meaning to the organization has not been clearly defined. They conclude that "it would be unreasonable to expect LP to generate certain results since any results would be determined by how the concept of LP has been interpreted and translated within the organization intending to implement it" (Halling & Renström, 2011, p. 3). Therefore, it is essential for not only the managers but also the whole organization to define what lean means to them. Convis (2001) suggests that it would be beneficial to define lean through a combination of elements - its philosophical premise, managerial practices, and technical tools. Herrala et al. (2012, p. 7) propose that a "right combination of long-term philosophy, processes, people and problem solving" is essential in achieving performance improvements, a learning organization, and a sustainable lean transformation, all promoting value creation.

In addition to discussing how managers understand lean, it is important to explore what is the role of managerial perceptions in lean implementations and how the perceptions can affect implementation efforts throughout the organization. Januszek et al. (2024) find that managerial perceptions and behaviors are key success factors of lean implementation. They conclude that in current literature there is an assumption of a connection between managerial perceptions and management behavior during lean implementation. However, Januszek et al. (2024, p. 55) expect there to be a potential misalignment between "management perceptions about lean programs and their commitment toward these programs". Moreover, there is another assumption in current literature that the perceptions and commitment of top-management directly affect how the rest of the organization reacts to lean implementation, as the attitudes trickle down (Januszek et al., 2024). Therefore, Januszek et al. (2024, p. 55) suggest that "especially in large and

complex organizations, one should consider how top managers' perceptions affect middle managers' perceptions and commitment before reaching the shop floor".

Januszek et al. (2024) find a correlation between top-management commitment and middle-management's perception of lean effectiveness. This finding is supported by Netland et al. (2020) and Emiliani (2008), who find that top-management commitment increases involvement and motivation towards lean efforts amongst employees. Thus, "the extent to which top managers actively engage in lean implementation and strategically communicate the importance of lean implementation can positively influence middle managers' perceptions of lean programs" (Januszek et al., 2025, p. 68). On the other hand, top-management commitment to lean efforts not only influences the perceptions of middle-managers but also has an effect on the creation of organizational infrastructure (Januszek et al., 2024). Through the increased efforts towards building the organizational infrastructure, top-managers are able to positively influence middle-managers' perceptions further. Januszek et al. (2024, p. 69) conclude that top-management's "active involvement in implementation is important because it can increase their perceptions of lean effectiveness, foster the transfer of knowledge and spark new ideas or discussions that employees can embark on and realize".

Even though top-managements perceptions and commitment to lean seem to trickle down to middle-managers and further to employees, there still emerges a difference in perceptions between hierarchical levels. Even though top-management usually initiates the lean implementation, middle-managers are often responsible for translating the lean strategy into effectual actions (Van Dun et al., 2017). Therefore, it is likely for the different hierarchical levels to have differing perceptions of lean, its benefits and possible barriers (Januszek et al., 2024; Lodgaard et al., 2016). The differing perceptions can lead to a misalignment within the organization in regard to its lean aspirations (Lodgaard et al., 2016). Moreover, the difference in perceptions can lead managers to have different expectations of the outcomes and required change efforts, which can be a fatal issue for the implementation (Floyd & Lane, 2000). Mann (2009) agrees by stating that many lean

implementations fail due to mistaken beliefs regarding the purpose of the lean program. Kotter and Schlesinger (2008, p. 4) provide some explanation for the effects of potential misalignment between managers: “managers who initiate change often assume both that they have all the relevant information required to conduct an adequate organization analysis and that those who will be affected by the change have the same facts, when neither assumption is correct”. Moreover, they continue to state that “in either case, the difference in information that groups work with often leads to difference in analyses, which in turn can lead to resistance” (Kotter & Schlesinger, 2008, p. 4).

Continuing on the differing perceptions, Januszek et al. (2024) find that due to their different roles, top-managers often have lower perceptions regarding lean operations usefulness compared to middle-managers. According to Emiliani and Stec (2005), due to their detachment from daily operations, top-management often depends on financial evidence for the assessment of their lean efforts. Januszek et al. (2024) follow by stating that in case top-managers are not able to find evidence of success from financial performance indicators, they might lose conviction for the program. On the other hand, as middle-managers are closer to the daily operations they are able to observe the performance changes more directly and see their effect on the productivity and quality of their operations (Januszek et al., 2024). This potential difference in perceived efficacy of lean efforts is important to note as “top managers are usually the first to decide upon the launch and continuation of a lean program, so their convictions are essential for the program’s sustainment” (Januszek et al., 2024, p. 66).

Another factor that may explain differing perceptions of lean amongst managers, is the cross-cultural context of the lean implementation. Existing literature highlights that diverse cultural settings have significant effects on individual and organizational sensemaking. While empirical research on the implications of cross-cultural environment on perceptions about lean remains unexplored, it can be argued that similar phenomena can occur with lean implementations. For example, Erthal and Marques (2018) find that cultural dimensions such as power distance and uncertainty avoidance affect how lean

principles are interpreted in MNCs. They demonstrate that, for example, bottom-up problem solving utilized in lean organizations can be perceived as inappropriate or conflicting in cultures with high power distance and hierarchical traditions. On the other hand, in cultures where stability is valued over experimentation, continuous improvement efforts can be resisted. In accordance, Wangwacharakul (2024) concludes that managers across multinational units, especially in culturally distant environments, often perceive global initiatives differently. Moreover, these differences in perceptions can have direct effects on lean engagement and commitment. However, even though some literature on sensemaking in MNCs exists, a critical research gap still emerges regarding, for example, how cross-cultural misalignments, language barriers or competing organizational priorities influence managerial perceptions about lean.

Furthermore, Januszek et al. (2024) conclude that their research indicates a nonlinearity between managerial perceptions and commitment regarding lean. They find that “increasing top managers’ perceptions of lean effectiveness do not automatically increase their commitment to the program” (Januszek et al., 2024, p. 68). They state that while managers might believe in the effectiveness of lean, they still might not be willing to prioritize lean implementation over other initiatives. In contrast, they find that “an increase in middle managers’ perceptions of lean effectiveness directly translates into higher levels of lean organizational infrastructure” (Januszek et al., 2024, p. 68). Therefore, it can be concluded that while top-managers’ perception of lean effectiveness might not translate directly into lean commitment, middle-managers in turn seem to commit more easily as their perception of the effectiveness increases. This finding is fundamental, especially when aiming to understand what factors drive or hinder top-managers’ commitment towards lean. Januszek et al. (2024, p. 69) also conclude that “increasing the likelihood of the success of a lean implementation from the top might require identifying the antecedents of top management’s commitment toward the lean program”.

2.2.2 Antecedents of management commitment

To understand further how managers make sense of lean and its implementation in the conceptualization phase, the thesis explores the antecedents of management commitment to lean. Arellano et al. (2021) state that it is managers' beliefs and perceptions that drive commitment towards the adoption of new practices. Moreover, Kostova and Roth (2002, p. 229) conclude that the "depth of adoption within organizations is not necessarily driven by rational, efficiency-based decisions but can be better explained in terms of the interpretive social processes through which employees build perceptions about the efficiency of a practice." Therefore, the thesis focuses on discussing how managers' beliefs and perceptions about lean practices influence their commitment to implement lean in their organization.

Arellano et al. (2021, p. 452) define management commitment as a "mindset that indicates an individual's level of attachment" to a certain practice. They conclude that when managers identify a practice as a part of their identity and their way of operating, they are more attached to it and thus more likely to fully support it. Moreover, Arellano et al. (2021) argue that management commitment comprises of a configuration of their beliefs, which include behavioral beliefs, control beliefs and normative beliefs. They distinguish that "behavioral beliefs represent an individual's evaluation of engaging in the behavior in question", while "control beliefs represent an individual's sense of ability to perform the behavior" (Arellano et al., 2021, p. 453). Furthermore, they define normative beliefs to "represent an individual's perception of the social pressure to perform a given behavior (Arellano et al., 2021, p. 453). They conclude that none of the different types of beliefs are influential enough to drive management commitment solely, however a combination of beliefs can evoke attachment to the practice.

Arellano et al. (2021) define different types of individuals in organizations based on their belief configuration: followers, pragmatists and reformers. Moreover, they present different type of individuals to be motivated by different attributes, depending on what beliefs they tend to emphasize more. According to Arellano et al. (2021, p. 466) followers

“commit when there are strong external pressures from superiors and peers, adequate resources to support them during the change, and when they feel that they can master that change”. On the other hand, according to Arellano et al. (2021, p. 466) “pragmatists require individual incentives and tangible proof of the fit between the practice and the needs of their units”, whereas “reformers commit when they sense continuous learning opportunities that trigger both their belief in discrepancy and a sense of high capability to embrace the change”.

In accordance, Boyle et al. (2011) also define management commitment to be influenced by managers’ beliefs and perceptions. However, they emphasize the role of external lean information, and define it as a key antecedent to management commitment. They state that the more management is exposed to external information on lean, the more there is “support for lean improvements and evidence of the company moving from simply implementing individual lean practices to lean thinking” (Boyle et al., 2011, p. 593). Based on their research, Boyle et al. (2011) find that external information can comprise of different ways through which managers obtain information about lean and operation improvements, such as literature, conferences, training, tours and internal workshops.

The findings by Boyle et al. (2011) align with previous literature and findings regarding barriers to lean implementation. For example, Salonitis and Tsinopoulos (2016) find that implementation barriers related to top management include limited understanding of the approach, low confidence in its benefits, and resistance to change. Moreover, Christensen et al. (2019) find that one of the main barriers to engaging with lean more deeply is the perceived lack of time. However, they state that “lean practitioners know that time constraints should not be a barrier to work with lean as applying lean techniques should free up resources” (Christensen et al., 2019, p. 283). Thus, the barrier would imply that there is insufficient understanding of lean and its advantages. In accordance, Kahm and Ingelsson (2017) conclude that lean education as well as the sharing of successes are key success factors in achieving engagement in lean programs. In addition, they emphasize the role of practical experience as “lean is learning by doing and has to be lived by

everyone in the organization and then assurance based on experience can be acquired" (Kahm & Ingelsson, 2017, p. 54).

On the other hand, in cases where training and evidence of lean advantages are not sufficient in creating management commitment, Christensen et al. (2019) find that there could be "a lack of bandwidth for change" or a lack of intrinsic motivators. In addition to intrinsic and extrinsic motivation, they state that the way managers make sense and understand lean is also a key antecedent to management commitment. Christensen at al. (2019, p. 277) argue that "people implement new methods and processes if it makes real sense to the individual". For example, managers might have a considerable amount of knowledge about lean and might even support its implementation, however, if lean does not make sense to the individuals it is unlikely to prompt actual behavioral change.

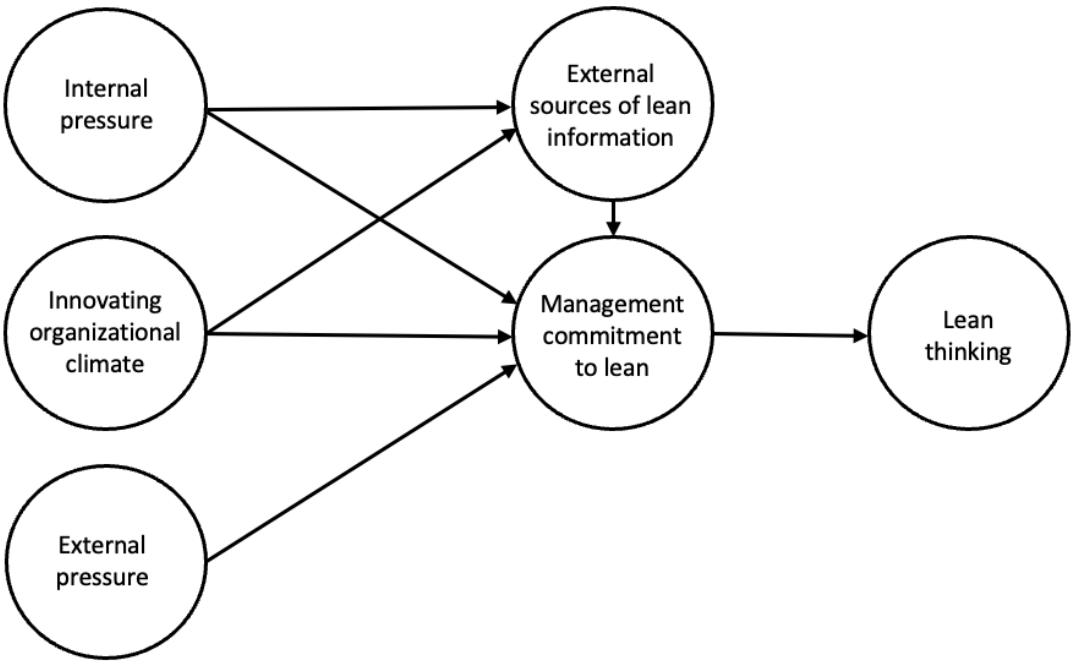

Figure 3. The influence of external information sources in management commitment to lean (adopted from Boyle et al., 2011, p. 590)

To conceptualize the relationship between different motivators, as well as the role of external information in relation to management commitment to lean implementation,

the thesis presents the above figure, adopted from Boyle et al. (2011, p. 590). The figure demonstrates a relationship between internal pressure and innovating organizational climate, and management commitment to lean. Both internal pressure as well as innovative climate have direct and indirect effects on commitment, as both factors also influence the use of external information sources, which in turn increases management commitment to lean. On the other hand, external pressure is only connected to management commitment, as there are no findings in current literature to support a significant relationship between external pressure and the use of external information sources. The figure also demonstrates a relationship between management commitment to lean and lean thinking.

The figure is adopted from Boyle et al. (2011, p, 597), who find that "management's use of external information sources and their commitment to lean are mediator variables between a number of internal and external drivers of lean and lean thinking". Their model concludes that there is significant correlation between management commitment and lean thinking within organizations. Moreover, they state that there is indirect influence between "management exposure to external information sources" and lean thinking, as external information supports management commitment to lean (Boyle et al., 2011, p. 597). Furthermore, Boyle et al. (2011) find that external pressures influence management's commitment, however, not their motivation to seek external information about lean. External motivation to work with lean stems from practical advantages, often including improved processes, cost and time reductions, better quality or even institutional pressures (Christensen et al., 2019; Januszek et al., 2024). External pressure can also stem from mergers and acquisitions, as lean thinking can potentially be inherited from another organization (Thornton et al., 2019).

In regards of internal pressure and innovating organizational climate, Boyle et al. (2011) discover that both factors are the main drivers for management's incentive to pursue external information sources about lean. According to Boyle et al. (2011, pp. 591-592), "organizations with an innovative climate are likely to be open to new ideas, less

resistant to change, and therefore more likely to support the openness, information transparency, and functional integration that is required for lean to succeed". However, while innovative climate is a key antecedent to management commitment, its influence on lean thinking is not substantial enough to directly increase lean thinking in organizations. Therefore, even in innovative organizations, a successful lean implementation eventually depends on managerial leadership. Thus, managers' understanding of lean principles and their commitment to them will ultimately define the extent to which an innovation-oriented culture can support lean outcomes (Boyle et al., 2011). These findings suggest that the combination of internal and external pressure, innovating organizational climate, and especially the utilization of external lean information are key antecedents to management commitment.

In conclusion, while existing literature has identified factors such as employee engagement, top management involvement and lean training as critical to the success of a lean implementation (Belhadi et al., 2016), most studies have, however, examined already established implementations or the transfer of lean practices across multinational units, leaving the initial phase of implementation underexplored. Moreover, although studies suggest that pressure, organizational culture and external information have significant effects on management commitment (Boyle et al., 2011), the influence of cross-cultural environments has not been explored sufficiently. Little is known especially about how managers in multinational environments interpret and make sense of lean, and how global standards interact with local perceptions during the early stages of implementation. These research gaps emphasize the need for empirical research that examines managerial sensemaking in a multinational context, with a focus on the antecedents of managerial commitment that shape lean initiations.

2.3 Summary

The literature review explores the early stages of lean implementation within multinational companies. While lean practices are popular, especially in the manufacturing industry, many MNCs struggle to achieve lasting improvements due to misapplication of

tools, incomplete understanding of lean principles and the tendency to standardize practices across diverse environments. These issues often stem from a lack of strategic alignment and insufficient preparation during the early stages of implementation.

Two key frameworks are examined to understand the initial phases of lean implementation. Mostafa et al. (2013) present a model which divides implementation into four phases: conceptualization, implementation design, implementation and evaluation and complete transformation. The model effectively displays the different phases while highlighting practical tools as a part of each phase. On the other hand, Belhadi et al. (2016) provide deeper insight into the pre-implementation phase of implementation. Their model outlines sequential steps of the conceptualization a more organizational perspective which suits the sensemaking approach of the thesis. The framework helps to establish critical success factors for the conceptualization phase, such as organizational involvement and strategic alignment, lean training, as well as lean plan and selection of lean perimeter.

The examination of the conceptualization stage of implementation and its critical success factors provide a foundation for further exploration regarding managerial sensemaking. Subsequently, the thesis discusses how managers perceive lean practices during the early stages and how those perceptions influence their engagement with lean (Arellano et al., 2021). Existing research establishes that managers' attachment to lean is essential in driving meaningful and effective change, however, even when lean is perceived as beneficial it does not guarantee managerial commitment (Januszek et al., 2024). Moreover, existing literature demonstrates that perceptions of lean can vary across hierarchical levels (Emiliani & Stec, 2005; Januszek et al., 2024), which can lead to a misalignment and ultimately resistance if the lean plan is not clearly defined and communicated across the organization (Floyd & Lane, 2000; Kotter & Schlesinger, 2008).

Multinational environments further complicate managerial sensemaking in MNCs. Cultural dimension such as power distance and uncertainty avoidance can have significant

effect on how lean principles are perceived within multinational organizations (Erthal & Marques, 2018). For example, bottom-up problem solving may contradict hierarchical norms in cultures with high power distance, whereas continuous improvement can face resistance in cultures that favor stability. Therefore, managers in culturally distant environments can perceive global lean initiatives differently, which can influence their engagement and commitment (Wangwacharakul, 2024). On the other hand, while the effects of multinational context on lean implementation and transfer of practices has been explored in existing literature, its implications on the conceptualization of lean remain underexplored.

In conclusion of the literature review, antecedents of management commitment to lean are rooted in individual beliefs, organizational dynamics and external influences. While managers' perceptions about lean have a critical role, it is important to recognize the significance of external information in strengthening lean commitment, especially when supported by an innovative organizational climate and internal motivation (Boyle et al., 2011). Practical experience and lean knowledge reinforce engagement with lean, while barriers such as time constraints, limited understanding and competing priorities hinder it (Christensen et al., 2019; Salonitis & Tsinopoulos, 2016).

3 Research methodology

3.1 Research design and approach

In order for the thesis to address the identified research gap regarding how sense making affects commitment in lean implementations, it adopts a qualitative research approach. Qualitative methodology provides the opportunity to take a more exploratory approach as well as collect in-depth data that can contribute to existing theories and literature (Grossoehme, 2014). Moreover, it enables a more comprehensive contextual understanding of the researched phenomenon as experienced or perceived by the individuals (Malterud, 2001). As the thesis aims to explore sensemaking in an MNC, qualitative analysis allows the thesis to not only detect managers' interpretations and perceptions which are key elements to the sensemaking perspective, but also to examine the implications of a complex multinational context. Moreover, the thesis follows an abductive research approach. While the analysis is guided by existing literature on lean implementation in MNCs and managerial sensemaking, the emerged themes are not predetermined. As stated by Timmermans and Tavory (2012, p. 167) "Abduction refers to a creative inferential process aimed at producing new hypotheses and theories based on surprising research evidence". Therefore, even though existing theory and literature ground the research, unforeseen themes emerge during the empirical analysis thus affecting the findings and implications of the thesis. Accordingly, the research alternates between existing theory and empirical findings to develop insights into how managers perceive and commit to lean.

3.2 Research strategy: Interview study

The thesis has selected interview study as the primary research strategy as it has the ability to provide more comprehensive insight by allowing a broader sample of managers within a single company. A larger sample of managers from a single organization but from different hierarchical levels enables a more dimensional perspective of the organization and its correlative relationships (Gerring, 2004). Moreover, an interview study

enables the research to go beyond observation as it allows for direct contact with the subjects (Viera, 2023). Furthermore, direct contact provides the opportunity to gain deeper understanding of "the subjects' perspectives, opinions, and experiences", which supports the objective of the thesis (Viera, 2023, p. 125).

The thesis bases the choice to focus on a single multinational corporation on the research question. The primary aim of the study is to gain in-depth understanding of how managers make sense of lean in practice, rather than generalize findings across organizations. Interviewing the members of a single company enables the collection of detailed insights across multiple managerial levels within a consistent organizational context, providing depth that would not be possible in a broader, multi-company study. The company included in the study was not selected through a sampling process, but instead was determined by the fact that the thesis was conducted as a commissioned project. Nevertheless, the selected organization provides a highly relevant case for the research question, as it is a multinational corporation currently in the early stages of lean implementation. Moreover, the commission enabled access to managers across different functions and organizational levels, ensuring a diverse set of perspectives.

3.3 Data collection methods

In order to gain insight into the organizational perceptions, the thesis selected to utilize semi-structured interviews as the data collection method. Interviews allow analyzing gestures and attitudes in addition to textual answers (Fossey et al., 2002). Furthermore, according to Fossey et al. (2002), a semi-structured interview allows for more flexibility, thus ensuring that key topics are covered thoroughly. As the study includes managers from different managerial levels and different MNC units, semi-structured interviews allow for the accommodation of contextual variations, thus strengthening the depth of the analysis. Therefore, data for this research was collected through semi-structured interviews. The unit of analysis in this study is the individual manager, as the research focuses on how managers perceive lean implementation and what factors influences their commitment to it. The unit of data collection consists of semi-structured interviews

conducted with managers at various levels within the case company. Moreover, the units of measurement in the study are the themes derived from the interview transcripts, which portray the interviewees' views, interpretations, and experiences related to lean implementation.

The interview structure was outlined generally and key themes of the questions were defined before the interviews (appendix 1), however the specific questions and their sequence altered between interviews depending on the interviewees' role within the company, lean knowledge, and experience on the topics. As stated by Viera (2023, p. 125), "the information that is collected not only informs the researchers' initial research question(s) but also may change or broaden them". Consequently, the interview questions were altered and broadened as the interviews went on, due to the accumulated knowledge from the earlier interviews. In addition, the nature of semi-structured interviews allowed for follow-up questions during the interviews in case further elaboration or explanations were required. The interview themes were developed primarily based on the research question and secondary research objectives, with an emphasis on managerial sensemaking and commitment antecedents as these topics are underexplored in current literature. The interview questions were further defined based on the literature review regarding key success factors of lean implementation in initial stages as well as literature on managerial sense-making. Moreover, the interview questions were developed utilizing the prominent more specific themes that emerged from the review, which included managerial perceptions, organizational commitment, and individual engagement.

The sample for data collection was delimited according to the scope of the thesis. As the thesis focuses primarily on the sense-making perspective amongst managers and especially top-management, the sample was selected to include individuals from a managerial level. The sample for the data collection included eleven individuals who were all interviewed between February and March 2025. Between the managers that were interviewed, there were differences in their hierarchical level as some but not all of the

participants were in the company's executive team. The selection criteria for interviewees included having all of the executive level managers, as well as a variety of middle level directors and managers across different functions and MNC units to ensure both horizontal and vertical depth. Consequently, the sample had executives, directors and managers from nearly all of the different functions within the company, as well as from different subsidiaries of the group. Moreover, the selection criteria included having interviewees with some levels of lean experience. Thus, the selected interviewee group consists of individuals who have operative experience of lean efforts, as well as individuals who are in a key decision-making position and thus should be aware of the implemented lean activities. In order to protect confidentiality, all interviewees have been anonymized for the thesis and are referred to by coded labels which represent the interviewees' role level and rank at the case organization.

Interviewee label	**Interview time**	**Interview length**	**Interview language**	**Primary location**	**Previous experience with lean**
Executive A	14. March 2025	57 minutes	English	Subsidiary, Denmark	Yes
Executive B	14. March 2025	41 minutes	English	Subsidiary, Sweden	Yes
Executive C	12. March 2025	51 minutes	Finnish	HQ, Finland	Yes
Executive D	12. March 2025	41 minutes	English	Subsidiary, Sweden	No
Executive E	21. February 2025	36 minutes	English	Subsidiary, Poland	Yes
Director F	21. March 2025	29 minutes	Finnish	HQ, Finland	No
Director G	26. February 2025	59 minutes	Finnish	HQ, Finland	No
Director H	25. February 2025	39 minutes	Finnish	HQ, Finland	Yes
Director I	17. February 2025	38 minutes	Finnish	HQ, Finland	Yes
Director J	7. March 2025	50 minutes	English	Subsidiary,	Yes

				Denmark	
Manager K	5. March 2025	30 minutes	Finnish	HQ, Finland	No

Table 1. Summary of the interview details

Before conducting the interviews, the interviewees were notified of the research and its topic through a research notice. A brief introduction was provided ahead of the interviews, in order to ensure that all participants were prepared to discuss the specific topic and were aware of related terminology. Moreover, the interviewees were informed about the scope and objective of the research, as well as the broader themes of the interview questions. Additionally, the interviewees were provided a privacy notice, as the interviews were voice recorded to ensure accurate capturing of the responses, and to mitigate misinterpretations and researcher bias.

As there were participants from different subsidiaries of the multinational organization, all of the interviews were held online. Moreover, the interviews were conducted in either Finnish or English, based on the interviewees' preference. Finnish was chosen due to the company headquarter being located in Finland, and thus several participants speaking Finnish as their first language. English was chosen as the second option based on it being the primary language within the company for global communication. It is important to consider the possible influence of cultural differences as well as differences in language proficiency, which might cause miscommunication between the interviewer and interviewee. On the other hand, as the interviews were conducted as semi-structured, it allowed for further questions and elaboration in order to achieve mutual understanding of the responses. Moreover, in order to mitigate language related miscommunication the interviews were transcribed carefully while being mindful of expressed nuances, tones and cultural expressions. Another factor to be considered is translation of the interviews. The Finnish interviews were analyzed in Finnish to mitigate misunderstandings and to ensure captivation of tones and nuances. However, some citations from the interviews are highlighted in the analysis to further support and validate the findings. The

translation of citations from Finnish interviews was conducted carefully to preserve the content.

3.4 Data analysis

For the analysis of the collected interview data, the thesis has selected to utilize abductive thematic analysis. According to Khurshid et al. (2025, p.3) thematic analysis is a "process that codes the data into themes and patterns". In addition to "structuring the data into meaningful themes", thematic analysis helps to condense the data into comprehensible form while "maintaining the balance of theorizing with empirical data" (Thompson, 2022, p.1410). According to Thompson (2022), abductive thematic analysis includes the following steps: transcription and familiarization, coding, development of themes, theorizing, and comparison of datasets.

The thesis started the thematic analysis with transcribing the audio recordings after the data collection phase. Recordings were transcribed into a table and sorted by interviewee and further by interview question. As the thesis utilized an abductive approach, it was possible for the thesis to note interesting points during the interviews which required further detail and adapt the data collection in order to seek deeper understanding. After transcribing the audio recording, the thesis continued the analysis with coding and development of themes, which were broadly divided into three categories based on the literature review: perceptions about lean, organizational motivation to implement lean, and managerial commitment to lean. As the analysis deepened, more specific themes were determined within these broader categories based on emerged interpretations.

As stated by Thompson (2022, p.1413), "the process of coding condenses the mass of qualitative data by categorising and colour highlighting certain sentences and paragraphs into codes based on their related characteristics". Accordingly, the transcriptions were color coded by themes that emerged from the data. First, the transcribed interview answers were divided into three major categories based on which theme the questions were related to: perceptions, organizational motivation, and management commitment.

Next the data in each category was further coded by highlighting all different characteristics, after which all related points were color coded to represent a possible connection.

As clear patterns were identified from the data, the thesis started to develop themes. According to Thompson (2022, p.1414), “developing themes begins by looking at relationships between different codes and sorting them based on their ability to collectively explain the story behind the data”. Consequently, the thesis grouped different related codes that collectively portrayed a meaningful theme. While developing themes from the visible patterns, the thesis also compared the datasets to identify differences. The comparison was conducted by exploring whether some themes emerged in one dataset but not in another.

Lastly, the thesis theorized the collected data by explaining the connections between the datasets and the emerged themes. The thesis connects the empirical findings with theoretical knowledge in order to determine how existing frameworks could explain the emerged themes. Moreover, in line with the abductive approach, the thesis also explored themes that existing literature has not yet addressed or sufficiently explained.

3.5 Reliability and validity

With qualitative interview studies, there are some concerns related to the reliability and validity of the research. As Quintão et al. (2020) emphasize, trustworthiness is essential in ensuring that findings are robust and meaningful. Since the thesis employs an interview study as its research method, with semi-structured interviews as the primary data collection technique, it is acknowledged that not all factors affecting reliability and validity can be fully eliminated.

Validity refers to the accuracy and generalizability of the research and its findings. As the research was conducted through semi-structured interviews, there is a concern regarding the accuracy of the findings and the appropriateness of the selected methodology. However, as the semi-structured interviews allowed for clarifying follow-up questions

and exploration of unexpected findings, it increases the validity of the research. Moreover, as the thesis follows a qualitative and abductive research design, its purpose is not to achieve statistical generalization but to contribute to analytical generalization. The findings are grounded in the specific context of a multinational company undergoing the early stages of lean implementation and, therefore, reflect the perceptions of managers within that setting. By linking the empirical research to theoretical frameworks related to lean implementation, managerial sensemaking and commitment antecedents, the thesis enables conceptual generalization. Furthermore, the description of data collection allows practitioners to assess the relevance of the findings to other organizational contexts.

Reliability refers to the consistency and replicability of the findings. However, due to the nature of interview study methodology and semi-structured interview approach, the findings are not intended to be validated through repetition. As lean implementation is a complex and multi-staged process, there is significant variation regarding the state of implementation between different companies. Therefore, the specific context of the case company and the implementation phase it is in, has many implications on the findings of the research. Thus, the findings may not be replicable in studies where the case company has, for example, different implementation stage, lean experience or vision to implement lean.

4 Findings

4.1 Perceptions about lean

When the interviewees were asked to describe what lean means to them, the general answer amongst all participants was that lean focuses on improving efficiency in the company through minimizing waste. The answers reflected a theme of continuous improvement with an emphasis on efficiency and improved quality.

> *"For me lean is a philosophy or a kind of a mindset. It is the way we work with less waste, and there are many different kinds of waste. It can be applied at work or in your lifestyle, so it is not limited to professional use only" (Executive B)*
>
> *"I would describe lean as a streamlining process that aims to reduce waste in different functions. So reducing time spent on actions which are not value adding" (Executive C)*
>
> *"I have not worked with lean at all, but in my understanding it is to find ways to work in a safe and efficient way in a production facility" (Executive D)*
>
> *"Lean for me is the utilization of all resources which we have in the company, and focusing on not creating waste. So focusing on what can we do better, when can we save, when can we make an improvement. Sometimes people think that lean is only about supply chain or production, but it is incorrect as lean is as worth in for example sales" (Executive E)*
>
> *"For me lean signifies, above all, a structured way of working and the utilization of numeric tools for improvements and increased efficiency" (Director H)*
>
> *"For me, lean stands for order and organization in our processes and way of working within the supply chain. Producing our product with the right supplies and equipment, with the right processes and resources, efficiently without waste, and with good quality" (Director F)*

Executives A, B, C and E viewed lean beyond operational improvements as they mentioned that lean is a mindset that goes beyond the value chain and touches the whole company. On the other hand, Executive D as well as the majority of directors highlight

lean from a more operational perspective. This difference in perceptions could be due to the different backgrounds and current roles of the managers. While some of the executives and directors have some previous experience with lean, they seem to emphasize different lean benefits. Many of the directors highlight operative improvements, whereas majority of the executives view lean from a more holistic standpoint while emphasizing its benefits across the organization. Moreover, four of the five executives mentioned streamlined communication as one of the benefits of lean implementation, while emphasizing the importance of open communication within the whole organization. Communication was also mentioned by Director I, who in turn placed emphasis on open communication in the operative processes. Furthermore, Manager K as well as the directors emphasized utilizing lean to streamline processes and to find a structured way to organize processes, with a clear focus on production operations. They also mentioned lean tools more frequently than interviewees on the executive level. These interpretations showcase that managers' backgrounds influence managerial perceptions within the case organization. Top-level managers seem to have a more comprehensive view of lean and its impact on the whole organization, whereas middle-managers emphasize practical improvements related to operations, systems and especially production processes. This suggests that there is a potential **difference in the perceived benefits of lean** across managerial levels.

Additionally, another major theme emerged from the interviews. Out of all eleven interviewees only four of them mentioned customers in any way.

> *"Minimizing waste not only in the value chain but the whole organization, with the customer or end consumer in mind" (Executive A)*
>
> *"Lean can address things that are value adding to customers" (Executive B)*
>
> *"Focusing our resources where they add most value" (Director J)*

Moreover, Executive C also stated that lean is aims to reduce the time spent on non-value-adding activities. While the theme of customer orientation was mentioned in a few of the interviews, it is notable to acknowledge that in seven out of the eleven

interviews the theme did not emerge. Therefore the findings indicate a **lack of customer-centric thinking**.

When asked about the perceived challenges regarding establishing lean within the organization, the majority of respondents mentioned resources. The theme emerged most frequently amongst middle-managers as all of them stated that more resources would be required for a successful implementation.

> *"We would need resources to implement lean. With current resources it is not possible for the organization to sustain a complete lean transformation" (Director F)*

Moreover, two of the executives also mentioned resources as a possible challenge, and stated that insufficient resources are one of the reasons why the organization has not been able to implement lean further yet. Both Executives A and E noted that because lean implementation requires full commitment, it is challenging to initiate implementation when resources and focus are already occupied in other major projects. On the other hand, Executive A also noted that as other projects are soon being finalized and the company is showing signs of financial readiness, the implementation of lean is becoming more topical. However, Executive A stated that there are other challenges the organization must address before implementation can move forward.

> *"One of the things where I feel we are still struggling is to have a very good feedback culture. I think it is very important that we have a feedback culture from leader to an employee but also between employee. Because you need to have that element in order to secure the discipline and being consistent in your way of operating" (Executive A)*

A consistent theme that emerged from the interviews was **insufficient lean awareness and knowledge within the organization**. The topic of lean training and increasing lean understanding was mentioned as a necessary step before implementation in eight out of eleven interviews, with varying levels of managerial roles.

> *"There is scattered knowledge and experience about lean in the executive team" (Executive A)*

"It is important to get people to understand lean and take it as a way of working rather than a set of tools" (Executive B)

"The organization is very specific about cost efficiency. I believe a conversation would be raised about why we are investing money in new processes when we can manage with the current ones. Obstacles for process improvements that have been raised include investment costs, such as external consultation, and employee resources. And this is where we are mistaken, as in the end we would save resources" (Executive C)

"If lean was to be implemented more in depth, it would require more know-how and time. I don't believe we currently have enough people with expertise in data analytics, so it could be worth it to consider outside consultants to support the utilization of tools" (Director H)

One director emphasized training regarding lean tools, while four directors and executives emphasized raising awareness about lean and its benefits in order for the whole organization to understand why it should be implemented. This difference in interpretations could stem from a difference in perceived benefits as Director H emphasized lean tools whereas many of the executives viewed lean more holistically. However, the managers' backgrounds with lean don't seem to directly influence their views on lean training as Director H, Executive A, B and C all have previous experience with lean. Executives A and B noted that one of the biggest challenges is to implement lean beyond tools and practices. The theme of insufficient understanding of lean was raised as a challenge also by Executive C who mentioned that there could be some concerns about the costs and workload in the executive level. Executive C noted further that the concerns would refer to insufficient understanding of lean within executives as the premise of lean philosophy is to save time and resources in the long term.

To address the need for more lean training, Director H noted that the organization would benefit from external expertise. Also Executive A mentioned that external experts could potentially be utilized in the implementation, however Executive A also recognized some

additional challenges, especially related to the multinational aspect. According to Executive A, as the company has multiple sites in different countries it is difficult to have external expertise in the right place at the right time. The challenge is to determine whether to get local or global experts while maintaining cost-effectiveness. In addition, the multinational aspect brings another challenge regarding lean training. Executive A noted that it would be important for employees to get training in their own language to ensure sufficient understanding, however if the trainings are held locally it is difficult to ensure standardized content. On the other hand, if there is a joint external expert across sites to ensure coherent trainings and standardized activities, it is challenging to address site or country specific issues. The theme of multinational training surfaced only in Executive A's interview, thus implying an inconsistency amongst top-level managers. While there are several executives with previous experience with lean and similar background of managing multiple sites in a multinational organization, only one executive raised the implications of the multinational settings. This finding could suggest that there is, however, a difference in the depth of lean experience amongst executives, which could affect their understanding of implementing lean in a multinational company.

4.2 Organizational motivation to implement lean

When asked how lean would fit into the strategy and goals of the company, all interviewees responded positively, thus indicating **perceived strategic alignment**.

> *"In the strategy there are a few initiatives that are very clearly related to lean. The initiatives aim towards doing things better and smarter, and that is some-thing that relates to lean and continuous improvement mindset. So clearly these parts are lean, but of course lean can be used everywhere" (Executive B)*
>
> *"In my opinion, lean is not clearly present in the strategic initiatives, or at least it is not very visible in the projects as nobody mentions lean when talking about the initiatives" (Executive C)*
>
> "Per my understanding lean is currently not a part of the strategic initiatives" (Director F)

"It would be important to determine if lean is a practice that the company wants to implement. On the other hand, lean is not suitable for every organization, and it is not needed everywhere. Therefore, the company must first decide if lean is needed and suitable for the organization" (Director I)

Directors F and I stated that it would require further examination to determine what continuous improvement philosophy would suit the company best, but both also portrayed willingness to engage with lean if it was to be implemented further. The rest of the interviewees indicated clearly that in their perception lean would align well with the company's strategy. Many of the interviewees, for example Executive B, referred to the company's current strategy, expressing that there are some ongoing strategic projects that reflect lean philosophy. However, Director G and Executive C pointed out that lean is not mentioned at all when communicated about these projects. Consequently, several interviewees did not consider the current strategic projects to represent lean philosophy. The responses indicate varying perceptions among managers of what constitutes lean, thus reflecting a broader **misalignment between strategic intent and operational understanding**. While the interviews displayed conflicting views regarding the perceived leanness of the current strategic initiatives, on the other hand, all the respondents recognized that some lean tools have been implemented within the organization.

All eleven respondents stated that some lean elements have been implemented group wide, including 5S, root cause analysis and some form of daily operations management. Majority of the respondents indicated that 5S has been a group wide effort, while other lean tools have been implemented in a more localized manner across sites.

"There is inconsistency with used tools" (Executive A)

"Lean is very individual and not very systematic at the company" (Executive B)

When asked about the implementation process regarding the elements that have been introduced thus far, the interviews displayed some conflicting views. On the executive level a few respondents viewed that the implementation process has been successful. On the other hand, for example Executive E mentioned that the implementation of 5S

did not take on immediately when first introduced. According to Executive E the implementation was not successful at first due to insufficient resources and inadequate change management as the implementation process lacked consistency, proper education and reasoning for the change. This finding also emerged from interviews with Manager K, Directors F and G as well as Executive C.

The interviews also portrayed a pattern of **confusion and uncertainty regarding the long-term plan for lean** across all managerial levels, but especially amongst middle-management as all six middle-managers noted that they are unaware of any intention to implement lean.

> *"Lean implementation requires someone to drive the initiative systematically" (Manager K)*
>
> *"We have discussed lean a few years ago, but since then there have not been any discussions. At that time we said we are not ready now, let's focus on some simple tools like 5s. But maybe it is a good time to think about it again, if we would be ready now" (Executive B)*
>
> *"There has not been any discussions on implementing more lean practices" (Executive D)*

Moreover, Directors F, G and I all mentioned that there must be a clearly communicated decision from top-management to initiate a comprehensive implementation, which they have not noted yet. Several of the middle-managers also noted that it is unclear how lean the organization aspires to be in the future. For top-management, the interview findings were mostly in line with middle-management perceptions about the organization's lean vision. Three of the five executives were not aware of any intention to implement lean further in the near future. Executive B mentioned that lean has not been ruled out, but because it has not been a topic of discussion for a few years the executive team lacks a clear and well communicated long-term plan. On a contrary note, Executive E stated that there is intention to implement lean in the future, but it would require absolute commitment from top-management first. Moreover, Executive A stated that there

is desire to implement lean and the organization is getting closer to a position where it can be implemented, however capabilities and knowledge about lean are not yet sufficient to sustain a comprehensive lean implementation.

> *"There needs to be a balance between what gives most value to the business versus what can be implemented successfully" (Executive A)*

In addition, Executive A noted that the objective with certain elements of lean that have been implemented within the organization is to prepare the organization and familiarize people with the lean philosophy. Furthermore, the aim is to not only gain experience about lean tools, but to initiate a lean mindset thorough different strategic projects which represent lean. All in all, there seems to be a disconnect between managerial levels regarding the company's lean vision. Top-level managers seem to have a clearer vision and plan for lean in the long-term, however there are differences within the executive level as well.

In addition to a pattern of conflicting perceptions about the long-term plan for lean, another major theme of **organizational change as a catalyst for lean** emerged from the interviews. When asked about the factors that led the company to consider lean, a few of the interviewees noted factors beyond the expected operational improvements. Director G and Executive C stated that the company started to gain interest in lean after external personnel joined the organization. Director G noted that the company carried out some acquisitions after which some managers with deep lean knowledge joined from the acquired organizations. Moreover, Executive C noted that other top managers with strong interest in lean were also recruited, which further increased the organization's motivation to implement lean practices. Therefore, this finding could indicate a possible relation between mergers and acquisitions and intention to implement lean.

4.3 Managerial commitment to lean

When asked to describe top management commitment towards lean implementation, the interviewees responded coherently across managerial levels. All of the interviewed

managers and directors raised that top management's commitment to lean efforts is not really visible within the organization and its internal communication.

> *"It is difficult to assess commitment towards lean as it is not visible in any communication" (Director I)*
>
> *"I would say top management commitment towards lean is quite weak. We have had a lean project where we tried out some tools, and as I recall, when we presented some of the results it did not seem to spark interest with the involved executives. On the other hand, some of the current strategic initiatives that are related to lean have strong top management commitment. However, it seems like the motivation could stem from other factors rather than from a vision to implement lean" (Director G)*

Manager K noted that engagement with lean is somewhat visible as there has been desire to implement certain elements of lean, however there is a lack of sufficient resources which does not indicate deep commitment. Also Director G and Executive C stated that for the current lean tools that have been implemented, the responsibility of following up on the practices lies mostly on the individual sites and functions rather than being supervised by the global management team. In addition, Director G noted that the top management is very specific on what projects are raised as initiatives in the company's strategy, and that in order to establish commitment towards lean on both managerial and organizational scale, it would require lean to be clearly raised as a strategic initiative. These statements together indicate an interpretation of **perceived lack of top management commitment**.

On the executive level, the theme of commitment emerged as well but from a different perspective. All five executives stated that the top management is supportive of lean. Executive C mentioned that on a general level there is desire to engage, however there still is a lack of understanding and experience of lean. Moreover, Executive A noted that commitment is very high but there is not sufficient awareness yet. On the other hand, Executive E mentioned that there is support for lean in the top management, however

commitment is difficult to assess as lean is not implemented wholly. In accordance, Executives B and D noted that there is not much commitment towards lean explicitly as the lean has not been a topic of communication at all, however there is support for the strategic initiatives which represent continuous improvement, efficiency and reduction of costs. Thus, a theme of **managerial support undermined by conceptual unclarity** emerges from the interviews.

Continuing on management commitment, the topic of prioritizing lean emerged in some of the interviews and thus uncovered a theme of **conditional commitment and competing priorities**.

> *"I have to prioritize my responsibility area, but I am applying lean even though it is not an explicit lean implementation. I try to streamline our team's processes and make it as easy as possible. I try to do things in a leaner way, but I am not really having an initiative called lean" (Executive B)*
>
> *"I am not the core target group for lean, and I think the core group should be established within the production function" (Director F)*

Two of the interviewees, Executive C and Manager K mentioned that they are interested in lean and would support it, but are currently unable to prioritize improvement and development efforts due to not having enough resources. On a similar note, Executive D noted that continuous improvement is prioritized throughout the top management, but personally would prioritize it only second after daily business activities. Moreover, also Executive B stated that they have to first prioritize their own role and area of responsibility, however lean philosophy can be applied to their own as well as their team's way of working. Out of the directors, Directors G and H stated that they would prioritize lean very high, whereas Director F mentioned that lean is not the highest priority as they do not see themselves as a part of the core target group for lean within the organization.

As a prioritization dilemma emerged from the interviews, the interviewees were asked to elaborate on what changes or support would enable deeper engagement and commitment with lean.

> *"In order to commit further,* lean needs to be raised into the company's strategy and campaigned within the organization" (Executive B)
>
> *"I would need more top management engagement and understanding for lean. In order to reduce waste, we need some investments that require top management permission. For top management to support the investments they must understand and see the potential benefits" (Director G)*

A key theme that emerged was a **need for stronger leadership support and communication** as half of the participants highlighted that they felt hindered by a lack of clear direction and visible top management support regarding lean. For example, Executive E noted that the whole top management team must commit, engage and visibly support lean. Moreover, Executive B stated that they could be an advocate and driver for lean, but there should be more than one driver within the organization.

To gain deeper understanding on commitment enablers, the interviewees were asked about the factors that influence their level of commitment and engagement with lean. A key interpretation that emerged from the responses was that **increased understanding enables lean commitment**. Four participants stated that they don't have practical experience with lean but are interested in it as they can recognize the value and potential benefits of lean. Moreover, two of these respondents mentioned that having clear top-down communication and demonstration on the objectives and purpose of the lean program would increase their commitment. In accordance, six of the interviewees, including both directors and executives, noted that their commitment to lean is based on their previous practical experiences with lean. Out of the participants with personal experience with lean, all six of them stated that it has increased their commitment to lean as they have been able to witness the potential benefits.

Dominant perceptions	Key findings
Difference in perceived benefits	Misalignment regarding the purpose of lean
Lack of customer-centric thinking	
Insufficient lean awareness	Misalignment in managers' awareness of lean
Misalignment with strategic intent and operational understanding	
Managerial support undermined by conceptual unclarity	
Confusion and uncertainty regarding long-term plan	Lack of a communicated lean vision
Perceived lack of top management commitment	
Conditional commitment and competing priorities	
Need for stronger leadership support and communication	

Table 2. Summary of the key findings

The above table represents a summary of dominant perceptions that emerged during the empirical analysis and consequent key findings. The thesis identified several consistent themes from the interviews, which can be divided into three key findings: misalignment regarding the purpose of lean, misalignment in managers' awareness of lean, and lack of a communicated lean vision. In addition to the above interconnected interpretations, the thesis also identified separate themes that are not clearly related to the observed key findings but are, however, significant factors for managerial sensemaking in MNCs. The themes include organizational change as a catalyst for lean, as well as lack of consideration for the effects of multinational environment on lean conceptualization.

5 Discussion and Conclusions

Lean management is a central approach for manufacturing companies seeking to enhance efficiency, reduce waste and increase customer value in highly competitive global markets (Lodgaard et al., 2016; Pakdil & Leonard, 2014; Sinha & Matharu, 2019). Although lean has been extensively researched, important research gaps remain regarding how managers interpret and commit to lean during its initial stages, especially in multinational corporations (Jurburg et al., 2019). The conceptualization phase is crucial for implementation as it shapes how managers make sense of lean and how they define their priorities during the implementation (Mostafa et al., 2013). Understanding the critical success factors at the early stages helps to reveal the antecedents of management commitment, such as management support, lean awareness and perceived benefits of lean (Belhadi et al., 2016; Boyle et al., 2011; Christensen et al., 2019). Furthermore, exploring these antecedents in MNCs, where implementation is more complex due to, for example, cultural and environmental differences (Friel, 2005), provides valuable insight into how lean commitment can be developed across diverse organizational contexts. By examining how managers make sense of lean during the initial stages of its implementation in MNCs and further by identifying the antecedents of management commitment to lean in MNCs, the thesis provides both theoretical and managerial insights into the interactive relationship between managerial sensemaking and lean commitment.

For the empirical study, the thesis utilized a qualitative approach. With a semi-structured interview strategy as the data collection method, the thesis gathered insights from eleven managers from different hierarchical levels, functions and MNC units within a single case company undergoing early lean conceptualization. The selected approach enabled horizontal and vertical depth and thus allowed for deeper understanding of diverse managerial sensemaking within a consistent organizational context. The data analysis was conducted by applying abductive thematic analysis methods including transcription, coding, theme development and theorization. The abductive methodology enabled the thesis to identify both expected and emergent themes related to lean sensemaking and managerial commitment.

Consequently, the thesis identified an emergent key finding regarding management commitment antecedents that is yet to be explored or explained in existing literature. The thesis concludes that lean vision, and more precisely a well-communicated lean vision, is an essential antecedent of managerial commitment to lean implementation. While Boyle et al. (2011) establish that internal and external pressure, innovating organizational climate as well as external lean information are key factors that enable managerial commitment to lean, the thesis would argue that lean vision is as vital in establishing deep commitment amongst managers in MNCs. The empirical findings indicate that even managers who exhibit the antecedents associated with strong commitment are still hesitant to fully commit to a lean transformation. The analysis suggests that this hesitation is driven by the lack of a collective and unified lean vision, which prevents individual sensemaking from translating into organizational commitment.

5.1 Theoretical Implications

One major theme that emerged from the empirical analysis was a difference in the perceived benefits of lean within the case organization. Moreover, the findings indicate that most managers perceive lean as a set of tools that reduce waste rather than as a value creating, customer-driven approach. This finding is in line with existing literature as Herrala et al. (2012) as well as Radnor and Johnston (2013) find that professionals often emphasize the operational approach with lean. Both the differing perceptions and the lack of customer-centric thinking have significant implications for the implementation of lean (Lodgaard et al., 2016). For example, Floyd and Lane (2000) state that misalignment within the organization can lead to managers having different visions of the outcomes as well as differing expectations of the required efforts, which can lead to a failed implementation.

In addition to differing views on whether lean is a set of tools or a holistic mindset, the findings also indicate a difference in perceptions about the purpose of lean. While some top managers mentioned value-creation, the majority of participants did not define lean

through a customer-focused approach. The same finding has been discussed in previous research, for example, Thornton et al. (2019, p. 719) conclude that managers often fail to see how lean "influences customer satisfaction and retention while enhancing efficiency in production". While Herrala et al. (2012) state that lean processes can create value to customers even if lean is not considered directly as a value-adding practice, they also conclude that a tool-driven focus ultimately undermines the purpose of lean. In accordance, Radnor and Johnston (2013) also find that ultimately customers are the ones who define waste and, thus, it is vital for companies to be able to identify what factors are value-adding for their customers.

Another factor that can influence how lean is perceived within multinational companies is the cross-cultural environment. Current literature suggests that diverse cultural context can have significant effects on how individuals make sense of lean. Wangwacharakul (2024) mentions that managers in culturally distant environments can often have different perceptions on global initiatives. In accordance, Erthal and Marques (2018) also conclude that cultural dimensions have significant effect on how lean practices are perceived in MNCs. On the other hand, while the phenomenon is suggested in existing research, it was not noted within the case organization in the empirical analysis. However, as the units of the case organization are relatively close culturally and thus are not that distant in dimensions such as power distance and uncertainty avoidance, it may explain why cultural factors did not emerge during the interview study. More so, the findings indicate that differing perceptions about lean are more likely due to insufficient lean awareness and knowledge within the case organization. Nevertheless, as cross-cultural environment has clearly been stated as a significant factor in later lean implementation phases, it should be somewhat present in the conceptualization phase as well. As the theme barely emerged in the empirical research, it would suggest that managers are yet to identify the scale of the effects of MNC context on lean sensemaking and managerial commitment. Subsequently, this finding is still underexplored in current literature, and thus this study extends the research on the topic.

The empirical analysis highlighted a pattern of misalignment between strategic intent and operational understanding, which indicated that lean initiatives in the case organization's strategy were not considered as lean by all of the interviewed managers. Even though the executive level confirmed that the strategic initiatives represent lean philosophy and are utilized to endorse a lean mindset within the organization, multiple managers did not mention the initiatives when asked about existing lean practices within the organization. Moreover, a few participants directly stated that they do not perceive the strategic initiatives to represent lean. This finding not only highlights the difference in perceptions, but also the significant misalignment in managers' awareness and understanding of lean.

In accordance, the analysis also indicated that there is managerial support for lean in the case company, however, it is undermined by conceptual unclarity. The theme is also highlighted in previous research as Netland et al. (2020, p. 546) find that "top managers cannot commit fully to something they do not understand and believe in". Furthermore, the analysis displayed that many of the managers invoke the lack of time and resources as a barrier to commit to lean, whereas Christensen et al. (2019, p. 283) state that "lean practitioners know that time constraints should not be a barrier to work with lean as applying lean techniques should free up resources". Thus, it would also imply that lean and its benefits are not understood sufficiently.

Moreover, the findings suggest that the scope of lean knowledge has direct effects on motivation to implement and commit to lean. Although the analysis revealed insufficient lean knowledge overall, it also showed that individuals with greater knowledge and especially prior experience of lean were more inclined and committed to its implementation, thus suggesting that increased knowledge is an antecedent to managerial commitment. This finding is also suggested in previous research, for example, by Boyle et al. (2011) who suggest that managers' beliefs and perceptions of lean beneficiality influence their commitment towards lean efforts. Moreover, they highlight the importance of external information by stating that there is direct correlation between the amount

of external lean information and management support. They also observe that greater exposure to external lean information often leads to a transition from a tool-based approach towards adopting lean as a mindset. In accordance, Januszek et al. (2024) find that perceptions of lean effectiveness are likely to translate into lean commitment, however, they only observe this finding with middle-managers, whereas with top-managers they find that an improvement in perceptions of lean effectiveness does not necessarily translate into stronger commitment to the program.

This finding also emerged from the analysis as the interviews imply a pattern of conditional commitment to lean as well as competing priorities, especially within the top-management level where several interviewees referred to a lack of time and resources. On the other hand, the findings demonstrate that executives with competing priorities and thus lower commitment to lean also display a lower level of lean knowledge and a lack of lean vision. In turn, executive level managers with deep lean experience displayed a clear intent to implement lean and commit to it. Moreover, not only did they have intent to implement lean but a clear vision about the implementation. The interviews demonstrated that executives with lean vision also have different barriers to implementation than managers with less lean knowledge. For example, Executive A stated that it is essential to first prepare the organization and the employees for the implementation before it can be initiated. In addition, they mentioned that the company's multinational context is a hindrance that must be addressed before lean implementation can take place. Thus, contrary to the findings of Januszek et al. (2024), the empirical research would suggest that at least in the case organization lean knowledge has significant influence also on top-management commitment to lean, thus providing new insight compared to existing literature. Furthermore, it could be argued that in addition to sufficient lean knowledge obtaining a lean vision is also an essential antecedent to management support.

The importance of lean vision emerges on several occasions in the interview analysis. The findings demonstrate patterns such as confusion and uncertainty regarding the long-

term plan for lean, perceived lack of management commitment, as well as need for stronger leadership support. All these themes fundamentally suggest a lack of a clear and well communicated lean vision. Existing literature addresses the need for lean vision briefly, for example, Netland et al. (2020) state that top-management must demonstrate their commitment through establishing a lean strategy, goals and vision. Moreover, Näslund (2013) mentions that top-management commitment should be presented through including lean in the strategy and furthermore by taking appropriate practical measures to evidence top-management support. Also Mann (2009) establishes that top-management can positively shape perceptions by clearly communicating the lean transformation and its anticipated benefits for the organization. Regarding the long-term plan for lean, Näslund (2009) concludes that a lack of long-term vision can be paralyzing for lean efforts as it can result in losing faith for the lean program. However, while lean vision and long-term plan are identified in previous research as antecedents for successful implementation, existing literature does not observe their role as antecedents for management commitment. Therefore, the thesis provides a new perspective for managerial sensemaking during lean conceptualization and thus extends existing literature on lean implementation.

Consequently, the thesis answers the research question "*How are managers making sense of lean during the initial stages of its implementation in MNCs*", by highlighting the role of managerial perceptions and organizational motivation, as well as emphasizing managerial commitment. With a primary focus on the management commitment, the thesis also answers a secondary research objective of identifying antecedents of management commitment, by establishing a new fundamental antecedent of management commitment to lean in MNCs: lean vision.

Finally, similarly to the finding of lean vision as a commitment antecedent, existing research overlooks another theme that emerges from the empirical analysis. The findings suggest that organizational change can potentially be a catalyst for lean and thus act as a motivator for managers to implement lean. The interviews demonstrate that external

recruits with deep lean knowledge and experience can act as drivers within the organization as they are able to advocate for lean programs. Moreover, the analysis suggests that mergers and acquisitions can demonstrate the same effect, especially if the other organization has already established lean practices within their operations.

5.2 Practical implications

This thesis provides several practical implications for managers and organization engaged in lean implementation, particularly within multinational contexts. The key contribution of the thesis is the finding regarding the significance of establishing and communicating a clear lean vision early in the implementation process. More importantly, the finding emphasizes the influence of shared lean vision on management commitment to lean, as the empirical analysis concludes that commitment remains limited without a shared understanding of the overall lean purpose and direction. Therefore, organizations should ensure that top management articulates a clear lean vision that connects strategic intent with daily operations and is consistently communicated across all organizational levels and units.

Second, the results highlight the need to invest in lean training and knowledge development at all managerial levels. Enhanced understanding of lean as a holistic philosophy, beyond a set of operational tools, can foster better alignment, deeper commitment and ultimately mitigate resistance. Structured and regular training programs can help managers internalize the customer-centric and value-driven principles of lean. Moreover, creating shared learning opportunities can help managers translate lean concepts into practical applications. In addition, providing tailored training for different managerial levels can ensure that both strategic and operational leaders understand their roles in supporting the lean transformation.

Third, the findings suggest that organizational change events such as acquisitions and leadership transitions can serve as catalysts for lean adoption if they are leveraged strategically. Recruited managers with lean expertise or exposure to mature lean systems

can act as internal change agents who reinforce commitment and knowledge transfer across units. However, to maximize the potential organizations should establish mechanisms that capture the tacit lean knowledge, ensuring that lean expertise becomes embedded across the organization rather that remaining dependent on specific individuals.

Finally, the research highlights the importance of contextual coordination and cultural sensitivity in promoting lean consistency across MNC units. Managers should recognize that while lean principles are universal, their interpretation is influenced by local environment and culture. Therefore multinational implementation requires adaptive communication and leadership approaches. A balance between global direction and local flexibility enhances the sustainability and long-term impact of lean initiatives across diverse organizational contexts.

5.3 Limitations and suggestions for future research

While the thesis offers valuable insight into managerial sensemaking during lean implementation, it is important to recognize certain limitations that frame the scope of the thesis as well as the relevance of its findings. First, the study focuses on a single multinational corporation, which limits the generalizability of the findings. The organization's specific culture, structure and stage of lean implementation possibly affect managerial sensemaking within that organization, thus making the findings less transferable to different settings. Second, while the abductive qualitative approach and the semi-structured interviews are well-suited for exploring sensemaking, they also involve subjectivity in both data collection and interpretation. The flexibility of semi-structured interviews allow for variability in the framing of questions and the depth of responses, thus possibly affecting the consistency across interviews. Third, the multilingual nature of the interviews introduces challenges related to translation and interpretation. Although the transcription and translation was conducted carefully to preserve meanings and nuances, factors such as subtle shifts in tone and language-specific expressions may have influenced the analysis. Fourth, the commissioned nature of the thesis, as well as the purposive sampling of managers may have introduced selection bias. Lastly, it is important

to mention the limited availability of literature. While lean implementation is a widely researched topic, literature gaps still emerge, especially regarding conceptualization and commitment antecedents as well as implications related to multinational implementation. These factors should be considered when applying the findings to broader theoretical or practical frameworks.

Building on the findings and limitations of this thesis, several avenues for future research are recommended. Future research could examine managerial sensemaking and commitment to lean implementation across multiple organizational context to enhance the transferability of the findings. Conducting comparative studies across different cultural environments would provide deeper understanding of how contextual factors influence lean conceptualization and managerial behavior. Moreover, future studies could also adopt longitudinal research approaches to explore how managerial sensemaking and commitment evolve over time as lean matures from conceptualization to full implementation. Finally, the role of lean vision communication identified in this thesis could be further explored to gain deeper understanding into how shared vision-building affects commitment and alignment in multinational settings.

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Appendices

Appendix 1. Semi-structured interview guide

Semi-structured interview guide	
Part I: Perceptions	
1.	What does lean mean to you, how would you describe it?
2.	What would you say are the key benefits of lean?
3.	How do you see lean fitting into the strategy and goals of the company?
4.	Is there an intention or desire to adapt lean more comprehensively and systematically?
5.	What challenges or obstacles do you see in establishing lean within the organization?
Part II: Implementation	
6.	Can you share an example of a lean practice that has been implemented in the company?
7.	Do you consider current strategic initiatives to represent lean principles?
8.	What factors led the company to consider lean? What was the driver/motivation?
9.	Was the implementation process of adopted lean tools standard across sites?
10.	Do local projects or challenges hinder lean / continuous improvement efforts on a group level?
11.	Has there been adequate allocation of resources, training and incentives?
Part III: Organizational commitment	
12.	How would you describe the level of employee participation in lean initiatives?
13.	How would you describe top management commitment towards lean?
14.	In you perception, is there any hesitation or resistance with implementing lean?
15.	In your perception, is there a long-term vision for lean?
16.	How has the lean vision been communicated within the organization?
Part IV: Individual engagement	
17.	What factors influence your level of commitment and engagement with lean?
18.	How would you prioritize lean compared to other strategic initiatives?
19.	What changes or support would enable you to engage and commit more?