



Kaunas University of Technology

School of Economics and Business

**The Relationship Between Leaders' Competencies and Factors
of Change Management in Medical Equipment
Manufacturing Companies**

Master's Final Degree Project

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Supervisor

Kaunas, 2024



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Innovation Management and Entrepreneurship (6211LX031)

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The Relationship Between Leaders' Competencies and Factors of Change Management in Medical Equipment Manufacturing Companies

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Summary

Innovation is a driving force for an organisation's success. It introduces new ideas and processes that transform the existing ways of working, making change management crucial for the implementation of innovation. Change remains a pertinent topic in today's globalised world, demanding both small-scale and multinational organisations to develop change management initiatives to adapt to the constantly changing business environment. Despite the importance of change management in organisations, change management initiatives have high failure rates, predominantly due to human factors. Stringent regulations and limited flexibility within the healthcare industry pose considerable challenges to change initiatives. For organisations in the healthcare industry to achieve the desired change outcomes, having a competent change leader is crucial. Today's dynamic environment calls for a more diverse and effective set of competencies, apart from the traditional leader competencies. The success of a change initiative is dependent on the leader navigating the challenges that arise throughout the change process. It is therefore important to understand the relationship between leaders' competencies and factors of change management to enable successful change initiatives.

Research question: How are leaders' competencies related to factors of change management in the context of the healthcare industry?

Research object: Relationship between Leaders' Competencies and Factors of Change Management

Research aim: To reveal the Relationship between Leaders' Competencies and the Factors of Change Management in Medical Equipment Manufacturing Companies in Germany.

Research objectives:

1. To define the research area in conjunction of leaders' competencies and the factors of change management in medical equipment manufacturing companies.
2. To develop a conceptual model of the relationship between leaders' competencies and the factors of change management
3. To justify the methodology for empirical research of leaders' competencies and factors of change management in medical equipment manufacturing companies.
4. To analyze the results of the research on the relationship between leaders' competencies and factors of change management and develop recommendations for future research and for medical equipment manufacturing companies

Research method:

1. Literature review was conducted to determine the relevance of the topic. The initial conceptual model was then developed, based on the leader competencies and factors of change management identified from the surveyed literature, relevant to the healthcare industry.
2. A mixed method strategy of qualitative and quantitative analysis was conducted to glean insights on the initial conceptual model. The quantitative data was collected through an online survey from 109 respondents (leaders and members) across four medical equipment manufacturing companies in Germany. The responses were then analysed using the statistical tool SPSS by IBM. To gain further insights, interviews were conducted with six of the survey respondents. This was then analysed using the 'content analysis' method. Findings from both quantitative and qualitative analysis were then discussed and the revised conceptual model was developed.

Research findings:

Although literature review suggested relationships between leaders' competencies and change management, these relationships have not been explicitly examined. The literature review facilitated the identification of leader competencies relevant to change management, and factors prominent across several change management models. With this as the basis, an initial conceptual model was developed.

The conceptual model was then revised based on the findings from the quantitative and qualitative research. These findings unveiled the presence, nature, and strength of the relationships between leaders' competencies and factors of change management. Organisations and leaders can gain a comprehensive overview of the leader competencies that are related to different change management factors, through insights generated from this research. The insights encourage leaders to further develop these competencies, fostering positive outcomes in change initiatives.

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Santrauka

Šiuolaikiniame globalizuotame pasaulyje pokyčiai tebėra aktuali tema, reikalaujanti tiek iš mažų, tiek iš tarptautinių organizacijų kurti pokyčių valdymo iniciatyvas, kad jos galėtų prisitaikyti prie nuolat kintančios verslo aplinkos. Nepaisant pokyčių valdymo svarbos organizacijose, pokyčių valdymo iniciatyvų nesėkmės dažnos, daugiausia dėl žmogiškųjų veiksnių. Griežtos taisyklės ir ribotas lankstumas sveikatos priežiūros sektoriuje kelia nemažai iššūkių pokyčių iniciatyvoms. Kad sveikatos priežiūros sektoriaus organizacijos pasiektų norimų pokyčių rezultatų, labai svarbu turėti kompetentingą pokyčių vadovą. Šiandieninėje dinamiškoje aplinkoje reikia ne tik tradicinių lyderio kompetencijų, bet ir įvairesnių bei veiksmingesnių gebėjimų. Pokyčių iniciatyvos sėkmė priklauso nuo to, ar vadovas sugebės įveikti iššūkius, kylančius pokyčių proceso metu. Todėl svarbu suprasti ryšį tarp lyderių kompetencijų ir pokyčių valdymo veiksnių, kad būtų galima įgyvendinti sėkmingas pokyčių iniciatyvas.

Tyrimo problema: Kaip lyderių kompetencijos susijusios su pokyčių valdymo veiksniais sveikatos priežiūros sektoriuje?

Tyrimo objektas: Lyderių kompetencijų ir pokyčių valdymo veiksnių ryšys

Tyrimo tikslas: Atskleisti lyderių kompetencijų ir pokyčių valdymo veiksnių ryšį medicinos įrangos gamybos įmonėse Vokietijoje.

Tyrimo uždaviniai:

1. Apibrėžti tyrimo kryptį Lyderių kompetencijų ir pokyčių valdymo veiksnių sąsajų medicinos įrangos gamybos įmonėse sąsajoje.
2. Sukurti konceptualų lyderių kompetencijų ir pokyčių valdymo veiksnių sąsajų modelį.
3. Pagrįsti lyderių kompetencijų ir pokyčių valdymo veiksnių medicinos įrangos gamybos įmonėse empirinio tyrimo metodologiją.
4. Išanalizuoti lyderių kompetencijų ir pokyčių valdymo veiksnių sąsajų tyrimo rezultatus ir parengti rekomendacijas būsimiems tyrimams bei medicinos įrangos gamybos įmonėms.

Tyrimo metodai:

1. Siekiant nustatyti temos aktualumą, atlikta literatūros apžvalga. Po to, remiantis ištirtos literatūros pagrindu nustatytais lyderių kompetencijomis ir pokyčių valdymo veiksniais, aktualiais sveikatos priežiūros pramonei, buvo sukurtas pirminis koncepcinis modelis.
2. Siekiant gauti išvalgų apie pradinį konceptualųjį modelį, buvo taikoma mišri kokybinės ir kiekybinės analizės strategija. Kiekybiniai duomenys buvo surinkti atliekant internetinę

apklausą, kurioje dalyvavo 109 respondentai (vadovai ir nariai) iš keturių medicinos įrangos gamybos įmonių Vokietijoje. Vėliau atsakymai buvo analizuojami naudojant IBM statistinę priemonę SPSS. Siekiant gauti daugiau įžvalgų, su šešiais apklausos respondентаis buvo atlikti interviu. Vėliau jie buvo analizuojami taikant turinio analizės metodą. Po to buvo aptartos kiekybinės ir kokybinės analizės išvados ir parengtas patikslintas koncepcinis modelis.

Tyrimo rezultatai:

Literatūros apžvalga leido daryti prielaidą, kad egzistuoja ryšiai tarp vadovų kompetencijų ir pokyčių valdymo, nors šie ryšiai nebuvo aiškiai išnagrinėti. Literatūros apžvalga padėjo nustatyti pokyčių valdymui svarbias lyderių kompetencijas ir įvairius veiksnius, kurie buvo ryškūs keliuose pokyčių valdymo modeliuose. Tuo remiantis buvo sukurtas pirminis koncepcinis modelis.

Vėliau koncepcinis modelis buvo patikslintas remiantis kiekybinio ir kokybinio tyrimo rezultatais. Šios išvados atskleidė vadovų kompetencijų ir pokyčių valdymo veiksmų sąsajų buvimą, pobūdį ir stiprumą. Organizacijos ir vadovai, remdamiesi šio tyrimo metu gautomis įžvalgomis, gali išsamiai apžvelgti vadovų kompetencijas, susijusias su įvairiais pokyčių valdymo veiksniais. Šios įžvalgos skatina lyderius toliau tobulinti šias kompetencijas, skatinant teigiamus pokyčių iniciatyvų rezultatus.

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List of abbreviations and terms

Abbreviations:

CM – Change Management

HC – Healthcare

Terms:

Organisational change: “Organisational change refers to when a company or business alters a significant component of its organisation, such as its culture, the underlying technologies or infrastructure it uses to operate, or its internal processes.” (Harvard Business School, 2020, p. 24).

Change Management (CM): Change Management is a systematic approach involving practices, processes and deliberate activities in order to facilitate and guide an organisation in its transition from the present state to the desired future state; It majorly focuses on managing the ‘people side’ of change (Kho, Gillespie, & Martin-Khan, 2020).

Leader: A leader is someone who guides, respects and supports their followers, through smooth and challenging times, to pursue a common vision. (Patton, 2020).

Leadership: “The ability to inspire confidence and support among the people who are needed to achieve organisational goals” (Dubrin, 2007 as cited by Visagie & Ukpere, 2013, p. 247).

Leadership competency: “A leader’s knowledge, ability, skills and behavioral capabilities to perform the job” (Swanson, Kim, Lee, Yang, & Lee, 2019, p. 89)

Introduction

Relevance:

In an ever-changing dynamic business environment, organisations strive to change and adapt their operations to the present needs as they evolve (Errida & Lotfi, 2021). Various factors such as customer needs, market dynamics, local & global competitors, and government regulations contribute significantly to the change in organisational requirements (Akbar, et al., 2019). This makes innovation a driving force for an organisation's success. It introduces new ideas and processes that transform the existing ways of working, making change management crucial for the implementation of innovation. The investigation of change and its development in organisations is one of the most pertinent themes in management studies (Rafferty, Jimmieson, & Armenakis, 2013 as cited by Irimiás & Mitev, 2020). However, several studies have highlighted that most organisational change initiatives are complex and risky, and hence, fail with an estimated failure rate of 60–70% (Errida & Lotfi, 2021; Jones, 2018). Thus, for organisations to accomplish the desired outcomes of the change initiative, it is essential to have assistance from change leadership alongside the change management philosophy (Mansaray, 2019).

The stance that leadership is critical to successful change implementation is central in literature regarding change management (Burke, 2017). Leaders should be proficient in two areas: creating a solid but flexible vision and the ability to manage the process of change right from conveying the need for change to embedding the change into the organisation's everyday activities (Kotter, 2018). Today's dynamic world calls for a more effective set of competencies as compared to the traditional ones, which this study aims to address. Leaders can implement change that addresses the needs of both the organisation and society (Payne, Trumbach, & Soharu, 2023). Without a competent leader, the organisation's efforts to execute change, fail.

Problem and Research Gap:

Selecting medical equipment manufacturing companies, which lie within the healthcare sector, is a great opportunity for research as there has been less development in this area (Geada, Alturas, & Anunciação, 2023). This also creates an opportunity to develop a proposal for a model that supports change management (Geada, Alturas, & Anunciação, 2023). New developments in technology, impact of globalization, and more demanding customers demand high quality and efficient healthcare services (Kazmi & Naaranoja, 2019). To provide this, over the past few decades, healthcare (HC) companies have been undergoing significant organisational and practice change to incorporate new technologies (Kho, Gillespie, & Martin-Khan, 2020). While the healthcare industry is bound by strict regulations and limited reimbursement, the rate of adoption of new solutions has been attributed to human and organisational factors rather than the solution itself (Kho, Gillespie, & Martin-Khan, 2020). Due to the complexity and sensitivity of the healthcare sector, change processes that impact the organisational processes and people must be planned wisely (Geada, Alturas, & Anunciação, 2023).

It is crucial for leaders to possess the ability to strategically orient and manage the human and organisational aspects of change in addition to the technical aspect. For an organisation to successfully transition from its existing state to the desired future state, key leadership positions are essential to inspire and guide the workforce throughout the transition (Moosa, Moosa, & Faheem, 2023). In order to navigate the constantly evolving workspace, leaders today need to possess not only

improved, but also distinct leadership competencies (Visagie & Ukpere, 2013). Studying various competencies of a leader enables an organisation to identify and develop the competencies that are required by a leader when it comes to steering the organisation through the process of change (Swanson, Kim, Lee, Yang, & Lee, 2019).

Despite the criticality of the issue, there is a gap in literature, emphasizing the relationship between a leader's competencies and factors of change management, particularly in the healthcare industry. Several studies have analysed and studied different leadership styles, however, there has been less focus on leader competencies (Swanson, Kim, Lee, Yang, & Lee, 2019). Although many models exist, there is still a need to understand these factors clearly to bridge the knowledge gap to understand how to succeed in organisational change management (Jones, 2018). This study aims to address that gap by revealing the relationship between various competencies of a leader and factors of change management.

Therefore, **the research question** is stated as, 'how are leaders' competencies related to factors of change management in the context of the healthcare industry?'

Research Object: Relationship between Leaders' Competencies and Factors of Change Management

Research Aim: To reveal the relationship between leaders' competencies and the factors of change management in medical equipment manufacturing companies.

Objectives:

1. To define the research area in conjunction of leaders' competencies and the factors of change management in medical equipment manufacturing companies.
2. To develop a conceptual model of the relationship between leaders' competencies and the factors of change management
3. To justify the methodology for empirical research of leaders' competencies and factors of change management in medical equipment manufacturing companies.
4. To analyze the results of the research on the relationship between leaders' competencies and factors of change management and develop recommendations for future research and for medical equipment manufacturing companies.

Structure & Methodology:

Chapter 1 establishes the research novelty and lays the foundation for the significance of the research object and aim. In chapter 2, a theoretical background is presented, covering the concepts of change management, models in change management, factors of change management, and leaders' competencies. These theoretical insights formed the basis of the initial conceptual research model, which is also presented in chapter 2. The following chapter 3 provides an overview of the methodology employed to examine the credibility of the conceptual model presented in chapter 2.

To test and validate the theoretical foundations and the conceptual model, a mixed method strategy was used, involving qualitative and quantitative analysis, for evaluating the relationship between leaders' competencies and factors of change management. For the quantitative analysis, an online survey was conducted with leaders and members across four medical equipment manufacturing firms in Germany. The survey facilitated the evaluation of factors in change management and leaders' competencies, thereby indicating their respective significance. The survey concluded with a question

regarding the respondent's interest in engaging in a follow-up interview to gain deeper insights into the relationship between leaders' competencies and factors of change management. In the qualitative phase, the researcher engaged in interviews with the same cohort of leaders and members that participated in the survey. This approach was aimed to glean insights from their professional experiences regarding the importance of factors in change management and leaders' competencies, as well as the relationship between them. Subsequently, the collected data from the survey underwent correlation analysis through the utilization of the SPSS tool, and the interviews were analysed using the 'content analysis' method. The findings were carefully examined, and conclusions and recommendations are provided based on the results.

1. Problem analysis of Change Management and Leader Competencies in the Healthcare Industry

This section aims to emphasize the relevance and importance of change management and leadership, as well as a leader competencies in the healthcare industry. The first section speaks about change management and the most widely used models to bring about change in an organisation. The following section discusses the importance of leadership and leader competencies in the field of change management.

1.1. Change Management (CM) in the Healthcare Industry

Efficient organisational change is notably pertinent in today's rapidly changing environment, for both smaller firms and global firms (Payne, Trumbach, & Soharu, 2023). Change is not dependent on the size or age of the organisation but is essential for every organisation to thrive in today's evolving world (Payne, Trumbach, & Soharu, 2023). The scale of change can be at the departmental level (which is chosen for this study), at an incremental level, modular transformational level, and the corporate level (Payne, Trumbach, & Soharu, 2023). Organisational change entails the moving of an organisation from a known, present state to an unknown, desired future state (Hussain, et al., 2016). Since this future state is unknown and uncertain, it faces resistance from the organisation (Hussain, et al., 2016). Only when organisations realise that the change is essential for the survival of the organisation, are they willing to change. Resistance to change can be reduced if those who need to change, know, and trust who is directing the change (Payne, Trumbach, & Soharu, 2023). Since change comes with uncertainties and is faced with high resistance, the ability to manage the change process becomes critical for its success.

Change Management is a systematic approach involving practices, processes and deliberate activities in order to facilitate and guide an organisation in its transition from the present state to the desired future state; this method majorly focuses on managing the 'people side' of change (Kho, Gillespie, & Martin-Khan, 2020). It pertains to the degree to which such capability is integrated within the corporate culture (Higgs & Rowland, 2000 as cited by Irimiás & Mitev, 2020). According to the research conducted by Kazmi & Naaranoja, 2019, few among the major reasons for enforcing organisational transformations are: "the introduction of new technological inventions and innovations, pressure from the external competition, customers' demands", or the changing expectations of the workforce. Because of the limited understanding of what CM is and its application, CM plans are frequently executed poorly and a wide range of firms struggle to cope (Rafferty, Jimmieson, & Armenakis, 2013 as cited by Irimiás & Mitev, 2020; Kho, Gillespie, & Martin-Khan, 2020). The complexity of CM across different industries is strongly influenced by various factors like the social, political, economic, and cultural environment of the ecosystem in which firms operate (Acs, Stam, Audretsch, & O'Connor, 2017 as cited by Irimiás & Mitev, 2020). Another reason, according to Heat & Porter, is that individuals appear to exhibit a response (or a sequence of responses) to the change process, and this disrupts their normal job routine, which causes resistance to change (Geada, Alturas, & Anunciação, 2023). Barriers that arise during the implementation of CM also play a crucial role in this. Some of the most commonly observed barriers to successful CM are poor communication, resistance to change, lack of technical capability, and weak leadership among many others (Errida & Lotfi, 2021; Kho, Gillespie, & Martin-Khan, 2020; Harrison, et al., 2021). With rapid change required as a key and enduring feature, change management has been recognized as a core need of HC organisations (Harrison, et al., 2021).

1.2. Change Management Models

In order to overcome or minimize the hurdles that arise during the CM process, CM models have been developed by leading researchers. Various models and theories have been developed to assist leaders with strategizing and implementing changes within organisations (Van Ossten, 2006). These models enable the swift adaptation to internal or external environment shifts, crucial for the organisation's growth (Van Ossten, 2006). When it comes to models in CM, there is no one-model-fits-all solution. Change management in a HC organisation requires planning carefully and making effective strategic considerations. A combination of models should be used by picking the most relevant factors from different models, omitting the inappropriate ones, and tailoring it to best fit the company's requirement for change. Organisations need to adapt by comprehensively transforming their models & processes continuously so they could increase their performance and improve their offering to their customers (Geada, Alturas, & Anunciação, 2023). When change management is led by strong intrafirm communication and the sharing of common interests and benefits, efficient exploitation and allocation of resources & capabilities can be achieved (Peter, Kraft, & Lindeque, 2020 as cited by Irimiás & Mitev, 2020).

One of the most prominent change management models for organisational change is Kurt Lewin's model for organisational change (Hussain, et al., 2016). Lewin's change model consists of three phases – unfreeze, transition, and freeze, which he explains using the analogy of the changing shape of a block of ice (Tang, 2019). The first step is unfreeze, which involves breaking down the existing way of working, followed by transition, where the organisation moves from the present state to the desired state by looking for new ways of doing things, and the third part is freeze, which involves institutionalizing this change into the organisational systems and processes (Tang, 2019). Tang goes on to explain that Lewin's model identified several internal and external forces that drive change. Tang lists them out as shown below:

Some of the internal forces include: (Tang, 2019)

- A sense that the organisation could do better.
- The desire to increase profitability and performance.
- The need to increase efficiency and effectiveness.
- Concerns about ineffective communication, de-motivation, or poor organisational relationships.

Some of the external forces include: (Tang, 2019)

- Increased demands for better quality of services and products.
- Uncertain conditions.
- Globalization.
- Greater competition.

Tang concludes that it is the external driving forces that create the highest pressure for change.

Lewin's model was criticized by many, but nonetheless is one of the most widely used change models in organisations today. It has proven to be effective in managing change (Tang, 2019). Several other change management models are used in today's world such as Kotter, ADKAR, 7 step GE & Garvin

change acceleration process, Young's 9 stage framework, and more. Although each of these models are unique in their own way, most of them still follow the overall process as described by Kurt Lewin.

This research describes and analyzes two prominent CM models due to their organisational and individual focus, holistic coverage, and empirical reliability: Kotter's 8 step change model (2014) and the Prosci ADKAR (Awareness, Desire, Knowledge, Ability and Reinforcement) model (Kotter, 2018; Kazmi & Naaranoja, 2019).

1.3. Leadership and Leadership styles in Change Management

Analysis of several change management models and theories imply that the implementation of change highly relies on the capabilities of top managers and change leaders. Hence it is crucial for leaders to be well equipped with the necessary tools, competencies, and ethics. One researcher defines leadership as "the ability to inspire confidence and support among the people who are needed to achieve organisational goals" (Dubrin, 2007 as cited by Visagie & Ukpere, 2013, p. 247). Most definitions of leadership refer to the ability to influence others and enable them to work towards a common organisational goal (Visagie & Ukpere, 2013). Oftentimes, the role of leaders is demanding and requires a lot of effort which tends to put important attributes like creativity and flexibility in the backseat (Hegarty, 1990 as cited by Denicolai & Previtali, 2022) Thus, the ability of a leader to be able to balance the multiple elements of change influences the success of the innovation and change process.

Change is a process that creates a lot of uncertainty not only for organisations, but also for individuals and leaders. In such times of changing work roles and environment, it is vital for a leader to have a clear vision and help employees to not lose sight of their part in the organisation. One cannot undermine the importance of the role of leaders and management in this process. As key change agents, leaders take up the vital role of enabling and guiding members through organisational changes (Aitken & von Treuer, 2021). It is clear that the essence of leadership in a change environment involves the ability to create a vision that excites people to achieve the impossible (Visagie & Ukpere, 2013). They are needed to clearly and openly communicate the necessity and urgency of the change, the impact the change will have on the organisation, employees and stakeholders, provide resources and support, and explain what the future state will look like. Traditional leadership focused only on the technical and operational dimension of leadership; however, studies show that to be effective in today's ever changing environment, the interpersonal dimension is crucial (Graetz, 2000). Graetz further explains that for a leader to be successful in their role in change management, they need to combine the technical and operational skills with strong interpersonal skills (Graetz, 2000). Key aspects of the interpersonal dimension include challenging the status quo and creating a sense of readiness for change, inspiring a shared vision, clear and transparent communication, involving employees and stakeholders in important decisions, modelling the way, and enabling others to act (Graetz, 2000). These aspects are strongly aligned with the change management theory.

There are several styles of leadership that prevail in today's organisations: transformational, transactional, authoritative, Laissez-Faire, authentic, autocratic and more. Most leaders and managers are usually familiar with about four to six different styles of leadership (Moosa, Moosa, & Faheem, 2023). Some of the leadership styles have a negative influence on the followers which should ideally not be the case. From literature survey, transformational leadership seemed to work best when it came to change management in an organisation (Moosa, Moosa, & Faheem, 2023; Ford, Ford, & Polin,

2021). The aim of a leader following the transformational leadership style is to focus on motivating the employees and building their morale and drive to achieve a common, shared goal (Moosa, Moosa, & Faheem, 2023). Transformational leadership enables employees to perform in a manner that exceeds expectations. Reza, in his research, states that transformational leadership is when a leader uses idealized influence, inspiration, and intellectual engagement to move their followers beyond their immediate self interests (Reza, 2019). Transformational leadership has positive effects on employee performance in terms of commitment, satisfaction, and organisational effectiveness (Top, Abdullah, & Faraj, 2020). This is because they provide the employees with freedom and flexibility in performing their tasks (Top, Abdullah, & Faraj, 2020). Bushra et al., also state that there is a positive relationship between transformational relationship and employees' job satisfaction and commitment (Bushra, Ahmad, & Naveed, 2011). Thus, from the literature surveyed, it is evident that transformational leadership is the most common style of leadership when it comes to change management.

Still, it is not proven that following only one style of leadership guarantees success, instead literature reiterates that leaders need to pick and choose aspects of different leadership styles and tailor a style that best suits the organisation's situation, employees' needs and leaders' competencies.

1.4. Leaders' Competencies and Change Management

According to Calhoun et al., 2008, competencies of a leader are the foundational stones upon which the best leadership practices are built (Calhoun, et al., 2008 as cited by Aitken & von Treuer, 2021). Studies suggest that leaders should possess an inner strength that helps them pull through challenging times, support team members by empowering them, possess emotional intelligence to be able to understand the underlying emotions of the employees, and provide a solution to motivate them in the face of uncertainty (Visagie & Ukpere, 2013). This enables them to create a relationship of trust with the employees and stakeholders involved in the change process (Visagie & Ukpere, 2013). A competency framework for leadership takes into consideration the factors of current leadership scenario and requirements, desired change leadership competencies and the organisation's available resources and goals. Many studies emphasize that leadership competencies should cover a wide range of dimensions such as emotional intelligence, relationship management, organisational aspects, apart from the technical capabilities. The technical and operational competencies of a leader are moderated or stimulated by the leader's personal characteristics or self competencies (Visagie & Ukpere, 2013).

A study conducted by Aikten and von Treuer presented a leadership competency framework to foster organisational change (Aitken & von Treuer, 2021). In their study they emphasized that these competencies were the effective for organisations, for also maintaing organisational identity, during the process of change (Aitken & von Treuer, 2021). These competencies consisted of four domains: "leadership and governance in organisational change, relationship management and communication skills, management of people, organisational systems and processes, and personal characteristics and capabilities" (Aitken & von Treuer, 2021). They achieved these results based on insights and interviews from experienced leaders as well as leadership experts (Aitken & von Treuer, 2021). The competency model developed by Aitken and von Treuer can be seen in the **Fig. 1** below.

Leadership and governance in organisational change	Relationship management and communication skills	Management of people, organisational systems and processes	Personal characteristics and capabilities
1. Clarity of shared vision 2. Stewardship of organisational change	3. Stakeholder management 4. Focus on internal relationships 5. Communication	6. Management of people 7. Management of organisational systems and processes 8. Planning	9. Personal integrity 10. Achievement focus 11. Analysis, decision making and judgement 12. Self management

Figure 1: Leader Competency Framework developed by Aitken & von Treuer (Aitken & von Treuer, 2021)

Several studies reveal that a leader’s personal character and traits play a role in change management. A leader’s personal competencies such as emotional intelligence, courage, self confidence, integrity, and other related competencies drive a leader’s approach to change, thus ultimately influencing the employees’ motivation and perception of change (Visagie & Ukpere, 2013). They further emphasize that it is crucial that leadership and organisational goals, and strategies work together to a culture and performance that ultimately lead to the desired organisational performance (Visagie & Ukpere, 2013). Visagie & Ukpere concluded from their research that the leadership attributes pivotal to the change initiative were highly effective “ in terms of creating a vision for the envisaged change, providing the necessary guidance during the change process, and ensuring the application of relevant change leadership attributes to support the implementation of the proposed change” (Visagie & Ukpere, 2013). Thus, competencies of a leader play a crucial role when it comes to the process of change management.

Despite being a critical part of change management, literature survey showed that there is ample research done on leadership types and styles, however, there is scant research on leader competencies and their relationship with different factors of change management.

Keeping all the aforementioned aspects in mind, the **research question** is stated as ‘how are leaders’ competencies related to factors of change management in the context of the healthcare industry?’

2. Theoretical Solutions for Factors of Change Management and Leader Competencies

This section aims to describe and analyze two prominent change management models, explain their relevance in the HC sector and find commonly emphasized factors when it comes to change management. Additionally, it seeks to shed light on the competencies, highlighted and inferred from the CM models analyzed, that are imperative for a leader in order to implement transformation within a HC company.

The healthcare industry has diffused into the private and public sectors, just like other industries, but in a much stronger way. What makes this industry different from the other service industries is the complexity within its operational and work setup and design, seriousness of motivation needed by the people involved, sensitivity of products, data, and profits (Kazmi & Naaranoja, 2019). In addition to their external customers i.e. patients, their families, competitors and suppliers, etc, they also hold significant value when it comes to service quality for their internal customers i.e. management, staff members, and regulators (Kazmi & Naaranoja, 2019). In order to meet the demands of increasing life expectancy and complicated health conditions, and to have superior service quality across the domains of safety, efficiency, patient-centeredness, timeliness, effectiveness, and accessibility, it is crucial to develop the skill of adapting to change (Harrison, et al., 2021). Over the past few decades, healthcare (HC) companies have been undergoing significant organisational and practice change to incorporate new technologies and solutions having the aim of improving quality and increasing efficiency (Kho, Gillespie, & Martin-Khan, 2020). While the healthcare industry is bound by strict regulations and limited reimbursement, the rate of adoption of relevant technologies has been attributed to human and organisational factors rather than the technology itself (Kho, Gillespie, & Martin-Khan, 2020). For this, medical equipment manufacturing companies need to identify the need for transformation and strategies, implement it with the participation of stakeholders and employees, and sustain it in order stay competitive.

2.1. Factors in the Models of Change Management

As described earlier, CM is a systematic approach involving practices, processes, and deliberate activities in order to facilitate and guide an organisation in its transition from the present state to the desired future state; this method majorly focuses on managing the ‘people side’ of change (Kho, Gillespie, & Martin-Khan, 2020). According to Heat & Porter, individuals appear to exhibit a response (or a sequence of responses) to the change process, and this disrupts their normal job routine (Geada, Alturas, & Anunciação, 2023). Studies show that when those directly and indirectly affected by change understand why the change is necessary, how it is going to improve patient and staff experiences in the healthcare environment, and contribute to the decision- making about the change, they are more likely to commit to, and embrace the process (Harrison, et al., 2021). While there are several CM models available and applied, it is important to understand that there is no perfect model or single model that fits every situation. It is crucial to gauge the situation at hand, select the relevant model and modify it to best serve the situation. In this research, two significant CM models are discussed – Kotter’s 8 step change model (2014) and the Prosci ADKAR change model. Through the literature survey, it was clear that these two models were some of the most widely used and effective models due to their organisational and individual focus, holistic coverage, and empirical reliability, when it came to managing change in the healthcare industry and hence have been chosen for this research.

Kotter's 8 step change model (2014):

“Kotter's 8-step model was designed for the 21st century and in the need to bring innovation sense to corporate leadership” (Gupta, 2015, p. 1). This research will be addressing the 8-steps or now known as ‘8 accelerators’ version of Kotter's model that was published in 2014, which slightly varies from the 1995 model. The 8 steps from the 1995 model are depicted in **Fig. 2**.

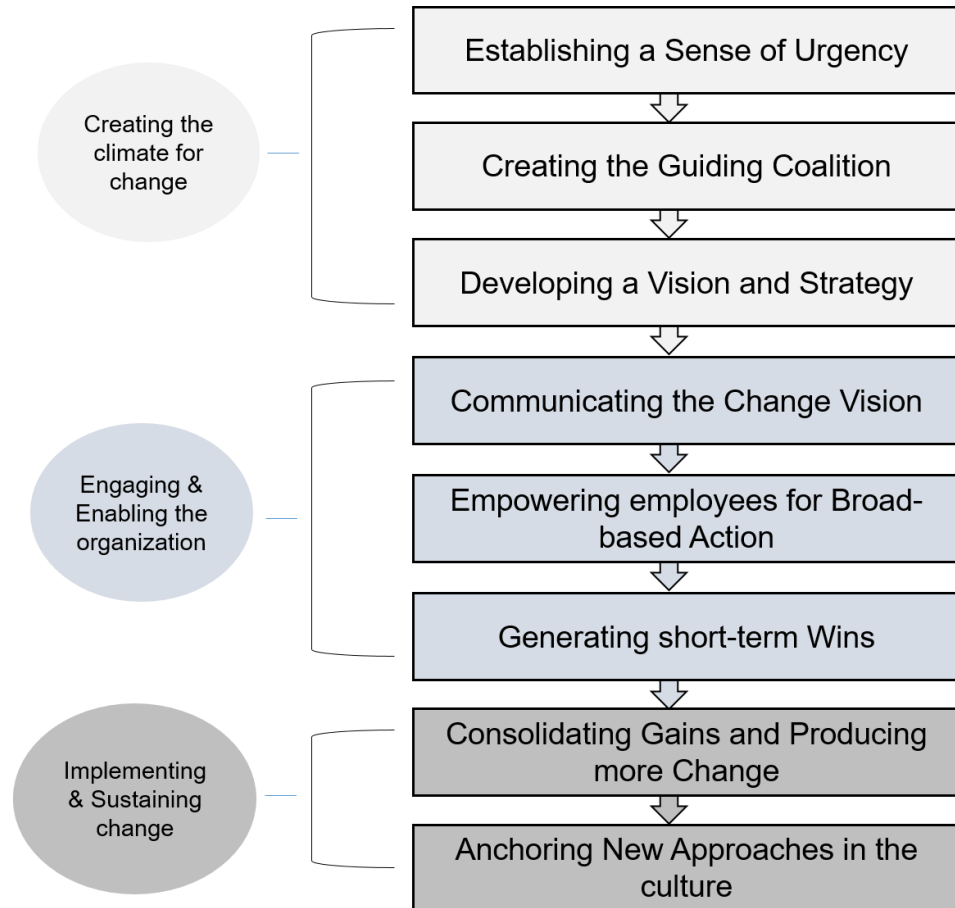


Figure 2: Kotter's 8 step change model; Own illustration based on Kotter J.P,(1995)

The 2014 model is similar to the 1995 model, with a few changes to better fit the present organisational and change environment, “giving it reach and potency today and beyond” (Kotter, 2018, p. 7). The 8 steps from the 2014 model are depicted in **Fig. 3** below.

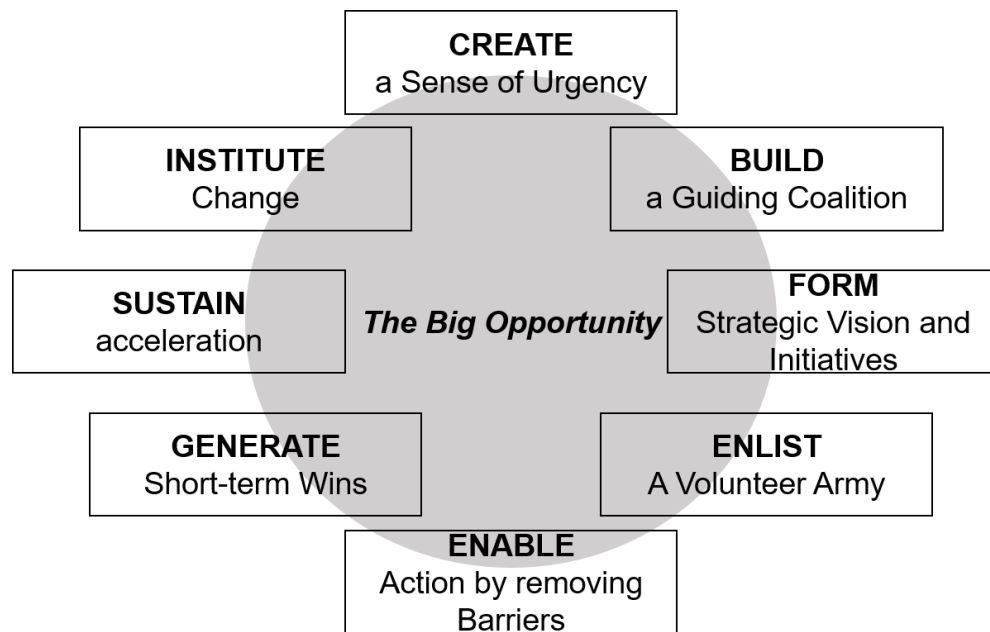


Figure 3: Kotter's 8 step change model (2014); Own illustration based on Kotter, (2018)

Step 1: Creating a Sense of Urgency

Several studies have emphasized that most of the efforts put into the innovation and transformation process fail. The single biggest error that caused those failures is that a sense of urgency was not created and sustained (Kotter, 2018). Creating urgency is crucial as it helps identifying and capitalizing on an opportunity that is open today and may close tomorrow (Kotter, 2018). This step helps spark curiosity and motivation for employees to start considering the change. By communicating openly and often about the change needed, the urgency can be emphasized. It is important that the business focuses on creating value to the customers and society and not only on making money (Gupta, 2015). By capturing the opportunity as soon as it arises and utilizing it to create value for the customers and society before other competitors in the market can, a business can create a competitive edge. Good leadership can motivate and promote growth, and good management can create profits (Gupta, 2015). This step can also be carried out by using trend radars to identify the upcoming solutions and trends in healthcare, articulating and communicating the need and importance of the change, and setting deadlines for milestones along the journey. All the aforementioned create a sense of urgency among the teams involved. Potential scenarios of success and failure that could develop should also be discussed with all the involved stakeholders and employees in order to get a comprehensive idea of the path to change (Kotter, 2018). “Windows of opportunity are appearing more quickly than ever; identifying an opportunity quickly, and mobilizing urgency around it, is becoming the key to beating competitors” (Kotter, 2018, p. 12).

Step 2: Build a Guiding Coalition

The guiding coalition forms the crux of the 8 step process. It is a catalyst that instills change in employee behaviors (Gupta, 2015). It “must consist of members from multiple layers of the hierarchy, represent many functions, [...] and synthesize that information into new ways of working” (Kotter, 2018, p. 13). In this step, selecting the right change agents and leaders should be of utmost importance. It is ideal to identify key leaders and teams that are diverse horizontally, vertically, tenure wise as well as culturally, that can work with stakeholders and employees across various levels and

teams with respect and empathy (Kotter, 2018). The coalition could consist of a physician, surgeon, R&D specialist, administration lead, product manager, financial manager, etc. in order to communicate the vision, guide, encourage, and provide feedback to members throughout the process (Auguste, 2013). This enables the organisation to have a more innovative approach to change, exchange various view points, and helps create a larger pool of ideas. The guiding coalition needs to have a commitment to the change initiative at hand, be enthusiastic about the success, care for the people, and be educated and well trained in relevant innovation methods and tools (Gupta, 2015). Gupta further emphasizes that care and empathy are critical to build trust. It is of great significance as it provides guidance and support for the organisation to move through the change process smoothly.

Step 3: Form a strategic Vision and Initiatives

Strategic initiatives, as described by Dr. Kotter, are “targeted and coordinated activities that, if designed and executed fast enough and well enough, will make the vision a reality” (Kotter, 2018, p. 16). According to Kotter, the best strategic vision should be flexible, desirable, imaginable, communicable, simple, feasible, creates a verbal picture, and benefits all stakeholders (Kotter, 2018). In this step, it is imperative to adjust the organisation’s vision to the current environment and demands of the market. The best way to communicate a vision is leadership by example and creative leadership helps create an exciting vision and initiatives that employees would believe in and pursue to realization (Gupta, 2015). It is important to also reach the employees through emotions rather than only numbers and facts. Forming initiatives that connect deeper with employees and provide a greater meaning to their efforts, buys in the employees and helps serve the customers and society in a better way. Understanding their struggles during this process and helping them, can lead to tremendous success. Multiple channels like weekly meetings, bulletins, emails, poster, story boards, and more can be used to reiterate the strategic vision and initiatives and gain feedback (Kotter, 2018).

Step 4: Enlist a Voluntary Army

According to Kotter, a large-scale change occurs only when very significant number of employees amass under a common opportunity and work towards the same direction (Kotter, 2018). In this case, it is important to give employees and stakeholders the choice to participate in the transformation process. Having a large voluntary army that is passionate about the goal and have the relevant skills or are eager to learn and develop the skills needed to achieve the goal is essential. The members involved in the change process don’t necessarily have to be external to the organisation, they can be from within the company, across teams (Kotter, 2018). A few ways to build a strong voluntary army, mentioned by Kotter, are giving people motivation and a reason to be part of the process, and recognizing and appreciating the efforts of the teams to keep them engaged (Kotter, 2018).

Step 5: Enable Action by removing Barriers

Kotter provides this step as barriers stand in the way of success for several organisations. It is crucial to be able to identify the barriers that could arise during the process of change before initiating the process (Kotter, 2018). Various barriers that could arise in this case are lack of technical competence, communication barriers – horizontal and vertical, regulatory barriers, implementation barriers, inefficient and time-consuming processes, silos, limited involvement, and access to stakeholders. Identifying and analyzing these barriers beforehand and preparing steps to avoid or overcome them is important for a smooth transition. It is unwise to neglect or undermine the power of barriers. The

management and leaders should provide the employees with freedom to work across the boundaries to create valuable impact for the business and customers (Kotter, 2018). Open and honest communication is important to ensure that all involved are heading towards the same goal; training, guidance, and support mechanisms must also be provided in order to overcome the barriers.

Step 6: Generate Short-term Wins

The feeling of winning or success is what motivates people the most. Short-term goals and milestones should be set in way that they can be achieved at the initial stage of the transformation as well as throughout the process. For this step, Kotter mentions that the milestones could be a lesson learned, completion of a training on relevant tools and market needs, a process improved or anything, preferably tangible and replicable, that helps move towards the goal (Kotter, 2018). Kotter goes on to mention that these wins should be celebrated, collected, categorized, and shared often to motivate and energize the stakeholders and employees to drive change. These short-term wins prove that the innovation is worth the efforts and justifies the desire for change (Gupta, 2015). Gupta further elaborates that momentum and morale for more innovations can be built by implementing a reward system.

Step 7: Sustain Acceleration

The process does not end at achieving short-term or significant wins, instead it is important to keep the momentum of change sustained. The new changes achieved should not be a one-time goal but should get entrenched into the culture and process of the organisation. This keeps the momentum going and makes it easier to come up with new innovations and ideas, fueling further change (Kotter, 2018). It keeps the voluntary army energized and motivates more members to join the change journey. The adapted innovation methods and the learnings from the transformation journey must be expanded to institutionalize innovation throughout the organisation (Gupta, 2015). It is necessary to revise corporate culture, policies, way of working, and procedures, in order to maintain the newly instituted change. Periodic review of the new trends and technologies implemented and identification of barriers and opportunities for improvement should be conducted in order for optimization of the change for the benefit of the organisation and society (Gupta, 2015). Some ways to keep the acceleration sustained, suggested by Kotter, are revisiting the urgency after achieving significant wins in order to avoid losing sight of the ultimate goal and getting more people involved, hence expanding the voluntary army which helps find more barriers that need to be overcome or more opportunities to capitalize on. Hence, sustaining the change is as crucial as implementing the change for the first time.

Step 8: Institute Change

To ensure that the new process is repeated over the long term, it is crucial to emphasize the connection between the new process and the organisation's success (Kotter, 2018). The organisation's culture should be readjusted to the current process and this can be achieved once the organisation is deep into the transformation and the people's actions are altered. This results in an organisation that is able to work with agility and innovation, thus contributing to the strategic goals of the organisation (Kotter, 2018). Kotter emphasizes on the importance of management and leadership by explaining that 'strong management is need to handle the day-to-day, and strong leadership is needed to capitalize on unpredictable opportunities' (Kotter, 2018). Everybody, throughout the organisation, across all levels must emphasize innovation and change, which helps in sustaining the attitude of innovation within the organisation. Society and customers then expect to see more innovation from the organisation and

this sets new targets for leaders to achieve; all this is not possible unless an innovative mentality is not anchored in the culture of the organisation (Gupta, 2015). Open communication and strong leadership helps ingrain the new change into the company’s way of working and eases the grafting of new practices onto older ways.

On analyzing Kotter’s model, the author has identified important factors for organisational change, depicted in the **Fig. 4** below.

<p style="text-align: center;">CREATE a Sense of Urgency</p> <ul style="list-style-type: none"> • Communicate in a clear and open manner • Employ efficient leadership & management • Use trend radars to identify relevant upcoming trends • Set deadlines • Be aware of barriers 	<p style="text-align: center;">BUILD a Guiding Coalition</p> <ul style="list-style-type: none"> • Identify key change agents across hierarchies, teams, departments and cultures • Should have technical, managerial as well as people skills • Encourages more innovative and creative ideas • Should be committed to the change vision 	<p style="text-align: center;">FORM Strategic Vision and Initiatives</p> <ul style="list-style-type: none"> • Create a communicable, comprehensible and flexible vision • Have creative leadership to form a creative vision and initiatives • Reinforce the vision through weekly meetings, bulletins, e-mails, posters and so on 	<p style="text-align: center;">ENLIST A Volunteer Army</p> <ul style="list-style-type: none"> • Create a voluntary army through motivation • Connect with employees and stakeholders beyond data and facts • Provide freedom to learn and express opinions • Encourage employees to make decisions
<p style="text-align: center;">ENABLE Action by removing Barriers</p> <ul style="list-style-type: none"> • Identify possible barriers ahead of time • Prepare a strategy to deal with and overcome or minimize the barriers • Provide trainings and encourage knowledge sharing • Good leadership is a requirement to tackle barriers 	<p style="text-align: center;">GENERATE Short-term Wins</p> <ul style="list-style-type: none"> • Set short-term achievable goals • Celebrate wins • Re-iterate lessons learned • Motivate the employees to keep going 	<p style="text-align: center;">SUSTAIN acceleration</p> <ul style="list-style-type: none"> • View change as a continuous process and not a one time win • Keep the momentum going • Implement the change organization-wide • Readjust corporate policies and procedures 	<p style="text-align: center;">INSTITUTE Change</p> <ul style="list-style-type: none"> • Ingrain the change into the organization culture • Allocate resources accordingly • Implement the new solutions in day-to-day business • Continue to provide leadership support and trainings

Figure 4: Factors of Change Management based on analysis of Kotter's 8 step change model (2018); own illustration

Drawbacks of Kotter’s Model: In spite of its success in the business environment, Kotter’s model also has certain drawbacks, when analyzed. The model does not explicitly address emotions that may arise

during the process of transformation, especially resistance to change, fear and anxiety. From the various literature sources examined, there has been criticism regarding the linear, sequential structure of Kotter's 8-steps (Gupta, 2015). However, in reality, the change process is more complicated, iterative and can seldom follow a linear approach due to the many complexities. Hence, following a linear, sequential approach is not valid in a practical scenario. In addition, Kotter's model does not place emphasis on the cultural aspects. In today's globalized world, cultural differences and aspects play a huge role in organisational success. Kotter's model fails to include this aspect. Another drawback would be the number of steps involved in the process. In today's rapidly changing environment, executing all 8 steps can be time consuming and may make the process of change slower than anticipated. Despite these drawbacks, Kotter's 8-step model is still widely used and is one of the most successful models when it comes to change management in organisations.

The Prosci ADKAR model:

According to Prosci, the word 'ADKAR' is an acronym for the 5 outcomes an individual must to achieve to implement change successfully: Awareness, Desire, Knowledge, Ability, and Reinforcement (Kazmi & Naaranoja, 2019). This model was initially developed by Hiatt in 2003, and after Prosci (founded by Hiatt in 1994) studied more than 700 organisations and their change patterns, the ADKAR model has been used as a practical model for managing change (Ali, A, Zafar, & Nazim, 2021). The model has been widely used in the healthcare industry and focuses on the level of readiness, along the process of change, among the employees (Kazmi & Naaranoja, 2019). This model strongly emphasizes that for change to occur, it must start at an individual level. Hence, it focuses on guiding individuals through change as well as identifying different barriers in the process of change (Hiatt, 2006).

Awareness of the need for change

When it comes to change initiatives, lack of awareness of the need for change could be a barrier. It is important that the employees are made aware of 'why' this change is needed and how it will affect the employees, organisation as well as stakeholders (Hiatt, 2006). This step is clearly relevant in order to start the process of change in any organisation. Clear communication is important at this stage. It is crucial to make sure that the employees have all the information they might need to understand the process. Once the employees understand the reasons for change, they will become less resistant to it (Kazmi & Naaranoja, 2019). It can be explained that the new process or technology provides people with better healthcare anytime, anywhere, which brings a sense of fulfillment to the employees knowing that their work is impacting people's lives. The professional and competitive benefits can also be pointed out. This encourages the employees to agree with and buy into the change. Different ways that one could create awareness could be through effective and clear communication through the intranet, face to face meetings, emails, demonstrations, presentations, training and workshops by the people managers, access to information regarding market conditions, competition, changing organisational priorities, and support needed through weekly check-ins and meetings.

Desire to participate and support the change

Another barrier that could impede the change process is the lack of desire. Creating awareness is only the first step to making the employees understand the need for change. This does not guarantee the employees willingness or desire to participate in the change process. Desire can be influenced by personal situations and the change itself, but it is ultimately a personal choice (Hiatt, 2006). Creating

desire is not directly under the control of the change leader but a change leader can have influence by creating a strategy that not only aligns with organisational goals but also with the personal goals and motivators of those involved. Incentives should be provided for participating in the change process and employees should be aware of what's in it for them (Hiatt, 2006). When employees resist change it is important to understand the underlying reason for the resistance and tackle that (Kazmi & Naaranoja, 2019). Resistance to change could be due to fear of lack of competency, fear of uncertainty created during the process, or fear of loss of productivity or job. It is important that the change leaders understand this and provide specific support and guidance in order to enable the employee to willingly participate in this process (Kazmi & Naaranoja, 2019). Thus, desire is one of the most challenging steps of the ADKAR model because it depends on the individual's will to participate in the change.

Knowledge on how to change

When the person is aware of the change and has a desire to participate in the change, the next step is to have the knowledge necessary for the change. Lack of knowledge about the process of change, the technology to be utilized, and what the future state will look like, can be a barrier to the process (Kazmi & Naaranoja, 2019). It is the knowledge assimilated by the individual employees that plays a role in the success of the change implementation (Ali, A, Zafar, & Nazim, 2021). This knowledge involves the training, education, and information needed to understand how to change, how to utilize the new tools and systems, and how to work in the future state (Kazmi & Naaranoja, 2019). Several factors that could affect knowledge building are the employee's willingness to learn, the accessibility of supportive learning resources, and effective leadership. Investing in training programs is essential at this stage of the ADKAR model because that forms the basis of the knowledge used in the change process, thus also impacting the result of the process. Training on what to look out for during change management, shift in roles and responsibilities, how to be a change leader, and technical training can be provided. The success of the project is influenced by change leaders by intentionally providing support, resources, and time to help the involved employees gain new knowledge and develop the desired skills (Hiatt, 2006).

Ability to implement desired skills and behaviors

Ability is the stage where an employee implements the knowledge and information gained in the previous step of the ADKAR model. According to Prosci consulting company, ability means tangibly demonstrating and applying gained knowledge to the real world (Prosci website). If the margin between knowing how to do something (knowledge) and the ability to do it is large, this could create a road block in the process of change (Ali, A, Zafar, & Nazim, 2021). In this stage it is important for the employees to be given the space and time to get used to the new technology. The ability to adapt and exhibit new skills and behaviors varies from person to person; it could take weeks for one person and months for another. Understanding the needs of the employees at this stage is important for the change leader. The leadership should provide space for mistakes and learning and extend support when needed (Kazmi & Naaranoja, 2019). Different ways to enable employees develop the ability to make the most of the new technology is by allowing them to try the tools and make mistakes, providing feedback in a way that motivates them to do better and knowing that time is important. The more the employees can put the knowledge gained into action, the more successful the change management process becomes.

Reinforcement to sustain the change

The first four elements of the ADKAR model help bring about change in an organisation, however the last step of reinforcing change, which must be carried out throughout the process of change, is also of equal importance. Bringing about change and not institutionalizing it in the organisation leads to failure to fully realize the potential of the change. It is important to embed the change in the organisation and continue working with it rather than going back to the comfortable, old ways of working (Kazmi & Naaranoja, 2019). The Prosci ADKAR model implies that it is important to consider the internal as well as external factors that help sustain change, in the stage of reinforcement (Hiatt, 2006). It involves factors of rewards, recognition, and celebration of wins in the process of achieving change as well as the internal fulfillment of an employee from implementing the change (Hiatt, 2006). Ways that help reinstitute change could be reallocating resources according to new tasks and responsibilities, conducting training to develop and leverage the new tools fully, recognizing employee efforts and rewarding them, and continuing to create short-term achievable goals and support to keep the employees motivated.

Important factors identified by the author for each step of the ADKAR model is shown in the **Fig. 5** below.

AWARENESS	DESIRE	KNOWLEDGE	ABILITY	REINFORCEMENT
<ul style="list-style-type: none"> • Open communication is essential • Explain the impact and benefits of the change on an organizational and individual level • Use emails, meetings, posters, training, presentations to make sure employees have all the information needed 	<ul style="list-style-type: none"> • No one can create the desire to participate in change but oneself • Understanding the root of resistance is important to eliminate it and thus create the desire to change • Leaders can positively influence desire by considering individual motivators, providing incentives and support throughout the process 	<ul style="list-style-type: none"> • Knowledge about the change process, technology to be used and adapting to the future state is essential • This knowledge can be provided through trainings, workshops, organizational learning systems, coaching, forums and user groups, access to field experts and so on 	<ul style="list-style-type: none"> • The ability to implement the knowledge gained is a fundamental part of change • This ability can be developed by developing the necessary skills • Time, training, space for practise and making mistakes and feedback are important for employees to master the skill of working with the new digital solutions 	<ul style="list-style-type: none"> • The instituted change needs to be made part of the everyday business in order to fully leverage the potential benefits of the new solutions • Short-term goals, trainings, rewards, recognition and leadership support ease the process of embedding the new change into the organizations skeleton.

Figure 5: Factors of change management based on analysis of Prosci ADKAR change model (n.d.); own illustration

Drawbacks of Prosci ADKAR model: Just like all models, there are certain limitations when it comes to the ADKAR model. On analyzing the model, the drawbacks identified are mentioned. As explained, this model is focused on the individual aspect of change in an organisation (Calder, 2013). This could fall short when it comes to a broader organisational context involving group or team work or with more complex change and more number of stakeholders involved. Again, like Kotter’s model, this too is a linear model with sequential steps. Change management in the real world is more complicated and agile and could require revisiting certain steps from time to time. Even though on the whole, this model has proven to be effective, some more emphasis could be placed on dealing with the practical complexities of change. The model does not explicitly talk about external factors and offer solutions to deal with them. More often than not, change in an organisation is carried out due to external pressure and so it would be more efficient if the model spoke also about how to deal with external pressure during the process of transformation.

Summary: It can be seen from the two models, they follow the three broad categories provided by Kurt Lewin, a classic model used in change management. This conveys that change management consists of three major phases that can be broken down into smaller, more specific steps according to the current business environment, needs, and resources of the organisation.

Table 1: The relationship between Lewin's three step model (Tang, 2019), Kotter's 8 step model (Kotter, 2018) and the Prosci ADKAR model (Prosci, n.d.); Own illustration

Lewin	Kotter	ADKAR
Unfreeze	Create a sense of urgency Build a guiding coalition Form strategic vision and initiatives	Awareness Desire
Change	Enlist a volunteer army Enable action by removing barriers Generate short-term wins	Knowledge Ability
Refreeze	Sustain acceleration Institute change	Reinforcement

Kotter focuses on the organisational aspect of change whereas ADKAR focuses on the individual aspect of change, but both of them emphasize some common factors for change management. On analyzing the models, the most relevant and important factors identified are shown in **Fig. 6**. The shading and size of circles in figure below indicate their levels of significance as seen from the models. Darker and bigger circles represent factors that hold greater importance while the lighter and smaller circles are used to indicate factors with comparatively lower significance based on the analysis of the two models. For instance, the factor of employee motivation has a positive impact on the change process when the motivation is high. Whereas, low employee motivation will have a negative impact on the change process (Kotter, 2018). In the same way, creating a sense of urgency, concrete vision, having clear communication, high support from the management, an organisational culture that is willing to execute change and adapt, and high engagement from stakeholders and employees help accomplish the change process in a smoother way, impacting it positively.



Figure 6: Factors identified for Change Management based on the analysis of Kotter's and ADKAR models

Thus, according to Harrison et al., (2021), review, it was evident that change management models served as a reference for change agents to support them to consider crucial elements, such as exploring why change is needed and developing strategic messages for stakeholders at every step to keep them aligned throughout the change journey, required for sustained change implementation (Harrison, et al., 2021). The common principles found in the change models, emphasized key aspects of dealing with the doubts and concerns about the process, engaging employees and stakeholders in change right from the beginning, and facilitating the transformation process and sustaining it through collaborative behaviors, clear and open communication, and strong management and leadership.

2.2. Leaders' Competencies for Change Management

Swanson et al., define a leader's competency as "a leader's knowledge, ability, skills, and behavioral capabilities to perform the job" (Swanson, Kim, Lee, Yang, & Lee, 2019, p. 89). Competency is an essential quality that a leader needs to have. According to a study conducted by Aitken & von Treuer, (2021), the most frequently emphasized competencies were personal characteristics of the leader such as honesty, willingness to participate in open and honest conversations, integrity, and willingness to take up ownership of situations (Aitken & von Treuer, 2021). For successful achievement of goals, it is important that business strategies and leadership work together to drive motivation and performance in the organisation (Aitken & von Treuer, 2021). A leader should not only guide the employees through change but should themselves embrace the change, commit to the change, and work towards the goal, thus leading by example. A good leader should be able to create an effective vision, provide the needed guidance and resources throughout the process, ensure the utilization of attributes of change leadership that are relevant and support the process of change (Aitken & von Treuer, 2021). Once the change has been implemented, change leaders must reinforce the change into

the organisation by means of allocating resources, setting up new processes and systems and providing continued support. The literature review highlighted various competencies that are essential for a leader guiding a change initiative at an organisation. The author has compared several research papers on leadership competencies in change management and has addressed the most frequently mentioned competencies in this section, keeping in mind the relevance to the factors emphasized by the CM models and the healthcare industry. The author has divided the competencies into four themes: a. Self, b. Relational, c. Knowledge and d. Organisational, which can be seen in **Fig. 7** below.

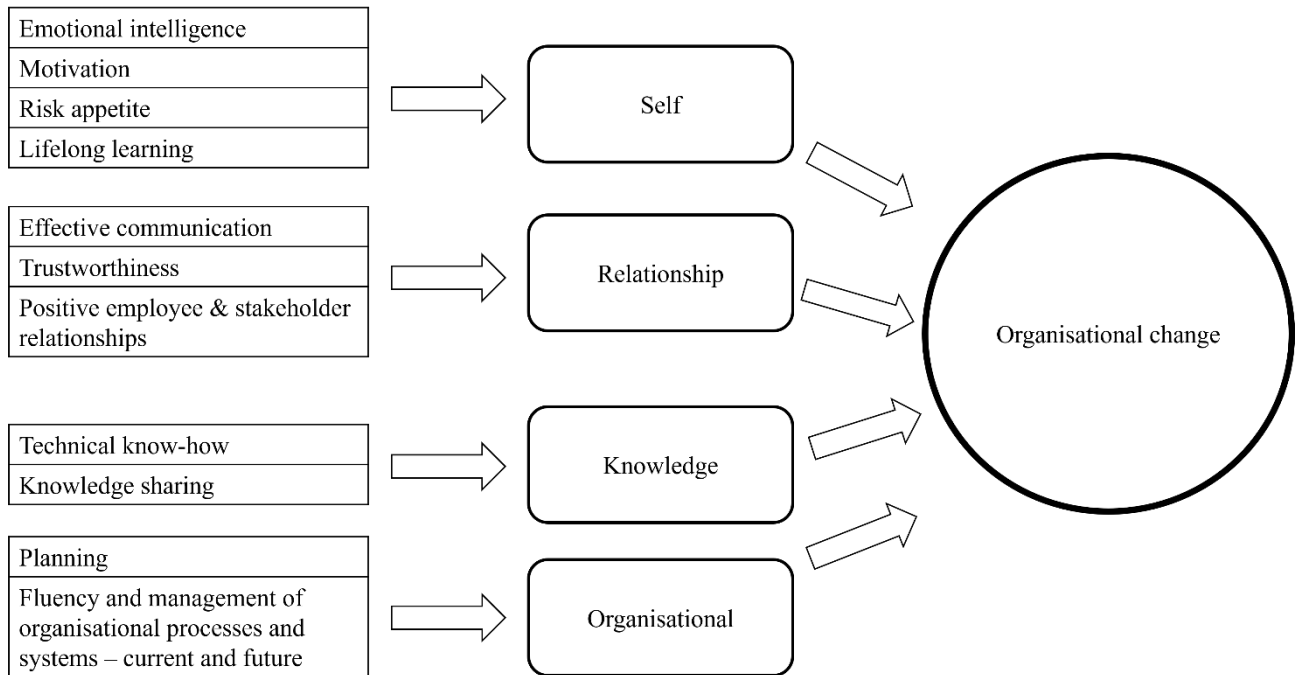


Figure 7: Leader competencies essential for change management in the healthcare industry illustrated by the author based on Aitken & von Treuer (2021) and Graetz (2000)

Leader Competency: Self

The competencies that fall under the self category are emotional intelligence, motivation – of self and others, risk appetite, and lifelong learning. These are competencies that are internal to the leader at an individual level but can also be developed and improved over time, despite being challenging.

Emotional intelligence: Emotional intelligence refers to the ability to be aware of one’s emotions, be able to keep them in check, be aware of the way one communicates their emotions to others, and be empathetic to the feelings of others (Swanson, Kim, Lee, Yang, & Lee, 2019). This is a crucial skill because leaders need to connect with their employees at a deeper level than data and numbers in order to get a positive response and enable collaboration with employees. A leader that understands the emotions of their employees and stakeholders can help reduce their resistance to the change initiative (Aitken & von Treuer, 2021; Swanson, Kim, Lee, Yang, & Lee, 2019; Graetz, 2000; Visagie & Ukpere, 2013).

Motivation: Employee motivation is crucial to gain the commitment of employees to the change initiative. It is a leader’s responsibility to create that motivation which will increase employee engagement in the change process (Aitken & von Treuer, 2021). In order to motivate the employees, the leader must themselves be motivated internally. They should show commitment to the goal by

taking initiatives and setting an example for the employees. Without motivation, no one is able to give their best, making it an essential competency.

Risk appetite: The process of changing from one state to another desired state entails several uncertainties. In the practical world, the process of change involves not only successful steps, but also failures and losses. A leader should have an appetite to take risks in order to explore the different possibilities of how to bring about change (Visagie & Ukpere, 2013; Swanson, Kim, Lee, Yang, & Lee, 2019). Even if the risk leads to failure, this should not offset the leader but should push them to further explore opportunities by keeping the bigger goal in mind. This also encourages employees to come up with bold and innovative ideas.

Lifelong learning: Successful change management is not only about bringing about change in an organisation but also about reinforcing and institutionalizing the change in the organisation's culture. This requires an attitude of lifelong learning. A leader who is committed to lifelong learning helps keep the momentum of learning new concepts, improving the change achieved and looks for more ways to lead the organisation towards its business goal (Visagie & Ukpere, 2013). It also includes the ability of learning from fellow employees, stakeholders and subordinates. When a leader is open to learning, they are able to guide and support their employees efficiently (Visagie & Ukpere, 2013).

Leader Competency: Relationship

The relationship category includes three competencies, namely effective communication, trustworthiness, and positive employee and stakeholder relationships. These competencies relate to the social aspects the leader engages in. For a leader, it is not enough to have only personal competencies but should also have interpersonal competencies since an organisation involves multiple interactions among people.

Effective communication: Effective communication has been identified as one of the most crucial competencies from the literature survey conducted by the author (Aitken & von Treuer, 2021; Graetz, 2000; Visagie & Ukpere, 2013; Moosa, Moosa, & Faheem, 2023). Clear, open, and honest communication is essential to create a sense of urgency for the change, to provide a clear vision, to guide the employees through the process and ensure the transition is as smooth as possible (Visagie & Ukpere, 2013). It also involves the skill of active listening, i.e. listening patiently to the concerns of the employees and stakeholders involved without prejudice or judgement (Aitken & von Treuer, 2021). Understanding their emotions and fears during this process, helps the leader be more effective by providing specific support to them. Maintaining frequent communication throughout the process and addressing the needs or barriers that arise immediately, help accelerate the process of change (Aitken & von Treuer, 2021).

Trustworthiness: Gaining the trust of employees and stakeholders is important for the success of the transformation process. As emphasized earlier, the process of change creates doubts and uncertainties in the minds of those involved. It is important that the leader is confident about the change and creates an environment of trust for those involved (Visagie & Ukpere, 2013). If a leader gains the trust of their employees, this would tackle the issue of resistance to change by decreasing resistance. It would convince the employees of the need for change and the benefits that can be achieved, which in turn would create a desire in the employees to participate in the change (Visagie & Ukpere, 2013; Graetz, 2000).

Positive employee and stakeholder relationship: Employees and stakeholders have a huge impact on the success of the change process, too, in addition to leaders and managers. In order to reduce friction and bring the stakeholders and employees on board the change journey, the leader should exhibit good people skills which would create positive relationships among one another (Ford, Ford, & Polin, 2021). This can be done by showing that their opinions matter, keeping everyone updated about the process, giving them power to make some of the decisions and recognizing and rewarding their contributions (Visagie & Ukpere, 2013). It is important for all to be equally committed to the process and strive together to achieve the common goal of the process to proceed smoothly. A leader should be able to keep his emotions in check and handle uncomfortable situations and discussions professionally (Aitken & von Treuer, 2021). Open communication is an important aspect of maintaining good relationships with employees and stakeholders.

Leader Competency: Knowledge

The technical competencies of a leader are critical to understand how the new technology will impact the business, employees and stakeholders. A leader should be able to train, guide and support the employees in the new technology implemented. The two competencies in this category are technical know-how and knowledge sharing.

Technical know-how: For a new technology to be implemented in an organisation, it is important to have an expert. The leader leading the change should have expertise in the field of the new technology being employed (Swanson, Kim, Lee, Yang, & Lee, 2019). Without fluent knowledge of the technology, the leader will fail to guide and support the employees. This also causes the change initiative to fail. Thus, when a leader is appointed, it is important to ensure that they are competent in the new technology. Hence, it can be inferred that the knowledge possessed by the leader has a definite impact on the result of the process (Swanson, Kim, Lee, Yang, & Lee, 2019; Graetz, 2000; Ford, Ford, & Polin, 2021).

Knowledge sharing: It is not enough that the leader alone is competent in the technology and has all the knowledge about it. It is vital that the leader has the ability to share their knowledge in a clear and effective way with the employees involved, thus empowering them to contribute significantly to the change (Swanson, Kim, Lee, Yang, & Lee, 2019). The knowledge can be shared through training and workshops, short courses, coaching sessions in smaller groups, meetings, bulletins and so on. The leader must also be open to mistakes, keep bias and judgement aside, encourage employees to ask ‘why’ and create space for the employees to explore the technology (Swanson, Kim, Lee, Yang, & Lee, 2019; Graetz, 2000). Guidance must be provided throughout the process. The more knowledge is gained and shared among those involved, the more motivated and empowered the change team is and the higher the chances leading to success are.

Leader Competency: Organisational

The organisational category consists of competencies related to the processes and systems employed in the organisation. It consists of planning, and fluency and management of organisational processes and systems – both present and future. These competencies are important since the change process leads to discontinuing certain organisational systems and replacing them with new ones. Hence, a leader should also be competent in aspects of the organisation.

Planning: A leader should be able to develop a strategic plan for transformation keeping in mind the goals of the organisation. Planning involves the strategy to be employed, the resources needed, schedules and timelines, and a clear goal (Graetz, 2000). All of this must be done, while understanding the needs and situation of the organisation at the moment and how the change will impact aspects of the organisation (Aitken & von Treuer, 2021). If a leader lacks this competency, the plan will be hindered by various barriers and impede the process of change.

Fluency and management of organisational processes and systems – both present and future: It is vital that a leader is fluent with the organisational systems and processes in place in order to devise a change initiative that will prove beneficial for the organisation and not cause damage to the organisation (Aitken & von Treuer, 2021). The leader should be able to analyze the impact of the change on the different systems and be able to decide which systems and processes need to be discontinued and which must be retained. Unless this is clear, it will lead to chaos in the organisational system and the change will not reach its full potential. This includes understanding and dealing with organisational culture and values which may need to be modified in the future (Aitken & von Treuer, 2021). Thus, to put the right systems and processes in place, a leader must be fluent with the organisation's way of working.

Hence, a change leader should possess wide-ranging set of competencies that are not only related to oneself and knowledge, but also to social interactions and organisational aspects. This helps them guide and lead their teams during times of change, navigate the complexities of change management, and sustain the change.

2.3. The Conceptual Model of the Relationship Between Leaders' Competencies and the Factors of Change Management as a Summary of Theoretical Solutions.

On analyzing the two change management models and identifying the factors that play an important role in transformation, and different leader competencies for the same, the author has come up with a conceptual model that depicts the relationship between the competencies of a leader and the factors identified from the change management models. The factors of change management considered for the model are *urgency, concrete vision and initiatives, clear and open communication, management support, organisational change culture, employee motivation, and employee and stakeholder engagement*. The leader competencies considered are those described in the previous section. This theoretical model aims to identify the relationship between competencies of a leader and the factors identified from the CM models. The theoretical model has been created from the inference made by the author from the surveyed literature. It is only preliminary and requires further validation before being generalized and extended to other organisations undergoing change.

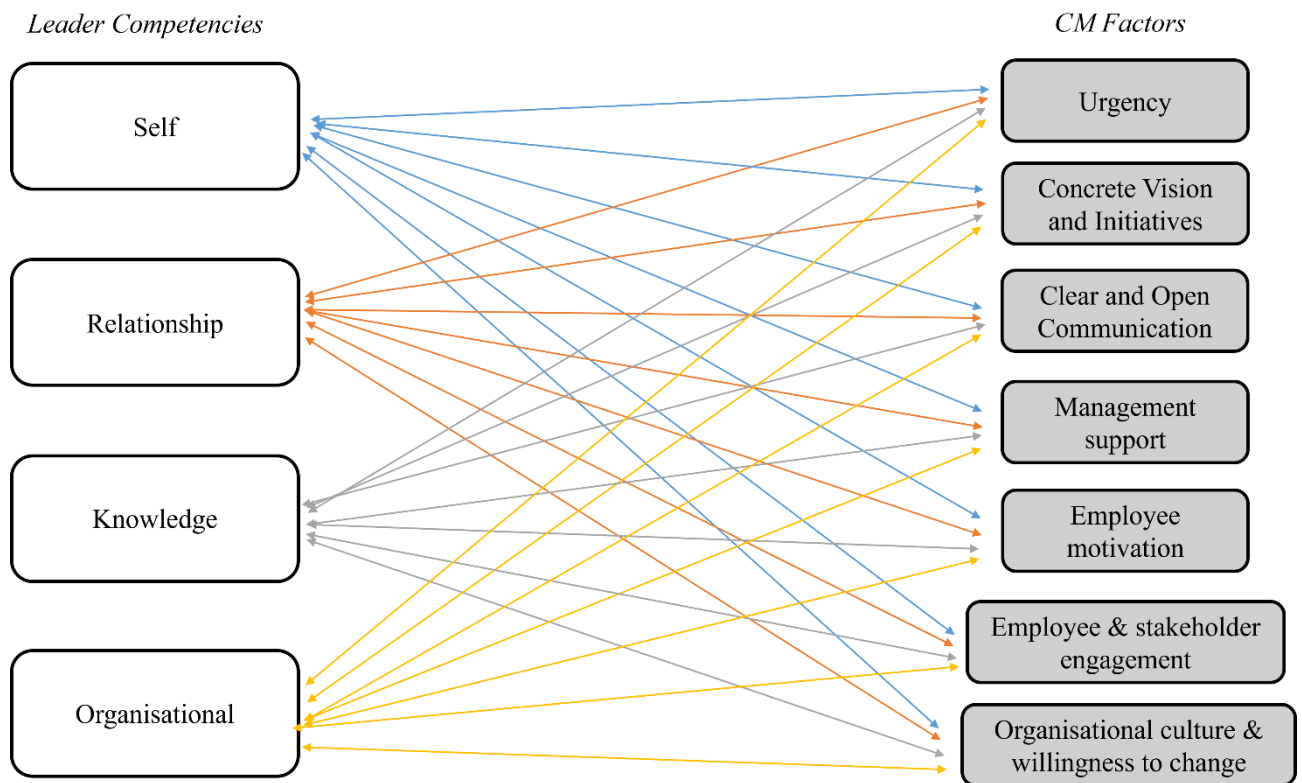


Figure 8: A conceptual model of the relationship between leader’s competencies and factors of change management analyzed and illustrated by the author based on Kotter (2018), Prosci ADKAR (n.d.) models, Aitken & von Treuer (2021), Graetz (2000)

In order to create urgency in an organisation, the leader must be able to communicate the need for change effectively, should be able to take the decision to implement a change based on their knowledge and expertise, should be motivated to make the change happen, and must have a risk appetite to address any potential risks that may arise during the process (Kotter, 2018; Aitken & von Treuer, 2021).

For concrete vision and initiatives, it is important that the leader communicates the vision in a clear and motivating way to all involved. The leader must create a vision, and initiatives to achieve that vision, taking into consideration the organisation’s culture, systems, and processes as well as the technical competency of the leader themselves as well as of the organisation (Kotter, 2018; Gupta, 2015; Aitken & von Treuer, 2021).

The critical competencies needed to enable clear and open communication are emotional intelligence, knowledge sharing, and communication skills. A leader should be fluent in the communication systems in place within the organisation, as it plays a huge role in enabling the leader to allow the flow of communication throughout the organisation. Emotional intelligence is needed to be able to empathize with the people involved, respond to their queries with honesty, and to regulate one’s emotions (Aitken & von Treuer, 2021). Knowledge sharing is important to ensure that everyone involved is on the same page regarding the requirements and process of change (Swanson, Kim, Lee, Yang, & Lee, 2019). Communication skills involve being able to convey the message clearly as well as being able to actively listen to the employees' concerns and understand them. Thus, to enable this, organisations need to have efficient communication tools and systems in place.

Management support should involve planning at every stage. Planning on how to distribute tasks based on employee competency, needs and availability, and planning how to execute the process considering the organisation's goals and abilities (Visagie & Ukpere, 2013). It is also crucial for the leader to make decisions throughout the planning stages in order to move in the right direction. Building trustworthiness and positive relationships with all involved, makes everyone feel supported and safe in the face of uncertainties and risks that arise in the process of change (Graetz, 2000).

Employee motivation and engagement is vital to the process of change (Kotter, 2018; Hiatt, 2006; Graetz, 2000). Lack of motivation of employees lead to sub-par results. A leader must motivate the employees to get involved in the transformation process to ensure that intent is turned into action. Connecting with the employees' and stakeholders' emotions and fears, creating a safe space, trustworthiness, actively listening to their feedback and concerns, and empowering them through knowledge sharing helps build positive relationships with them (Kotter, 2018; Hiatt, 2006). This motivation pushes employees and stakeholders to engage even more in the process, impacting the result of the transformation positively.

When it comes to the organisational change culture and willingness to change, a leader should have a considerable risk appetite as this change is not only at an individual level but an organisational level and impacts employees, stakeholders, and customers. The leader should be fluent with the organisational systems in order to utilize them to optimize the change process and later embed the change into the organisation (Kotter, 2018). Knowledge sharing and effective communication help reduce the resistance to change and make employees more open to the idea of change (Swanson, Kim, Lee, Yang, & Lee, 2019). By displaying dedication to lifelong learning, the leader sets an example for employees organisation wide, to stay motivated, and keep looking for opportunities to learn and implement those learnings in the organisation, thus leading to the success of the organisational transformation.

Thus, the author has proposed a conceptual model to identify how various leadership competencies are related to factors of change management and the methodology of its empirical research is presented in the next chapter.

3. Methodology of Empirical Research of the Relationship between Leaders' Competencies and Factors of Change Management

As explained in the introduction, it is seen that the research on the relationship between leaders' competencies and factors of change management is scarce and fragmented. The methodology employed to understand this relationship is elaborated in the further sections of this chapter. First, the research objectives and design is described, second, the process of quantitative data collection and method of analysis is delineated and lastly, the process of qualitative data collection and method of analysis is explained.

3.1. Research Objectives and Design

Based on the research aim and conceptual model, the **objectives** of the empirical research are as follows:

1. To evaluate leaders' competencies.
2. To evaluate factors of change management.
3. To reveal the leaders' experience in change management with relation to their competencies and the factors of change management
4. To identify the relationship between leaders' competencies and factors of change management,

In order to test the conceptual framework shown in section 2.3 and meet the objectives of the empirical research, a mixed method strategy, involving qualitative and quantitative research and analysis methods, has been chosen for evaluating the relationship between leaders' competencies and factors of change management. The quantitative method consisted of an online survey created using reliable items from relevant scientific literature on leaders' competencies as well as factors of change management. The qualitative method consisted of interviews that were conducted with participants who took part in the survey and agreed to participate in the follow-up interview. In order to have a narrow scope, to identify the relationship between leaders' competencies and factors of change management, the healthcare industry in Germany was selected. This narrowing down to a specific industry and specific geographical area is due to the highly regulated nature of the healthcare industry (Donzé, 2022). The regulations pertaining to the healthcare industry vary from one geographical region to another. Since Germany is one of the countries that holds a dominant position in the field of medical technology, it has been selected for this research (Donzé, 2022). Furthermore, the geographical scope was selected due to the author's familiarity with the medical technology and healthcare industry in Germany. The unit of analysis for this master thesis is at the departmental level and not organisational.

Sampling of the survey companies and participants: The companies chosen for this research were medical equipment manufacturing companies in Germany. The companies were spread across different regions of Germany spanning cities such as Hamburg, Munich, Berlin, and Eschborn. These companies were identified via the author's professional network and LinkedIn. A purposeful sampling approach (Johnson, Adkins, & Chauvin, 2019) was taken to further analyse and select companies for this research. **Table 2** shows the 'Must have' and 'Should have' criteria, which formed the basis of the final selection of companies.

Table 2: Selection criteria for Medical Equipment Manufacturing Companies in Germany

Must have criteria	Should have criteria
<ul style="list-style-type: none"> • Company that manufactures Medical Equipments • Company has to be located within Germany • Company should have first hand experience with Change initiatives and Change Management • Availability of sufficient and pertinent data related to change management initiatives and leadership competencies within the company, in line with the research objectives. 	<ul style="list-style-type: none"> • Acknowledgement of leadership practices or change management strategies within the medical equipment manufacturing sector. • Evidence of strong employee engagement and involvement in decision-making processes, indicating a conducive environment for change. • Companies with a track record of innovation in their product development and manufacturing processes.

It was essential that the companies selected satisfied the ‘Must have’ criteria. Companies that also satisfied the ‘Should have’ criteria, were then selected. A total of nine companies were selected and contacted via LinkedIn and through emails in the author’s professional network. Out of the nine companies contacted, four companies responded positively, two companies chose not to participate due to time constraints and other priorities, and three companies did not respond.

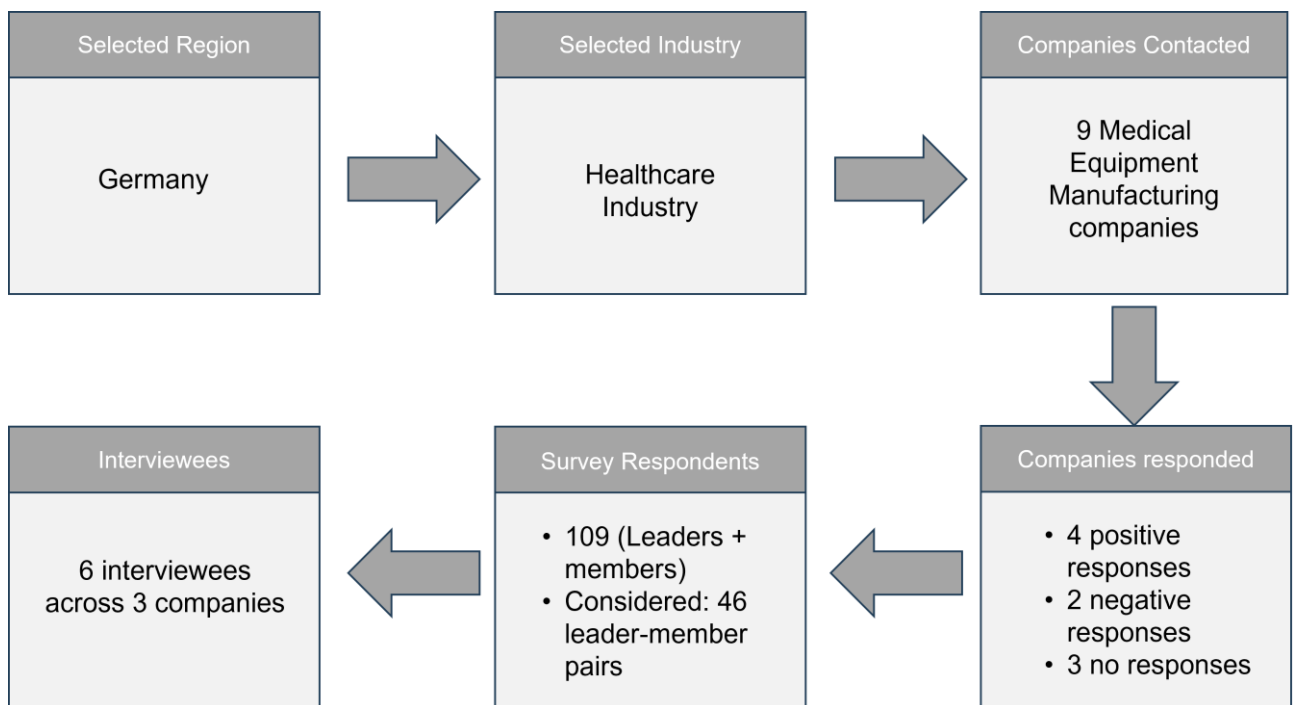


Figure 9: Overview of the sampling process for the survey and interviews

Once the companies were selected, representatives and employees of those companies were reached out to, who held managerial positions and have been part of atleast one change initiative in their professional career. The data was collected over a period of one month.

3.2. Quantitative Data Collection and Analysis

For the quantitative analysis, an online survey, using the tool Microsoft Forms, was conducted, where both, leaders and a member from the leader’s immediate team were invited to participate. Purposeful sampling (Johnson et al., 2019) of respondents was conducted to ensure that the data was provided by professionals with experience in change initiatives and management, and had taken up leadership roles at some point in their career. Participants for the survey were contacted through a prewritten standard survey request, sent out via email and LinkedIn messaging, briefly outlining the aim and purpose of the research along with a guarantee of anonymity. Leaders in managerial roles and higher were contacted for the survey. To assess leaders’ competencies, solely relying on self evaluation from the leader would not be considered credible data. Therefore, a member from the leader’s immediate team was also invited to participate, by the leader, in the survey and evaluate the leader’s competencies. Since the survey was anonymous and no names were asked, the leader-member pairs were identified based on the company and team names. The average of the leader-member ratings was then utilized for the evaluation of the leader’s competencies.

Overview of the respondents: As shown in **Fig. 9**, four companies responded positively when asked for their participation in the survey. Since the survey was anonymous, company names are not mentioned. However, an overview of the respondents and companies that participated in the survey is shown in **Table 3** below.

Table 3: Overview of survey respondents and their companies

Company	No. of Employees	Location	No of participating Leaders	No of participating Members	Leader Member Pairs identified
Company 1	7000-8000	Hamburg	15	13	13
Company 2	15000-17000	Munich	10	16	10
Company 3	500-1000	Berlin	18	16	15
Company 4	500-1000	Eschborn	8	13	8
Total			109		46

To assess leadership competencies and factors of change management, the crafting of survey questions was based on reliable instruments extracted from scientific papers. The survey questions were formed with the objective of gauging leaders’ and members’ evaluation of each leaders’ competency and factor of change management considered in this research. The instrument for evaluation of leaders’ competencies consisted of a total of 24 items, whereas the instrument for evaluation of factors of change management consisted of 26 items. The items for leaders’ competencies included ‘*I can control my emotions when there is a dispute/disagreement*’ (Mohamad, Akanmu, Ponnusamy, Yahya, & Omar, 2024) for self, ‘*There is tolerance/acceptance in my communication with my employees*’ (Christensen, 2014) for relational, ‘*I know what I am talking about when it comes to discussions in my field*’ (Aarons, Ehrhart, & Farahnak, 2014) for knowledge, and ‘*I ensure employees continue to contribute to changes that were made*’ (Kin and Kareem, 2018) for organisational competencies. Items for factors of change management include ‘*The department feels that planned changes need to be implemented immediately in a timely manner*’ (Joshi and Jha, 2016), ‘*The top management clearly communicates the vision to the employees*’ (Martins and Ledimo, 2016), and more. The complete table of items for leaders’ competencies and factors of change management can be found in **Appendix 1 and 2**, respectively.

The same instruments were rephrased and presented, from a member’s point of view, for the members’ part of the survey for evaluation of leaders’ competencies. Thus, the survey facilitated the

evaluation of factors in change management and leaders' competencies, thereby indicating their respective significance and relationship. The survey consisted of a total of 50 questions. Data in the survey was collected based on a Likert scale ranging from 1 to 5, where 1 = Very rarely, and 5 = Very often. Some questions were based on the agree-disagree format and for these questions, 1 = Strongly disagree, and 5 = Strongly agree. 109 participants took part in the survey including leaders and members. Since every leader did not invite a member to participate, either due to non-availability or other priorities, these responses were filtered out and eventually 46 leader-member pairs were identified and the final number of respondents was 92, and this was then considered as the data for analysis. The survey was open for the duration of 15th March to 14th April, 2024.

Quantitative data analysis was done in three phases. First, descriptive statistics were run to understand the distribution of data through characteristics such as mean, median and standard deviation. The second phase included reliability tests for instruments for leaders' competencies as well as factors of change management. Factor analysis was conducted for item scales having Chronbach's alpha < 0.7 . Cronbach's alpha has a scale of 0-1 and values above 0.7 are considered satisfactory. Instrument scales having values below 0.7 cannot be considered reliable. Once the reliability tests were completed, the third phase was to perform a bivariate correlation analysis to identify hidden relationships between leaders' competencies and the factors of change management. "Correlation, also called as correlation analysis, is a term used to denote the association or relationship between two (or more) quantitative variables" (Gogtay, 2017). This analysis assumes a linear relationship between the variables (Gogtay, 2017). The output of the correlation analysis is the correlation coefficient which has a value ranging from -1 to +1. A correlation coefficient with a value of +1 signifies a perfect, positive, linear relationship between the variables and a correlation coefficient with a value -1 signifies a perfect, negative, linear relationship between the two variables (Gogtay, 2017). A correlation coefficient having value 0, indicates that "there is no linear relationship between the variables studied" (Gogtay, 2017). There are two methods of calculating the correlation coefficient. One is the Karl Pearson's correlation coefficient (r), and the other is the Spearman's rank correlation coefficient (ρ) (Gogtay, 2017). Since the Pearson correlation coefficient is suitable only when the variables have a linear relationship, are independent of each other, and are distributed close to normal distribution (Gogtay, 2017), the Spearman's correlation coefficient has been considered for this research. Spearman's correlation coefficient, being non-parametric is more resilient to outliers as compared to Pearson's coefficient (Gogtay, 2017).

Bivariate correlations are useful to establish reciprocal relationships between variables. It can be used for scale as well as ordinal variables, such as data from a Likert scale. The correlation analysis provides three main insights:

1. **Whether there is a statistically significant relationship between the two variables.** If the significance value indicated by the *Sig. (two tailed) value* < 0.05 or *p value* < 0.05 , the relationship between the two variables is statistically significant (Gogtay, 2017).
2. **The nature of the relationship between the variables.** If the correlation coefficient is positive, then the two variables are positively related i.e. as one variable increases, the other variable also increases (Gogtay, 2017). If the correlation coefficient has a 'minus' sign in front of it, then it is a reverse relationship i.e. as one variable increases, the other variable decreases (Gogtay, 2017).

3. **The strength of the relationship.** The absolute value of the correlation coefficient shows the strength of the relationship. According to Sarstedt and Mooi (2019), the interpretation of strength between two variables can be based on the following **Table 4**.

Table 4: Interpretation of value of Correlation Coefficient based on Sarsedt and Mooi (2019)

Correlation Coefficient (absolute value)	Interpretation
Below 0.30	Weak relationship
0.30 – 0.49	Moderate relationship
0.50 and higher	Strong relationship

What the correlation analysis does not provide information about whether a variable moves in response to another and it does not attempt to establish variables as dependent or independent (Gogtay, 2017). Another drawback of the correlation analysis is that it considers only linear relationships and other kinds of relationships are not taken into account. However, considering the scope of the research, correlation analysis was selected for this research.

At the end of the survey, a question was included asking the respondent if they would like to participate in a short interview, thus leading to the qualitative research phase.

3.3. Qualitative Data Collection and Analysis

In the qualitative phase, the author engaged in interviews with a few of the cohort of leaders and their members, that participated in the survey. This approach aimed to glean insights from their professional experiences regarding the importance of the factors of change management and leaders' competencies, as well as the relationship between them. Interviews with participants of the survey were conducted to also understand the meaning behind the responses shared. Quantitative analysis exclusively considers statistical data without providing a justification for the underlying meaning of the data and its outcomes. Hence, to gain a more comprehensive understanding of the relationship between leaders' competencies and factors of change management, interviews with leaders and members were conducted.

Sampling of the interviewees: Several respondents from the survey volunteered to participate in a follow up interview to dive deeper into the concept of change management and its factors, as well as leadership and leaders' competencies. However, to select suitable candidates for the interview process, an additional sampling criterion was defined, which can be seen in **Table 5** below.

Table 5: Selection criteria for interviewees

Must have criteria	Should have criteria
<ul style="list-style-type: none"> • Interviewee is knowledgeable about change management • Interviewee is knowledgeable about leadership and leadership competencies • Interviewee has been part of at least one change initiative in their professional career • Interviewee must be fluent in English to understand the terms and concepts of the research 	<ul style="list-style-type: none"> • Interviewee should have played an active role in change management • Interviewee should have been in leadership roles or should have worked closely with a leader during a change initiative

The potential interviewees had to fulfill the ‘Must have’ criteria, to be considered for the interview process. Potential interviewees that fulfilled both the ‘Must have’ and ‘Should have’ criteria were then selected for the interviews. Among the respondents who agreed for the interview, the ones with more years of experience in leadership roles, as well as experience with change management were selected for the interviews.

Overview of Interviewees: An overview of the interviewees and their field of expertise, as well as time duration of the interviews is listed in the below **Table 6**.

Table 6: Overview of interviewees

Position	Duration of Leadership Role	Experience with Change Management	Duration of interview
Senior Product Manager - Digital Solutions (Leader)	6 years	Yes	30 min
Product Manager - Digital Solutions (Member)	1.5 years	Yes	30 min
Global Head- Business Strategy (Leader)	13 years	Yes	30 min
Regional Manager - Business Strategy (Member)	9 years	Yes	30 min
Global Transformations Manager (Leader)	12 years	Yes	30 min
Regional Transformations Manager (Member)	9 years	Yes	30 min

While contacting the interviewees, a prewritten standard message was sent out to their email addresses, explaining the aim of the interview as well as ethics that would be followed during the interview. According to the ethics of interviewing, the prewritten standard message assured the respondents anonymity and confidentiality. Before each interview, a verbal consent for recording the interview was taken from each interviewee. Additionally, it was also communicated that the company and team names would not be disclosed but was only required for the purpose of analysis. The number of interviews conducted was dependent on information saturation. On completion of each interview, the author analysed the interview to understand the relationship between leaders’ competencies and factors of change management and to identify any new information. Hence, interviews and analysis of interviews were done parallelly till the author found that no new significant information was provided i.e. the information retrieved from the interviews had become saturated. This saturation was achieved after 6 interviews. Hence, the number of interviews conducted for this research was 6 i.e. three leader interviews and three member interviews, to gain a comprehensive understanding of the relationship between leaders’ competencies and factors of change management.

The questionnaire for the interviews was created based on previous literature review and insights gathered from the survey responses. The questionnaire was adjusted according to each company and interviewee’s expertise and experience in change initiatives and leadership. A total of ten descriptive, relevant questions were selected from a pool of thirteen interview questions and asked in each interview to understand more elaborately the leader’s and member’s impressions about the relationship between leaders’ competencies and factors of change management. The high priority questions were covered in each interview whereas, the low priority questions were only asked if time permitted. If all questions were asked and time persisted, the interviewee was asked to share some

more insights and experiences relevant to the research topic. Additionally, feedback from the interviewee was asked at the end of each interview to constantly improve the quality and experience of the interview. The questionnaire was adjusted after each interview based on feedback and insights received from each interviewee. Each of these questions were revised and worded to best suit each company and interviewee. The interview usually followed the order of the questionnaire, but in many cases, the order of the questions was based on the flow of the conversation. The list of broad interview questions for leaders and members can be found in **Appendix 3 and 4**, respectively.

The interviews were conducted via platforms like MS Teams and Zoom. All interviews were conducted in English as that was the preferred language for the author and also a comfortable language for the interviewees. On permission from the interviewee, the interviews were recorded, so that it could be transcribed for analysis. Each interview was conducted for a duration of 30 minutes due to the time limitations on the part of the interviewees. The interviews were conducted during the period ranging from 17th March to 15th April, 2024.

Analysis of the interview was done in four steps:

1. Firstly, each interview recording was transcribed using an online transcribing software and was checked thoroughly by the author and the interviewees were made anonymous.
2. The second step was conducting line by line ‘coding’. According to Locke, et al., there is no predetermined or standardized procedure for interpreting code; it is rather a relational journey where researchers go from their current level of comprehension of the subject to the next level using subjective research logic (Locke, Feldman, & Golden-Biddle, 2022). This was done by analysing each interview, sentence by sentence, and creating ‘codes’, relevant to the research topic. Initially the components of the conceptual model was used as codes and on further analysis, additional codes were identified and created.
3. Once these ‘codes’ were created, the next step was to analyse each ‘code’ and ‘categorise’ them. The codes were categorized into two categories: Leaders’ Competencies and Factors of Change Management based on the conceptual model. Additional codes that emerged were re-evaluated and were then included in one of the two categories based on the idea and meaning behind them, from the interview.
4. Finally, on analysing the codes in these two categories and comparing them, relationships between different leaders’ competencies and factors of change management were identified. In addition to this, a list of most prevalent leaders’ competencies and factors of change management was created to understand its significance and compare it with the analysis of the survey responses.

Subsequently, the collected data from the survey underwent statistical analysis through the utilization of the SPSS tool and the interview data was analysed qualitatively. The research findings are discussed in the following chapter.

4. Research Findings and Discussion on the Relationship between Leaders' Competencies and Factors of Change Management

In this chapter, empirical findings regarding the relationship between leaders' competencies and factors of change management will be delineated. Both quantitative and qualitative analysis were conducted from 15th March to 20th April, 2024.

Firstly, the chapter commences with a descriptive analysis of the dataset, to understand the distribution of the data statistically. Following this, the results of the overall correlation analysis is presented. Finally, the relationship between each leaders' competency and factors of change management is explained based on the quantitative and qualitative analysis conducted.

4.1. Descriptive Analysis

The survey responses were numerically coded and entered into the tool SPSS for analysis. A total of 109 responses were received through the survey. However, since leader-member pairs are required, in order to ensure the credibility of the evaluation of the leader's competencies, single responses by leaders without a member response, and vice versa, were filtered out and not considered for the analysis. Thus, after filtering and cleaning the data, a total of 92 responses i.e. 46 leader-member pairs were identified for analysis. This data was then entered into the SPSS tool and a descriptive analysis was conducted to understand the distribution of the data in the dataset. The results of the descriptive analysis for leader competency scales can be seen in **Fig. 10**.

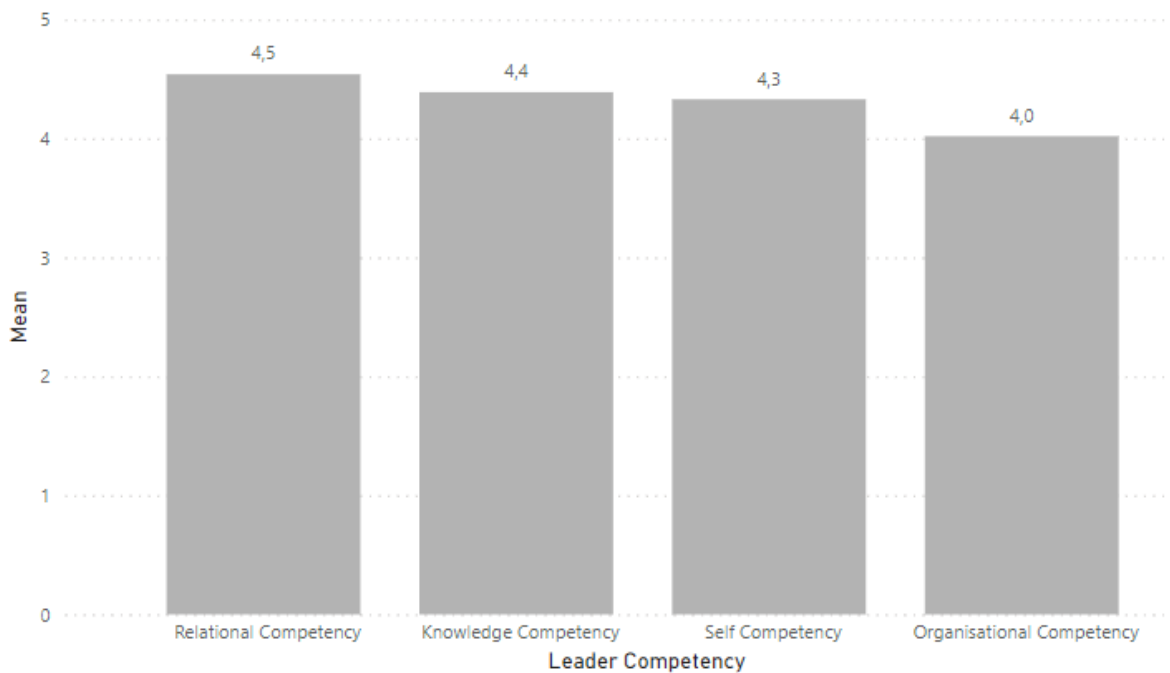


Figure 10: Means of evaluation of Leaders' Competencies

It can be seen from the table above that the mean values for each of the leaders' competencies ranges from 4 to 4.5, which indicate that the leaders were well aware of these competencies and were practising it often in their day to day work. The standard deviation value (see **Appendix 5**) indicates that the data in the dataset is not distributed normally.

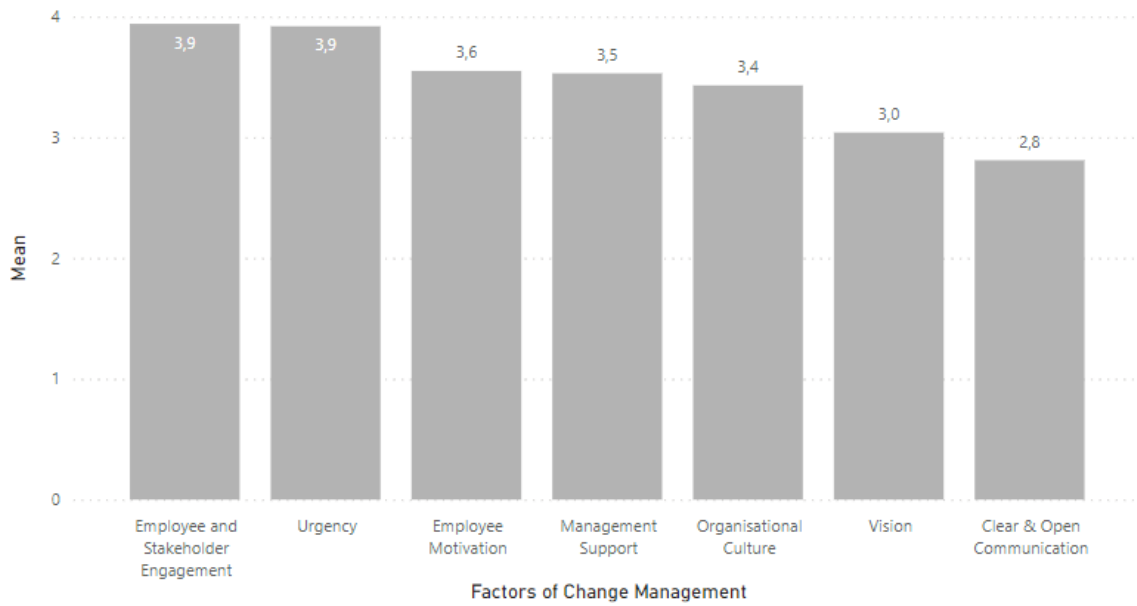


Figure 11: Means of evaluation of Factors of Change Management

It can be seen from the **Fig. 11** above that the mean values for each of the factor of change management ranges from 2.8 to 4, which indicates that the employees perceive these factors as areas where improvements could be made when it comes to change management within each department and eventually the organisation as a whole. The standard deviation value (see **Appendix 6**) indicates that the data in the dataset is not distributed normally. Hence, for the correlation analysis, we have considered Spearman's coefficient (ρ), instead of Pearson's coefficient (r).

4.2. Correlation Analysis to understand the Relationship between Leaders' Competencies and Factors of Change Management

Once the survey responses were received, the value for each leaders' competencies was computed by taking the average rating derived from both the leader's self evaluation and the evaluation provided by the leader's immediate team member. The responses were collected in the format of a Likert scale having a range from 1 to 5 (1 = Very rarely, 2 = Rarely, 3 = Neutral, 4 = Often, 5 = Very often). The survey also contained questions for which the response was in the agree/disagree format (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). Prior to conducting correlation analysis, the reliability of the survey items was assessed by performing reliability analysis using the SPSS tool. For items with Chronbach's alpha < 0.7, factor analysis was conducted, and the items were adjusted accordingly. Once all items exhibited a Chronbach's alpha > 0.7, it could be concluded that the instruments were reliable, thus enabling subsequent correlation analysis. The reliability analysis of each component of the conceptual model is seen in **Table 7**.

Table 7: Reliability analysis of survey scales

Scales	Chronbach's alpha
Self Competencies	0.710
Relational Competencies	0.740
Knowledge Competencies	0.777
Organisational Competencies	0.794
Leaders' Competencies (Self - Organisational)	0.843

Factor 1: Urgency	0.701
Factor 2: Vision	0.846
Factor3: Clear & Open Communication	0.871
Factor 4: Management support	0.820
Factor 5: Employee Motivation	0.785
Factor 6: Employee & Stakeholder Engagement	0.862
Factor 7: Organisational culture	0.842
Factors (Urgency - Organisational culture)	0.929

A bivariate correlation analysis was then carried out to understand the relationship between leaders' competencies and factors of change management. As mentioned in section 4.1 of this chapter, the correlation coefficient used was Spearman's coefficient (ρ), since the data in the dataset is not normally distributed. A condensed form of the correlation analysis, consisting of the leader competencies, factors of change management, and the Spearman's correlation coefficient, is presented in below **Table 8** and is delineated further in this chapter.

Table 8: Correlation analysis matrix for relationship between Leaders' Competencies and Factors of Change Management

	Self Competencies	Relational Competencies	Knowledge Competencies	Organisational Competencies
Factor 1: Urgency	0.214*	0.141	0.208*	0.211*
Factor 2: Concrete Vision & Initiatives	0.316**	0.083	0.025	0.317**
Factor 3: Clear & Open Communication	0.067	0.123	0.069	0.503**
Factor 4: Management Support	0.161	0.507**	0.206*	0.048
Factor 5: Employee Motivation	0.614**	0.516**	0.240*	0.078
Factor 6: Employee & Stakeholder Engagement	0.423**	0.239*	0.021	0.256*
Factor 7: Organisational Culture	0.254*	0.191	0.239*	0.460**

(** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed))

A statistically significant relationship exists between two variables if the value $Sig. (2-tailed) < 0.05$ (Gogtay, 2017). The strength of the relationship is based on the value of the correlation coefficient. If the *correlation coefficient* < 0.30 , the relationship between the leader competency and related factor of change management is considered *weak* (Sarstedt & Mooi, 2019). If the *correlation coefficient* is between 0.30 and 0.49 , the relationship between the leader competency and related factor of change management is considered to have *moderate* strength (Sarstedt & Mooi, 2019). If the *correlation coefficient* is > 0.49 , the relationship between the leader competency and related factor of change management is considered *strong* (Sarstedt & Mooi, 2019). Since all correlation coefficients have a positive value, it means that the relationships between the leader competencies and factors of change management are positive i.e. as the magnitude of one competency increases, the magnitude of the

related factor also increases. It can be seen from **Table 8** that a strong relationship exists between a leader’s *organisational competencies*, such as planning and communicating milestones to their colleagues, and the factor of *clear and open communication* within the department. Another example of a strong relationship is between *employee motivation* and the leader’s *self and relational competencies*. The subsequent subsections elucidate the relationship between each leaders’ competency and factor of change management, derived from both the correlation analysis and qualitative analysis of the interviews.

4.2.1. Results and Discussion of the Relationship between Leaders’ Self Competencies and Factors of Change Management

The competencies that fall under the self category, as depicted in **Fig. 7**, are emotional intelligence, motivation – of self and others, risk appetite, and lifelong learning. These are competencies that are internal to the leader at an individual level but can also be developed and improved over time, despite being challenging.

The correlation analysis of the *Self* competencies of a leader with the different factors of change management is seen in **Table 9**.

Table 9: Correlation analysis of Leaders’ Self Competencies and Factors of Change Management

	Self Competencies
Factor 1: Urgency	0.214*
Factor 2: Vision	0.316**
Factor 3: Clear and Open Communication	0.067
Factor 4: Management Support	0.161
Factor 5: Employee Motivation	0.614**
Factor 6: Employee & Stakeholder Engagement	0.423**
Factor 7: Organisational Culture	0.254*

(** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed))

From the correlation analysis, it is evident that the *self* competencies of a leader have a linear statistically significant relationship with the factors of *urgency, vision, employee motivation, employee & stakeholder engagement, and organisational culture*.

Leaders’ Self competency and Factor of Urgency: The factor of urgency refers to the state of urgency when it comes to change management in an organisation or department. It is essential to create a sense of urgency for change to happen, and this needs to be communicated openly and accurately (Kotter, 2018). From the quantitative analysis, it is evident that the relationship between a leader’s self competencies and the factor of urgency is *statistically significant*. However, the strength of the relationship is 0.214, which is below 0.30. This indicates that the relationship between a leader’s self competencies and the factor of change is *weak*. To gain a deeper understanding into the

results provided by the correlation analysis and to find the meaning behind it, interviews were conducted where questions related to leaders’ self competencies and the factor of urgency to change were asked. Fourteen codes were attributed to this relationship across six interviews. Following are some excerpts from the interviews conducted relevant to this relationship.

Table 10: Interview excerpts relating Leaders’ Self Competencies and Factor of Urgency

Category	Subcategory	Excerpt
Self Competencies	Emotional intelligence	“You must accept that there are different working styles. So even if there is urgency to change, you must consider people’s emotions and ways of doing their tasks” (Interview_Senior Product Manager)
		“Change is always something people at the beginning react negatively to, because they have to get out of their comfort zone, hence it is important to convey the significance and urgency of the situation, and understand their emotions about change, to get them onboard” (Interview_Global Head – Business strategy)
	Motivation	“My internal motivation keeps me going even in the face of urgent tasks or urgency in some aspects of the business” (Interview_Senior Product Manager)
		“Many times, being internally motivated is key to prevent burnout, in the face of a constantly evolving industry, where change is the only constant and most urgent factor” (Interview_Global Transformations Manager)
		“I mean, there needs to be the urgency for people to move and get things done, hence, a leader needs to be motivated to be able to motivate others” (Interview_Global Transformations Manager)
	Lifelong learning	“This is how I stay up to date - through peer industry exchange. Yes, it is crucial to be successful, in a rapidly changing world” (Interview_Global Head – Business strategy)
		“[...] the high paced environment we are in sometimes, due to very urgent tasks, you’re not really able to perform some, I would say, sustainable learning” (Interview_Senior Product Manager)
		“Because of my knowledge of the current trends, I am able to create a sense of urgency for my team to adapt to the trends and stay in the market” (Interview_Global Transformations Manager)
	Risk taking	“You need to change because the world is changing. The expectations are changing. The company also must change to adapt. And of course, it brings risks” (Interview_Global Head – Business strategy)
		“But if you work in the medical business, you have to also make sometimes quick decisions that’s ultimately the best for the customer, and that’s where risk taking kicks in” (Interview_Global Transformations Manager)

From the excerpts, the relationship between a leader’s self competencies and the factor of urgency can be understood. Emotional intelligence refers to the ability to be aware of one’s emotions, be able to keep them in check, be aware of the way one communicates their emotions to others, and be empathetic to the feelings of others (Swanson, Kim, Lee, Yang, & Lee, 2019). This is a crucial skill to help reduce the resistance to change within the team. From the interviews conducted, it was clear that when there is a sense of urgency, a leader’s emotional intelligence helps understand the fears and reservations that the team members might have when it comes to change. An interviewee mentioned that *“urgency can create panic among the team”*, which is where relating to the emotions of the members of the team, can help them be open to the urgency and provide substantial results. It is also important to provide flexibility to the employees with regards to their *“way of performing the tasks”*, which again *“helps them be more open to the situation of urgency”*. All of this becomes possible when a leader themselves are intrinsically motivated. Motivation emerges as a pillar for leaders in

the midst of change. Leader interviews have emphasized that internal motivation was what propelled them forward even in the face of strictly time bound decisions and changes. They were then able to lead their team by example. Leaders mentioned that urgency also played a role in motivating themselves and their team members *“to take action and adapt”*.

Leaders also stressed that lifelong learning and keeping up with the ever changing trends helps create a sense of urgency and push for the team to progress. At such times, decisions may need to be made within limited time and a leader should be capable of taking *“calculated risks”*, with the help of their expertise in the matter. A leader should have an appetite to take risks in order to explore the different possibilities of how to bring about change (Visagie & Ukpere, 2013; Swanson, Kim, Lee, Yang, & Lee, 2019). Risk taking has been emphasized by the interviewees, as an essential skill for leaders facing change. Urgency prompts leaders to *“think on their feet”* and improve their ability to take calculated risks and responsible decision making. Interviews highlighted that though there is a relationship as explained above, the magnitude of the relationship is smaller as compared to other *“bigger factors like budget and resources”*, that have a stronger relationship when it comes to urgency. Hence, it is considered weak, and is in accordance with the statistical analysis.

Leaders’ Self competency and Factor of Vision: The factor of vision refers to the importance of having a well defined vision for the change process that is aligned with the department’s goal. The interviews revealed that *“merely having a vision is not sufficient, it is essential to put efforts into communicating this vision precisely to the employees and stakeholders involved”*. Besides making the vision clear, concrete steps need to be defined to achieve the said vision. Only then, will the vision have meaning and be achieved. From the quantitative analysis, it is evident that the relationship between a leader’s self competencies and the factor of a creative, well defined vision *is statistically significant*. Additionally, the strength of the relationship is 0.316, which is between 0.30 and 0.49. This indicates that the relationship between a leader’s self competencies and the factor of the vision is *moderate*. A deeper understanding into the results provided by the correlation analysis and the meaning behind it, was obtained through the conducted interviews, where questions related to leaders’ self competencies and the factor of vision of the change were asked. Sixteen codes were linked to this relationship, across the six interviews. Following are some excerpts from the interviews conducted relevant to this relationship.

Table 11: Interview excerpts relating Leaders’ Self Competencies and Factor of Creative Vision

Category	Subcategory	Excerpt
Self Competencies	Emotional intelligence	“If you don't have the vision, you don't understand why you do the change” (Interview_Senior Product Manager)
		“And then of course, you communicate the vision with the team and say because of this, we are going to do that and then they of course need to let it sit and come back then, also because of this safe space and open communication” (Interview_Senior Product Manager)
	Motivation	“So, it’s clear at all times, what we are working towards.” (Interview_Global Head – Business strategy)
		“And of course, for those people who are more involved, they really have a very clear understanding when the leader is motivated to answer their concerns regarding the vision” (Interview_Global Transformations Manager)
		“When the leader is motivated, it has an effect on the vision, because then they get creative and formulate an innovative vision” (Interview_Senior Product Manager)

	Lifelong learning	<p>“Understanding the current market requirements helps me create the right vision for the change process” (Interview_Global Transformations Manager)</p> <p>“The vision is one of the most critical parts of the change process. For this, a leader really needs to know his field, to create a relevant and inspiring vision” (Interview_Global Head – Business strategy)</p>
	Risk taking	<p>“There are several times where we do not have all the information we need. At such times, we need to be able to produce a vision, with the limited information we have, that we know will pay off in the future. It is risky at times, but you must take risks if you want to move forward” (Interview_Global Transformations Manager)</p> <p>“If you want to be innovative with your vision, you have to have an appetite for risk” (Interview_Senior Product Manager)</p> <p>“My appetite for risk enables me to be flexible and open to unforeseen things that arise during the process of change. When this happens, I adjust the vision accordingly and move forward. That has really been helpful” (Interview_Global Transformations Manager)</p>

According to Kotter, the best strategic vision should be flexible, desirable, imaginable, communicable, simple, feasible, creates a verbal picture and benefits all stakeholders (Kotter, 2018). A leader’s self competencies play an important role in creating a vision that resonates with both the department’s and the employees’ goals. Strategic initiatives, as described by Dr. Kotter, are “targeted and coordinated activities that, if designed and executed fast enough and well enough, will make the vision a reality” (Kotter, 2018, p. 16). When setting up concrete initiatives to achieve the vision, a leader must keep the employees’ concerns in mind. A leader in an interview emphasized that being flexible and creating a “*safe space and open communication*” was important to motivate the employee regarding the vision. Only then will they work towards achieving the vision. The intrinsic motivation of the leader helps them “*get creative and formulate an innovative vision,*” a vision that is exciting and inspiring for the team members and external stakeholders involved. Another interviewee emphasized a past experience, where being motivated for the change enabled them to also involve the team members in the process of creating an innovative vision and concrete steps towards achieving that vision. At the end, the change process was a success and was completed with minimal delay. Motivated leaders are driven by passion and are able to foresee the results of the change process, thus using that passion to create a vision, and initiatives to reach that vision. This passion mobilizes the team members to share in the vision too, with a sense of commitment and dedication.

When it comes to lifelong learning, “*understanding the current market requirements helps me create the right vision for the change process*”. The interviews revealed that being abreast with the current market needs and trends, helps envision the market trends in the near future. This helps the leader and their team members to come together and create a vision that serves not only the current market needs but also the future market needs. Constantly learning throughout the process, helps create strategic and flexible steps to achieve that vision.

Since the vision is associated with the future state, risk is inherent and according to the global transformations manager, “*we need to be able to come up with a vision, with the limited initial information we have, that we know will pay off in the future. It is risky at times, but you must take risks if you want to move forward.*” It was evident from all the interviews conducted, that a leader’s risk appetite is very important when it comes to setting a vision. A really innovative, creative, and effective vision can be created only when there are risks involved and the leader is willing to take calculated risks to achieve that vision. Thus from the interviews, it is clear that a leader’s self

competencies have a significant relationship with the factor of creating a concrete and innovative vision for the department and laying down concrete steps to achieve it.

Leaders’ Self competency and Factor of Employee Motivation: The factor of employee motivation is crucial in change management, because a change process can only be successful if the employees are motivated to contribute towards it. Employee motivation is critical to gain the commitment of employees to the change initiative. According to Aitken & von Treuer (2021), it is the responsibility of the leader to motivate the employees to participate and commit to the change process (Aitken & von Treuer, 2021). It is evident from the quantitative analysis, that the relationship between a leader’s self competencies and the factor of employee motivation is *statistically significant*. The strength of the relationship is 0.614, which is higher than 0.49. This indicates that there is a *strong* relationship between a leader’s self competencies and the factor of employee motivation. Twenty-seven codes were associated with this relationship, from all the six interviews conducted. Following are some excerpts from the interviews conducted relevant to the relationship between leaders’ self competencies and the factor of employee motivation, to understand the meaning behind the quantitative results.

Table 12: Interview excerpts relating Leaders’ Self Competencies and Factor of Employee Motivation

Category	Subcategory	Excerpt
Self Competencies	Emotional intelligence	“Empathy definitely improves employee motivation and engagement of all involved.” (Interview_Senior Product Manager)
		“If your leader is not empathetic with your situation, then it might bring your motivation even further down and increase the pressure that is not necessary, and therefore just creates an unnecessary, conflict situation or more tension” (Interview_Product Manager)
		“[...] my leader at least shows appreciation. And a bit more push, which, at least in my case, has given me a boost of motivation.” (Interview_Regional Manager - Business Strategy)
		“A slight change in my leader showing a bit more appreciation [...] has hugely impacted my work this week, and motivation.” (Interview_Regional Transformations Manager)
		“If the leader shows more empathy, and tries to also understand the situation, maybe the feelings also when providing feedback or when asking for a task to be completed, then of course, this will also impact the motivation of their team member.” (Interview_Global Head – Business Strategy)
		“We need a long-term commitment and I believe this can only be done by showing empathy.” (Interview_Global Transformations Manager)
	Motivation	“When I see that my leader is motivated, rather than resistant, when it comes to change, it reduces my resistance to change too and motivates me to get onboard” (Interview_Regional Manager - Business Strategy)
		“A motivated leader is crucial when faced with uncertain situations like change” (Interview_Regional Manager - Business Strategy)
	Lifelong learning	“Definitely, my leader’s approach to constantly learning, motivates me too to accept new tasks and learn new things” (Interview_Product Manager)
		“When we as leaders show our team members that despite our expertise and experience in our field, we are still learning new things everyday, I have seen it really push our team members to embrace learning new things” (Interview_Senior Product Manager)

		<p>“It is really motivating when my leader attends training too with me and asks questions without hesitation. This shows his willingness to learn and motivates me to participate in the change process too and learn” (Interview_Regional Manager - Business Strategy)</p>
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From the interviews, it is observed that the self competency of *empathy* plays a major role in impacting employee motivation. Understanding the emotions of the members, listening to them, and being in control of one’s emotions is crucial for employees to stay motivated. From interviews with leaders, it was clear that leaders were aware of the importance of being empathetic towards the people around them. Some of them have undergone training and have attended seminars and “*worksops that teach how to cultivate the skill of empathy*”. They emphasized that when they practised empathy, their team members were more aligned with the tasks and the goals of the change process. Interviews with members concluded that when there is even a “*slight change in [their] leader of showing a bit more appreciation*”, there was a huge impact on their levels of motivation. Change is a process that creates a lot of uncertainty and hence, “*having an empathetic leader shields the employee*” and reduces their resistance towards change. When members feel that their leaders see the work they do, appreciate them, and consider their feelings when providing feedback, it raises their level of motivation significantly. In the same way, if a leader is not empathetic towards the team, then according to the product manager, “*it might bring your motivation even further down and increase the pressure that is not necessary and therefore just creates an unnecessary [...] conflict situation or more tension*” Thus the interviews revealed that the competency of empathy of a leader has a strong, positive relationship with the motivation levels of employees. More empathetic the leader is, more motivated the employee becomes.

The interviews also highlighted that “*a motivated leader is crucial when faced with uncertain situations like change*”. When members see that the leader is motivated with regards to the change process, it reduces their resistance and motivates them further to contribute to the change initiative. According to the global transformations manager, “*motivation is contagious; when a leader is motivated, it also motivates their team members*”. It is evident that the motivation of a leader has a positive relationship with motivation of their employees, and vice versa. The member interviews emphasized how the leader’s lifelong learning impacts their motivation levels. According to the product manager, “[...]my leader's approach to constantly learning, motivates me too to accept new tasks and learn new things.” When a leader exhibits lifelong learning, it propels the employees to develop the ability of constantly learning, adapting, and evolving. This is crucial when it comes to change initiatives because change brings many new perspectives and ways of working.

Leaders’ Self competency and Factor of Employee and Stakeholder Engagement: Employee and stakeholder engagement is an important factor that determines the success of a change initiative. Without their engagement, a change initiative stays only in theory and cannot be implemented. In order to get them to participate in change initiatives, incentives should be provided and everyone should be aware of what’s in it for them (Hiatt, 2006). It is important that the change leaders understand this and provide specific support and guidance in order to enable the employee to willingly participate in this process (Kazmi & Naaranoja, 2019). It is seen from the quantitative analysis, that the relationship between a leader’s self competencies and the factor of employee and stakeholder engagement is *statistically significant*. The strength of the relationship is 0.423, which lies between 0.30 and 0.49 This indicates that the relationship between a leader’s self competencies and the factor of employee and stakeholder engagement is *moderate*. Twelve codes were attributed to this relationship across the six conducted interviews. The table below provides some excerpts from the

interviews conducted relevant to the relationship between leaders' self competencies and the factor of employee employee and stakeholder engagement, to better understand the meaning behind the quantitative results.

Table 13: Interview excerpts relating Leaders' Self Competencies and Factor of Employee & Stakeholder Engagement

Category	Subcategory	Excerpt
Self Competencies	Emotional intelligence	“Empathy definitely improves employee motivation and engagement of all involved.” (Interview_Senior Product Manager)
		“So many different people involved, so many different countries involved, so empathy plays a very important role in order to increase their engagement in the process” (Interview_Global Head – Business Strategy)
		“If the leader is empathetic, everyone involved will be glad to participate in the change process and not be too resistant to it” (Interview_Product Manager)
		“Having an empathetic leader lets everyone involved be creative and flexible with the way they work. This increases employee and stakeholder engagement.” (Interview_Regional Transformations Manager)
	Motivation	“For the team members and external stakeholders to participate proactively, it is important that I as a leader am motivated myself” (Interview_Global Head – Business Strategy)
		“The motivation of a leader translates to higher engagement by all involved.” (Interview_Global Transformations Manager)
		“When a leader is intrinsically motivated, it is contagious. It reduces the fear and resistance the stakeholders have towards the change and increases their engagement in the process.” (Interview_Global Transformations Manager)
	Lifelong learning	“Attending training and informative events together with all the stakeholders involved promotes constant learning and encourages stakeholder participation” (Interview_Global Head – Business Strategy)
	Risk taking	“Taking risks can have its own nuances when dealing with stakeholders. At such times, the risk you take can either motivate the stakeholder to participate or push them off [...]. That is why, when stakeholders and employees are involved, it is important to be able to take calculated risks” (Interview_Global Head – Business Strategy)

The interviews revealed that a leader's empathy influences stakeholder and employee engagement positively. As seen from the interview excerpts, when a leader is empathetic towards everyone involved in the change process, the employee and stakeholder engagement in the change process increases. The member interviews emphasized that *“how a leader behaves in the face of change and uncertainty, has an effect on the engagement levels”* of the members involved. A leader who is able to stay calm in the midst of uncertainty, and is able to *“understand the emotions and reasons behind the resistance from the members and stakeholders”*, increases the willingness to participate of everyone involved. Providing flexibility in carrying out tasks according to one's own way of working also increases the engagement levels of those participating. According to the global transformations manager, *“the motivation of a leader translates to higher engagement by all involved”*. It has been observed that when a leader is motivated, they encourage employees and stakeholders to participate better by providing them incentives for achieving milestones. Member interviews also revealed that their participation levels increase when a *“leader communicates the benefits of the change”* to them, in terms of their professional goals. Celebrating milestones and appreciating the work done by the

team also has increased engagement levels significantly, according to the global head of business strategy. When there are high levels of engagement from employees and stakeholders, this also increases the motivation of the leader towards the change initiative.

Leader interviews also elucidated that a leader’s dedication towards lifelong learning has resulted in higher participation levels by those involved. When members observe this skill of the leader, they are motivated to learn more and participate enthusiastically in change initiatives. The motivation for learning and sharing knowledge among everyone involved, further develop a leader’s lifelong learning. This helps reduce the resistance towards uncertainty for leaders, members, and stakeholders. Leader interviews highlighted that risks can effect the levels of employee and stakeholder engagement. If the risk taken by the leader “*does not seem viable*”, employees and stakeholders tend to “*slack in their output, due to fear of the uncertain*”. But if the leader explains that the risk has been taken calculatively, keeping important factors in mind, this increases the confidence of everyone involved in the change process, thus increasing their engagement. Hence, it can be seen that a leader’s self competencies have a relationship with employee and stakeholder engagement levels. This is a positive relationship, where, more empathetic and motivated the leader is, higher are the levels of engagement of the employees and stakeholders.

Leaders’ Self competency and Factor of Organisational Culture: Literature review has highlighted that the organisational culture can have an impact on the employees innovativeness and openness to change. From the quantitative analysis, it can be seen that the relationship between leaders’ self competencies and the factor of organisational culture is *statistically significant*. The strength can be understood from the value of the correlation coefficient. Here, the value is 0.254, which is below 0.30. This indicates that though the relationship is statistically significant, it is a *weak* relationship. Eight codes were allocated to this relationship across the six conducted interviews. The interview excerpts for this relationship are listed in the the table below.

Table 14: Interview excerpts relating Leaders’ Self Competencies and Factor of Organisational Culture

Category	Subcategory	Excerpt
Self Competencies	Emotional intelligence	“One of the core values of our organisation is empathy. It emphasizes that all employees should develop the habit of being empathetic to one and another, only then can one overcome the resistance to change. Several workshops and training are also conducted to improve the skill of empathy.” (Interview_Senior Product Manager)
		“I believe the workshops conducted by the HR Change team, has helped me learn to deal with my emotions and understand the emotions of my team members as well, while navigating through the complexities of change.” (Interview_Global Transformations Manager)
	Motivation	“Our organisation and department have events where employee efforts are recognized and appreciated. This motivates me to perform better each time and take on new challenges, especially when it comes to change initiatives.” (Interview_Global Head – Business Strategy)
	Lifelong learning	“It is important that an organisation has a learning and development centre for their employees, and a culture that promotes lifelong learning. Only then will one have the opportunity to exhibit lifelong learning”. (Interview_Global Transformations Manager)

	Risk taking	“Be it at the organisational or departmental level, having the flexibility to take risks is important when it comes to change management. If a department is very rigid and does not want to try new methods, it cannot be innovative, and the change effort then is impacted negatively.” (Interview_Senior Product Manager)
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Analysis of the interviews also showed that the relationship between leaders’ self competencies and organisational culture is not strong. Leader interviews emphasized that initiatives taken by the organisation to inculcate skills like empathy among its employees, have a positive effect. This helps employees and leaders apply empathy in their everyday interactions with each other. *“Training and workshops conducted”* in the organisation, help develop the competency of empathy further, for both leaders and employees. Leader and member interviews highlighted that when the organisation or department, make sure to recognize employee and leader efforts and appreciate them for it, this further motivates both leaders and members to learn more and participate in change initiatives. These organisational practises, motivate the leader to *“perform better each time and accept new challenges, especially when it comes to change initiatives.”* Thus, a culture of appreciation, increases the willingness and motivation of leaders to accept and participate in change initiatives.

Interviews also revealed that *“learning and development centres”* help improve the lifelong learning attribute of leaders and members. However, often due to strict time limitations and responsibilities, leaders are not able to take the full benefit of it. Learning within working hours becomes difficult when the organisation works on strict timelines. When it comes to risk appetite, leaders in the interview emphasized the importance of having a culture that embraces change and risk taking. Change always comes with inherent risk. To be able to successfully implement change, organisations should give leaders the flexibility to take risks along the process. When there is a culture that is open to risks and provides the leader flexibility with decisions, this positively affects the leader’s ability to take calculated risks.

Thus, the relationship between leaders’ self competencies and factors of change management can be summed up in the **Fig. 12** below.

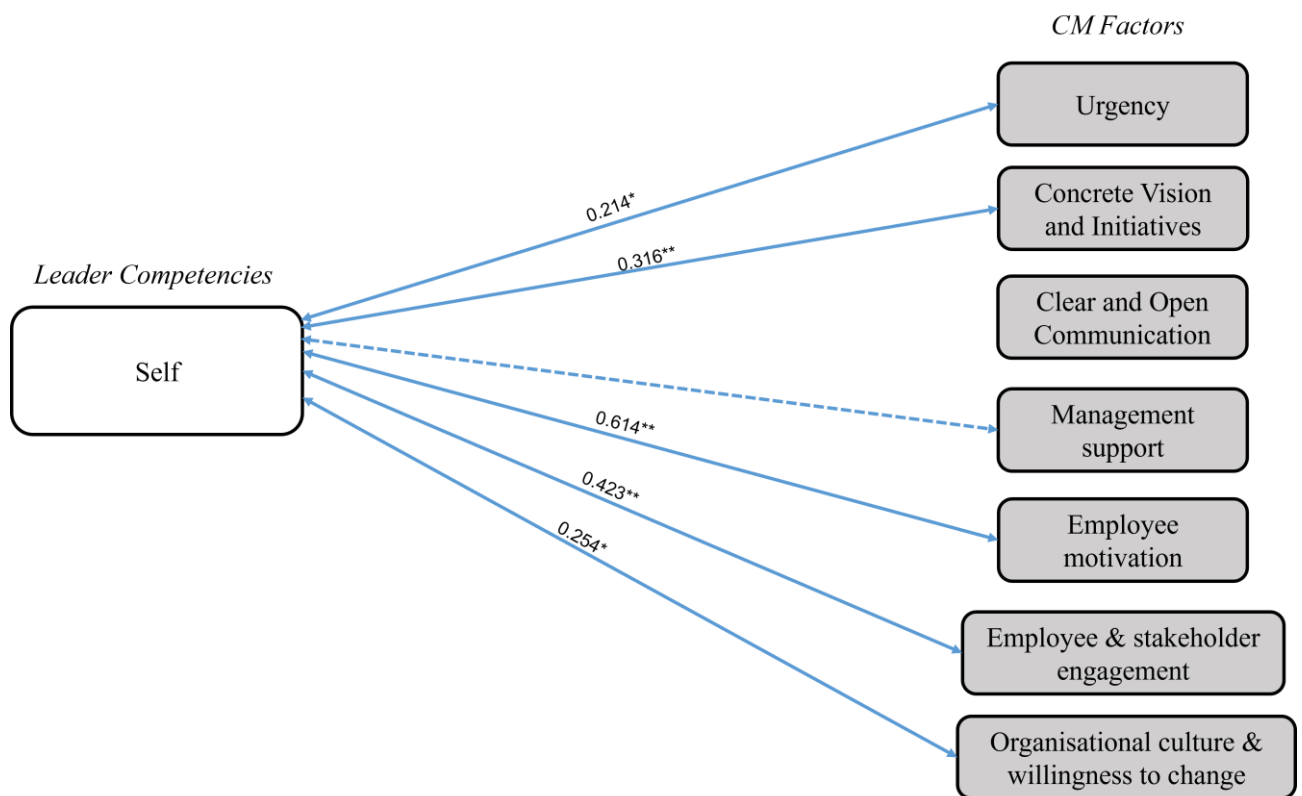


Figure 12: Relationship between Leaders’ Self Competencies and Factors of Change Management

Statistical analysis shows that there is no significant linear relationship between leaders’ self competencies and the factors of clear and open communication, and management support. However, interview analysis revealed that there is a relationship between leaders’ self competencies and management support, where in an ideal case, a leaders’ empathy and lifelong learning increase the support that can be provided to the team. An example from an interviewee’s professional career was shared which illustrated this relationship. Interviews emphasized that an empathetic and motivated leader are better equipped to offer support to the team. Thus, establishing a relationship between these two variables.

The interviews revealed a significant competency that is crucial in today’s globalized world but has been relatively overlooked in the existing literature pertaining to change management. They emphasized the importance of leaders possessing *intercultural competency*, given the diversity in modern workplaces. One interviewee pointed out that “*managing teams that have members from diverse backgrounds and cultures could be challenging. This is where a leader’s intercultural competency plays a role.*” Both leader and member interviews highlighted that there are always differences in perceptions when it comes to a multicultural team, with few cultures favouring high context communication, while other cultures prefer low context communication. “*Sometimes a leader’s feedback is purely based on the task and is professional, but it could come off differently to a person from a different culture.*” To avoid varied interpretations of a leader’s feedback or communication, leaders should possess at least elementary knowledge of the cultures of their team members and keep that in mind during their interactions. One member shared how their leader promotes intercultural competencies: “*My leader practices intercultural competencies by having a monthly lunch together with the team, where we discuss about our culture and background, so that everyone is aware of different cultures and is mindful of it.*” Despite being regarded as part of

emotional intelligence and relational competencies, each interviewee emphasized that this competency should be an individual competency of its own. The interviews revealed positive relationships between leaders' intercultural competencies and factors of creating a vision, clear communication, management support, and employee motivation and engagement. Thus, possessing intercultural competency and its mindful application during interactions with team members and stakeholders from diverse backgrounds is deemed essential, not only in change management initiatives, but also in daily workplace interactions.

4.2.2. Results and Discussion of the Relationship between Leaders' Relational Competencies and Factors of Change Management

The relational competencies, as shown in **Fig. 7**, include three competencies, namely, effective communication, trustworthiness, and positive employee and stakeholder relationships. These competencies are of significance in professional settings where the leader encounters interactions with colleagues and stakeholders.

The correlation analysis of the *Relational* competencies of a leader with the different factors of change management is seen in the **Table 15** below.

Table 15: Correlation analysis of Leaders' Relational Competencies and Factors of Change Management

	Relational Competencies
Factor 1: Urgency	0.141
Factor 2: Vision	0.083
Factor 3: Clear & Open Communication	0.123
Factor 4: Management Support	0.507**
Factor 5: Employee Motivation	0.516**
Factor 6: Employee & Stakeholder Engagement	0.239*
Factor 7: Organisational Culture	0.191

(** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed))

The above table shows that the relational competencies of a leader have a linear statistically significant, positive relationship with factors of *management support*, *employee motivation*, and *employee and stakeholder engagement*.

Leaders' Relational competencies and Factor of Management Support: The survey responses as well as interviews highlighted the importance of management support, in the context of change management. The biggest barrier to successful change initiatives is the resistance to change. This resistance can be reduced when there is considerable support from the management throughout the change process. The quantitative analysis indicates that a *statistically significant* relationship exists between a leader's relational competencies and the factor of management support. The strength of the relationship is *strong* as the value of the correlation coefficient is 0.507, which is above 0.49.

Thus, the analysis indicates that there is a statistically significant relationship that is positive in nature, and the strength of this relationship is high. Seventeen codes were identified for this relationship, from the six interviews that were conducted. Excerpts from interviews are listed in the table below to gain a deeper insight of this relationship.

Table 16: Interview excerpts relating Leaders’ Relational Competencies and Factor of Management Support

Category	Subcategory	Excerpt
Relational Competencies	Effective communication	“Its important to have one-on-one meetings with the team on a regular basis [...] as this helps understand their concerns or any personal matter that they cannot share in a team meeting. This helps me connect better with my team and support them in whatever way I can.” (Interview_Senior Product Manager)
		“As a leader, I prefer being transparent and honest always, even if it means admitting that I made a mistake. This creates an environment, where my team can also feel safe to share any struggles they face with the process, or any mistakes they make.” (Interview_Senior Product Manager)
		“I can reach out to my leader whenever I need either through email or a Teams message.” (Interview_Product Manager)
		“And I also like the methodology of the five-minute feedback that just after calling you check in [...] ask them as to how did you perceive this? How could I support you?” (Interview_Global Head – Business Strategy)
		“There is an open-door policy with my leader. I can approach them whenever I want during work hours. My leader has created an open communication space, and this provides a lot of support when it comes to demanding and complex issues in the change process.” (Interview_Regional Transformations Manager)
	Trust	“So, I think trust is absolutely key in any relationship [...] definitely for a leader, when there is change happening. For the management to support you, they need to first trust your abilities.” (Interview_Regional Transformations Manager)
		“Yeah, I think trust, is very important because you can only grow and be empowered as an observer, if your leader also trusts you and does not control or do micromanagement, and also you trust the leader.” (Interview_Regional Manager – Business Strategy)
		“So, if you want to be innovative and creative, your leader also needs to empower you needs to trust you. And I think this this supports idea generation and innovation [...] and collaboration as well.” (Interview_Regional Manager – Business Strategy)
	Positive employee and stakeholder relationship	“Among team members and external stakeholders, when we go through this change, we all accept that this is a challenge, but we will also, you know, go through this together and we will achieve the goal.” (Interview_Global Transformations Manager)
		“I also see a tendency of management to become more empathetic through this change and really having it and a loving open communication between team members and making sure that the trust is there. This really strengthens the relationships.” (Interview_Global Transformations Manager)

Leader interviews emphasized the importance of practising effective communication with their team members. They implement this by having regular one-on-one meetings with the employees, asking for feedback after each meeting, taking the time to listen to employees’ concerns, and providing timely responses. These actions increase the level of management support provided to the employees and stakeholders. One of the members emphasized that “*having clear and open communication and having trust for each other [...] would be really important in change management.*” Other member

interviews also highlighted that being able to openly reach out to the leaders when there is an issue with a deliverable and receiving timely responses from the leader, indicated elevated levels of management support. When it comes to trust, both leader and member interviews emphasized that “*trust is a two-way factor.*” It is essential for the leaders to trust their employees and stakeholders with their responsibilities, and it is also important that the leader creates an environment of trust, where employees and stakeholders can also trust the competencies and abilities of the leader. In such a situation, when the leader creates trust among all involved, the “*uncertainties of the change process are reduced,*” and the employees’ resistance to change is also decreased. This environment of trust is known to increase the management support toward the employees and stakeholders. Member interviews also revealed that when there is “*team spirit throughout the change process,*” it motivates the employees to further participate in the change initiative. Keeping everyone updated about the progress of the process, listening to the concerns of those involved, as well as recognizing and appreciating the efforts taken by the employees and stakeholders, helps create positive relationships between everyone involved. Thus, when a leader has good relational competencies, the level of support they can and are willing to offer also increases significantly, corroborating the strong relationship.

Leaders’ Relational competency and Factor of Employee Motivation: As discussed earlier, employee motivation is crucial for the success of a change initiative. The relational competencies of a leader involve identifying barriers to employee motivation and tackling them in a way that leads to an increase in employee motivation. The quantitative analysis shows that the relationship between the leader’s relational competencies and the factor of employee motivation is *statistically significant*. The strength of the relationship is indicated by the value of the correlation coefficient, which is 0.516 in this case. This shows that the relationship is *strong*. From the analysis it is evident that the relational competencies of a leader have the strongest linear relationship with the factor of employee motivation. Thirteen codes were assigned to this relationship, from the interviews conducted. Interview excerpts from **Table 17** below provide further insights into this relationship.

Table 17: Interview excerpts relating Leaders’ Relational Competencies and Factor of Employee Motivation

Category	Subcategory	Excerpt
Relational Competencies	Effective communication	“Frequent communication with the team regarding the progress of the process and milestones achieved, helps motivate them.” (Interview_Global Head – Business Strategy)
		“I feel very motivated when my leader communicates that they are happy with job I have done.” (Interview_Regional Manager – Business Strategy)
		“It is very important that a leader ensures honest and transparent communication throughout the change process as this helps stay focused and increase motivation.” (Interview_Senior Product Manager)
	Trust	“Trusting your employees and giving them the flexibility to be creative with their tasks is very important in change management” (Interview_Global Head – Business Strategy)
		“Change management comes with a lot of uncertainty and hence it is particularly important to convey to your team that they can rely on you and the decisions that you take. This reduces their resistance and increases motivation.” (Interview_Global Transformations Manager)
		“When my leader shows that they trust me and provide flexibility for me to think out of the box, I feel motivated” (Interview_Product Manager)

	Positive employee and stakeholder relationship	“Having positive relationships with employees and stakeholders, motivate them to participate in change initiatives.” (Interview_Global Transformations Manager)
		“Having good, cordial relationships with employees and stakeholders and respecting their views and opinions, increases their motivation to participate.” (Interview_Global Head – Business Strategy)

The interviews highlighted the importance of relational competencies of a leader when it comes to increasing employee motivation. Leader interviews emphasized that having open communication with the team and stakeholders is important to keep the motivation levels high. According to the global head of business strategy, *“frequent communication with the team regarding the progress of the process and milestones achieved, helps motivate them.”* This communication can include status of the process, milestones, how it benefits the employees, as well as appreciation of efforts taken. The regional manager of business strategy mentioned that they *“feel very motivated when (their) leader communicates that they are happy with job (they) have done.”* By keeping everyone involved in the change process always informed about the process, it helps reduce uncertainty and fear of change. It gives the team and stakeholders an overall picture of the process, thus keeping them motivated. Member interviews also highlighted that when leaders are transparent with the communication and readily answer employee queries, this increases the motivation of the team and reduces the resistance.

When a leader creates an environment of trust, this enables the employees to feel more confident with the decisions taken by the leader. *“Trusting your employees and giving them the flexibility to be creative with their tasks is very important in change management,”* according to one of the interviewees. This statement was reiterated in the other leader and member interviews too. Thus, being able to trust the leader, helps the employees stay motivated and move through the turbulent phases of change management. As change management is all about people, building positive relationships with all involved is crucial. According to the senior product manager, *“when there is an environment of positivity and belonging, it definitely increases the motivation of those involved.”* Thus, creating professional and cordial relationships based on mutual trust, respect and communication is essential when it comes to increasing employee motivation during periods of change. Analysis of the interviews and the correlation analysis thus provide strong grounds for the strong, positive relationship between leaders’ relational competencies and the factor of employee motivation.

Leaders’ Relational competency and Factor of Employee and Stakeholder Engagement: Employee and Stakeholder engagement in a change initiative depends on several factors. One of them is the leaders’ relational competencies, as made evident from the analysis and interviews. Here, the correlation analysis reveals that the relationship between a leaders’ relational competencies and the factor of employee and stakeholder engagement is *statistically significant*. The relationship is *weak* as the correlation coefficient has a value of 0.239, which is below 0.30. Seven codes were attributed to this relationship, from the conducted interviews. The interview excerpts related to this relationship is seen in **Table 18** below.

Table 18: Interview excerpts relating Leaders’ Relational Competencies and Factor of Employee & Stakeholder Engagement

Category	Subcategory	Excerpt
Relational Competencies	Effective communication	“Providing constant updates and collecting and providing feedback, helps increase engagement.” (Interview_Senior Product Manager)
		“Being open to taking feedback and incorporating it into the process also increases participation.” (Interview_Senior Product Manager)
	Trust	“Trusting each one to do their part, increases their will to participate.” (Interview_Global Head – Business Strategy)
		“Frequent reassurance regarding the goals and benefits of the change process helps increase engagement.” (Interview_Global Transformations Manager)
	Positive employee and stakeholder relationship	“Building positive relationships with other departments definitely increases stakeholder and employee engagement.” (Interview_Senior Product Manager)
		“When a strategic decision needs to be made, involving all stakeholders and employees, improves the quality of the relationship” (Interview_Global Transformations Manager)

As seen from the above table, the interviews highlighted that there is a relationship between leader’s relational competencies and employee and stakeholder engagement, but the strength of the relationship is weak, as also indicated in the correlation analysis. Leader interviews revealed that effective communication played a role in increasing engagement from employees and stakeholders. However, though the desire to participate in change initiatives can be influenced by personal situations and the change itself, it is ultimately a personal choice (Hiatt, 2006). Thus, a leader cannot compel people to participate unless they personally want to. A leader can, however, influence the decision to an extent, which is why the statistical analysis shows that there is a relationship, however, it is a weak one. Building trust and reassuring all involved in the process *“regarding the goals and benefits of the change process helps increase engagement,”* according to the global transformations manager. Member interviews explained that when the leader is trustworthy and knows what they are doing, the employees and stakeholders feel more confident to participate in the change initiatives. Interviews also revealed that when employees’ and stakeholders’ *“feedback and input are taken into consideration and are executed in the process, it increases the motivation and engagement levels.”* This empowers them and encourages them to increase their engagement in the process.

Thus, an overview of the relationship between the leaders’ relational competencies and the factors of change management can be seen in **Fig. 13** below:

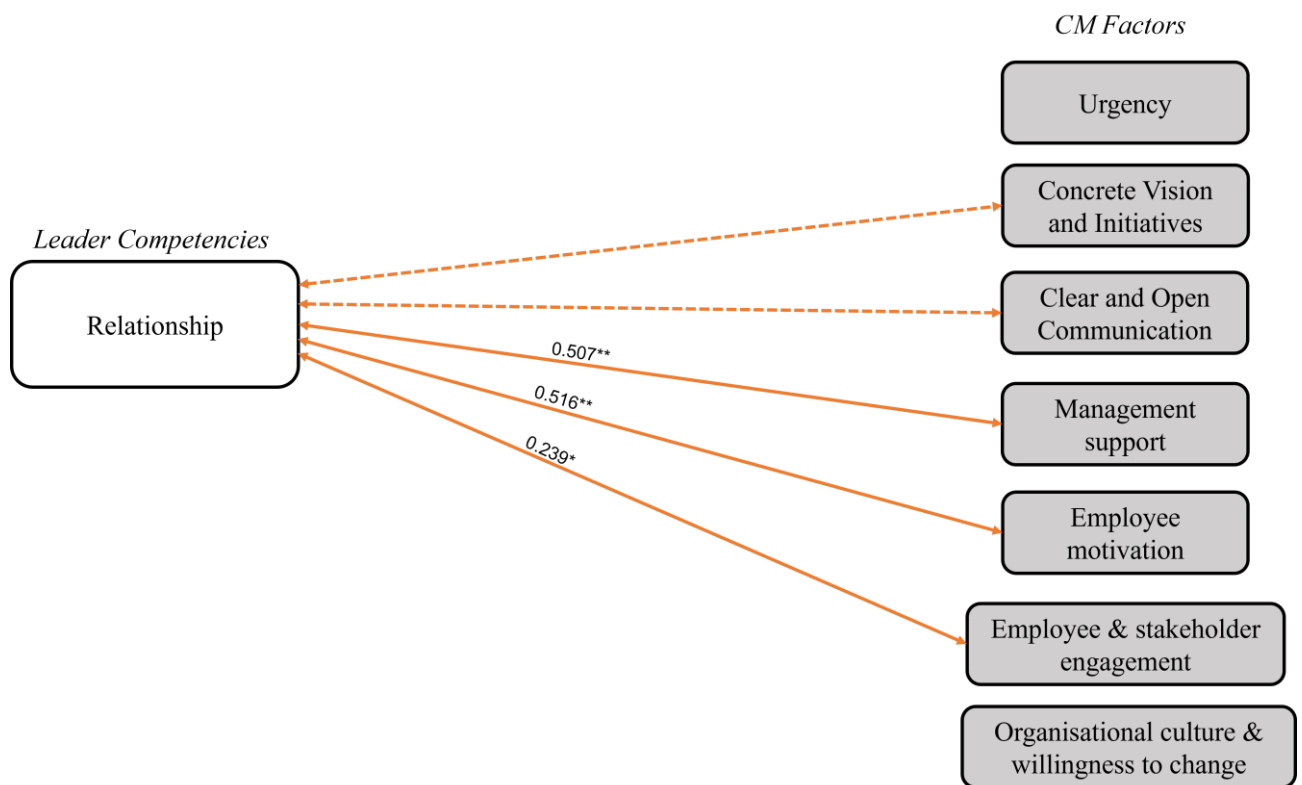


Figure 13: Relationship between Leaders' Relational Competencies and Factors of Change Management

The correlation analysis indicates no statistically significant linear relationship between leaders' relational competencies and the factors of urgency, concrete vision and initiatives, clear and open communication, and organisational culture and willingness to change. There could be a potential for a non-linear relationship between these variables. Interviews revealed that there exists a relationship between leaders' relational competencies and clear and open communication, and vision. It is important for a leader to communicate the vision clearly and constantly to the employees and stakeholders involved. An interviewee pointed out *"the process of change can be long and challenging and can cause employees to lose sight of the vision."* It is imperative that the vision should be clear to everyone involved in the change process and for this, a leader must possess the ability of effectively communicating the vision to everyone involved. The factor of clear and open communication refers to the communication between departments and at an organisational level. It also refers to the organisational systems in place to enable smooth communication within the organisation. Interviews revealed that a *"leader can communicate more effectively if the organisation has systems in place that enable the leader to communicate openly"* and in a transparent manner with all involved. These systems, such as MS Teams, emails, weekly *"coffee catchups,"* newsletters, and meetings, aid the leader in communicating effectively with the employees. Through meetings and other communication channels within the organisation, the leader can receive feedback from employees and *"practise active listening"* that means to listen to the concerns of the employees without judgement. In this way, the leader can implement their effective communication skills and create positive relationships with employees. The other results of the correlation analysis are aligned with the findings from the interview.

4.2.3. Results and Discussion of the Relationship between Leaders' Knowledge Competencies and Factors of Change Management

The knowledge competencies of a leader are crucial to understand how the new process or technology will impact the business, employees and stakeholders. It is important for a leader to have well founded knowledge in their field. Statistical analysis and the interviews conducted reveal relationships between a leader's knowledge competencies and several factors of change management, highlighting the importance of this competency. The two competencies in this category are the technical acumen and knowledge sharing.

The correlation analysis of the *Knowledge* competencies of a leader with the different factors of change management is seen in the **Table 19** below.

Table 19: Correlation analysis of Leaders' Knowledge Competencies and Factors of Change Management

	Knowledge Competencies
Factor 1: Urgency	0.208*
Factor 2: Vision	0.025
Factor 3: Clear & Open Communication	0.069
Factor 4: Management Support	0.206*
Factor 5: Employee Motivation	0.240*
Factor 6: Employee & Stakeholder Engagement	0.021
Factor 7: Organisational Culture	0.239*

(** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed))

The correlation analysis indicates the linear relationship between leaders' knowledge competencies and factors of change management. It can be seen that a leader's knowledge competencies have a statistically significant relationship with factors *urgency*, *management support*, *employee motivation* and *organisational culture*.

Leaders' Knowledge competencies and Factor of Urgency: Literature review provides limited insight with regards to the relationship between a leader's knowledge competencies and factor of creating a sense of urgency when it comes to change management. Hence, exploring this relationship through the analysis conducted in this research has been intriguing. The results of the correlation analysis depict that there is a *statistically significant* relationship between a leader's knowledge competencies and factor of urgency. The correlation coefficient has a positive value of 0.208, which indicates that the strength of the relationship is *weak*. This is because the value of the correlation coefficient is below 0.30. Seven codes were allocated to this relationship, from the interviews conducted. Interview excerpts for this relationship are displayed in **Table 20** below.

Table 20: Interview excerpts relating Leaders' Knowledge Competencies and Factor of Urgency

Category	Subcategory	Excerpt
Knowledge Competencies	Technical acumen	“Because of my knowledge of the current trends, I am able to create a sense of urgency for my team to adapt to the trends and stay in the market.” (Interview_Global Transformations Manager)
		“What we are now seeing that for example in in our industry, medical AI, robotics and new trends and subscription model software, they become or may come more into focus in the near future, so you need to be up to speed on that.” (Interview_Senior Product Manager)
		“Usually, it's even better to be more up to speed than what is needed.” (Interview_Senior Product Manager)
	Knowledge sharing	“Attending training and informative events together with all the stakeholders involved promotes constant learning and knowledge sharing, this helps create urgency based on the knowledge of the current trends.” (Interview_Global Head – Business Strategy)
		“I think knowledge gain and exchange comes more often from frequent exchange with countries and also through meetings. This helps us understand the urgency based on different countries requirements.” (Interview_Regional Manager – Business Strategy)

The interviews with the leaders and members provided a comprehensive understanding of the relationship between leaders' knowledge competencies and factor of urgency. The interviews revealed that “*knowledge of the current trends*” helps create urgency. Leader interviews emphasized the importance of staying “*up to speed,*” which means to be abreast with the latest trends and needs of the market. One of the leaders shared an example how their knowledge of the current and future trends, enabled them to create a sense of urgency in the department to adapt to the evolving trends. This urgency created, then mobilised the employees and caused “*them to take action and change,*” thus enabling them to gain the “*first mover advantage*” in their market. Therefore, being able to translate knowledge into action is a crucial factor in change management. The interviews also revealed that by sharing the knowledge among different departments or countries through meetings, conferences, and exhibitions, the state of urgency relevant to that department and or country can be gauged. The interviewees' responses were consistent with the results of the correlation analysis, which indicated the existence of a relationship, albeit weak. This relationship is not clearly articulated in the surveyed literature; hence these insights were confirmed through both the correlation analysis and interviews conducted.

Leaders' Knowledge competencies and Factor of Management Support: The ability of a leader to use their knowledge to support employees throughout the change process is of importance. The correlation analysis of the relationship between leaders' knowledge competencies and factor of management support indicates the existence of a *statistically significant* relationship. The correlation coefficient has a value of 0.206, which is below 0.30, indicating that the relationship between these variables is *weak*. Eight codes were linked to this relationship, across the six interviews conducted. Excerpts from the interviews relevant to this relationship is listed in the table below.

Table 21: Interview excerpts relating Leaders' Knowledge Competencies and Factor of Management Support

Category	Subcategory	Excerpt
Knowledge Competencies	Technical acumen	“My leader is an expert in their field and supports me with any technical queries that I have.” (Interview_Product Manager)

		“When a leader has well founded knowledge in their field or the change management process, they are able to extend support to the others involved in the process.” (Interview_Global Transformations Manager)
		“When the change initiative gets complicated, the leaders’ knowledge of the process and its benefits, helps form a ground for support and motivation.” (Interview_Regional Transformations Manager)
	Knowledge sharing	“My leaders’ ability to precisely and accurately pass on knowledge to the team, is of great help to the rest of the team.” (Interview_Regional Transformations Manager)
		“The team feels supported, for sure, when they can go up to their leader with any queries or questions and the leader is able to answer them and encourage knowledge transfer.” (Interview_Regional Manager – Business Strategy)

The analysis of the interviews revealed deeper insights into the relationship between a leaders’ knowledge competencies and factor of management support. The leader interviews highlighted that when the leaders’ knowledge about the change process or technology to be employed is well established, their ability to support their team and others involved increases. They are then able to “*guide and support*” their team better. Member interviews confirmed that when a leader is “*competent*” in the knowledge of the technology or change process, they are “*more responsive to the needs of the employees*” and can provide solutions for different complications that arise throughout the process. One of the members shared a related experience in their interview. They reported that during one of the change initiatives, a “*critical task*” needed to be completed within the week. However, the member received “*insufficient training, in comparison to the scope of the task.*” The member faced several challenges throughout various stages of the task. It was the “*leader’s expertise in the task*” that enabled the leader to support the member, thus ensuring timely and accurate completion of the task. Thus, from the interviews it is evident that the ability of a leader to possess extensive knowledge in their field, and the ability to be able to effectively communicate this knowledge to the others involved, enables the leader to support the employees in a more effective manner. Analysis of the interview made it evident that though the relationship existed, it was weak. The findings from the interview are thus, aligned with the results of the correlation analysis.

Leaders’ Knowledge competencies and Factor of Employee Motivation: In a knowledge intensive change initiative, it is likely that the motivation of employees can tend to drop at different stages of the process. In such situations, a leader who is able to share their knowledge and guide their team, helps increase the employee motivation to an extent. According to the correlation analysis, there is a *statistically significant* relationship between a leader’s knowledge competencies and factor of employee motivation. The value of the correlation coefficient, 0.240, indicates that the relationship between these variables is *weak*. This is because the value is below 0.30. Eleven codes were associated with this relationship, from the interviews conducted. Some of the excerpts relevant to this relationship are shown in **Table 22** below.

Table 22: Interview excerpts relating Leaders’ Knowledge Competencies and Factor of Employee Motivation

Category	Subcategory	Excerpt
Knowledge Competencies	Technical acumen	“Knowing that my leader has expertise in their field, definitely motivates me.” (Interview_Product Manager)
		“I feel motivated to accept new, challenging tasks if I know that my leader will be able to guide me due to his expertise in the field.” (Interview_Regional Manager – Business Strategy)

	Knowledge sharing	“When leaders share their knowledge with their employees, it motivates the employees to cultivate the habit of lifelong learning.” (Interview_Global Transformations Manager)
		“Leaders set an example for the members of the team and motivate them to also constantly gain knowledge in their field and share it with one another.” (Interview_Regional Transformations Manager)

Interviews with members highlighted that the expertise of leaders motivates them to “*learn new concepts and accept challenging tasks.*” It motivates them to gain a steep learning curve throughout the change process and their professional career. “*When a leader knows their field very well, it helps everyone involved in the process, to navigate smoothly through the entire process.*” It instils “*confidence*” in the employees that rely on the leader’s expertise, thus empowering and motivating them to “*cultivate the habit of lifelong learning.*” The leader’s ability to enable knowledge transfer also played a role in increasing employee motivation. When a leader creates a safe environment for learning and knowledge exchange, “*where mistakes are not looked down upon,*” the employee motivation levels increase, and they are motivated to participate actively and learn throughout the process. The “*fear of uncertainty reduces due to the transfer of knowledge,*” thus reducing the resistance to the change initiative. Thus, it is clear from the interviews conducted that when the leader is an expert in their field and can share this knowledge with team members and stakeholders, the motivation of employees increases positively.

Leaders’ Knowledge competencies and Factor of Employee Organisational Culture: It is important to have an organisational culture that encourages learning and development of its employees. Initiatives should be in place for leaders to share their knowledge with other employees within the department and organisation. It can be observed from the correlation coefficient that the relationship between a leader’s knowledge competencies and factor of organisational culture is *statistically significant*. The value of the correlation coefficient is obtained as 0.239, which is below 0.30, thus indicating a *weak* relationship. Seven codes were connected to this relationship, across the six interviews. Following are some of the excerpts from the interviews, relevant to this relationship.

Table 23: Interview excerpts relating Leaders’ Knowledge Competencies and Factor of Organisational Culture

Category	Subcategory	Excerpt
Knowledge Competencies	Technical acumen	“The culture in my department always tries to encourage the members and leaders to constantly gain knowledge.” (Interview_Regional Manager – Business Strategy)
		“The availability of online resources from the organisation as well as experts in the department, helps improve one’s knowledge in their field and the change process, however time is the constraint.” (Interview_Regional Transformations Manager)
	Knowledge sharing	“Having a culture that encourages a learning environment and provides initiatives for the same, promotes transfer of knowledge.” (Interview_Senior Product Manager)
		“Our organisation has a learning and development centre, which encourages employees to try out new things and gain knowledge. However, even if the intention is noble, they are not able to achieve their goal due to the busy schedules, especially of leaders.” (Interview_Product Manager)
		“Our department has a weekly session for 30 minutes where the team comes together to share any new knowledge gained in the past week. This culture encourages knowledge sharing.” (Interview_Global Head – Business Strategy)

It can be seen from the interviews that an organisation that has a learning culture, increases the leader's ability to increase their knowledge and share their knowledge. Leader and member interviews highlighted that their *"departments that have a culture that strongly encourages knowledge gaining and sharing and helps develop essential skills and knowledge."* This kind of environment helps the leaders to further gain knowledge in their field. It also encourages and *"provides initiatives for leaders to share the knowledge gained."* However, two out of six interviewees mentioned that though the organisation had these initiatives in place, *"the work loads and time constraints"* would prevent employees from taking complete advantage of these initiatives. A leader interview highlighted that *"in this situation, the organisation needs to do better when it comes to planning out these initiatives."* Another member mentioned, *"there is no point of having great content for knowledge gain and initiatives for sharing that knowledge, if one does not have the flexibility to make use of these resources."* This implies that merely having the resources is insufficient if the leaders lack the opportunities to access them. Organisations must therefore, go beyond providing resources alone, and strategize to create an environment where leaders and employees can access these resources, enhance their knowledge, and facilitate knowledge transfer. Other leader member interviews revealed that they are moderately satisfied with their organisation's culture when it comes to learning and development. However, they also suggested that there could be room for improvement. According to the senior product manager, *"having a culture that encourages a learning environment and provides initiatives for the same, promotes transfer of knowledge."* All interviewees agreed with the idea of this statement and emphasized that resource availability and strategic planning to encourage consumption of these resources is important to enable leaders as well as employees share knowledge among one and another and learn from the experiences of the others. Thus, the findings from the qualitative analysis, further strengthen the results of the correlation analysis, by depicting that there is a statistically significant relationship between leaders' knowledge competencies and factor of organisational culture.

An overview of the relationship between the leaders' knowledge competencies and the factors of change management can be seen in the **Fig. 14** below:

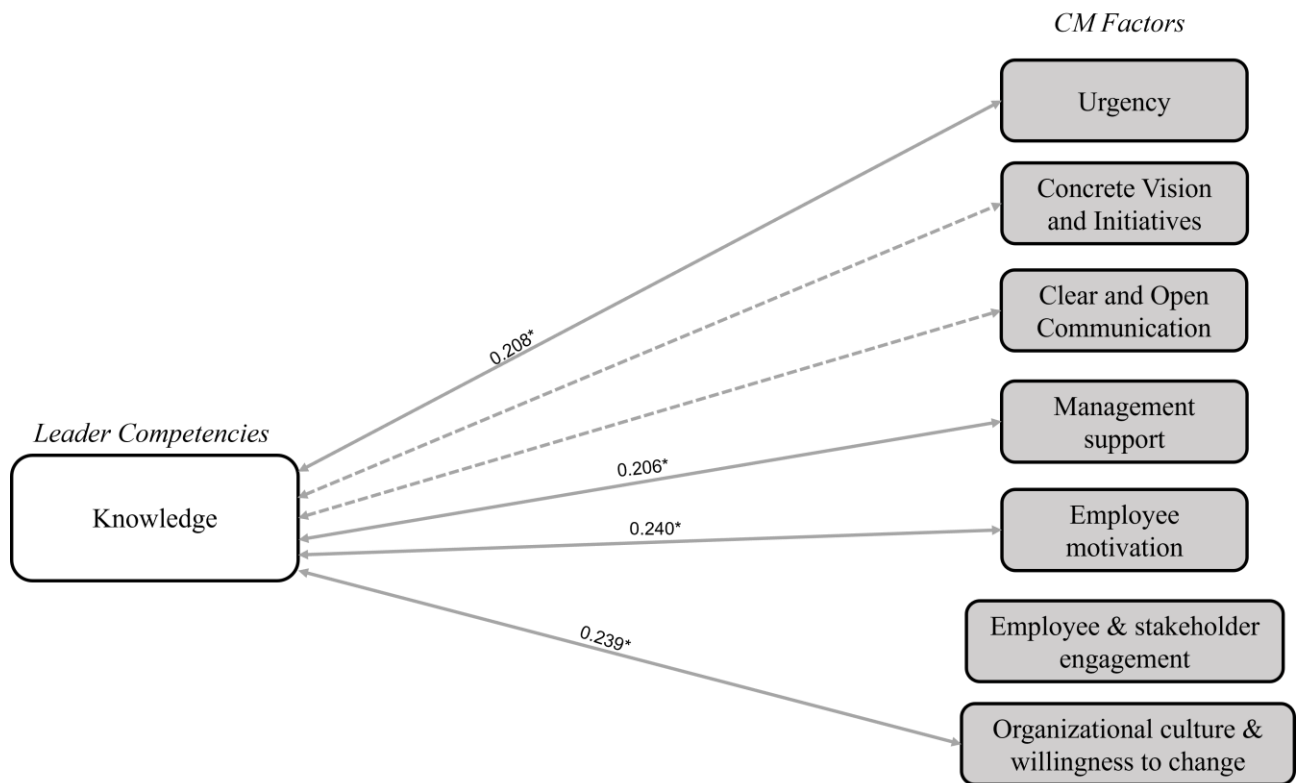


Figure 14: Relationship between Leaders’ Knowledge Competencies and Factors of Change Management

From the results of the correlation analysis, it can be seen that there is no linear statistically significant relationship between a leader’s knowledge competencies and factors of concrete vision and initiatives, clear and open communication, and employee and stakeholder engagement. However, interviews revealed a relationship between leaders’ knowledge and factors of concrete vision, and clear and open communication. Interviews revealed that a leader’s expertise in their field enables them to formulate a concrete and innovative vision. According to an interview, “a leaders’ ability to facilitate sharing of knowledge across the team, definitely enhances clear and open communication among the team.” Both leader and member interviews highlighted that when complications arise, either technical complications or complications in the process of changing, a leaders’ expertise and experience helps tackle those complications and improves the flow of open communication among the team. The knowledge is shared and stored openly and on common platforms like “MS Teams groups, newsletters, and team dashboards,” so that everyone involved can access the information. These platforms help “streamline the communication and every can see new information and add their insights too, all in one place, thus encouraging and increasing engagement from stakeholders and employees.” Therefore, interview findings revealed that having open communication throughout the department or organisation at a higher level, facilitates sharing of knowledge, thus improving the knowledge sharing competency of the leader. It can therefore be implied, from the interviews, that there is a relationship between leaders’ knowledge competencies and factors of concrete vision, and clear and open communication. However, not much was revealed regarding the strength of the relationship.

4.2.4. Results and Discussion of the Relationship between Leaders’ Organisational Competencies and Factors of Change Management

The organisational competencies are related to the processes and systems employed in the organisation. It consists of planning, and fluency and management of organisational processes and systems – both present and future. These competencies are equally important because a change process impacts the organisational processes and ways of working. Hence, when leading a change process, a leader should also keep these factors in mind.

The correlation analysis of the *Organisational* competencies of a leader with the different factors of change management is seen in **Table 24** below.

Table 24: Correlation analysis of Leaders’ Organisational Competencies and Factors of Change Management

	Organisational Competencies
Factor 1: Urgency	0.211*
Factor 2: Vision	0.317**
Factor 3: Clear & Open Communication	0.503**
Factor 4: Management Support	0.048
Factor 5: Employee Motivation	0.078
Factor 6: Employee & Stakeholder Engagement	0.256*
Factor 7: Organisational Culture	0.460**

(** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed))

From the results of the correlation analysis, it can be seen that leaders’ organisational competencies have a linear, statistically significant relationship with factors of *urgency, vision, clear and open communication, employee and stakeholder engagement, and organisational culture*.

Leaders’ Organisational Competency and Factor of Urgency: Urgency for change definitely has a relationship with a leaders’ ability and flexibility to devise a strategic plan for change. Urgency exerts time and execution pressure on a leader when it comes to change. A leader needs to be fluent with the organisational culture and processes to devise an efficient strategy for execution of change within their department. The correlation analysis of the relationship between a leaders’ organisational competency and factor of urgency indicates the presence of a *statistically significant* relationship. The value of the correlation coefficient is 0.211, which is below 0.3, implying that the relationship between these variables is *weak*. Eleven codes were identified for this relationship from the analysis of the six interviews conducted. Following are some of the excerpts from the interviews, highlighting this relationship.

Table 25: Interview excerpts relating Leaders’ Organisational Competencies and Factor of Urgency

Category	Subcategory	Excerpt
Organisational Competencies	Planning	“When there is urgency for change, planning becomes difficult because decisions need to be made within limited time.” (Interview_Global Head – Business Strategy)
		“If you are a big organisation, several approvals are required, and then its just stressful at times.” (Interview_Global Transformations Manager)
		“I believe a leader should be equipped to take decisions and devise strategic plans within a limited timeframe.” (Interview_Senior Product Manager)
		“There’s so many things upcoming, in so little time, that makes it difficult to follow a timeline.” (Interview_Regional Manager – Business Strategy)
	Fluency and management of organisational processes and systems	“And in terms of like, for example, the processes and the goals as well, there's not been much structure to it.” (Interview_Product Manager)
		“A leader needs to be fluent about the systems in place within the organisation. That influences the decisions he makes for his team. Urgent changes need agile and efficient systems, only then can a leader plan strategically within the limited time.” (Interview_Regional Transformations Manager)

From the interviews analysed, it is seen that urgency for change can pose challenges to a leaders’ ability to create strategic plans for the change process. As emphasized earlier, the change process comes with its own challenges, risks, and uncertainties. Several “*unforeseen situations require urgent interventions.*” In such situations, the leader needs to create a plan that is “*flexible,*” so that changes can be made to the plan to tackle any barriers that arise a long the process. Interviews highlighted that “*organisational systems can hamper a leaders’ ability to devise plans when there is limited time.*” In these situations, a “*leader needs to be fluent with the systems*” and process of the organisation, to select the most relevant processes and systems that will accelerate the planning process and propel the change process in the right direction. Two out of six interviewees mentioned that the organisational systems that are in place currently are “*not equipped to deal with urgency and this creates a pushback to the leaders planning ability.*” An organisation needs to make room for flexibility to support the leader with decision making and planning in timebound situations. Thus, both leaders and members in the interviews, emphasized that it is important for “*a leader should be equipped to take decisions and devise strategic plans within a limited timeframe.*” The ability to take strategic decisions and devise a plan for the execution of the change process, is also dependent on the leaders’ fluency with the organisational processes and systems in place. Being competent in these two aspects, enables a leader to formulate a strategic plan that eventually leads to a positive change outcome for the department. Interviewees also implied that the relationship between the leaders’ organisational competencies and factor of urgency is weak, thus, justifying the results of the correlation analysis.

Leaders’ Organisational Competency and Factor of Vision: When creating a vision for change, a leader needs to take into consideration the steps to be implemented for achieving this vision. Planning and creating concrete initiatives are as important as the change vision itself. The correlation analysis shows that there is a *statistically significant* relationship between leaders’ organisational competencies and factor of vision. The strength of the relationship is *moderate*, as the value of the correlation coefficient lies between 0.30 and 0.49. From the interviews conducted, thirteen codes

were assigned to this relationship. Some of the excerpts from the interview are shown in **Table 26** below.

Table 26: Interview excerpts relating Leaders’ Organisational Competencies and Factor of Creative Vision

Category	Subcategory	Excerpt
Organisational Competencies	Planning	“Creating a vision and communicating it is one thing but establishing timelines and a path to achieve the vision, is what makes the vision a reality and not just a goal.” (Interview_Global Head – Business Strategy)
		“Having an exciting and innovative vision, definitely motivates me to craft strategic steps to achieve the vision” (Interview_Senior Product Manager)
	Fluency and management of organisational processes and systems	“The vision is about the future state that a change process wants to achieve. This will include changing certain existing processes within the organisation and instilling new ones. For this, the leader should be fluent with the current organisational systems.” (Interview_Regional Manager – Business Strategy)
		“Visions provide leaders with a goal to work towards, which motivates them to improve their strategic planning by taking into consideration current organisational systems and practices.” (Interview_Regional Transformations Manager)
		“It is important that the vision is aligned with the present position of the company. Only then can a leader create concrete initiatives, by using systems and resources within the organisation.” (Interview_Global Transformations Manager)

The interviews provided insights on the relationship between leaders’ organisational competencies and the factor of vision. Leader interviews implied that having achievable, creative, and innovative visions, enables them to develop and implement their strategic planning competencies. Such a vision motivates the leaders to *“craft strategic steps to achieve the vision.”* Two out of six interviews emphasized that the organisational systems in place *“seem to be outdated and need to be changed to adapt to the present world and market needs.”* Such systems could demotivate the leader, resulting in a planning strategy that does yield the full potential of the vision. Thus, when a leader is competent in strategic planning, they can to *“some extent influences the present state of systems and process in the organisation.”* Interviews highlighted that when leaders create initiatives that *“connect with the employees on a deeper level,”* greater meaning is provided to their efforts. Member interviews revealed that their leaders were competent with regards to strategic planning that was aligned with the vision and organisational practices and market needs. They mentioned their leaders were also aware of the current systems and processes of this organisation. This combination of skills enabled the leaders to formulate effective steps to achieve the vision. In one case, once the vision was achieved, the leaders’ experience and strategy led to the creation of a new and effective system within the organisation, which has since then been used for several change initiatives. In this way, the interviews revealed that while having a vision is fundamental to any initiative, the ability of the leader to understand the vision and create tangible milestones to achieve the vision, coupled with their fluency with current systems, increases the viability of the vision and facilitates its achievement. Thus, the analysis of the interview stay aligned with the results of the quantitative analysis.

Leaders’ Organisational Competency and Factor of Clear and Open Communication: When a leader needs to develop a strategic plan for the transformation process, they need to be transparent through every step of the plan. It is essential that employees are aware of the progress of the process at all times, for successful implementation of the change process. The correlation analysis of the

relationship between leaders’ organisational competencies and factor of clear and open communication indicates the presence of a *statistically significant* relationship. The value of the correlation coefficient is 0.503, which is above 0.49, thus indicating a *strong* relationship. Eighteen codes were allotted to this relationship from the six interviews conducted, signifying the relationship. Some of the excerpts from the interviews can be seen in **Table 27**.

Table 27: Interview excerpts relating Leaders’ Organisational Competencies and Factor of Clear and Open Communication

Category	Subcategory	Excerpt
Organisational Competencies	Planning	“A leader creates a plan for the team to follow. Hence communicating the plan to all the stakeholders involved is important.” (Interview_Product Manager)
		“Being open to feedback on the plan is extremely important. This is only possible when there is an environment of open communication.” (Interview_Senior Product Manager).
		“Strategic planning can contain several steps that need to be taken to achieve the goal. I find it essential that everyone involved in the process receives transparent, honest, and clear communication regarding the progress of the initiative, on a regular basis. The organisational systems should support this.” (Interview_Global Transformations Manager)
		“When my leader creates a plan, they always communicate it clearly with the team and are always open to feedback.” (Interview_Product Manager)
		“Clear and open communication is extremely important when executing a plan. That is what ensures that everyone is on the right path. This can be done through different communication channels in the organisation” (Interview_Global Head – Business Strategy)
	Fluency and management of organisational processes and systems	“Several systems are in place in our organisation, which allows for open communication. These systems aid the leader to give regular updates to the employees involved in the change process.” (Interview_Global Transformations Manager)
		“The leader’s fluency with the existing systems for communication in the organisation, definitely improves the flow of open communication throughout the change process.” (Interview_Regional Manager – Business Strategy)

The interviews elaborated on the relationship between leaders’ organisational competencies and the factor of clear and open communication. Every interviewee emphasized the significance of clear and open communication when it comes to planning a change process. Feedback is an equally important part of planning and “*this is only possible when there is an environment of open communication.*” Interviewees also implied that there are “*several systems in place*” in their organisations that enhance the streamlining and flow of communication throughout the process. A leader can communicate the strategic initiatives and plans to the employees and stakeholders through different organisational systems that are in place. These systems include common team dashboards, SharePoint sites, emails, and MS Teams messaging. These communication systems, “*help leaders gain varied perspectives regarding the plan.*” It also helps “*identify barriers*” or situations that the leader may have overlooked. Leaders who are fluent with these systems can take advantage of these systems to improve the communication regarding the process, and gain feedback from those involved. This helps in creating a well-founded strategy. These findings from the interviews further strengthen the results of the correlation analysis stating a strong, positive relationship between leaders’ organisational competencies and the factor of clear and open communication.

Leaders’ Organisational Competency and Factor of Employee and Stakeholder Engagement: Employee and Stakeholder engagement is extremely important for a plan to reach realization. Without the participation of employees and stakeholders, a plan will only remain a plan and will not be converted into action. Based on the correlation analysis conducted, it is clear that there is a *statistically significant* relationship between leaders’ organisational competencies and the factor of employee and stakeholder engagement. The value of the correlation coefficient is 0.256, which is below 0.30, indicating that the relationship between these variables is *weak*. Twelve codes have been assigned to this relationship, from the qualitative analysis of the interviews conducted. A few excerpts from the interview are presented in **Table 28** below.

Table 28: Interview excerpts relating Leaders’ Organisational Competencies and Factor of Employee & Stakeholder Engagement

Category	Subcategory	Excerpt
Organisational Competencies	Planning	“A leader creates a plan for the team to follow. Hence communicating the plan to all the stakeholders involved is important.” (Interview_Product Manager)
		“My leader ensures that the opinions and concerns of all stakeholders involved in the change process are taken into consideration when formulating a strategic plan.” (Interview_Regional Manager – Business Strategy)
		“Involving stakeholders in the planning process has increased their participation in the process, as they feel empowered.” (Interview_Global Transformations Manager)
		“Valuing feedback and inputs from employees and team members is crucial for a leader if they want the plan to succeed.” (Interview_Senior Product Manager)
	Fluency and management of organisational processes and systems	“Feedback systems are important when it comes to encouraging stakeholders and employees to participate. I see that is an area for improvement for the systems in our department.” (Interview_Global Head – Business Strategy)
“If I just create a strategy based on the vision without considering the teams opinions or the organisational processes, it is guaranteed that the plan is never going to succeed.” (Interview_Global Head – Business Strategy)		

Analysis of the interview revealed that one of the most successful factors in increasing employee and stakeholder engagement is to involve them in the process of planning. A strategic plan is only a plan unless it is executed by the employees and stakeholders involved. Leaders who involve the employees and stakeholders in the process of formulating the plan, have seen an increase in the engagement of all stakeholders involved. Leader interviews have emphasized that *“involving stakeholders in the planning process has increased their participation in the process, as they feel empowered.”* They have also emphasized the importance of being open to getting feedback and incorporating the feedback into the planning process. This feedback further helps a leader develop their organisational competencies. However, two out of six interviewees implied that feedback systems during the planning phase need to be improved and developed further. Because of this, certain *“feedback is missed or gets lost in the process”* and this can cause *“misunderstandings among the stakeholders,”* thus impacting *“their engagement negatively.”* Member interviews revealed that their leaders have been open to *“opinions and concerns”* from everyone involved. The feedback or concerns are *“taken seriously,”* thus further motivating the stakeholders and employees to participate in the change initiatives. Interviews also highlighted that this *“instils confidence in those involved and makes them feel empowered and less resistant to the change.”* Thus, when a leader is fluent with the organisational

systems and can utilize these systems to encourage engagement from stakeholders and employees, the leader is able to then formulate a successful strategy to achieve the desired change goal, together with those involved. However, interviewees also implied that a leader’s organisational competencies do not have a strong relationship when it comes to employee and stakeholder engagement. Thus, corroborating the results from the correlation analysis.

Leaders’ Organisational Competency and Factor of Organisational Culture: The culture of an organisation plays a role in determining the culture of the teams and departments within the organisation. The research analysis shows that a leader’s organisational competencies of planning will then be influenced by the prevailing culture of the department. The correlation analysis of the relationship between leaders’ organisational competencies and factor of organisational culture indicates the existence of a *statistically significant* relationship. The value of the correlation analysis is 0.460, which lies between 0.30 and 0.49, indicating a *moderately strong* relationship between these variables. From the interviews conducted, sixteen codes were attributed to this relationship. Some excerpts from the interviews can be seen in the table below.

Table 29: Interview excerpts relating Leaders’ Organisational Competencies and Factor of Organisational Culture

Category	Subcategory	Excerpt
Organisational Competencies	Planning	“The culture in the organisation should allow flexibility for leaders to formulate innovative plans strategically.” (Interview_Global Head – Business Strategy)
		“Unfortunately, my organisation is not very innovative or agile, and this definitely impedes the leaders' ability to devise innovative strategies and set creative goals.” (Interview_Product Manager)
		“Organisations should provide leaders with freedom to take their own decisions and let bring in innovation and creativity into the planning process. This improves the leader’s ability to develop concrete initiatives and steps for achieving the desired state of change.” (Interview_Global Transformations Manager)
	Fluency and management of organisational processes and systems	“Organisations that are agile and innovative, have systems in place that make it easier for leaders to formulate strategic plans that align with the change initiative's goals as well as organisational goals” (Interview_Product Manager)
		“Organisations should be open to changing their systems and methods and embracing the change. Only then will the change be sustained within an organisation and reach its full potential.” (Interview_Global Transformations Manager)
		“Organisations should have systems and processes that are flexible. Only then will the leader be motivated to bring in innovation in the planning process. When these changes are then incorporated into the organisation, the full benefit of the change is reaped.” (Interview_Global Head – Business Strategy)
		“Innovative organisations empower leaders to develop their strategic planning ability and approach to achieving creative visions.” (Interview_Regional Manager – Business Strategy)

The interviews emphasized that is crucial for the leaders to work in a culture that is agile and innovative to enable them to devise the most effective strategy. When an organisation is innovative, it “*empowers leaders to develop their strategic planning ability, and approach to achieving creative visions.*” Leader interviews revealed that “*Organisations should provide leaders with freedom to take their own decisions and let bring in innovation and creativity into the planning process.*” When a leader is provided with the freedom and right environment, they can let their “*creative juices*” flow

and formulate a plan that is not only required to be followed but is also “*motivating and exciting*” to everyone involved. Having an organisation that provides this culture, increases the leader’s ability to strategically think and plan. Two out of six interviews mentioned that their organisation “*is not very innovative or agile.*” They highlighted that “*this definitely impedes the leaders’ ability to devise innovative strategies and set creative goals.*” Member interviews revealed that when leaders are in “*rigid organisations,*” they are not able to utilize their full potential and “*feel bound and limited*” when it comes to being creative with planning.

Interviews also emphasized that merely implementing a change is not where the journey culminates. It is essential for the organisation to embed this change within its processes and systems, for the change to be sustained. Transparent and clear communication helps embed the new change into the company’s processes. Thus, when a leader is aware that they can make an impact and the “*organisational culture supports innovation and creativity,*” the leader is able to successfully develop and implement his organisational competencies, thus achieving the goal and benefitting the organisation. Hence, the interviews explained that the culture of the organisation plays a role in the ability of a leader to implement their organisational competencies. When asked about the strength of this relationship, the interviewees revealed that it was not a strong relationship but rather a moderate one, which is aligned to the results of the correlation analysis.

A summary of the relationship between the leaders’ organisational competencies and the factors of change management can be seen in **Fig. 15** below:

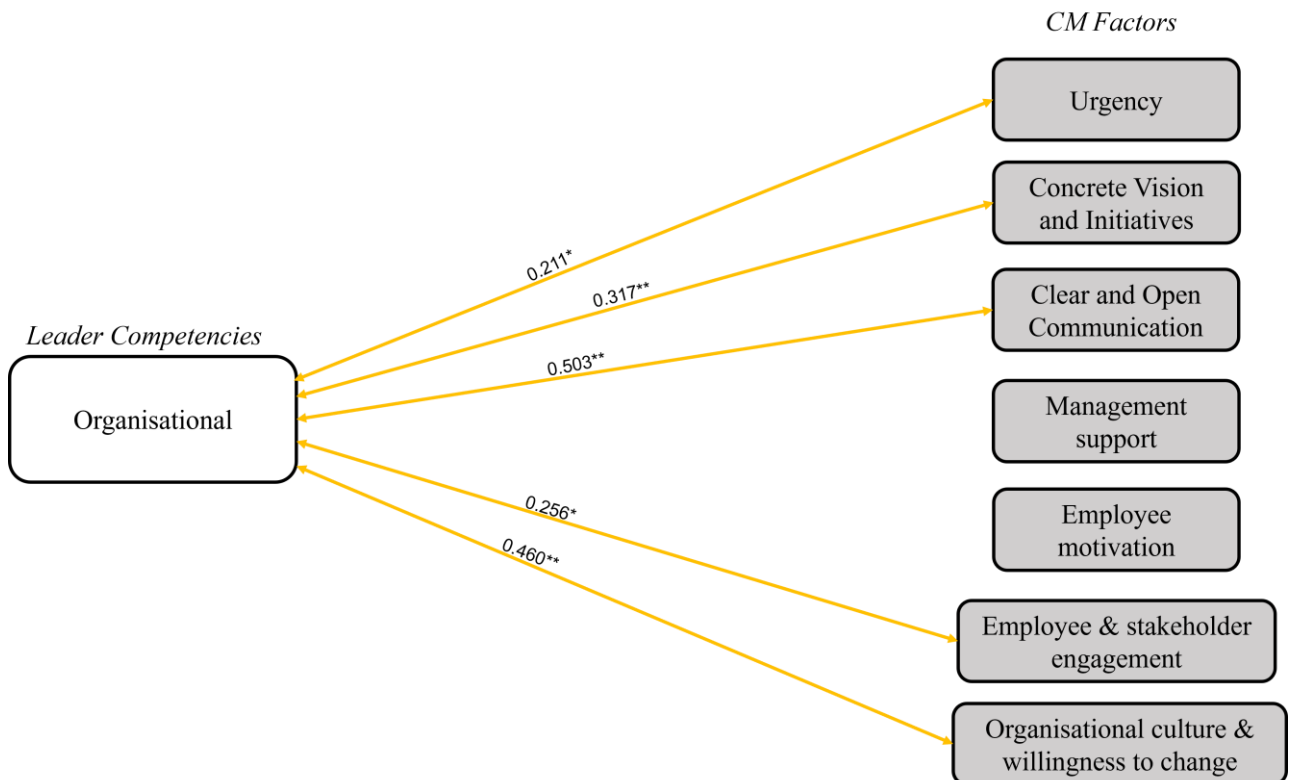


Figure 15: Relationship between Leaders’ Organisational Competencies and Factors of Change Management

Correlation analysis shows that there is no statistically significant linear relationship between leaders’ organisational competencies and factors of management support and employee motivation. One out of six interviews revealed that there is a relationship between leaders’ organisational competencies

and the factor of employee motivation. However, they mentioned that it was not a direct relationship but an implied one, and that it is not observed very often. Thus, it can be concluded that the interview findings are aligned with the statistical analysis for this relationship.

4.3. Summary and Discussion of the Results and Findings regarding the Relationship between Leaders’ Competencies and Factors of Change Management

This section aims to provide a summary of the results of the quantitative and qualitative analysis conducted to determine the relationship between leaders’ competencies and factors of change management in medical equipment manufacturing companies. According to the correlation analysis, strong relationships existed between leaders’ self competencies and the factor of employee motivation, leaders’ relational competencies and the factor of employee motivation, and leaders’ organisational competencies and factor of clear and open communication within the team, across departments and within the organisation. According to the interviews, the most important competencies among the competencies considered were empathy (all six interviewees), trust (all six interviewees), open communication by the leader (five interviewees), team relationship (four interviewees), and technical expertise (three interviewees). An overview of the findings regarding the relationship between each leaders’ competency and factor of change management is described further.

Self: The table below summarizes which relationships were identified between leaders’ self competencies and factors of change management during the correlation analysis and interviews.

Table 30: Overview of identified relationships between Leaders’ Self Competencies and Factors of Change Management

		Relationship with Self Competencies	
		Confirmation from survey results	Confirmation from interview results
Factors of Change Management	Urgency	Yes	Yes
	Concrete Vision and Initiatives	Yes	Yes
	Clear and Open Communication	No	No
	Management Support	No	Yes
	Employee Motivation	Yes	Yes
	Employee and Stakeholder Engagement	Yes	Yes
	Organisational Culture and Willingness to Change	Yes	Yes

Self competencies include emotional intelligence, intrinsic motivation of the leader, lifelong learning, and risk appetite of the leader. From the table above, it is seen that findings from the correlation analysis conducted and interviews are aligned in most cases, except one. Both, interviews, and the correlation analysis suggested that there is a statistically significant, positive relationship between leaders’ self competencies and factors of urgency, concrete vision and initiatives, employee motivation, employee and stakeholder engagement, and organisational culture and willingness to change. Though the strength of each relationship varied, the nature of each relationship was positive. This indicates that a positive change in the competency would result in a positive change in the related factor. The correlation analysis reveals that the relationship between a leader’s self competencies and factors of urgency, and organisational culture is weak, implying that other factors may have a more significant role in influencing urgency and the organisational culture, and vice versa. The analysis

indicated a moderate relationship between a leader’s self competency and factors of vision, and employee and stakeholder engagement, and a strong relationship between a leader’s self competencies and the factor of employee motivation.

In addition to the findings from the correlation analysis, the interviews revealed an additional relationship. The findings from the interview, indicated that there exists a relationship between a leader’s self competencies and the factor of management support. Interviewees highlighted that leaders that are proficient in the self competencies, can provide better support to everyone involved in the change process. Each interviewee stressed that, among all the competencies, empathy emerged as one of the most important attributes that contributed to positive outcomes throughout the process of change.

It is noteworthy that the interview also unveiled the importance of intercultural competencies when it comes to change management. This competency has not yet been explicitly elaborated in the surveyed literature, thus adding further value to this research. The interviews revealed a positive relationship between leaders’ intercultural competency and factors of vision, clear communication, management support, employee motivation, and employee and stakeholder engagement. In summary, a leader’s self competencies are related to the factors of creating a sense of urgency, an innovative vision, management support, increase in employee motivation and engagement from all stakeholders, and the prevailing culture of the organisation with regards to change.

Relational: The table below summarizes which relationships were found between leaders’ relational competencies and factors of change management during the correlation analysis and interviews.

Table 31: Overview of identified relationships between Leaders’ Relational Competencies and Factors of Change Management

	Competencies	Relationship with Relational Competencies	
		Confirmation from survey results	Confirmation from interview results
	Confirmation of Relationship		
Factors of Change Management	Urgency	No	No
	Concrete Vision and Initiatives	No	Yes
	Clear and Open Communication	No	Yes
	Management Support	Yes	Yes
	Employee Motivation	Yes	Yes
	Employee and Stakeholder Engagement	Yes	Yes
	Organisational Culture and Willingness to Change	No	No

Relational competencies of a leader encompass effective communication, trustworthiness, and positive relationships with everyone involved. From the above table, it can be seen that the correlation analysis identified a linear statistically significant relationship between leaders’ relational competencies and factors of management support, employee motivation, and employee and stakeholder engagement. The nature of each relationship was positive, indicating that a positive change in the relational competencies would result in a positive change in the related factor of change management. However, the strength of each relationship was different. The correlation analysis reveals that the relationship between a leader’s relational competencies and factor of employee and stakeholder engagement is weak, implying that other factors may have a more significant role in

influencing employee and stakeholder engagement, and vice versa. The analysis indicated a strong relationship between a leader’s relational competencies and factors of management support and employee motivation.

In addition to the correlation analysis, interview analysis indicated the presence of a relationship between leaders’ relational competencies and the factors of vision, and clear and open organisational communication. As this relationship is not indicated by the correlation analysis, it can be suggested that this is a non-linear relationship. A leader that is fluent with the organisational communication culture and systems in place, can enhance their communication of the vision by using these systems. Relationships play a critical role in the success of a change initiative, as team dynamics and collaboration are vital for the transformation of a department from its present state to the desired future state. Thus, relational competencies are imperative for a leader.

Knowledge: The table below summarizes which relationships were found between leaders’ knowledge competencies and factors of change management during the correlation analysis and interviews.

Table 32: Overview of identified relationships between Leaders’ Knowledge Competencies and Factors of Change Management

	Competencies	Relationship with Knowledge Competencies	
		Confirmation from survey results	Confirmation from interview results
	Confirmation of Relationship		
Factors of Change Management	Urgency	Yes	Yes
	Concrete Vision and Initiatives	No	Yes
	Clear and Open Communication	No	Yes
	Management Support	Yes	Yes
	Employee Motivation	Yes	Yes
	Employee and Stakeholder Engagement	No	No
	Organisational Culture and Willingness to Change	Yes	Yes

A leader’s knowledge competencies consist of a leader’s technical expertise and ability to share that expertise with the employees and stakeholders involved. From the above table, it is seen that the correlation analysis reveals linear, statistically significant relationships between leaders’ knowledge competencies and factors of urgency, management support, employee motivation, and organisational culture and willingness to change. The nature of each relationship is positive, implying that they are positively related. The correlation analysis also reveals that the relationships identified, between a leader’s knowledge competencies and factors of urgency, management support, employee motivation, and organisational cultures, are weak, implying that other factors may have a more significant role in influencing these factors, and vice versa.

Interviews revealed additional relationships between leaders’ knowledge competencies and factors of vision, and clear and open communication. Leaders were able to use their knowledge in their field to create an innovative vision. Interviews highlighted that leaders were able to share their knowledge in an efficient manner by making use of the organisational communication systems in place, thus enabling a smooth flow of communication. Thus, a leaders’ technical expertise coupled with the leader’s ability to facilitate knowledge transfer personally, and through communication channels

within the organisation helps create an innovative vision and keep the department stay abreast with the latest advancements while also providing support to the employees and stakeholders, thereby increasing their motivation.

Organisational: The table below summarizes which relationships were found between leaders’ organisational competencies and factors of change management during the correlation analysis and interviews.

Table 33: Overview of identified relationships between Leaders’ Organisational Competencies and Factors of Change Management

	Competencies	Relationship with Organisational Competencies	
		Confirmation from survey results	Confirmation from interview results
Factors of Change Management	Confirmation of Relationship		
	Urgency	Yes	Yes
	Concrete Vision and Initiatives	Yes	Yes
	Clear and Open Communication	Yes	Yes
	Management Support	No	No
	Employee Motivation	No	No
	Employee and Stakeholder Engagement	Yes	Yes
Organisational Culture and Willingness to Change	Yes	Yes	

A leader’s organisational competencies involve the leader’s ability to formulate strategic plans for the implementation of the change process, and the leader’s fluency with the organisation’s present process and systems. The correlation analysis reveals statistically significant relationships between leaders’ organisational competencies and factors of urgency, concrete vision and initiatives, clear and open communication, employee and stakeholder engagement, and organisational culture and willingness to change. Each of these relationships have a positive nature but vary in strength. The correlation analysis reveals a weak relationship between a leader’s organisational competencies and factors urgency and employee and stakeholder engagement, indicating that other factors may have a more significant role in influencing urgency and management support, and vice versa. The analysis indicates a moderate relationship between a leader’s organisational competencies and factors of vision and organisational culture, and a strong relationship with the factor clear and open communication.

Interview findings were aligned with the results of the correlation analysis and no additional relationship was revealed. The leader’s strategic planning ability, combined with fluency in the organisational systems and processes, enables the leader to create strategic plans that align with the organisation’s present and future goals, motivate and support employees through the process, increase engagement, embed the change into the organisation, and eventually bring success to the organisation.

The revised model, based on the correlational analysis is depicted in **Fig. 16** below.

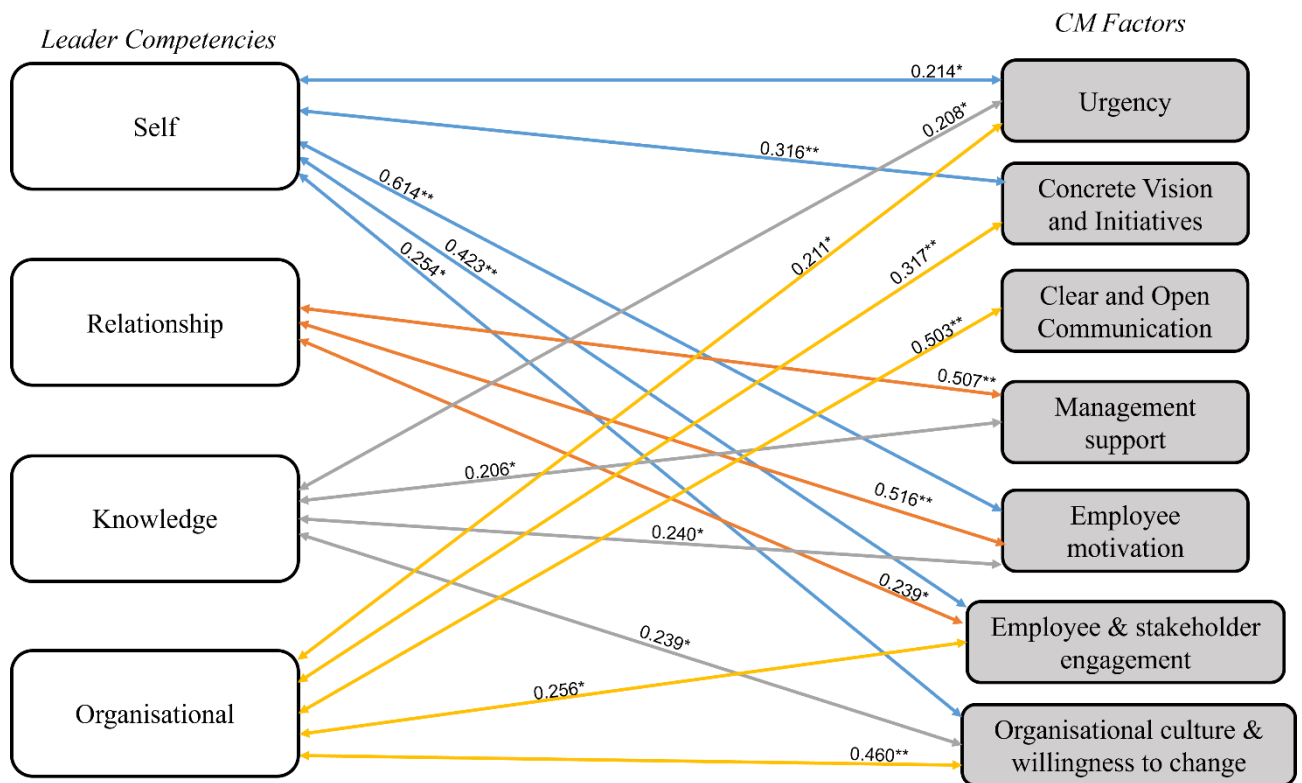


Figure 16: Overview of the results of the correlation analysis between Leaders' Competencies and Factors of Change Management

Discussion

Self: The results of the analysis closely align with existing literature, reinforcing the essence of specific leaders' competencies in navigating change initiatives. This result is consistent with a study conducted by Visagie & Ukpere (2013), which highlighted the importance of considering employees' resistance to change, identifying the root of these emotions and reassuring the employees about the benefits of the change for both the employees and the organisation; this concept is also reinforced in several other studies (Kazmi & Naaranoja, 2019; Kotter, 2018; Aitken & von Treuer, 2021; Swanson, Kim, Lee, Yang, & Lee, 2019; Graetz, 2000; Visagie & Ukpere, 2013). When leaders relate with the emotions and concerns of the employees, this increases the employees' confidence in the leaders' ability to take risks and motivates them to work together towards a common goal. This finding is consistent with the study conducted by Swanson, Kim, Lee, Yang, & Lee (2019). When the barrier of resistance is overcome, it encourages the employees to be open to change and participate in change initiatives.

Additionally, member interviews revealed that the leader's internal motivation is a pivotal factor in keeping the employees motivated throughout the change. This finding resonates with the research of Aitken & von Treuer (2021), who emphasized the role of leaders' motivation in fostering motivation, and openness to new challenges among the team members, thus reducing their resistance and increasing their engagement. Seeing the leader be committed to the change and strive to achieve the goal, further increases the engagement of the employees.

Motivation, lifelong learning, and risk appetite propel the leader even in the face of urgency and enables the leader to create an innovative vision that is tangible, exciting, and inspiring for the employees. These findings align with the research conducted by Visagie & Ukpere (2013), that suggests that these competencies enhance a leader's ability to create a concrete and innovative vision, as well as employee and stakeholder engagement. Member interviews highlighted that when the employees observe that their leader is motivated, empathetic and has an attitude of learning, this gives them confidence in the leader's abilities, thus, motivating them to participate actively in the change process. This finding corroborates the research of Hiatt (2006), who highlighted the role leaders' competencies play in increasing employee confidence and participation.

When there is a culture of appreciation within the team, it increases the engagement and motivation of both leaders and members. An organisational culture that promotes flexibility, and learning and development, enables a leader to constantly improve their competencies. This helps the leader to take strategic decisions and calculated risks, thus improving the outcome of the change process. Thus, these findings underscore the importance of leaders' emotional intelligence, intrinsic motivation, commitment to lifelong learning, and willingness to take calculated risks in effectively managing change.

This research adds value to the change management literature as it unveils a critical competency, which has been relatively less expounded upon in the change management literature. Interviewees stressed that the intercultural competencies of leaders should be considered as a distinct, crucial competency in change management. The ever globalizing and changing world brings people from diverse backgrounds and cultures together at workplaces. For any initiative to be successful, leaders must be mindful of the cultural considerations of their team and stakeholders. This is a competency that could make or break relationships between teams and stakeholders, and hence should be emphasized further in literature pertaining to change management and leader competencies.

Relational: When a leader can clearly and precisely communicate the process of the change initiative, its vision, implications, and benefits to everyone involved and the organisation, this increases the engagement of the employees and stakeholders. This resonates with the studies conducted by Kotter (2018) and Aitken & von Treuer (2021), which emphasizes the importance of clear communication throughout the process of change. Member interviews further elucidated that when leaders have an "open door policy," which means that employees can approach the leader at any time with any concerns or barriers they face during the change process, it makes the employees feel supported, which again increases their motivation and engagement.

Additionally, trust-based relationships between leaders and members, also highlighted by Payne, Trumbach, & Soharu (2023) and Gupta (2015), mitigate the resistance to change and promote active participation. When employees feel they can trust the leader with the change process, they feel less resistant to the change. Similarly, when a leader trusts their employees' abilities and allows them to work according to their own working style, this creates room for creativity and innovation among the employees. This corroborates the study conducted by Visagie & Ukpere (2013), that underscores the importance of providing flexibility to employees in their working style. New and exciting solutions, from different perspectives are then provided, which improve the quality of the outcome of the process.

It is essential that the leader creates a sense of team spirit within the team. This increases support for the employees, creates a space for open communication, active listening, and feedback, resulting in the creation of positive relationships according to the study by Aitken & von Treuer (2021). Leader and member interviews concluded that despite a leader's technical and organisational expertise, the inability to create positive relationships with the employees and stakeholders, jeopardizes the success of the change, as also highlighted by Visagie & Ukpere (2013). In summary, these findings highlight the crucial role of effective communication, trust-based relationships and fostering positive relationships with employees and stakeholders, in navigating the complexities of change.

Knowledge: A leader's knowledge and expertise in their field, enables them to create a sense of urgency within the department and anticipate upcoming trends by tracking the latest advancements in the field. This allows the leader to use their technical expertise to create a change initiative that is aligned with market, organisational, and employee goals, as also emphasized by Kotter (2018) and Gupta (2015). According to Swanson, Kim, Lee, Yang, & Lee (2019), it is essential for leaders to translate their knowledge effectively into action to achieve change goals. Findings from the research further strengthen this suggestion by revealing that fluency in relevant technologies and the ability to translate this into action, enables leaders to provide better support to employees and this facilitates smoother implementation process.

As important as it is to possess technical expertise, it is also essential that the leader can share this knowledge with everyone involved. According to research conducted by Swanson, Kim, Lee, Yang, & Lee (2019) and Graetz (2000), knowledge transfer empowers the employees, as they feel more confident when they have sufficient knowledge about the technology. Kotter (2018) further emphasizes that it is essential for a leader to create a knowledge sharing and learning space for everyone in the team as well as the stakeholders involved. The findings from the correlation and interview analysis are aligned with the findings from Kotter (2018), Graetz (2000), and Swanson, Kim, Lee, Yang, & Lee (2019) and Graetz (2000) and suggest that knowledge transfer helps the leader to better guide and support the members through the process and reduces the fear of change. The leaders' expertise also motivates the employees to inculcate the skill of lifelong learning, thus increasing their motivation for the change initiative.

However, it is imperative that the organisation needs to have a culture that promotes knowledge transfer. In accordance with a study conducted by Peter, Kraft, & Lindeque (2020) as cited by Irimiás & Mitev (2020), when there are such systems in place, the leader is able to effectively communicate and transfer the knowledge to the employees and also gain more knowledge through employee feedback and discussions. Interviews highlighted that merely having these systems in place is not sufficient. It is important to create an environment that provides opportunities and encourages the utilization of these systems. Thus, while it is critical for a leader to have expertise in the relevant field and be able to effectively communicate this knowledge with the team and stakeholders, the organisational systems must also create opportunities for, and encourage knowledge sharing (Swanson, Kim, Lee, Yang, & Lee, 2019; Gupta, 2015; Kotter, 2018). Only then will it lead to higher support for the employees, and higher levels of motivation of both employees and stakeholders.

Organisational: Planning involves the process of setting a timeline and milestones throughout the process, resource allocation, and finally a way to embed the change into the organisational systems and processes. Gupta (2015) highlights the critical role of leaders in developing strategic plans and setting relevant and timely milestones, particularly in the case of urgency. If the leader is not

competent in planning, milestone setting, and resource allocation, they will not be able to create a vision that is inspiring and innovative. This aligns with Kotter's (2018) study that strategic and structured planning competency is pivotal for formulating inspiring and tangible visions and executing concrete initiatives for change.

To create a plan that is aligned with organisational systems and priorities, the leader needs to be fluent with the organisational processes, budget, and available resources. The plan and initiatives are communicated through communication channels within the organisation. This aligns with the significance of integrating plans with organisational processes and resources, underscored by Peter, Kraft, & Lindeque (2020) as cited by Irimiás & Mitev (2020). Member interviews highlighted that when leaders consider employee feedback and opinions in the planning process, it makes them feel supported (Hiatt, 2006). The communication systems in the organisation facilitate these open conversations and discussions between leaders and employees, thus enabling higher management support. The leader's expertise in their field, and organisational systems and process enables them to bring in innovation into the strategic planning process.

Leader interviews also highlighted that institutionalizing this change is as important as implementing the change. This finding is also emphasized by Kotter (2018) and Prosci (n.d.). The lessons learnt from the change process as well as the new technology or process should be embedded into the organisation's processes and systems. Only then is the full potential of the change realised. This helps an organisation to continue being innovative and open to transformations, which eventually lead to organisational success.

While existing literature expounds the relationship between leadership, leadership styles and change management, this research uniquely contributes by providing empirical evidence for the relationship between certain leader competencies and factors of change management within medical equipment manufacturing companies in Germany. However, certain limitations must be considered.

Industry specificity: This study is focused on medical equipment manufacturing companies in the healthcare industry. This industry is strictly regulated due to its sensitivity, criticality, and operational challenges. Therefore, the results of this study may lack generalizability when it comes to industries with differing frameworks and operational dynamics. A future scope of study could be evaluating these results across a broader range of industries, to see if the findings still stand valid.

Regional limitation: This study was conducted in the region of Germany alone. This region is characterized by distinct labour laws, and employer and employee relationships. Here, the work culture aims for long term commitment and relations. These factors may not necessarily align with the work cultures of other regions. Since all respondents were of German nationality, it limits the study when it comes to cultural perspectives. The perceptions regarding change management and leadership competencies may vary across diverse cultures, and this could form a potential scope for future studies.

Sample size: The size of the sample for this study is relatively small as compared to the sample size needed to conduct quantitative analysis. This is mainly due to two reasons: challenges in securing participation from leaders due to their overly packed schedules and priorities as it not only involved the participation of the leader but also required the leader to contact and invite a member from their immediate team to participate, and second, reluctance among leaders to have members from their team evaluate their leadership competency. Nonetheless, despite the small sample size, credible and

sufficient amount of information was received, from the survey and the interviews, to be able to provide concrete and valid results for this research. The future scope could involve evaluating these results with a larger sample size to check the robustness of these findings.

Methodological limitations: The use of correlation analysis in identifying the relationships between leaders' competencies and factors of change management, though valuable, may have overlooked the existence of non-linear relationships between the variables. Therefore, interviews were conducted to supplement these findings and identify any additional relationships that exist, apart from the ones highlighted by the correlation analysis. Nonetheless, the study was not able to further explore non-linear relationships between these variables due to methodological, time, and scope constraints. Future studies could be conducted to further understand the non-linear relationships between leaders' competencies and factors of change management.

This study also highlights the relationship between leaders' intercultural competencies and factors of change management, which has not been explicitly covered in the surveyed literature. These insights were gleaned from the interviews conducted where each interviewee emphasized this competency to be crucial for a leader in change management. However, due to the time constraints, this study was not able to explore this relationship quantitatively, and hence provides scope for future research to explore this relationship more comprehensively.

Conclusions and Recommendations

1. Change, the only constant in today's evolving and globalised world, has become crucial for organisations striving to emerge successful and retain their competitive edge in the market. Therefore, change management has emerged as a key topic in management, representing one of the biggest challenges faced by organisations globally. Additionally, due to the complexity, critical, and stringent nature of medical equipment manufacturing companies, change initiatives become harder to implement. This emphasizes the critical role of leadership in change management processes. A competent leader is required to drive the change process successfully, as employees highly rely on their leader's guidance throughout.

However, there is a scarcity of literature that explores different competencies of leaders that play a role in navigating the complexities of the change process. While a few studies that have suggested the influence of leader competencies on the successful implementation of change, there has been a notable lack of empirical research conducted to identify and statistically substantiate the relationship between leaders' competencies and different factors of change management. This research contributes to that gap by providing empirical results on the relationship between leaders' competencies and factors of change management, helping organisations or departments to thus, tailor their change management strategies, taking into consideration the leader competencies that are related to their change objectives and goals.

2. On examining the existing literature on change management, leadership, and leadership competencies, this study identified factors of change management and competencies of a leader that were relevant to change management. Even though there exists a plethora of factors and competencies, this research focused on those repeatedly emphasized in the literature and applicable to the healthcare industry context. The factors of change management identified in this study were derived from Kotter's 8 step change model and Prosci's ADKAR model for change. The leadership competencies were identified based on literature pertaining to leadership styles and leader competencies within the healthcare industry. Literature review revealed that there was a lack of a model that showed the relationship between leaders' competencies and factors of change management, and this served as a motivation for research, leading to the development of an initial conceptual model proposing the relationship between leaders' competencies and factors of change management.
3. To test and validate the initial conceptual model, a mixed method approach was employed, involving quantitative and qualitative analyses. The quantitative analysis consisted of an online survey containing 50 reliable items, addressing both factors of change management and leaders' competencies. The analysis unit for this research was the department level, focusing on four different medical equipment manufacturing companies in Germany. To gain deeper insights on the responses from the survey and the topic of leader competencies in change management, qualitative research was also conducted until data saturation was achieved, resulting in six interviews. The interviews revealed additional relationships not captured by the correlation analysis. Thus, with the help of quantitative and qualitative analysis, the research concluded in an empirical foundation for a revised model, aligning with existing literature and indicating statistically significant relationships between leaders' competencies and factors of change management.
4. The empirical research yielded valuable insights into the relationship between leaders' competencies and factors of change management.

4.1 *Leaders' Self Competencies.* From the correlation analysis, leaders' self competencies had the strongest relationship with the factor of employee motivation. This was substantiated by the interview responses emphasizing that an empathetic leader, who is intrinsically motivated,

and is always open to learning, significantly increases the motivation of the employees. Self competencies of a leader also had positive relationships with factors of urgency, concrete vision, management support, employee & stakeholder engagement, and organisational culture and willingness to change. Furthermore, interviewees stressed that the competency of intercultural awareness and consideration is crucial in connecting with employees and guiding them throughout the process, particularly in the case of multicultural teams.

4.2 *Leaders' Relational Competencies.* The correlation analysis revealed that leaders' relational competencies had the strongest relationship with employee motivation and management support. The interviewees further underscored the importance of effective communication, an environment of trust, and positive relationships with everyone involved, in improving employee motivation, engagement, and support. Moreover, additional non-linear relationships between leaders' relational competencies and factors of concrete vision and clear and open organisational communication were revealed through the qualitative analysis. Interviews emphasized that a leader needs to be able to clearly and constantly reiterate the vision to the employees throughout the change process, and this can be done effectively through the organisational communication systems. Overall, it is essential for leaders to nurture positive relationships with both employees and stakeholders throughout the process of change, to ensure positive outcomes.

4.3 *Leaders' Knowledge Competencies.* A leader's knowledge competencies have relationships with factors of urgency, management support, employee motivation, and the organisational culture. Though these relationships exist, the strength is weak, indicating a stronger influence of other factors. Interviews also highlighted additional relationships with factors of concrete vision and clear and open communication within the organisation, emphasizing the significance of knowledge transfer in fostering innovation and motivation within the department.

4.4 *Leaders' Organisational Competencies.* Correlation analysis indicated the relationship between leaders' organisational competencies and factor of clear and open organisational communication was the strongest. Interviews revealed that the organisational culture has an influence on the leader's ability to create strategic plans and initiatives when it comes to change and innovation. Relationships between leaders' organisational competencies and factors of urgency, concrete vision, employee & stakeholder engagement, and organisational culture were also revealed through the quantitative and qualitative analysis. Thus, a leader's strategic abilities and organisational acumen contribute positively to the change process.

Recommendations:

Theoretical Recommendations:

1. This research contributes to the existing literature, by addressing different, prominent factors that play a role in change management initiatives and identifying relationships that leaders' competencies have with these factors. It provides empirical results on the relationship between leaders' competencies and factors of change management, thus providing grounds for further research which will help gain a more comprehensive understanding of leadership dynamics in the context of change management.

2. This study also encourages a competency-based approach when it comes to leadership theory. Even though few, studies on leaders' competencies emphasize that having a competency-based approach can improve the outcomes of a change initiative, by understanding the leader attributes that play a role in these initiatives (Aitken & von Treuer, 2021; Visagie & Ukpere, 2013). This study suggests that incorporating competency frameworks in leadership theories, helps gain a better understanding of the individual competencies of a leader that play a role in the successful implementation of change. The model provided in this study provides statistical and qualitative grounds for the relationship between different leaders' competencies and factors of change management, which can be further expanded and tested for a more comprehensive understanding of the relationships.
3. The study also reveals that leaders' intercultural competencies are essential when it comes to change management and has been relatively overlooked and not explained explicitly in leadership theories relating to change management. It provides direction for future research in the field of leadership and change management in multicultural contexts.

Organisational Recommendations:

1. Insights from the study can aid in the development of change management strategies that take into consideration leaders' competencies that have a proven relationship with factors of change management. It can help an organisation or department tailor its change strategy by aligning leadership competencies and strengths with the required change objectives and goals, thus optimizing their strategy, and increasing the likelihood of success.
2. Organisations and leaders can leverage the results and findings of this study in developing essential leadership development programs that are aimed at enabling leaders to develop, improve, and implement different competencies relevant to change management. Developing leadership programs that focus on, and train leaders in these areas can prove beneficial when a need for change arises. Identification of intercultural competencies as an essential part of change management, can motivate organisations to develop trainings and development programs aim to enhance leaders' intercultural competence and awareness.
3. Additionally, this study highlights the need for competent leaders for successful implementation of change. Organisations can consider the findings of this study when recruiting leaders to manage change. Competency based tests and screening processes can be carried out to identify candidates that possess the necessary attributes to manage change processes. Alignment of recruitment practices with the necessary, desired leadership competencies, enable organisations to select leaders who are well equipped to implement change successfully.

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Appendices

Appendix 1. Survey Instrument for Leaders' Competencies

Leader Competency	Item	Author
Self	I dare to make decisions even if it seems risky	Mohamad, et al. (2024)
	I dare to try something new	Mohamad, et al. (2024)
	I participate in initiatives and activities because I want relevant knowledge and information regarding good teaching to be passed on	Specht, et al. (2018)
	I give people choice about how to do their work	Kouzes & Posner (2017)
	I can control my emotions when there is a dispute/disagreement	Mohamad, et al. (2024)
Relational	My communication with my team is marked with openness	Christensen (2014)
	There is tolerance/acceptance in my communication with my employees	Christensen (2014)
	I listen to and respect the arguments of people who have different views	Mohamad, et al. (2024)
	I can be relied upon	Meynhardt, Steuber, & Feser (2023)
	I develop cooperative relationships with employees and stakeholders	Kouzes & Posner (2017)
Knowledge	I have in-depth knowledge of the field I work in	Mohamad, et al. (2024)
	I try to continuously improve my knowledge/talent	Mohamad, et al. (2024)
	I know what I am talking about when it comes to discussions in my field	Aarons, Ehrhart, & Farahnak (2014)
	I maintain contact with the team on a regular basis	Christensen (2014)
	I always gain knowledge to improve myself	Mohamad, et al. (2024)
	I practice the knowledge learnt	Mohamad, et al. (2024)
	I honour agreements	Meynhardt, Steuber, & Feser (2023)
Organisational	I create opportunities for sharing best practices among the departments	Kin & Kareem (2018)
	I ensure employees continue to contribute to changes that were made	Kin & Kareem (2018)
	I express confidence in people's abilities	Kouzes & Posner (2017)
	I identify measurable milestones that keep projects moving forward	Kouzes & Posner (2017)
	I build consensus around organisation's values	Kouzes & Posner (2017)
	I analyse objectively the final change outcomes	Kin & Kareem (2018)
	I can answer employee and stakeholder questions	Aarons, Ehrhart, & Farahnak (2014)

Appendix 2. Survey Instrument for Factors of Change Management

Change Management Factor	Item	Author
Urgency	The department feels that planned changes need to be implemented immediately in a timely manner	Joshi & Jha (2016)
	The planned changes for the department/organisation are critical for the department/organisation to thrive	Joshi & Jha (2016)
	Planned changes require personal effort and sacrifice on the part of everyone involved	Joshi & Jha (2016)
Vision	When it comes to change initiatives, the Vision of the new change is exciting for the employees	Martins & Ledimo (2016)
	The department's/organisation's change visions for the future are inspiring	Martins & Ledimo (2016)
	The top management clearly communicates the vision to the employees	Martins & Ledimo (2016)
Clear & Open Communication	There is timely communication between the department and related departments throughout the process	Hartner-Tiefenthaler, et al. (2022)
	The communication is exact and precise	Hartner-Tiefenthaler, et al. (2022)
	Team members are aware about the work of other team members	Hartner-Tiefenthaler, et al. (2022)
Management Support	Employee efforts are supported by leaders in the Change management process	Aarons, Ehrhart, & Farahnak (2014)
	Employee efforts to learn more about the change process/technology are supported by leaders	Aarons, Ehrhart, & Farahnak (2014)
	Employee efforts are Recognized and appreciated	Aarons, Ehrhart, & Farahnak (2014)
Employee Motivation	Employees are willing to work hard for achieving results	Razzak, et al. (2019)
	Employees have a clear idea of the vision of the whole change process	Razzak, et al. (2019)
	Employees are made aware of the perceived benefit of the change	Razzak, et al. (2019)
Employee and Stakeholder Engagement	In our department, employees are encouraged to develop ideas to improve work procedures and methods	Martins & Ledimo (2016)
	Employees in my team are open adapt to changes along the process	Martins & Ledimo (2016)
	Employees in my team deliver what was promised	Martins & Ledimo (2016)
	When external stakeholders are involved, the stakeholder and my department make decisions together by consensus	Laude (2020)
	The stakeholder and my department consider each other partners	Laude (2020)
	The stakeholder and my department have a right to a fair rate of return for what they put into this interaction	Laude (2020)
Organisational Culture	In this organisation employees are encouraged to be creative and innovative	van der Post, de Coning, & Smit (1997)
	In this organisation, inter-departmental cooperation is very strongly encouraged	van der Post, de Coning, & Smit (1997)
	In this organisation, employees are rewarded not for who they know but for what they produce	van der Post, de Coning, & Smit (1997))

	In this organisation communication flows freely and accurately throughout the organisation - upward, downward, and laterally.	van der Post, de Coning, & Smit (1997)
	This is an innovative organisation, and new ideas are generally encouraged	van der Post, de Coning, & Smit (1997)

Appendix 3. Instrument for Leader Interviews

Sr no	Questions - Leader
1	How do you perceive the role of empathy in your leadership role, and how does it influence your interactions with team members and stakeholders, especially during periods of change?
2	Can you share how often do you cultivate lifelong learning and self-motivation to stay adaptable and resilient in navigating challenges within your team? And how do you do that?
3	From your perspective, how do you prioritize building trust among team members and stakeholders, and how does this trust facilitate collaboration and innovation in your department?
4	How do you foster open communication channels within the team and with external stakeholders, and how does this contribute to a supportive environment?
5	Can you provide examples of how your understanding & knowledge of industry trends and emerging technologies impacts your strategic decision-making?
6	How do you approach planning and goal setting to ensure alignment with the vision and objectives of your department?
7	How do you observe the sense of urgency influencing decision-making and action-taking among team members and stakeholders during periods of change?
8	From your perspective, how important is it to have a clear and well-defined vision for change within your department?
9	What level of support and involvement do you observe from management during periods of change? Can you share examples of how management support has impacted the success or challenges faced during past change efforts?
10	How would you describe the overall level of motivation and engagement among employees during periods of change and can you discuss any specific strategies or initiatives implemented to enhance employee motivation in your department?
11	To what extent are employees and stakeholders involved during periods of change within your department? And what mechanisms are in place to facilitate their involvement?
12	How would you describe the overall culture within our organisation regarding change and adaptation to new initiatives or processes?
13	Finally, based on your experience, do you believe there are any other leadership competencies that come into play when it comes to change management?

Appendix 4. Instrument for Member Interviews

Sr. no	Questions - Observer
1	How do you believe the leader's empathetic approach influences their interactions with team members and stakeholders during periods of change?
2	In what ways do you observe the leader demonstrating a commitment to lifelong learning, and how does this impact their decision-making and problem-solving abilities in your department?
3	From your perspective, how does the leader's trustworthiness contribute to fostering a culture of transparency and collaboration within the department?
4	Can you provide examples of how the leader encourages open communication among team members and stakeholders, and how this fosters a supportive environment?
5	Can you share instances where the leader's understanding and knowledge of industry trends and best practices has influenced their strategic planning and decision-making?
6	From your observations, how does the leader approach organisational planning and goal setting to align with the vision and objectives of your department?
7	How do you observe the sense of urgency influencing decision-making and action-taking among team members and stakeholders during periods of change?
8	From your perspective, how important is it to have a clear and well-defined vision for change within your department?
9	What level of support and involvement do you observe from management during periods of change? Can you share examples of how management support has impacted the success or challenges faced during past change efforts?
10	How would you describe the overall level of motivation and engagement among employees during periods of change and can you discuss any specific strategies or initiatives implemented to enhance employee motivation in your department?
11	To what extent are employees and stakeholders involved during periods of change within your department? And what mechanisms are in place to facilitate their involvement?
12	How would you describe the overall culture within our organisation regarding change and adaptation to new initiatives or processes?
13	Finally, based on your experience, do you believe there are any specific leadership competencies that come into play when it comes to change management?

Appendix 5. Descriptive statistics of analysis of survey responses on Leaders' Competencies

		Self Competencies	Relational Competencies	Knowledge Competencies	Organisational Competencies
N	Valid	92	92	92	92
	Missing	0	0	0	0
Mean		4.33	4.54	4.39	4.02
Median		4.40	4.60	4.43	4.00
Std. Deviation		0.44	0.35	0.38	0.47
Skewness		-0.32	-0.97	-0.39	0.14
Std. Error of Skewness		0.25	0.25	0.25	0.25
Kurtosis		-0.77	0.51	-0.67	0.02
Std. Error of Kurtosis		0.50	0.50	0.50	0.50
Minimum		3.40	3.60	3.57	3.00
Maximum		5.00	5.00	5.00	5.00
Percentiles	25	4.00	4.40	4.18	3.71
	50	4.40	4.60	4.43	4.00
	75	4.60	4.80	4.71	4.29

Appendix 6. Descriptive statistics of analysis of survey responses on Factors of Change Management

		Factor 1: Urgency	Factor 2: Vision	Factor 3: Clear & Open Communication	Factor 4: Management Support
N	Valid	92	92	92	92
	Missing	0	0	0	0
Mean		3.92	3.04	2.81	3.53
Median		4.00	3.33	3.00	3.67
Std. Deviation		0.55	0.93	0.90	0.70
Skewness		-0.06	-0.66	-0.29	-1.00
Std. Error of Skewness		0.25	0.25	0.25	0.25
Kurtosis		-0.42	-0.57	-1.14	0.05
Std. Error of Kurtosis		0.50	0.50	0.50	0.50
Minimum		3.00	1.00	1.33	2.00
Maximum		5.00	4.33	4.00	4.33
Percentiles	25	3.67	2.33	2.00	3.33
	50	4.00	3.33	3.00	3.67
	75	4.25	3.67	3.33	4.00
		Factor 5: Employee Motivation	Factor 6: Employee & Stakeholder Engagement	Factor 7: Organisational Culture	
N	Valid	92	92	92	
	Missing	0	0	0	
Mean		3.55	3.94	3.43	
Median		3.67	4.00	3.50	
Std. Deviation		0.68	0.63	0.79	
Skewness		-0.15	-1.29	-0.28	
Std. Error of Skewness		0.25	0.25	0.25	
Kurtosis		-1.23	2.71	-0.94	
Std. Error of Kurtosis		0.50	0.50	0.50	
Minimum		2.33	2.00	1.60	
Maximum		4.67	5.00	4.60	
Percentiles	25	3.00	3.67	2.80	
	50	3.67	4.00	3.50	
	75	4.00	4.33	4.20	