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Impact of the Project Manager's interpersonal skills to Wärtsilä Marine Solutions customer delivery project success

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Tämän tutkimuksen tavoitteena oli selvittää organisaation ilmapiirin rooli projektipäälliköiden ihmissuhdetaitojen ja projektin menestyksen väliseen suhteeseen. Viime vuosina monet tutkijat ovat tunnustaneet projektipäälliköiden ihmissuhdetaitojen keskeisen roolin projektien menestyksessä. Lisäksi on ilmennyt tarvetta tutkia, miten organisaation ilmapiiri voi vaikuttaa projektin menestykseen.

Tietojenkeruu suoritettiin jäsennellyn web-pohjaisen kyselylomakkeen avulla, johon vastasi 253 henkilöä tutkitun yrityksen projektinhallintaosastolta. Kysymykset liittyivät tutkittavien henkilökohtaiseen näkemykseen, projekteihin, asiantuntemukseen ja organisaatioon. Vastaukset analysoitiin käyttämällä useita regressioanalyyssejä.

Ensinnäkin tämä tutkimus osoitti, että kunkin tunnistetun projektipäällikön ihmissuhdetaitojen ja projektin menestyksen välillä on tilastollisesti merkitsevä positiivinen suhde. Toiseksi tämä tutkimus osoitti, että projektin organisaation ilmapiirillä on tilastollisesti merkitsevä positiivinen vaikutus välittäjänä yhden tunnistetun projektipäällikön ihmissuhdetaidon ja projektin menestyksen välillä.

Tutkimus osoittaa myös, että organisaatioympäristössä esiintyy erilaisia ilmapiirejä ja että projektipäälliköiden ihmissuhdetaidot voivat vaikuttaa organisaation ilmapiiriin. Yhdessä aiempien tutkimusten kanssa tämä viittaa siihen, että tutkijoiden ja ammattilaisten olisi tarpeen huomioida organisaation ilmapiirin merkitystä ihmissuhdetaitojen ja projektin menestyksen väliseen suhteeseen.

Avainsanat	Ihmissuhdetaidot, organisaation ilmapiiri, projektin menestys, projektinhallinta, projektipäällikkö
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ABSTRACT

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The objectives of this study were to ascertain role of organizational climate on the relationship between project managers' interpersonal skills and project success. In recent years, many researchers have come to recognize the important role interpersonal skills of project managers play in project success. In addition, there have been calls for research into how organizational climate can affect project success.

Data was collected through a structured web-based questionnaire with response from 253 individuals in the company's project management department associated with projects representing themselves, their project, their expertise, and their organization. The responses were analysed using multiple regression analysis.

First, the results of the study indicated that a statistically significant positive relationship exists between each of the identified project manager's interpersonal skills and project success. Secondly, this study confirmed that a mediating effect of project organizational climate exists in the associations between the communications skills aspect of project manager's interpersonal skills and project success.

The study also shows that different types of organizational climates exist in project environment, and that project managers' interpersonal skills can influence the organizational climate. Coupled with previous studies, this suggest the need for both researchers and practitioners to explore the role of organizational climate plays in the relationship between interpersonal skills and project success.

Keywords	Interpersonal skills, organizational climate, project success, project management, project manager
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LIST OF ABBREVIATIONS

APM = Association of Project Management

BoK = Body of Knowledge

IPMA = International Project Management Association

IPS = Interpersonal skills

IQ = Intelligence quotient

ISO = International Organization for Standardization

MRP = Material Requirements Planning

OC = Organizational climate

PDM = Product Data Management

PM = Project Manager

PMBOK = Project Management Body of Knowledge

PMI = Project Management Institute

PS = Project success

SPSS = Statistical Package for the Social Sciences

TV = Television

UK = United Kingdom

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1 INTRODUCTION

The importance of interpersonal skills to achieve project success is on the increase, as the research and reviews on various standpoints of project management, from evaluation of BoKs, project manager competencies (Ireland 2004), leadership styles (Turner & Muller 2005) to project critical success factors (Azim, Gale, Lawlor-Wright, Kirkham, Khan & Alam 2010), reveal the importance of interpersonal skills in one way or the other. “The Human Resources Glossary” even limits the definition of soft skills to interpersonal skills (Tracey 2004). Our work is increasingly complex, often relying on new and unproven technologies and requiring greater interaction with an increasingly large number of stakeholders, many of whom may not be identified until the later stages of our work and it requires solid interpersonal skills to succeed with the aforementioned matters (Levin 2010). As stated by the project management organizations director (i.e. research owner) the possible technical issues in the project will be forgotten by the customer over time but they do not forget if they were treated badly as persons by the project manager or by any other person in the project and this is well in line with the statement by Levin (2010) that projects are technical problems with significant human dimensions.

The role of a project manager is generally taken to be the person accountable for delivering a project safely, on time, within budget and to the desired performance or quality standards determined by the client. The implication is that a project manager not only manages their team, but leads the team: leading by example, by gaining the trust and respect from their team through motivating, coordinating and maintaining morale (Somerville, Craig & Hendry 2010). As a result, project manager must exhibit and excel in interpersonal skills to lead the people in the project since it is the people who deliver successful projects and not just the application of methods and tools (Azim et al. 2010). Thus, highlighting the importance of interpersonal skills as imperative for project success as contended by Halstead (1999, p. 4): “Whilst a project manager must focus on the task, real success comes from knowing how to get things done through others. Whilst some may see managing the human issues within a project, as a soft option. It is neither soft, nor an option, if a project manager wants the project to succeed”.

Furthermore, companies are striving to recruit and retain good quality leaders capable to create a positive organizational climate. In a positive organizational climate, individuals are motivated, satisfied, have high expectations and are committed towards their company

and its mission. Organizational climate is about how employees perceive their work environment and how the latter makes them feel (Maamari & Majdalani 2017). Thamhain (2004) argued that effective team leaders are social architects who understand the interaction of organizational and behavioral variables and can foster a climate of active participation, accountability and result-orientation. However, despite the importance of organizational climate to contribution by people in project organization, there is a lack of research attention to understand the organizational climate role in the relationship between a project manager's interpersonal skills and project success as well as the project manager's affection to organizational climate using interpersonal skills.

Project success is a multi-dimensional and networked construct. Project success is impacted through the interactions of personal, project, team, and organizational success. Project success is influenced by competences and quality of team work, but also project scope, cost, and time management. Perceptions of success and the related importance of success dimensions also differ by individual personality, nationality, project type, and contract type. To a great extent, project success continues to be "in the eyes of the beholder" (Muller & Judgev 2012). For the project manager, interpersonal issues can hinder project success, especially in terms of meeting the project's schedule and budget. They can also jeopardize achieving customer satisfaction with the project's scope and quality requirements (Levin 2010).

However, regardless of the project manager's experience, knowledge, project type and organizational climate, practitioners realize and stress the importance of the project manager's interpersonal skills to project success as reflected in the results presented in this thesis.

1.1 Research problem

In Wärtsilä Marine Solutions customer delivery projects today, the scope of the projects contains typically four to five main products plus the auxiliary system products. This means many projects have team members from several different organizations and cultures which sets requirements for the project manager to manage and work with different types of people having different kinds of backgrounds to deliver projects successfully to customers. To meet this challenge the project manager is expected to have a good interpersonal skills as the interpersonal skills for project success is acknowledged as being as

important as the "hard" skills of managing project triple constraints (Schedule, Cost, Scope) in several research studies as already stated in chapter 1.

Multiple matters which relate to interpersonal skills are stated by the customers as the primary reason for the score they've given to Wärtsilä Marine Solutions in the customer satisfaction survey, in which the following matters were rated: cooperation, commitment, follow-up, late/poor response, slow response and feedback, communication, information of changes. It is assumed that if the project manager can develop his/her interpersonal skills it will contribute to a better project outcome, and to a better project organizational climate which will promote project success and higher customer satisfaction.

1.2 Research objectives and questions

The general objectives of this survey research are to ascertain the impact of the project manager's interpersonal skills (communication, relationship, cross-cultural, emotional intelligence) on project success while concurrently ascertaining the impact of project organizational climate as mediator variable between the project manager's interpersonal skills (communication, relationship, cross-cultural, emotional intelligence) and project success in context of the company where the research was conducted.

Moreover, this research study will assess the knowledge of the project manager's most critical interpersonal skills and the combinations affecting the project success positively. The output obtained from this research will also provide in-depth information for the interpersonal skills competence observing in the recruitment process of project team members as well as with training need planning.

This research intends answering the following questions:

- *What is the impact of the project manager's interpersonal skills on the project success?*
- *What is the mediator role of organizational climate in the relationship between the project manager's interpersonal skills and the project success?*

1.3 Structure of the thesis

To get an in-depth understanding of the research topic and to form a basis for the empirical part of the research, chapter 2 provides a theoretical review related the topic. Chapter 2 presents the key features of project management, interpersonal skills, organizational climate, project success, and project manager.

Chapter 3 introduces the research setting, collection of the data, methods that are used in the research and additionally presents the research data analysis process.

Chapter 4 focuses on the empirical analysis and results of the thesis.

The final chapter, chapter 5, provides the conclusion to the thesis by connecting the theoretical and empirical parts. Furthermore, it discusses some suggestions and recommendations for future research related to the topic as well as explains the limitations of the research.

2 LITERATURE REVIEW

The literature review about the topic includes five parts: project management, interpersonal skills, organizational climate, project success, and project manager. The first chapter provides the literature view and definitions of project management. The second chapter is about interpersonal skills and is divided into four subsets: interpersonal communication skills, relationship skills, cross-cultural skills, and emotional intelligence skills.

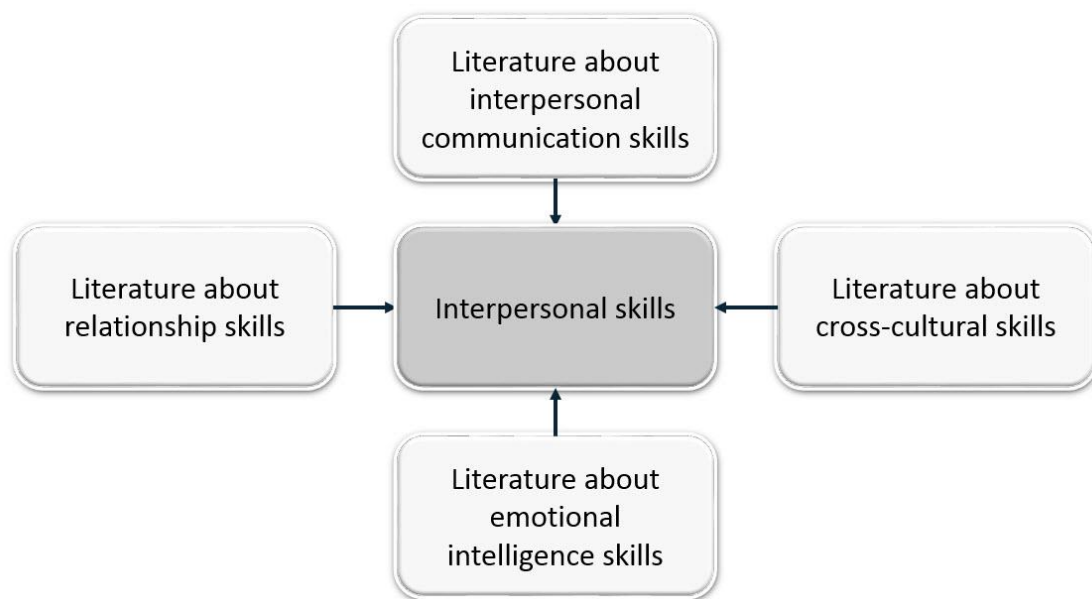


Figure 1. Literature review about interpersonal skills.

The third chapter is about organizational climate, the fourth chapter about project success, and the final chapter is about the project manager.

2.1 Project Management

The growth and recognition of project management has changed significantly over the past forty years, and these changes are expected to continue well into the twenty-first century, especially in the area of multinational project management. This is also well found in the latest PMI Job Growth and the Talent Gap 2017 – 2027 report points out that through to 2027, the project management-oriented labor force in seven project-oriented sectors is expected to grow by 33 percent, which equals nearly 22 million new jobs. According to PMI Job Growth and the Talent Gap 2017 – 2027 report by 2027, employers will need nearly 88 million individuals in project management-oriented roles. China and

India will represent more than 75 percent of the total project management-oriented employment (Project Management Job Growth and Talent Gap 2017 – 2027).

To support the resulting need for the development of competent project managers (PMs), over time, professional bodies such as the International Project Management Association (IPMA) and the Project Management Institute (PMI), respectively created in 1965 and 1969, have established standards and related professional certification systems (IPMA framework since 1987, and PMP®, since 1984). This is evidenced in the exponential growth in the number of certified project managers (PMs - IPMA Certification Yearbook, 2016; PMI Today, September 2017). Standards and credentials supported by professional bodies are developed based on identified ‘best practice’ within the profession.

Standards relating to aspects of project management competence fall into two main areas:

- what project managers are expected to know, represented by project management body of knowledge guides
- what project managers are expected to be able to do, which primarily take the form of performance based or occupational competency standards.

The classical view of standardization is exemplified by the International Organization for Standardization (ISO). Both PMI and IPMA are aligned with ISO, respectively through the development of PMBOK® Guide 5th edition, ANSI/PMI 99-001-2013, ISO 21500, and ISO/TC2583 for PMI and ISO/ TC 258 Project, Program, and Portfolio Management, and ISO/TC 176/SC 2 Quality Systems standards for IPMA 4.

Project Management is the application of knowledge, methods, tools, techniques, and competences to a project to meet the requirements and achieve goals. It is managed through processes including the integration of the different phases or subcomponents of the project lifecycle. Benefits of effective project management for the organization and stakeholders are for instance a greater likelihood of achieving the goals, ensuring efficient use of resources, satisfying the differing needs of the project’s stakeholders by delivering value to them and organization (Project Management Institute 2013; IPMA 2016).

As per PMI the project management is accomplished through integration of the 47 logically grouped project management processes being categorized into five process groups,

namely: Initiating, planning, executing, monitoring and controlling, and closing. These process groups are overlapping activities that occur throughout the project. Figure 2 illustrates how the process groups interact and shows the level of overlap at various times and if project is divided into phases, the process groups interact with each phase.

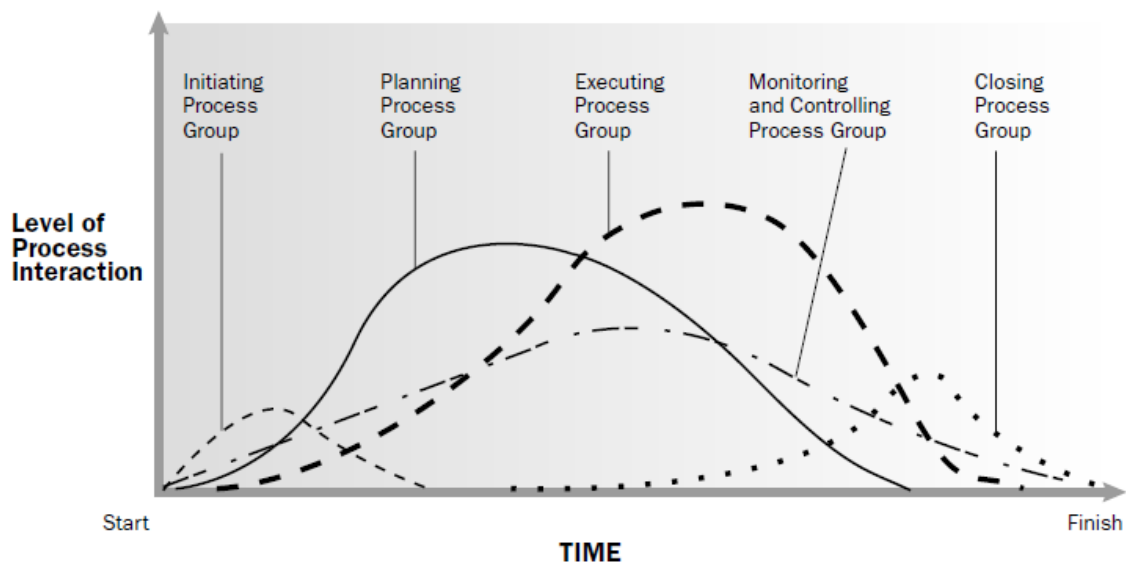


Figure 2. Process Groups Interact in a Phase or Project.

Kerzner (2013) claims that to understand project management, it is a must to begin with the definition of a project. According to him a project can be considered to be any series of activities and tasks that:

- Have a specific objective to be completed within certain specifications
- Have defined start and end dates
- Have funding limits (if applicable)
- Consume human and nonhuman resources (i.e., money, people, equipment)
- Are multifunctional (i.e., cut across several functional lines)

To put it in one sentence Kerzner (2015) has used following definition of a project: “A collection of sustainable business value scheduled for realization”. This definition is more supporting customer centricity and path to long-term success by highlighting the importance of continuous business after the project completion when compared to the PMBOK Guide definition of a project which is still lacking the importance of project result contribution to business continuation and sustainability after the project completion. The PMBOK Guide definition of a project is: “A temporary endeavour undertaken to create a unique product, service or result” (Project Management Institute 2013).

Burke (1999) considers project management to be a specialised management technique, to plan and control projects under a strong single point of responsibility. This is also an interesting view and highlights one important aspect in project management which is the importance of having clear responsibilities and ownerships clarified in the project to support decision making, communication and assignments in the project.

In addition, many companies have started to define by themselves different kinds of project definitions and criteria which need to be fulfilled in order to distinguish a project from routine operations and tasks.

Regardless of multiple different project management definitions in the literature it is difficult to define project management, Wirth and Tryloff (1995) indicated the differences in content between six countries' own versions of BoK's. Turner (1996) provided a consolidated matrix to help understand and moderate different attempts to describe project management, including the assessment. Turner (1996) further suggested that project management could be described as: "the art and science of converting vision into reality".

It also needs to be recognized that the project management applications do differ per project industry. For instance, international development projects in which for example financing and services are provided to low and middle-income countries to support development and change are having different kinds of procedures and stages in the project compared to standard projects which are mainly in the construction and IT sector.

For example, the World Bank project cycle is the framework used to design, prepare, implement, and supervise projects. The duration of the project cycle is long by commercial standards and it is not uncommon for their project to last more than four years; from the time it is identified until the time it is completed. A World Bank project consists of six stages: Identification, preparation, appraisal, negotiation/approval, implementation/support, completion/evaluation. (World Bank 2018).

2.2 A Project Manager's interpersonal skills

The importance and awareness of interpersonal skills for project managers has been on constant ascendance and much attention for interpersonal skills has been given in the researches (Klein, DeRouin & Salas 2006; Azim et al. 2010; Levin 2010; Fisher 2010; Brenton & Levin 2012). This can also be seen in the fifth edition of Project Management

Body of Knowledge (PMBOK) in which a new section was added to address the importance of interpersonal skills of a project manager (Project Management Institute 2013).

Especially interest towards project managers' interpersonal skills contribution to the overall success of the projects (Azim et al. 2010; Fisher 2010; Levin 2010; Bértholo 2012) has been on the rise even though not remarkable amount of scientific literature exists. Azim et al. (2010) underline the importance of "people" not only as factor attributing to project complexity, but also as a key element to project success, thus highlighting the benefits of soft skills in effective project management.

The term *interpersonal skill* is defined by several ways in scientific literature.

The PMBOK describes interpersonal skills, sometimes known as "soft skills," as behavioural competencies that include proficiencies such as communication skills, emotional intelligence, conflict resolution, negotiation, influence, team building, and group facilitation. PMBOKs definition of interpersonal skills is ability to establish and maintain relationships with other people. (Project Management Institute 2013).

Klein et al. (2006) stated that, in general, interpersonal skills may be described as the skills employed when persons interact with one other. According to them the interpersonal skills label is "an umbrella term that refers to a wide variety of concepts and associated terms, such as social skills, social competence, people skills, face-to-face skills, human skills, and soft skills" (p. 81).

Interpersonal skills are many times seen as one of the leadership sets. Interpersonal skills include being able to deal with people of different backgrounds, which means the skill of developing relationships with different kind of people when needed. Interpersonal skills also involve persuading, motivating, and incentive skills. Persuading skills refer to persuading and influencing others to support you in realizing the objectives of the project. Motivating and incentive skills refer to carrying out special strategies to motivate team members to work hard by identifying their feelings, needs, and expectations (Shi & Shen 2006; Brenton & Levin 2012).

However, there is a need to use different interpersonal skills in different situations, project stages as well with different kind of people considering the different personality traits (Klein et al. 2006; Goleman 2010; Levin 2010). As looked by Levin (2010) the five stages

of the Tuckman team development model correspondence to the Project Management Institute's (PMI) five life cycle stages for projects shows that specific people skills are required in different stages, some skills are more heavily relied on in one stage than in another, and some are more essential in co-located or in virtual environment.

It is also worth to mention and consider the interpersonal issues in the digital age as described by Levin (2010) that to work effectively with people over time, you need to stay abreast with changes in society. Tapsott (1988) describes the digitally based culture in which today's young people are growing up. The upcoming generation will for example be motivated by immediate experiences and the acquisition of knowledge. Levin (2010) continues that as a project professional, you should continue developing interpersonal skills that will enable you to keep up with these changes in priorities and values in an era dominated by technological advancement for which the primary people skills such as embracing intellectual and cultural diversity without feeling threatened should continuously be honed.

In this chapter I would like to quote Maya Angelou, who was an American poet, singer, memoirist, and civil rights activist, who said that: "I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel". This excellently refers to what interpersonal skills are about as with interpersonal skills we can precisely contribute to the feelings of the people.

For the purposes of this research and due to the suitability to the research organization, four specific categories of project managers' interpersonal skills were considered, and these were also prioritized by the key persons from the research organization: interpersonal communication skills, relationship skills, cross-cultural skills, and emotional intelligence skills. It is acknowledged that there are several other important interpersonal skills required in general by the project manager, such as problem solving skills, decision-making, resolving conflicts, and coping with critical incidents. It is crucial that when above listed things happen, then they will be solved fast and in a controlled manner. However, those things are not constant, i.e. do not occur all the time and hence are not ongoing matters or requirements like the selected interpersonal skills for this research. Communication and relationships with stakeholders are ongoing key processes during the project for project managers'. Emotional intelligence and cross-cultural skills are required to support competent communication as well as to ensure successful relationships.

2.2.1 Interpersonal communication skills

Interpersonal communication skills are a set of abilities needed in the interpersonal exchange of information; a two-way exchange requiring skill in both expressing and assimilating information. They not only involve listening, speaking, writing, and sending/receiving nonverbal signals, but doing so empathetically, attentively, responsively, directly, and confidently during the social interaction (Hutchins, McDermott, Carolan, Gronowski, Fisher & DeMay 2013). Hutchins et al. (2013) identified 7 different interpersonal communication skills; active listening, oral communication, written communication, assertive communication, nonverbal communication, informing, and information gathering.

According to Levin (2010) key interpersonal communication skills include the ability to:

- Use concrete communication skills, which can serve as the “nuts and bolts” of an effective discussion
- Identify and appreciate individual differences among stakeholders
- Pay attention to the tone and texture of the communication
- Recognize communication stoppers

An ability by the project manager to adapt his/her style of communication when interacting with stakeholders, depending their personalities and specific interests and influence the program or project, is important for the people performance and project result (Levin 2010; Clarke 2010).

In Fisher’s (2010) research effective communication scored high amongst the practitioners. They considered that project managers need to spend more time talking to others informally if they really wish to find out how others really feel, for example, about the project, the project manager or other team members. To just talk and communicate well is not sufficient. Active listening is part of effective communication. Azim et al. (2010) also state that effective communication helps to achieve interpersonal acceptance, enhances team work and team motivation.

Good communication equals in importance to reliable behavior as well as is crucial for trust and communication contributes to learning, for instance, how other people react, and this is also the foundation for trust or distrust (Karlsen, Græe & Massaoud 2007). These are supported by Brændshøi (2001), who states: “communication is timely, accurate and

relevant information, and it is important for project success". Further, Karlsen's et al. (2007) findings are in accordance with another case study conducted by Lander et al. (2004), in which they also found that communication was concluded as the most important trust-building mechanism. Karlsen et al. (2007) argue that good communication is closely linked to information exchange.

2.2.2 Relationship skills

Relationship building skills are the set of abilities needed to develop and maintain bonds with others, relate to and support others, foster ongoing relationships, and build strong beneficial alliances (Bowden, Laux, Keenan & Knapp 2003; Carpenter & Wisecarver 2004; Klein et al. 2006; Phelps 2009). These skills are imperative for team performance. Beyond the forming of interpersonal associations, relationship building skills also involve the management and resolution of conflicts and getting to get what you want from others (Fisher, Ury, & Patton 1991; Green 2010; Montgomery 2007).

Kets de Vries (2001) suggests that the well-functioning of the individual should be high on managers' agendas. He considers that behaviour is observable and that managers need to display open and authentic or genuine behaviours if they wish to build long-lasting relationships with their project teams. Managers need to build an understanding of what it is that makes the other person tick or what is important to them. He refers to this as authentizotic behaviour.

Levin (2010) argues that maintaining effective and positive relationships with stakeholders at all levels is essential for success in portfolio, program, and projects management. These relationships can either positively or negatively affect the program or project. She continues that to succeed as a project manager, the manager must have an orientation toward people, not just toward tools and techniques ("applying tools and techniques is the responsibility of team members"). The manager is the one who pulls everyone together to work effectively and who takes the high road even, for example, when a stakeholder makes negative comments about the project.

To unite team members with diverse views, Levin (2010) lists many different interpersonal skills the project manager must use, such as be able to sense stakeholder's attitudes toward the project, identify stakeholders needs, look at issues from the other person's

point of view, actively listen when meeting with stakeholders at all levels, and speak clearly and concisely in terms each stakeholder can understand.

The research study by Meng and Boyd (2017) provides evidence for the change in construction from traditional project management that concentrates on planning and control to new project management that highlights the importance of people and working relationships. They concluded that to maintain good relationships in the project it is crucial to resolve problems, conflicts, and disputes in fastest possible manner and at the lowest possible level. Additionally, from the effort and continuation point of view it is critical for project managers to maintain relationships unbroken with the stakeholders as it requires huge effort to restore them.

2.2.3 Cross-cultural skills

Trompenaars and Hampden-Turner (1993, 1997) consider that understanding different cultures is an important people skill. According to them, managers need to understand the values and beliefs people from different cultures hold, why this is the case and what the direct impacts are on their behaviours in certain, for example, work situations. Project managers need to understand that what works well in one culture, does not necessarily work equally well in another culture. This was also highlighted by Fisher (2010) who states that not all people skills will necessarily be applicable and effective in all projects anywhere in the world. Different cultures place different values on, for example, what is important to them.

Trompenaars and Hampden-Turner (1993, 1997) suggest that managers need to develop an understanding what the various trends, sequences and traditions are for the people they work with to manage people effectively at an international level. This is an important consideration as businesses increasingly operate at a global level, many times stretching their business activities beyond the borders of many countries simultaneously.

Fisher (2010) developed the following six specific people skills and associated behaviors with regards the cultural awareness through a research result. Develop, display and apply an awareness of the cultural differences of team members. Show an understanding and knowledge of the values and beliefs of other cultures. Adapt some of other people's own home country behaviours appropriate to the situation when managing people from diverse

cultures. Adopt cultural awareness behaviours to effectively manage people in their projects. Show an open optimism about cultural differences and show views that confirm that you see cultural diversity as an enhancement to your own values and beliefs.

More and more businesses operate at a truly global level. Project teams are no longer made up of nationals from just one country. It is quite common that global project teams have nationals from several countries as serving project team members (Trompenaars and Hampden-Turner 1993, 1997; Fisher 2010; Levin 2010).

It is therefore essential that project managers have a better and deeper understanding of the values and beliefs people from other countries hold if they wish to deliver their projects successfully in these working environments. Effective people project managers show an open optimism about cultural differences and show views, through their behaviours, that they see cultural diversity as an enhancement of their own values and beliefs. They adapt their own home country behaviours when managing people from diverse cultures. Cultural awareness skills and behaviours are an important part of the repertoire of skills and behaviours that make an effective people project manager (Fisher 2010).

Cross-cultural diversity can lead to more effective decisions and creative ways to resolve conflicts as well as to continue team building throughout the project life cycle. Diversity introduces also motivational challenges and therefore it is important that the individual differences of each team member are known, hence the project manager can consider how to best motivate and work with the team members with different backgrounds (Levin 2010).

2.2.4 Emotional Intelligence skills

The interest of emotional intelligence is a rather recent phenomenon, however it is surprising that the importance of emotionally associated abilities or skills in project management was recognized over three decades ago. Hill (1977) identified how high-performing project managers were more likely to adopt greater listening and coaching behaviours, as well as facilitate openness and emotional expression.

The term “emotional intelligence” was adopted in 1990 by John Mayer and Peter Salovey from Yale University, who have subsequently developed the concept of personal intelligences. Definition offered by them is stating that emotional intelligence is the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions (Salovey & Mayer 1990).

In the view by Petrovici and Dobrescu (2013), emotional intelligence involves passing from a unipersonal to a bipersonal perspective, from inner abilities of knowing one’s own person to interpersonal skills transposed in interaction. The ability to understand emotions and to act wisely in interpersonal relationships so as to contribute to developing communication skills and harmonious relationships constitutes, which they believe, reference points. “Know thyself!” finds its applicability in this case by the (self)control of feelings and adjusting them to the context, with the final purpose of knowing others and interacting positively, to the benefit of efficient communication.

In Goleman’s view, the constructs of emotional intelligence are related to the ability to manage ourselves and our relationships effectively—consists of four fundamental capabilities: self-awareness, self-management, social awareness, and social skill. Each capability, in turn, is composed of specific sets of competencies. Table 1 below shows in detail the fundamental emotional intelligence capabilities and their corresponding traits (Goleman 2010).

Self-Awareness	Self-Management	Social Awareness	Social Skill
<ul style="list-style-type: none"> • <i>Emotional self-awareness</i>: the ability to read and understand your emotions as well as recognize their impact on work performance, relationships, and the like. • <i>Accurate self-assessment</i>: a realistic evaluation of your strengths and limitations. • <i>Self-confidence</i>: a strong and positive sense of self-worth. 	<ul style="list-style-type: none"> • <i>Self-control</i>: the ability to keep disruptive emotions and impulses under control. • <i>Trustworthiness</i>: a consistent display of honesty and integrity. • <i>Conscientiousness</i>: the ability to manage yourself and your responsibilities. • <i>Adaptability</i>: skill at adjusting to changing situations and overcoming obstacles. • <i>Achievement orientation</i>: the drive to meet an internal standard of excellence. • <i>Initiative</i>: a readiness to seize opportunities. 	<ul style="list-style-type: none"> • <i>Empathy</i>: skill at sensing other people's emotions, understanding their perspective, and taking an active interest in their concerns. • <i>Organizational awareness</i>: the ability to read the currents of organizational life, build decision networks, and navigate politics. • <i>Service orientation</i>: the ability to recognize and meet customers' needs. 	<ul style="list-style-type: none"> • <i>Visionary leadership</i>: the ability to take charge and inspire with a compelling vision. • <i>Influence</i>: the ability to wield a range of persuasive tactics. • <i>Developing others</i>: the propensity to bolster the abilities of others through feedback and guidance. • <i>Communication</i>: skill at listening and at sending clear, convincing, and well-tuned messages. • <i>Change catalyst</i>: proficiency in initiating new ideas and leading people in a new direction. • <i>Conflict management</i>: the ability to de-escalate disagreements and orchestrate resolutions. • <i>Building bonds</i>: proficiency at cultivating and maintaining a web of relationships. • <i>Teamwork and collaboration</i>: competence at promoting cooperation and building teams.

Table 1. Fundamental emotional intelligence capabilities and their corresponding traits.

Unlike IQ, which is largely genetic—it changes little from childhood—the skills of emotional intelligence can be learned at any age. It is not easy, however. Growing your emotional intelligence takes practice and commitment. But the payoffs are well worth the investment (Goleman 2010). This is well proven also in the research results by Clarke (2010) that emotional intelligence abilities and empathy offer a means to further explain aspects of individual differences between project managers that can influence their performance in projects.

According to Stein and Book (2003), emotional intelligence designates the ability to perceive emotions, to access and generate emotions so that these support thought, to understand emotions and their meaning and to efficiently regulate emotions so as to improve emotional and intellectual evolution.

2.3 Organizational climate

Organizational climate is “a broad class of organizational, rather than psychological, variables that describe the organizational context for individuals’ actions” (Glick 1985, p. 613). Organizational climate is the property of individuals and refers to how everyone in an organization generally perceive the organization. However, since the composition of multiple individual viewpoints require some level of agreement, an organizational climate does not exist if people substantially differ in the way they perceive organizational characteristics (Glick 1988). Maamari and Messarra (2012) theorized organizational climate

as a psychological tool that focuses on individuals and tries to understand their cognitive development and behaviour. Therefore, it could be used as a management technique that enable understanding of the way employees view their working environment.

Alipour (2011) defines organization as a social system inside which a group of people with different mental, economic, social and cultural backgrounds work together to achieve common goal(s). An organization is a living and changing system with different structural and human dimensions. There are different forces in the organization causing effect on each organizational structure simultaneously. “The organizational climate is one of the significant characteristics in any systematic human complex and measuring it helps to the better conception of various and effective forces of any organization” (Alipour 2011).

Organ, Podsakoff and MacKenzie (2006) believe that “organizational climate is an important organizational concept and that scientific and careful study of it while specifying the major factors that constitute this concept, both increases the effectiveness of the organization and facilitates organizational goals.” Halpin and Croft (1963) suggest that organizational climate is the very personality of the organization.

The leaders who are capable to create a positive organizational climate are expected to have emotional intelligence traits that allow them to better handle themselves and their team members. In a positive organizational climate, individuals are motivated, satisfied, have high expectations and are committed towards their company and its mission (Maa-mari & Majdalani 2017). Organizational climate is about how employees perceive their work environment and how the latter makes them feel (Litwin & Stringer 1968).

James and Jones (1974) modelled three approaches to the definition and measurement of organizational climate: multiple measurement-organizational attribute, perceptual measurement-organizational attribute, and perceptual measurement-individual attribute. According to James and Jones the multiple measurement-organizational attribute approach regards organizational climate is a set of organizational attributes or main effects measurable by a variety of methods. Variables constituting organizational climate include size, structure, systems complexity, levels of authority, etc. The perceptual approach to organ-

izational climate has seemingly generated the greatest amount of research. A major significant contribution to the area of organizational climate was made by Litwin and Stringer (1968) and their research was significant on both theoretical and practical grounds. Litwin and Stringer (1968, p.1) defined organizational climate as “a set of measurable properties of the work environment, perceived directly or indirectly by people who live and work in this environment and assume to influence their motivation and behaviour”. Their theoretical view of climate is one that is most generally referred to different researchers. The 50 item Litwin and Stringer (1968) questionnaire consists of nine separate priori scales; structure, responsibility, reward, risk, warmth, support, standards, conflict, identity.

According to Randhawa and Kaur (2015) a positive organizational climate results in better relationships between the management and the employees, which in turn, result in encouraging the employees to engage in performing beyond their job and it is evident that the organizations which develop “organizational citizens” have a significantly better chance to combat the current competitive storm.

As analysed by Goleman (2010) the organizational climate has a significant influence on financial results such as revenue growth, profits and return on sales of the organization and can account for nearly a third of financial performance which is simply too much of an impact to ignore. Organizational climate, in turn, is influenced by leadership style—by the way that managers motivate direct reports, gather and use information, make decisions, manage change initiatives, and handle crises. The managers’ basic leadership styles, each deriving from different emotional intelligence competencies, work best in particular situations, and affect the organizational climate in different ways; 1. The coercive style, 2. The authoritative style, 3. The affiliative style, 4. The democratic style, 5. The pacesetter style, 6. The coaching style. Goleman (2010) found that all six leadership styles have a measurable effect on each aspect of climate and of which the authoritative leadership style has the most positive effect on climate but three others: affiliative, democratic, and coaching follow close behind. Leaders who used styles that positively affected the climate had decidedly better financial results than those who did not.

Even though there are several organizational climates that have been introduced in the literature, the foundational climate for trust, with its facilitation of adaptability and coordination among organization members (Carroll, Gormley, Bilardo, Burton & Woodman

2006; Collins & Smith 2006), is especially of importance as trust is generally acknowledged as a fundamental element of working relationships in both intra- and inter-organizations (Wong, Then & Skitmore 2000; Meng 2015). According to Poon (2003, p. 142) climate for trust, refers to the extent to which members within the organizational social system “have positive expectations regarding the motives, intentions, and prospective actions of other members”.

2.4 Project success

A major concern of the field of project management and a recurring theme in the literature, is that of project success. There are two major stands to this concern – how success is judged (success criteria), and the factors that contribute to the success of projects (success factors). Closely associated with this is concern for the competence of the project manager. On the one hand, the competence of the project manager is in itself a factor in successful delivery of projects and on the other, the project manager needs to have competence in those areas that have the most impact on successful outcomes (Lynn 2000).

To continue, there are several different standpoints on project success and one of the reasons for the interest in success is evident in Pinto and Slevin’s (1988b) article on the definition and measurement of project success: “There are few topics in the field of project management that are so frequently discussed and yet so rarely agreed upon as that of the notion of project success” (Pinto & Slevin 1988b, p. 68).

One generally quoted and high-level of agreement received definition of project success amongst researchers is the definition provided by Baker, Murphy and Fisher (1988, p. 902), that project success is a matter of perception and that a project will be most likely to be perceived to be an ‘overall success’ (Baker et al.1988) if: ...”the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort” (p. 902)

Based on Flannes and Levin (2001) the project success is stated in terms of five factors, and which all requires a project manager with effective people skills:

1. Completed on time
2. Completed within budget
3. Completed at the desired level of quality

4. Accepted by the customer
5. Resulted in use of the customer as a reference

For the project success factor criteria Pinto and Slevin (1987) are the most widely recognised authors for producing the ten success factors list shown in Table 2.

Success factor	Description
1. Project mission	Clearly defined goals and direction
2. Top management support	Resources, authority and power for implementation
3. Schedule and plans	Detailed specification of implementation process
4. Client consultation	Communication with and consultation of all stakeholders
5. Personnel	Recruitment, selection and training of competent personnel
6. Technical tasks	Ability of required technology and expertise
7. Client acceptance	Selling of the final product to the end users
8. Monitoring and feedback	Timely and comprehensive control
9. Communication	Provision of timely data to key players
10. Trouble-shooting	Ability to handle unexpected problems

Table 2. Pinto and Slevin's (1987) success factor list.

Müller and Jugdev (2012) concluded that project success continues to be a fascinating word and it continues to have different meanings for different stakeholders in the project context. Further, they found that views on project success have changed over the years from definitions that were limited to the implementation phase of the project life cycle to current definitions that reflect an appreciation of success over the project and product life cycle.

PMBOK defines, due to the fact that projects are temporary in nature, that the success of the project should be measured in terms of completing the project within the constraints of scope, time, cost, quality, resources, and risk as approved between the project managers and senior management. According to PMBOK the communication is the single biggest reason for project success and the next most critical reasons are project scope statement, stakeholder identification and culture in light of globalization meaning multicultural competence becomes critical for the project manager (Project Management Institute 2013).

IPMA defines that “the individual collects, acknowledges, priorities and completes both formal and informal success criteria for the project”. According to IPMA that definition is more challenging than “to achieve goals and objectives within the agreed constraints (e.g. strategic goals, tactical and operational objectives), which IPMA claims is only part of it (IPMA ICB 2016).

The success criteria identified in the research by Andersen, Birchall, Jessen, and Money (2006) reflect the immediate short term, predefined project goals (completion on time and to budget) as well as the longer-term contribution to “organisational health” in the form of strategic and personal success as well as captured experience. However, project impact, is the strongest dimension representing the potential for the longer-term impact of the project endeavour. This criterion relates more to the extent to which the project contributes to achieving strategic aims and the project manager’s are then motivated for future projects. The three success criteria appear to offer a good balance between the predetermined intention, the immediate benefits of project success and the longer-term contribution to the health of the organisation. From their research, managerial ability to deliver appears strongly related to the application of strong project management based on planning and cost control methodologies, “hard skills”, whereas project impact as well as captured experience both benefit from rich project communications, a factor which is less based on project management methodologies and more dependent upon the application of “softer” skills.

Kerzner’s (2015) revised definition of project success is “achieving the desired business value within the competing constraints” instead of the traditional definition to complete the projects within the triple constraints of time, cost, and scope.

Investigation on project success by Müller and Jugdev (2012) indicates that project success is a multi-dimensional and networked construct. According to them project success is impacted through the interactions of personal, project, team, and organizational success. However, project success is not only influenced by competences and quality of teamwork, but also project scope, cost, and time management. Defining and measuring success lead to discussions on efficiency and effectiveness at the organizational, team, and individual levels. Perceptions of success and the related importance of success dimensions also differ by individual personality, nationality, project type, and contract type. Müller and Jugdev (2012) conclude that to a great extent, project success continues to be “in the eyes of the beholder” hence a universally accepted project success definition has not yet been established.

As a final note, even though a project would be a success it does not mean that the company is successful in its project management efforts. Excellence in project management is defined as a continuous flow of successfully managed projects. A project can be driven

to success through formal authority and strong executive meddling but in order for a continuous stream of successful projects to occur, it is vital that there exists a strong corporate commitment to project management, and this commitment must be visible (Kerzner 2013).

It can be clearly seen from the literature that even though many the different suggestions about what project success criteria are have been made, the criteria for success, namely cost, time and quality remain and are included in the actual description. It might be that Oisen (1971), referencing project management views from the 1950's, was either correct, or as a discipline, project management has not really changed or developed the success measurement criteria in almost 50 years.

2.5 Project Manager

A project manager is generally taken to be the person accountable for delivering a project safely, on time, within budget and to the desired performance or quality standards determined by the customer (Lynn 2000; Flannes & Levin 2001; Levin 2010; Sommerville et al. 2010). The project manager plays the most critical role for the success of any project (Yang, Huang & Wu 2010). The importance of the project manager's role for the project is highlighted also by the UK Association of Project Management (APM) in their definition for project management in the UK Body of Knowledge (BoK): "The planning, organisation, monitoring and control of all aspects of a project and the motivation of all involved to achieve the project objectives safely and within agreed time, cost and performance criteria. The project manager is the single point of responsibility for achieving this".

The old view of the project manager as a boss and "in control" has changed as today multiple roles are required from the project managers as they must be not only leaders but also managers, facilitators, and mentors. A project manager must be able to play those roles throughout the project life cycle to complete a project on time, within budget, according to specifications, and to the customer's satisfaction (Flannes & Levin 2001; Levin 2010).

The importance of being able to demonstrate exceptional people skills is highly required from the project manager. It is now considered more important for the project manager to understand the technology rather than to be a technical expert. The focus is on business

rather than technical objectives. Behavioral people skills are considered vital for project success (Flannes & Levin 2001). This is well supported by Kerzner's (2013) statement that "the days of the manager who gets by with technical expertise alone or pure administrative skills are gone". According to Kerzner (2013) the project manager must relate to the people to be managed, the task to be done, the tools available, the organizational structure, and the organizational environment, including the customer community. Also, the PMI research addresses that even though technical skills are core to project and program management, they are not enough in today's increasingly complex and competitive global marketplace. The ideal skill set — the Talent Triangle — is a combination of technical, leadership, and strategic and business management expertise (The PMI Talent Triangle®).

The project manager is responsible for coordinating and integrating activities across multiple, functional lines. The integration activities performed by the project manager include:

- Integrating the activities necessary to develop a project plan
- Integrating the activities necessary to execute the plan
- Integrating the activities necessary to make changes to the plan

These integrative responsibilities require project manager to convert the inputs (i.e. resources) into outputs of products, services, and ultimately profits. To do that, the project manager needs strong communicative and interpersonal skills, must become familiar with the operations of each line organization, and must have knowledge of the technology being used (Kerzner 2013).

As per PMI definition the role of the project manager is to lead the team that is responsible for achieving the project objectives. The project manager works closely and in collaboration with other roles, such as a business analyst, quality assurance manager, and subject matter experts. Project Managers have the responsibility to satisfy the needs: task needs, team needs, and individual needs. The following competencies are required from the project manager to obtain effective project management (Project Management Institute 2013):

- Knowledge – refers to what the project manager knows about the project management

- Performance – refers to what the project manager is able to do or accomplish while applying his or her project management knowledge
- Personal – refers to how the project manager behaves when performing the project or related activity. Personal effectiveness encompasses attitudes, core personality characteristics, and leadership, which provides the ability to guide the project team while achieving project objectives and balancing the project constraints.

As mentioned in the chapter 2.2 in the fifth edition of Project Management Body of Knowledge (PMBOK) a new section was added to address the importance of interpersonal skills of a project manager. Effective project managers require a balance of technical, interpersonal, and conceptual skills that help analyse situations and interact appropriately. PMI describes several interpersonal skills needs for the project manager, such as leadership, team building, communication, political and cultural awareness, coaching and trust building (Project Management Institute 2013).

Nowadays there are increasingly additional skills needed to be a global project manager. Some of the additional skills include managing virtual teams, understanding global cultural differences, working in an environment where politics can dictate many of the decisions, and working under committee governance rather than a single sponsor (Grisham 2010). With virtual teams organizations have the opportunity to build a 24/7 workforce which for project manager means that more key subject matter experts are available regardless of their location. For the project manager's this increasingly requires to work and deal with more people from different cultures who have different perspectives (Levin 2012).

The role of the project manager is pivotal in the future according to the PMI Job Growth and Talent Gap 2017 – 2027 report which states that newly created positions are expected to occur each year in project management-oriented industries in the 11 countries analysed and that project-related job growth is expected to be 33 percent collectively particularly as seasoned practitioners reach retirement age, is creating many project-related job openings. The factors by PMI Job Growth and Talent Gap report further reinforce the role of project manager's in driving change and innovation in the organizations they serve. Also, as earlier stated in this chapter the demand is high for project managers with the necessary mix of competencies i.e. a combination of technical and leadership skills plus strategic

and business management as depicted in the PMI Talent Triangle® (Project Management Job Growth and Talent Gap 2017–2027).

2.6 Theoretical framework

Based on the literature review the theoretical framework for this thesis was formed to investigate the project manager's interpersonal skills' impact on project success, and to project organizational climate. Further, project organizational climate impacts project success was investigated and moreover, the impact of the mediator role on organizational climate in the relationship between the project manager's interpersonal skills and project success was examined.

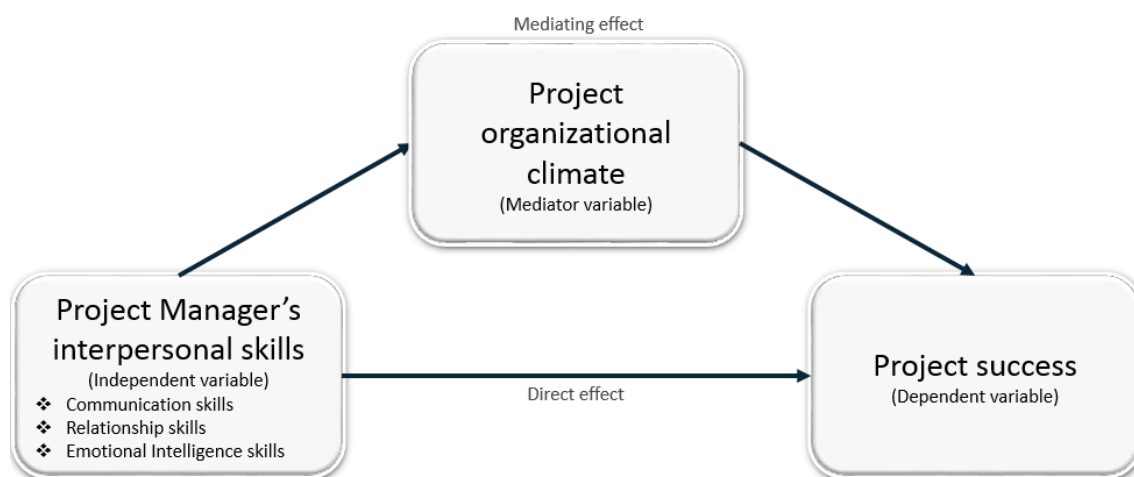


Figure 3. Theoretical model.

The above combination was based on the literature review seen as a strong foundation to achieve project success as well as to build lasting relationships with both the internal and external stakeholders supporting the future projects executions and business continuation.

2.6.1 Impact of the project manager's interpersonal skills to project success

The impact of project managers interpersonal skills to project success has during the recent years got increasingly attention within the project-based organizations in the different industries (Halstead 1999; Klein et al. 2006; Azim et al. 2010; Levin 2010; Fisher 2010; Brenton & Levin 2012). Especially in the industries in which the majority of people are having engineer education background the interpersonal skills have started to be realized for the project success and especially with the project manager's competence that it

is not only about technical skills anymore but more and more interpersonal skills are required to get along with different people from different backgrounds in the projects (Flannes & Levin 2001; Levin 2010; Kerzner 2013). The globalization of projects and companies and the increased scope of the projects has also given more importance for the interpersonal skills requirement for project managers. The work is increasingly complex when more products are in the project scope as then the more complex project gets, and the more interaction with large number of stakeholders are required and for which solid interpersonal skills by the project manager are required to succeed with the aforementioned matters for reaching project success (Levin 2010).

Based on the above discussion, the following hypotheses are presented:

H1a. The project manager's interpersonal communication skills will have positive relationship to project success.

H1b. The project manager's relationship skills will have positive relationship to project success.

H1c. The project manager's emotional intelligence skills will have positive relationship to project success.

2.6.2 Impact of the project manager's interpersonal skills to organizational climate

The project manager's who excellent in interpersonal skills, such as emotional intelligence, can build a positive organizational climate in which project team members are motivated, satisfied, have high expectations and are committed towards project goals. In other words, the better the project manager's interpersonal skills the more they are capable to develop a positive project organizational climate hence more significantly influence team members' motivation and behavior which promotes project success and moreover, enable project team members even to perform beyond their job (Litwin & Stringer 1968; Maamari & Majdalani 2011; Randhawa & Kaur 2015).

Based on the above discussion, the following hypotheses are presented:

H2a. The higher the interpersonal communication skills of the project manager, the higher the emphasis on organizational climate.

H2b. The higher the relationship skills of the project manager, the higher the emphasis on organizational climate.

H2c. The higher the emotional intelligence skills of the project manager, the higher the emphasis on organizational climate.

2.6.3 Impact of the organizational climate to project success

It is important how people feel about their organizational climate in the project in which they are involved as organizational climate is the property of individuals hence the better they perceive the organization the better psychological safety exist amongst the individuals which will enable better performance and outcome for the project (Glick 1988; Davidson 2003; Baer & Frese 2003; Maamari & Majdalani 2017). A climate for psychological safety is important as it support trustful interactions within the work environment. Trust is vital for relationships and work environment where employees are safe to speak up without being rejected or punished which positively impact team performance and project success (Baer & Frese 2003). In a positive organizational climate, individuals are motivated, satisfied, have high expectations and are committed towards their company and its mission (Maamari & Majdalani 2017). Better internal and external environments in organizational climate create more opportunities to improve project performance and achieve project success (Meng & Boyd 2017).

In this thesis, the organizational climate view and form developed by Litwin and Stringer (1968) was adapted. Their theoretical view of organizational climate is one that is most generally referred by different researchers. The 50 item questionnaire developed by them consists of nine separate a priori scales; structure, responsibility, reward, risk, warmth, support, standards, conflict, identity. Goleman (2010) found organizational climate has significantly impact to financial results and outcomes of different projects. He found that different leadership styles have a measurable effect on each aspect of climate and leaders who used styles that positively affected the climate had decidedly better financial results than those who did not.

However, as mentioned in the chapter 1, despite the importance of organizational climate to contribution by people in project organization, there is a lack of research attention to

understand the organizational climate influence on the relationship between project managers' interpersonal skills and project success as well as project managers' affection to organizational climate using interpersonal skills.

Based on the above discussion, the following hypothesis is presented:

H3. Organizational climate is positively associated with project success.

The above hypotheses advise that the organizational climate plays a mediating role in the relationship between the project manager's interpersonal skills and project success. In other words, organizational climate has an indirect effect on the project success through the project manager's interpersonal skills (Figure 3). This prediction is emphasized in the following hypothesis.

H4a. There is a positive indirect relationship between the project manager's interpersonal communication skills and project success through organizational climate.

H4b. There is a positive indirect relationship between the project manager's relationship skills and project success through organizational climate.

H4c. There is a positive indirect relationship between the project manager's emotional intelligence skills and project success through organizational climate.

3 METHODOLOGY

This chapter introduces the used research method, setting, data gathering process, measurement of variables and data analysis process. There is no one right research method (Kotzab, Seuring, Müller & Reiner 2005, 3). This research uses a survey research method and therefore, the research method is presented in the first subchapter. The second subchapter presents the research setting. After that the data gathering process is explained more detailed and in the fourth subchapter the measurement of variables is presented. Finally, the assessment of validity and reliability is presented.

3.1 Research method

In this thesis the research method used was a survey research hence this chapter introduces that research method more in detail and at the end of the chapter gives a reasoning about the method, type and design used in this thesis.

As a general statement, a survey means the gathering of information from a large group of people or a population. This definition involves a variety of data requisition processes including opinion surveys, political polls, TV viewing polls, etc. This thesis does not apply such surveys. On the contrary, the focus is on survey research, “which is conducted to advance scientific knowledge or develop theory” (Malhotra & Grover 1998).

A survey research has three distinct characteristics. First, it is about gathering information by asking people for information in some structured format. The gathering of information or data could be done by using email questionnaire, telephone interview, or face-to-face interview. Depending on the unit of analysis, the people surveyed could be representatives of themselves, their project, their expertise, or their organization. Second, a survey research is typically a quantitative method that “requires standardized information in order to define or describe variables, or to study relationships between variables”. Third, information is collected via a sample, which is a fraction of the population, with the necessity to be able to generalize findings from the sample to the population. As per these three characteristics, it makes it easier to distinguish survey research from other field based methods like case studies. Case studies usually are not quantitatively oriented, the variables are often not predefined, and such studies involve examination of a phenomenon more in detail within their natural setting, thereby ruling out any attempt at generalization (Malhotra & Grover 1998).

There are two major types of survey research (Kerlinger 1986). The first type can be classified as ‘exploratory’ and the objective being to become more familiar with a topic. Usually there is “no model in exploratory research and the concepts of interest need to be better understood and measured”. An exploratory survey’s resulting data can be refined to for example identify new possibilities. Another type of exploratory survey research is referred to as ‘descriptive’. A descriptive survey develops the units that comprise theories hence it is aimed at describing the distribution of a phenomena in a population, thereby ascertaining facts (Malhotra & Grover 1998).

The second type of survey research and probably the most important is ‘explanatory research’. This research is about finding causal relationships among variables. Theory-based expectations are used on how and why variables should be related. Hypotheses could be simple i.e., relationships exist or could be directional i.e., positive or negative. For instance, an explanatory study could explain, hypothesize, and test for a positive relationship between the existence of an PDM system and success in product specification management. Results of explanatory research are interpreted and contribute to theory development. The most general design is cross-sectional “in which information is collected at one point in time from a sample chosen to represent the population” and which fits well to test differences in population subsets. On the contrary, longitudinal designs “are appropriate for studying phenomenon that change e.g., the impact of MRP implementation on work design over time by collecting data in the same organization at two or more points over time”. It is more difficult to implement longitudinal design, but it can provide greater confidence regarding causality. In spite of whether a cross-sectional or longitudinal design is used, “all questions in the instrument should be collecting information at a consistent unit of analysis, whether it be the individual, work group, project, function, organization or even industry” (Malhotra & Grover 1998).

The ultimate aim of survey research is to contribute to theory development. In other words, survey research should better explain or predict a phenomena after evolving through the maturity cycle as shown in Figure 4. This requires consistent relationships between the various theoretical concepts must have been established and verified through continuous testing and extension. Exploratory and descriptive surveys support to identify the concepts and the basis for measurement and are very appropriate for early stages of the research. As the research becomes more mature then variables can be effectively

measured, and relationships can be studied using explanatory surveys (Malhotra & Grover 1998).

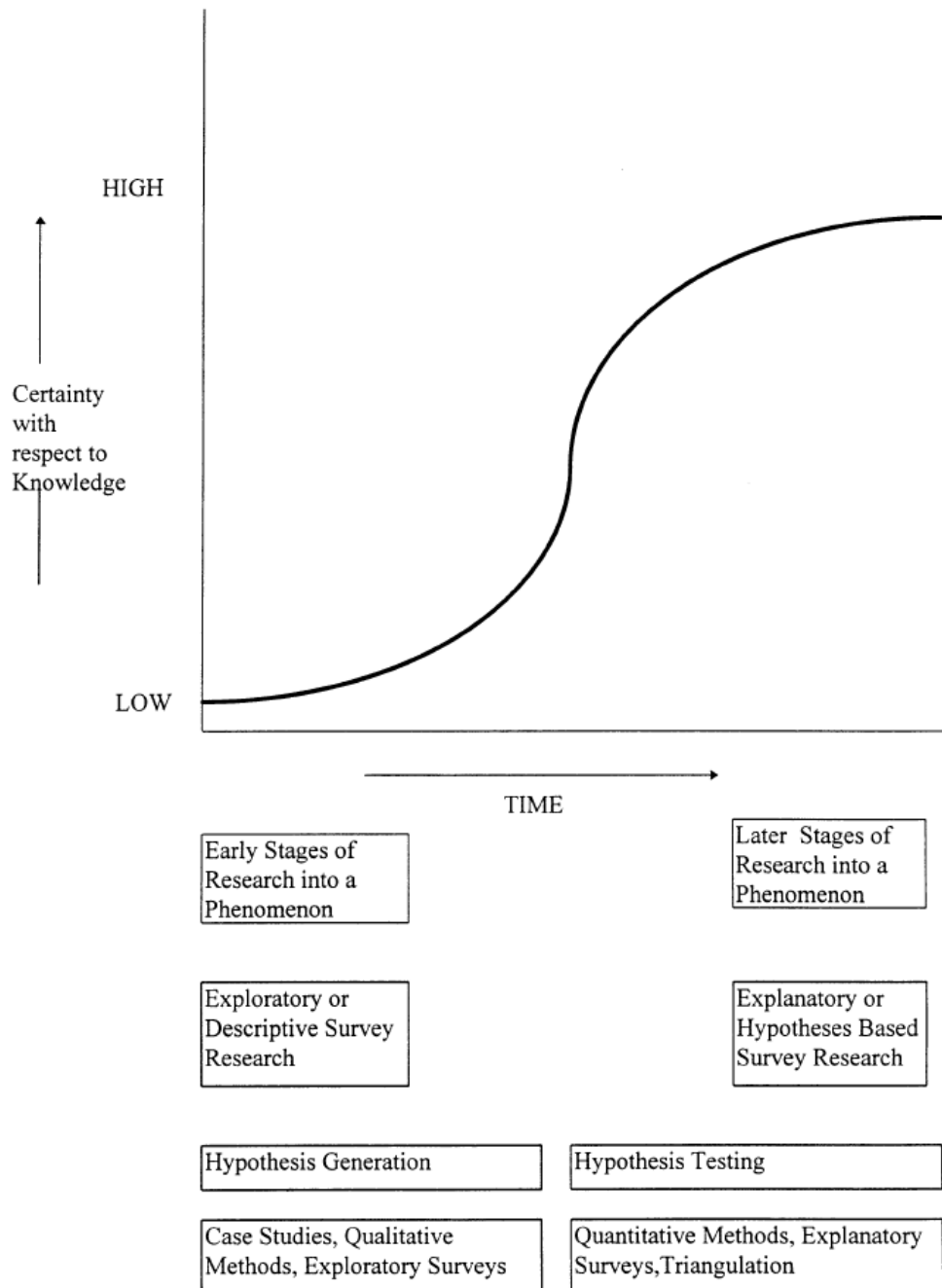


Figure 4. The maturity cycle of research.

As in this thesis the data collection was done via a structured web based questionnaire conducted with a large group of people representing themselves, their project, their expertise, and their organization, it can be concluded that the research method is a survey

research. The type of the research is explanatory as theory-based expectations on why and how variables were used. Additionally, in this survey research the intention is to explain, hypothesize, and test for a positive relationship between the project managers' interpersonal skills and success in projects. The results are interpreted and contribute to theory development hence it is an explanatory research. The design is cross-sectional as the information was collected at one point in time from a sample selected to represent the population. Regarding the questions for the questionnaire, quantitative questions were used. Therefore, the research is a quantitative research. A quantitative research can be also referred as a statistical research which uses numerical data and needs to have a quite large sample size. It contributes especially to the questions: what, where, how much and how often. (Heikkilä 2001, 16–17).

3.2 Research setting

The research company Wärtsilä is a global leader in advanced technologies and complete lifecycle solutions for the marine and energy markets. The company operates in over 70 countries with approximately 18,000 employees and is listed on Nasdaq Helsinki. The net sales of the company were 4.8 billion euros in 2016. (Annual Report 2016, 6)

The company has three businesses: Marine Solutions, Energy Solutions and Services (Annual Report 2016, 6). This thesis focuses on Marine Solutions hence it is presented in more detail. The customers of Marine Solutions consist of shipyards and ship owners (Annual Report 2016, 34). There are five main vessel segments which are served by Marine Solutions: merchant, offshore, cruise and ferry, special vessels, and navy. Additionally, Marine Solutions portfolio also covers offshore and gas systems for land-based installations, such as gas terminals. (Annual Report 2016, 34)

Marine Solutions main advantage lies in having the industry's broadest marine focused offering comprised of leading, innovative products, integrated systems, and engineering, which is supported by a unique sales and service network in touch with customers globally. Marine Solutions has continuously broadened its portfolio, which today ranges from engines and propulsion equipment to electrical equipment, automation, ship design, environmental solutions, gas systems, and pumps and valves. The ability to integrate different products offered into larger systems and solutions supports the company's strategy of being the main solutions provider to its customers. (Annual Report 2016, 34)

Marine Solutions operates in different business lines and this thesis covers all the business lines; Engines, Propulsion, Environmental solutions, Electrical and Automation, Ship design, and Flow and Gas solutions. Of those business lines, according to the intranet site of Wärtsilä, the business line Engines typically has the leading business line role for the bundle or integrated solutions customer delivery projects meaning it is accountable of overall project management and combining of different products and services from various business lines for the delivery to the customer.

The Wärtsilä Project Model is based on PMI's (Project Management Institute) Project Management Body of Knowledge (PMBOK® Guide). The structure and content of the Wärtsilä Project Model are based on the ABC Project Model™, developed by Project Institute Finland Ltd. / Suomen Projekti-Instituutti Oy. Both the ABC Project Model™ and the Project Management Guide are tailored for Wärtsilä to fulfil its specific needs.

3.3 Sample and data collection

As stated in chapter 3.1 the data for the study were collected using a web based survey questionnaire with Wärtsilä Marine Solutions project management stakeholders for customer delivery projects working in 7 different business lines. Stakeholders were divided in three different categories; project manager's, project engineer's and others. The others group consisted of multiple different stakeholders being part of typical Wärtsilä Marine Solutions customer delivery project such as, project purchaser, design engineer, delivery manager, project controller, and site manager (see Figure 5).

Wärtsilä Customer Delivery Project Organization

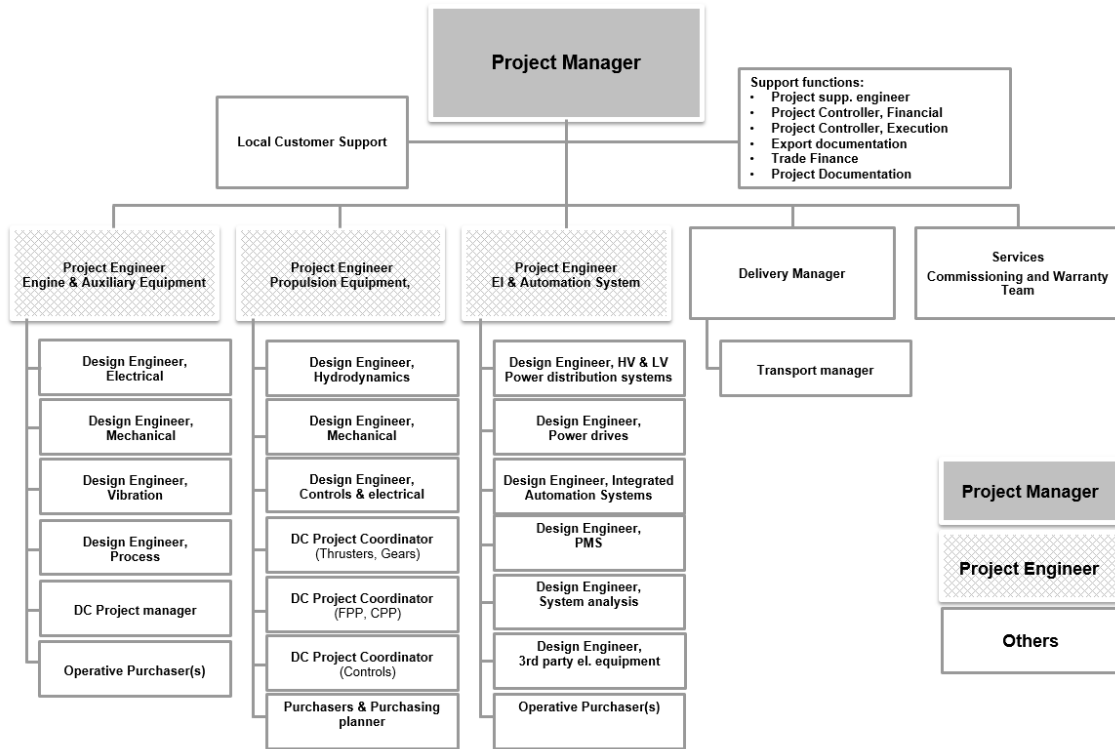


Figure 5. Wärtsilä customer delivery project organization.

The organizational climate in the context of this research applies to the customer delivery project organization (see Figure 6) in the survey research company organization.

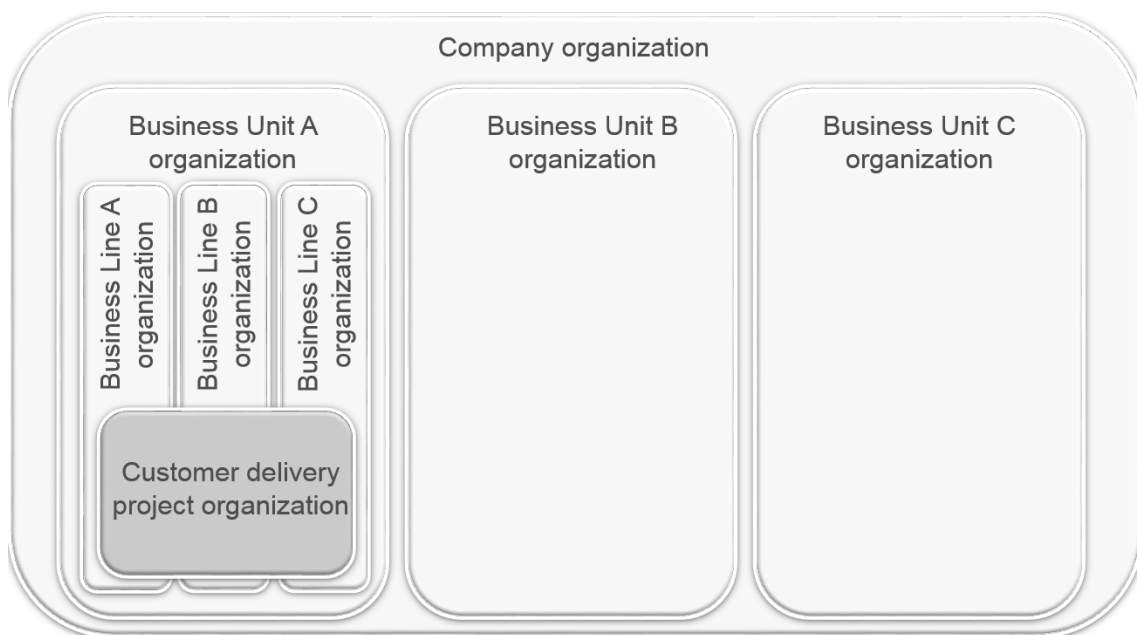


Figure 6. The organizational climate in the research.

As the questionnaire was a web based survey, the request for the survey was distributed via email including a link to web site of the survey. After distribution of the questionnaire the project management directors were requested to separately give a reminder within their business line for the stakeholders to reply to the questionnaire. Of the 676 stakeholders selected for the study, 274 completed the questionnaire hence the response rate was 41% at the time of the study. An evaluation was made on the assumptions of normality using Mahalanobis distance and we observed 21 outliers. The 21 outliers were removed leaving a sample of 253 responses for analysis. It should be taken into account that there were organizational restructurings going on in some of the organizations involved during the whole research process. This might have affected the responses and response rate.

A total of 253 valid responses obtained from individuals of selected organizations related to projects, out of which the majority were males, 81.0% of total respondents, and 17.0% were females. Most of the respondents were from Engines business line, 31.6%, followed by Ship Design 17.0%, 13.8% were from Environmental, 12.6% were from E&A, 8.3% were from Propulsion, 7.9% were from Flow&Gas, and 8.7% from other business lines. The majority of the respondents were other project team members (41.9%), followed by project managers (32.8%), and project engineers (25.3%). 41.1% of respondents had over 10 years of experience indicating long experienced individuals stayed in the organization. Most of the respondents were from Finland and Norway, 25.7% and 24.1% respectively. Majority of the respondents were between 36 – 45 years (36.0%), followed by 46 – 55 years (28.5%) and 26 – 35 years (19.8%) (see Table 3).

Demographics	Categories	Frequency	Percent
Business Line	Engines	80	31.6
	Environmental	35	13.8
	Propulsion	21	8.3
	Ship Design	43	17.0
	E&A	32	12.6
	Flow&Gas	20	7.9
	Other	22	8.7
Role	Project Manager	83	32.8
	Project Engineer	64	25.3
	Other	106	41.9
Experience in the Organization	Less than 1 year	15	5.9
	1-3	32	12.6
	4-5	59	23.3
	6-10	43	17.0
	over 10	104	41.1
Country	Finland	65	25.7
	Singapore	9	3.6
	United Kingdom	4	1.6
	Spain	3	1.2
	Italy	14	5.5
	Japan	1	0.4
	Denmark	6	2.4
	Slovenia	1	0.4
	United States	3	1.2
	South Korea	4	1.6
	India	1	0.4
	China	17	6.7
	Norway	61	24.1
	Sweden	2	0.8
	Serbia	3	1.2
	Poland	18	7.1
	Germany	23	9.1
Netherlands	11	4.3	
France	7	2.8	
Gender (optional)	Female	43	17.0
	Male	205	81.0
Age (optional)	18-25	6	2.4
	26-35	50	19.8
	36-45	91	36.0
	46-55	72	28.5
	56 and over	26	10.3

Table 3. Demographic statistics.

3.4 Measurement of variables

The questionnaire development was based on and adapted from previous researches conducted for the variables measured in this thesis and in similar kind of industries as the research company. In the following subchapters, the details regarding questionnaires per variable are presented. The survey questionnaire in Appendix 1 was used to measure the reported variables. Necessary modifications were made in the wording for compatibility with the research company environments. Due care was exercised while wording the questions to reduce changes of misinterpretation to achieve reliable survey results. Closed-ended questions were used in the questionnaire and statistical analysis was done by using IBM SPSS Version 23.

SPSS is a statistical software used to solve a variety of business and research problems and it provides a range of techniques including ad-hoc analysis, hypothesis testing and reporting to manage data, select and perform analyses, and share results (Field 2013).

3.4.1 Interpersonal skills

The questionnaire used for measuring the project manager's interpersonal skills was adapted from several previous researches and table 3 lists the constructs and reliabilities for each scale. Three different constructs were used i.e. Communication skills, Relationship skills, and Emotional Intelligence combined with Cross-cultural skills. In the questionnaire on interpersonal skills, questions 8 – 15 measured the communication skills, questions 16 – 24, the relationship skills and questions 25 – 30 examined the emotional intelligence skills (see Appendix 1). All items are reflective of their corresponding constructs and were measured on a five point Likert-type scale (1 = no importance to 5 = very important).

3.4.2 Organizational climate

The organizational climate questionnaire used in this study was designed by Litwin and Stringer (1968). The 50 item Litwin and Stringer (1968) questionnaire consists of nine separate a priori scales i.e. Structure (8 items), Responsibility (7 items), Reward (6 items), Risk (5 items), Warmth (5 items), Support (5 items), Standards (6 items), Conflict (4 items), and Identity (4 items). However, for the purpose of this study, the items and cli-

mates were limited, and some were slightly adapted due to best fit for the research company as well as not to overwhelm respondents with the number of items (see Appendix 1). The following seven priority scales are used in this research i.e. Structure (3 items, questions 32 – 34), Responsibility (3 items, questions 35 – 37), Reward (2 items, questions 38 – 39), Warmth (2 items, questions 40 – 41), Support (2 items, questions 42 – 43), Standards (2 items, questions 44 – 45), and Identity (3 items, questions 46 – 48) (see Appendix 1). These selected priori scales Litwin and Stringer (1968) defined as:

1. Structure - the feeling that employees have about the constraints in the group, how many rules, regulations, procedures there are; is there an emphasis on “red tape” and going through channels or is there a loose and informal atmosphere.
2. Responsibility - the feeling of being your own boss: not having to double-check all your decisions; when you have a job to do, knowing that it is your job.
3. Reward - the feeling of being rewarded for a job well done; emphasizing positive rewards rather than punishments, the perceived fairness of the pay and promotion policies.
4. Warmth - the feeling of general good fellowship that prevails in the work group atmosphere; the emphasis on being well liked; the prevalence of friendly and informal social groups.
5. Support - the perceived helpfulness of the managers and other employees in the group; emphasis on mutual support from above and below.
6. Standards - the perceived importance of implicit and explicit goals and performance standards: the emphasis on doing a good job: the challenge represented in personal and group goals.
7. Identity - the feeling that you belong to a company and you are a valuable member of a working team; the importance placed on this kind of spirit (pp. 81 – 82).

The respondents were asked to reply to each item using a five point Likert-type scale (1 = strongly disagree to 5 = strongly agree) as it applies to their organization.

3.4.3 Project success

A 7-item instrument adapted from Müller and Turner (2010) was used to measure the project success criteria's importance (see Appendix 1). The respondents were asked to reply to each item using a five point Likert-type scale (1 = no importance to 5 = very important) as it applies to their customer delivery projects. The respondents were asked to scale the importance of customer, supplier, and internal satisfaction as well as the triple constraints (time, cost, quality), and finally the achievement of reoccurring business.

3.5 Assessment of validity and reliability

The research design stage had four stages. First stage was about to form the stakeholder network in company which required to get acceptance and support within the company by explaining the purpose and significance of the study to the critical stakeholders, one being the project management director. The specific project management director was selected due to within his organization there were most project management stakeholders, especially project managers and project engineers. After getting the ownership from the project management the next stakeholders, i.e. contact managers, were selected to support with study as well as to plan and select the most suitable questions in the questionnaire. These contact managers were the human resource director, and two general managers from different business line. Additionally, the study was explained to all the other project management directors from 5 different business lines as well as to one experienced stakeholder representing different business unit. This was done also for the reason to get input for the names of the people to take part in the survey from different business lines. The second stage was to develop the questionnaire with the contact managers. This was an iterative process and included several meetings as based on experience by the contact managers the questionnaire needed to be carefully prepared and questions clearly defined in order to ensure the target group for the questionnaire would understand and reply properly on the selected questions. This required to adapt many of the questions taken from literature to fit accordingly to the terminology used in the company. The third stage was to validate the questionnaire by pre-testing. The questionnaire was pre-tested, in addition to contact managers, by 5 different stakeholders who had experience of customer delivery projects, and of project management as such, but were at the time of the study working in different kind of development projects. In total 11 stakeholders contributed to the pre-testing. After pre-testing some layout changes in survey template were done as

well as some questions had typos which were corrected accordingly. After validation of the questionnaire the fourth stage took place and that was to distribute the questionnaire directly to the target group. An introduction was provided at the beginning of the questionnaire so that every respondent could have a good understanding of the survey purpose (see Appendix 1).

Cronbach's Alpha, the reliability coefficient that measures accuracy of variable was used to check the reliability of the questionnaire. Factor analysis was used to determine if all the items measuring organizational climate (OC) constructs clustered together or not. Table 4 shows the principal component analysis. The factor analysis showed two distinct factors which were classified as OC1 and OC2. The items that not load properly were dropped. OC1 emphasis climate for mistrust, whereas OC2 emphasis climate for trust.

Factor	1	2
Items	OC1	OC2
OC1		
People don't really trust each other enough.	.777	
People tend to be reserved toward each other.	.738	
People pretty much look out for their own interest.	.715	
There are an awful lot of excuses around here when somebody makes a mistake.	.706	
It's very hard to get to know people.	.686	
One of the problems is that individuals won't take responsibility.	.672	
It is sometimes unclear who has the formal authority to make a decision.	.434	
OC2		
It is encouraged to provide constructive criticism.		.649
I feel that I am a member of a well functioning team.		.627
People are proud of belonging to Wärtsilä Marine Solutions customer delivery project organization.		.612
The roles in the project team are clearly defined, explained and logically structured.		.595
People are rewarded in proportion of their job performance.		.569
We set very high standards for performance.		.528
Excessive bureaucracy is kept to a minimum.		.471
When I am on a difficult assignment I can usually count on getting assistance from my boss and co-workers.		.401

Table 4. Principal component analysis.

Table 5 displays the results of the reliability coefficient. For the interpersonal skills (IPS), the constructs exhibited high levels of reliability (Cronbach's $\alpha = 0.91$). For the communication skills (COMSKILLS), the constructs exhibited high levels of reliability (Cronbach's $\alpha = 0.75$), for the relationship skills (RELSKILLS), the constructs exhibited high levels of reliability (Cronbach's $\alpha = 0.83$), and for the emotional intelligence skills (EISKILLS), the constructs exhibited high levels of reliability (Cronbach's $\alpha = 0.75$),

OC1 (Cronbach's $\alpha = 0.82$) with regards to project success was more negative and put less emphasis on performance than the OC2 (Cronbach's $\alpha = 0.73$) which contributes more to performance, hence promotes project success more and can be called a climate for trust (Poon 2003; Fainshmidt & Frazier 2017). The Cronbach's Alpha coefficient for project success (PS) was 0.82, indicating satisfactory internal reliability for the scale (Nunnally 1967).

Variable	Cronbach's Alpha	No. of items
IPS	0.912	24
- COMSKILLS	0.749	8
- RELSKILLS	0.825	10
- EISKILLS	0.780	6
OC	0.509	17
- OC1	0.818	7
- OC2	0.728	9
PS	0.815	7

Notes: COMSKILLS – Interpersonal communication skills; RELSKILLS – Relationship skills; EISKILLS – Emotional Intelligence skills

Table 5. Results of Reliability Testing.

Descriptive statistics of variables are provided in Table 6. Mean value of IPS (COMSKILLS, RELSKILLS, EISKILLS) and PS have been found greater than 4, whereas for the OC2 it has been found greater than 3, and for the OC1 lower than 3.

Variable	Minimum	Maximum	Mean	Standard deviation
COMSKILLS	3.00	5.00	4.3681	0.40728
RELSKILLS	3.10	5.00	4.3996	0.42757
EISKILLS	3.00	5.00	4.3386	0.45640
OC1	1.00	4.71	2.8809	0.72380
OC2	1.89	4.89	3.4229	0.53970
PS	2.86	5.00	4.3360	0.51127

Table 6. Descriptive Statistics (n = 253).

Connection between two variables is detected by the Pearson correlation coefficient which is one of the most popular coefficients to measure the dependences of two variables. In other words, it determines the proportionality extent of two variable values (Wang 2013). Table 7 displays the Pearson correlation coefficient of the variables under study. The level of significance to test the relationship was 0.01 and 0.05.

		COMSKILLS	RELSKILLS	EISKILLS	OC1	OC2	PS
COMSKILLS	Pearson Correlation	1	.723**	.696**	-.124*	.405**	.440**
	Sig. (2-tailed)		.000	.000	.048	.000	.000
	N	253	253	253	253	253	253
RELSKILLS	Pearson Correlation	.723**	1	.768**	-.075	.249**	.441**
	Sig. (2-tailed)	.000		.000	.238	.000	.000
	N	253	253	253	253	253	253
EISKILLS	Pearson Correlation	.696**	.768**	1	-.084	.280**	.420**
	Sig. (2-tailed)	.000	.000		.185	.000	.000
	N	253	253	253	253	253	253
OC1	Pearson Correlation	-.124*	-.075	-.084	1	-.367**	-.230**
	Sig. (2-tailed)	.048	.238	.185		.000	.000
	N	253	253	253	253	253	253
OC2	Pearson Correlation	.405**	.249**	.280**	-.367**	1	.427**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	253	253	253	253	253	253
PS	Pearson Correlation	.440**	.441**	.420**	-.230**	.427**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	253	253	253	253	253	253

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

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

Table 7. Correlation matrix.

The analysis shows that the relationships between the dependent and independent variable are significantly correlated ($p < 0.01$). The strongest relationship exists between project success and relationship skills, $r = 0.441$, followed by interpersonal communication skills and emotional intelligence skills. The analysis also shows that the relationship between mediator variable and dependent variable are significantly correlated. The OC2 is positively correlated and has strong relationship with project success, $r = 0.427$. OC1 is also significantly correlated but as opposed to OC2, is negatively correlated hence has negative relationship with project success, $r = -0.230$.

4 RESULTS AND ANALYSIS

This chapter presents the statistical analysis and results of the thesis. There are two sub-chapters and the first subchapter focus on this research's four hypotheses presented in chapter 2.6, whereas the second subchapters describes the compare mean analysis of the demographics.

The answers were analysed based on all stakeholders' opinions, but the data was also analysed separately per demographics in order to examine if any statistically significant differences hence contribute to the understanding of the opinions of different stakeholders.

4.1 Correlation Analysis and Testing of Hypotheses

The first hypothesis of the theoretical framework required a test of the expected positive relation between IPS (communication, relationship, emotional intelligence) and the PS. A simple correlation test provided the results shown in Table 7.

H1a suggested a positive relationship between COMSKILLS and PS, and was confirmed ($r = 0.440$, $p < 0.01$). *H1b* suggested a positive relationship between RELSKILLS and PS, and was confirmed ($r = 0.441$, $p < 0.01$). *H1c* suggested a positive relationship between EISKILLS and PS, and was confirmed ($r = 0.420$, $p < 0.01$).

The second hypothesis was needed to be divided into two different categories (OC1 and OC2) as per the reasoning given in the chapter 3.5. OC1 was predicted to give a negative relationship with the IPS variables, whereas the OC2 was predicted to give a positive relationship with the IPS variables. *H2a* predicted a positive relationship between COMSKILLS and OC2, and was confirmed ($r = 0.405$, $p < 0.01$). *H2b* predicted a positive relationship between RELSKILLS and OC2, and was confirmed ($r = 0.249$, $p < 0.01$). *H2c* predicted a positive relationship between EISKILLS and OC2, and was confirmed ($r = 0.280$, $p < 0.01$). Further analyses showed a negative relationship between COMSKILLS and OC1 and was confirmed as negative and significant ($r = -0.124$, $p > 0.05$). A negative relationship between RELSKILLS and OC1 was confirmed as negative but not significant ($r = -0.075$, $p > 0.01$). A negative relationship between EISKILLS and OC1 was confirmed as negative but not significant ($r = -0.084$, $p > 0.01$).

The third hypothesis was also needed to be divided as per different OC categories as like the hypothesis 2. *H3a* predicted OC2 to be positively associated with PS, and which was confirmed ($r = .427, p < 0.01$). *H3b* predicted OC1 to be negatively associated with PS, and which was confirmed ($r = -.230, p < 0.01$).

For the fourth hypothesis, using AMOS, multiple models were used to test the mediation effect of organizational climate between interpersonal skills and project success.

The mediation model was performed for OC1 and OC2. Table 8 and 9 below presents the mediation results for OC1. The mediation results for OC1 shows that it has a negative and significant direct effect on project success, as well as COMSKILLS effect on OC1 is negative which indicates that OC1 has an indirect effect between communication skills and project success. Moreover, the results also showed that if OC1 exists, then the RELSKILLS and EISKILLS are of high importance to promote PS.

	Estimate	S.E.	C.R.	P	Label
OC1 ← COMSKILLS	-.221	.111	-1.987	.047	
PS ← RELSKILLS	.340	.102	3.334	***	
PS ← OC1	-.137	.039	-3.530	***	
PS ← EISKILLS	.208	.096	2.181	.029	

Table 8. Regression weights OC1.

As shown in Table 9 below, for example relationship skills accounts for 28% of project success, and emotional intelligence skills accounts for 17% of project success. OC1 accounts for -19% of project success ($R^2 = -19\%$).

	Estimate
OC1 ← COMSKILLS	-.124
PS ← RELSKILLS	.284
PS ← OC1	-.193
PS ← EISKILLS	.186

Table 9. Standardized regression weights OC1.

Maximum likelihood estimation was used because the research data was normally distributed. From an evaluation and theoretical perspective, a research model that best fits the data was chosen. Figure 7 shows the structural equation modeling used in this thesis. The comparative fit index (CFI) was = 0.99, RFI was = 0.98, the Tucker-Lewis fit index

(TLI) was = 1.00, and the RMSEA was = 0.00. Table 10 and 11 below presents mediation results for OC2.

	Estimate	S.E.	C.R.	P	Label
OC2 ← COMSKILLS	.536	.076	7.027	***	
PS ← RELSKILLS	.314	.099	3.183	.001	
PS ← OC2	.308	.052	5.918	***	
PS ← EISKILLS	.143	.092	1.558	.119	

Table 10. Regression weights OC2.

As shown in Table 11 below, for example communication skills accounts for 40% of organizational climate, emotional intelligence skills accounts for 13% of project success, and relationship skills accounts for 26% of project success. OC2 accounts for 32% of project success ($R^2 = 32\%$, $P = .000$).

	Estimate
OC2 ← COMSKILLS	.405
PS ← RELSKILLS	.261
PS ← OC2	.324
PS ← EISKILLS	.127

Table 11. Standardized regression weights OC2.

Direct effects

The analysis (Figure 8) showed that relationship skills had a direct significant effect to project success (standardized coefficient = .26, $P = .000$). Emotional intelligence had a positive non-significant effect to project success (standardized coefficient = .13, $P = 0.172$).

Indirect effect

The thesis hypothesized (H4a, H4b, H4c) that the relationship between interpersonal skills and project success is mediated by organizational climate. The analysis (see Figure 8) shows that OC2 has an indirect effect between communication skills and project success, supporting hypothesis H4a (standardized coefficient = .165, $P = .000$). However, H4b and H4c was not supported. Additionally, as described earlier in this chapter, OC1

had a negative and significant indirect effect between communication skills and project success, but was not further analyzed as the focus in this thesis was on OC2 due to its positive indirect role on PS. The total effect of relationship skills on PS is .314 and significant ($P = .000$). The total effect of emotional intelligence skills on PS is .143 and non-significant ($P = .159$). The total effect of communication skills on PS is .165 and significant ($P = .000$).

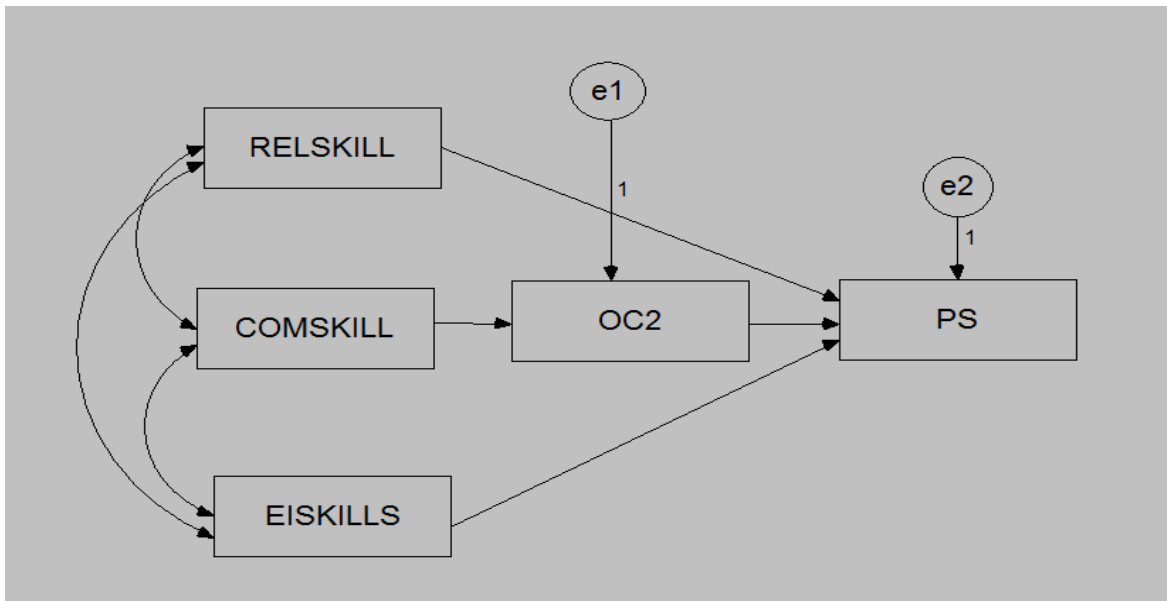


Figure 7. Structural Equation Modeling model in thesis.

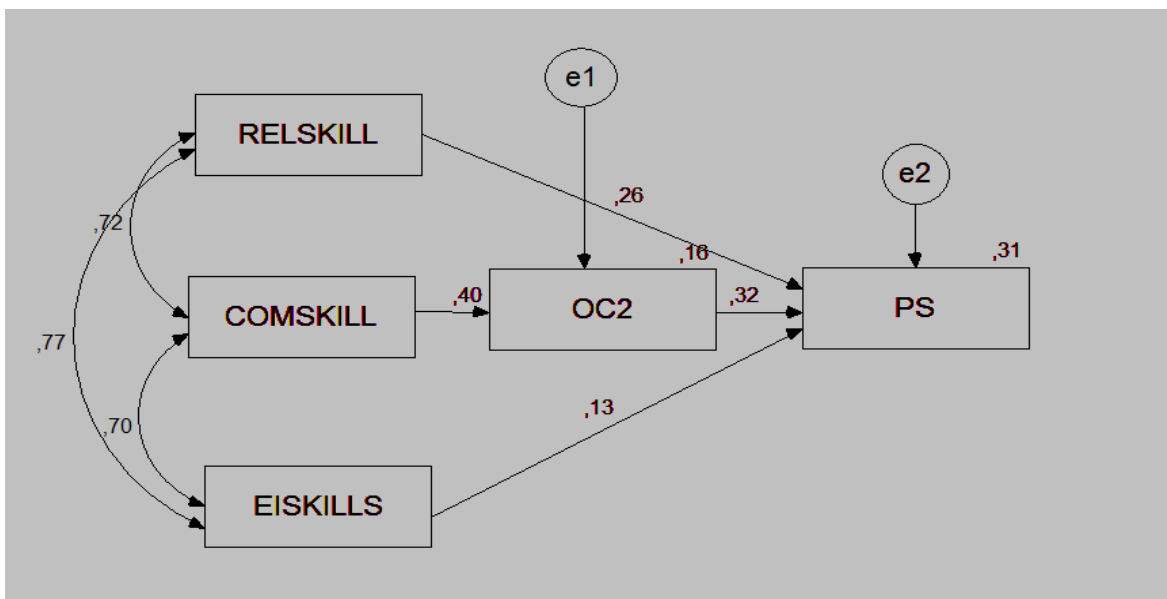


Figure 8. Structural Equation Modeling model in thesis with outputs.

4.2 Compare mean analysis of demographics

To explore additional aspects of the research model mean analyses were compared for country and business line in the areas of IPS (COMSKILLS, RELSKILLS, EISKILLS). There were no statistically significant differences found between demographics categories and IPS for the following demographics: genders, experiences in organization, roles and ages. However, for the country categories and IPS the mean COMSKILLS scores (see Table 12) had significant differences ($p = 0.046$) as well as RELSKILLS scores (see Table 13) had significant differences ($p = 0.038$) between the country categories whereas for the EISKILLS no statistically significant differences were found. Based on these scores it can be concluded that between the countries there are differences in valuing the COMSKILLS and the RELSKILLS.

COMSKILLS			
Country	Mean	N	Std. Deviation
Finland	4,2058	65	,39862
Singapore	4,3472	9	,57206
United Kingdom	4,6250	4	,44488
Spain	4,3333	3	,38188
Italy	4,4732	14	,35416
Japan	4,5000	1	.
Denmark	4,3542	6	,61450
Slovenia	4,8750	1	.
United States	4,6667	3	,14434
South Korea	4,4688	4	,38696
India	4,1250	1	.
China	4,5441	17	,38765
Norway	4,4385	61	,40545
Sweden	4,3750	2	,00000
Serbia	4,3333	3	,28868
Poland	4,3403	18	,42402
Germany	4,5109	23	,36524
Netherlands	4,2386	11	,23355
France	4,1071	7	,25443
Total	4,3681	253	,40728

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
COMSKILLS * Country	Between Groups (Combined)	4,758	18	,264	1,670	,046
	Within Groups	37,042	234	,158		
	Total	41,800	252			

Table 12. Compare means analysis of country and COMSKILLS.

RELSKILLS

Country	Mean	N	Std. Deviation
Finland	4,2908	65	,42820
Singapore	4,4333	9	,43875
United Kingdom	4,5000	4	,48305
Spain	4,2000	3	,10000
Italy	4,4214	14	,42999
Japan	4,2000	1	.
Denmark	4,3833	6	,54559
Slovenia	4,9000	1	.
United States	4,6667	3	,32146
South Korea	4,5750	4	,26300
India	4,2000	1	.
China	4,4882	17	,41515
Norway	4,4574	61	,37659
Sweden	4,8500	2	,07071
Serbia	4,0000	3	,55678
Poland	4,2500	18	,59235
Germany	4,6652	23	,31422
Netherlands	4,2364	11	,26560
France	4,2286	7	,52825
Total	4,3996	253	,42757

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
RELSKILLS * Country	Between Groups (Combined)	5,361	18	,298	1,712	,038
	Within Groups	40,709	234	,174		
	Total	46,070	252			

Table 13. Compare means analysis of country and RELSKILLS.

In addition, for the business line categories there were statistically significant difference found for the mean values between RELSKILLS (see Table 14). The mean score for the business line Ship Design was highest (4.5953), followed by the business line Propulsion (4.4095) and was confirmed statistically significant ($p = 0.022$). However, the compare means analyses did not score any statistically significant difference between the business line categories and COMSKILLS and EISKILLS.

RELSKILLS

Business Line	Mean	N	Std. Deviation
Engines	4,3612	80	,42142
Environmental	4,3486	35	,40611
Propulsion	4,4095	21	,36865
Ship Design	4,5953	43	,35986
E&A	4,4344	32	,44112
Flow&Gas	4,2100	20	,54280
Other	4,3500	22	,43507
Total	4,3996	253	,42757

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
RELSKILLS * Business Line	Between Groups (Combined)	2,670	6	,445	2,523	,022
	Within Groups	43,400	246	,176		
	Total	46,070	252			

Table 14. Compare means analysis of business line and RELSKILLS.

The main result of the compare means analysis of the demographics was that for two (country, business line) of the six categories there was statistically significant difference found for the mean values between those and IPS. However, no other significance was found for the rest of the demographics (genders, experiences in organization, roles and ages).

For the business line categories, a statistically significant difference was found for the mean values between RELSKILLS and IPS. However, for the country categories and IPS the mean COMSKILLS scores had significant differences as well as RELSKILLS scores had significant differences between the country categories.

5 DISCUSSIONS AND CONCLUSIONS

As stated in chapter 2.5, the project manager plays the most critical role towards success of any project (Yang, Huang and Wu 2010). Therefore, it is vital also for Wärtsilä Marine Solutions project managers to focus on improving their interpersonal skills continuously. As highlighted in chapter 1.0, the project manager's interpersonal skills are imperative for project success, and that the project manager must excel in interpersonal skills to lead the people in the project since it is the people who deliver successful projects (Halstead 1999; Azim et al. 2010). It was also stated in the literature review of the thesis, in chapter 2.2, that project managers should continue to develop interpersonal skills that will enable them to keep up with the changes in priorities and values in an era dominated by technological advancement for which the primary people skills should continuously be honed (Levin 2010).

Firstly, the final chapter of the thesis addresses the research questions based on both the statistical analysis and literature review. Secondly, it gives a suggestion and recommendations to research company, when starting with initiatives to improve the project success and competence development of the project manager's. Finally, some limitations for this research study are presented.

5.1 Summary of findings

The main objective of this research was to examine the importance of the project managers' interpersonal skills to project success at the research company Wärtsilä Marine Solutions. In general, this research confirmed the results of previous results that there is a positive relationship between interpersonal skills and project success.

Secondly, this research examined the mediating effect of project organizational climate on the associations between project managers' interpersonal skills and project success. As a result of literature review and empirical data analysis, this survey research contributes to the body of knowledge and provides convincing evidence for the significance of one (communication) of the project manager's interpersonal skills and organizational climate, as a direct and mediating effect, to the project success in project environments. For two (relationship and emotional intelligence) of the project manager's interpersonal skills

and organizational climate, as a mediating effect, to the project success in project environments the results of this research did not confirm any significance to exist.

Through a literature review and empirical data collection, provided by the research company, the research intended to answer to the following questions:

(1) What is the impact of the project manager's interpersonal skills on project success?

(2) What is the mediator role of organizational climate in the relationship between the project manager's interpersonal skills and project success?

The following subchapters address the two research questions one by one based on both the statistical analysis and literature review of the thesis.

5.1.1 What is the impact of the project manager's interpersonal skills on project success?

As described in chapter 2.5, to achieve project success, it is necessary to understand the interpersonal skills requirement and multiple roles for project managers to apply in order to succeed to lead the project team with a positive project end result (Flannes & Levin 2001; Levin 2010). In the results and analysis chapter, the first research problem is addressed especially in subchapter 4.1, based on the empirical data.

The statistical analysis confirmed the impact of the project manager's interpersonal skills on project success, based on the opinions of the project management people at the research company, as a positive and significant. This was valid for the interpersonal skills outright as well as individually per different constructs used i.e. communication skills, relationship skills, and emotional intelligence combined with cross-cultural skills.

Based on the literature review, it is evident that the impact of the project manager's interpersonal skills on project success is having high importance and the importance of it will just grow in the future as the continuous globalization of projects and companies and the increased scope in the projects will give more importance for the interpersonal skills requirement for project managers. The work is increasingly complex when more products are included in the project scope as the more complex project gets, and the more interaction with a large number of stakeholders are required and for which solid interpersonal

skills by the project manager are required to succeed (Levin 2010). Several different researches (Halstead 1999; Ireland 2004; Turner & Muller 2005; Azim et al. 2010; Fisher 2010; Bértholo 2012; Awan, Ahmed & Zulqarnain 2015) with positive findings of interpersonal skills impact on project success supported the first research question, as well as the major global project management standards in which more and more emphasis on interpersonal skills are given in addition to the hard skills i.e. application of methods and tools (APM 1995; PMI 2013; IPMA 2016).

5.1.2 What is the mediator role of organizational climate in the relationship between the project manager's interpersonal skills and project success?

In the results and analysis chapter, subchapter 4.1 also focuses on answering the second research question. As stated in chapter 1 and 2.3, the organizational climate is considered by the researchers to be an important contributor to project success.

The statistical analysis confirmed the impact of the organizational climate on project success as a positive and significant. As explained in chapter 3.5, based on principal component analysis results two different OC's, named as OC1 and OC2, were examined. OC1 gave negative effect on project success and had more emphasize on lack of trust, lack of responsibility, unknown decision making, giving excuses, and people looking out for their own interest. OC2, however, gave positive effect on project success and emphasized climate for trust in which people roles are clearly defined, constructive criticism is provided, continues improvement exist, people feel be part of well-functioning team, people can count on getting assistance from their co-workers, and are rewarded in proportion of their job performance. The statistical analysis confirmed the impact of the OC2 on project success as a positive and significant, and the impact of the OC1 on project success as a negative and significant. It can be concluded that OC2 role as mediator on the associations between one of the identified project manager's interpersonal skills (communication) and project success has a great impact and significance. However, for the two of the identified project manager's interpersonal skills (relationship and emotional intelligence) and project success, OC2 was not supported. This means that if the project manager has high relationship and emotional intelligence skills then OC2 is not required to mediate the relationship between those skills and project success as those skills direct effect as an independent variable on project success is significant. In the opposite sense, if a climate for trust (OC2) exists, it indicates that relationships based on trust already exists hence

project managers should have a focus on communication skills in order to avoid overloading relationships by relationship and emotional intelligence skills, hence setting risk on the project success as confirmed in the statistical analysis.

The literature review covered in this research underlines the positive role of organizational climate for project success. A positive organizational climate, foster active participation, accountability and result-orientation (Thamhain 2004). It will result in encouraging the employees to engage in performing beyond their job (Randhawa and Kaur 2015), ensure individuals are motivated, satisfied, have high expectations and are committed towards their project goals (Maamari & Majdalani 2017) hence it is evident that the project managers who are capable of develop positive organizational climate have a significantly better chance to achieve project success (Meng & Boyd 2017) as well as better financial results (Goleman 2010). In fact, the analysis by Goleman (2010) that organizational climate can account for nearly a third of financial performance was completely in line with results found in this research. However, none of the earlier researches revealed the low and negative impact of relationship skills on organizational climate and project success. Therefore, the results of this research are giving unique findings for the relationship between organizational climate and the project manager's relationship skills including emotional intelligence, for which organizational climate did not have an indirect effect between those skills and project success.

5.2 Suggestions and recommendation

There is a broad selection of literature related to interpersonal skills and organizational climate. It has been recognized by several researchers that constant demand related to the project manager's interpersonal skills improvement is fundamental for the project success. Moreover, organizational climate has been recognized as significant influencer on team members' motivation and behavior which promotes project success.

However, based on the results of this research the project manager's interpersonal skills solely do not contribute on project success as significantly as the mediating effect of project organizational climate on the associations between the project manager's interpersonal skills and project success. Even though there are many researches done on organizational climate, those are related to the body of the company's organization whereas the literature of organizational climate limited on project-based organization is lacking.

Hence this research can be considered as unique and it would be recommended, that future research for organizational climate could be limited on project-based organization. This mainly because project organization is something which a project manager can directly impact whereas the body of the company's organization is out of their scope. Nowadays, due to constant organizational changes, it is even more of importance to ensure that in the project organization the climate remains positive while possible changes happening in the company's organizational body in order to increase the likelihood of delivering projects successfully despite the ongoing organizational changes which always create a risk on people behavior hence endangering their commitment and contribution on their present work. Another important matter is that an external customer feels the climate through the project delivered to them hence highlighting the importance of project organizational climate as enabler to make a positive impact on external customer.

Projects are increasingly delivered in virtual environments, lacking face-to-face collaboration and occasions. It would be suggested to expand the knowledge and researches on the use of interpersonal skills with the virtual project teams as there are differences in working on virtual and co-located teams setting requirement for different kind of interpersonal skills to cope with the people and develop a positive organizational climate. To continue, in future researches the examining of mixed climate in which both, virtual and co-located teams, exist would be required to better meet the current situation requirements.

Furthermore, literature related to interpersonal skills and organizational climate improvement especially in the marine industry was rather challenging to find. Even though it should not be a value-reducing factor on the results of this research it needs to be acknowledged that some conclusions and guidelines from research studies which were conducted related to a totally different industry hence might be require some adaptation to apply in the research company. This provides one clear future research opportunity.

It was not part of this research scope, but clearly, based on the literature review more researches would be recommended for the measurement, such as performance indicators, of the interpersonal skills as if you cannot measure it, it is difficult to improve without the facts what specifically to improve. This knowledge would also contribute on the interpersonal skills training needs as obviously, it is relatively easier for project managers

to enhance the awareness of interpersonal skills. In order for them to deal with interpersonal issues, more effort is needed to develop their knowledge and skills on it.

The impact of different cultures on the preference of different interpersonal skills was neither in the scope of this research, mainly due to uneven division of the countries within the respondents but it would be worthy to analyze in future researches as one factor on the relationship between project manager's interpersonal skills and project success.

5.3 Limitations

The findings from this research study are not without limitations. First, the research was conducted as an assignment of the company Wärtsilä Marine Solutions hence had an internal focus. Therefore, the sample size was limited to the employees of the company and was relatively small as compared to the width and breath of the population available for subject study. Moreover, the study only focused on the selected organization from the project management area.

Secondly, a future researcher may also venture in finding the other interpersonal skills and organizational climate constructs which have impact on the project success in relation to the ones discussed and selected in this research.

Moreover, the size of the project has not been considered while conducting this research. Bigger projects have their own complexities and may require a different set of interpersonal skills than those described in this research; which may be explored while considering the project size.

This research was a cross-sectional study and compared different population groups at a single point in time and findings were drawn from what fits into the frame, hence limited to detect developments or changes in the characteristics of the target population. However, a cross-sectional study was required due to timeline constraints for the research study completion.

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APPENDIX 1 – QUESTIONNAIRE

Impact of Project Managers Interpersonal Skills to MS customer delivery project success?

We'd like to find out how you feel about the interpersonal skills of project manager, the organizational climate and project success criteria's in MS customer delivery projects.

The following questionnaire, in addition to general information, consist of three sections i.e. interpersonal skills, organizational climate, and project success. All the other questions except two questions (question 5 and 6) are mandatory questions for which you need to reply in order to submit your responses.

This questionnaire is completely anonymous and your name will not be recorded.


Thank you for taking our 10 minutes survey. You are a great help!

Your response is anonymous.

* Required

1

Please select your Business Line (i.e. where you are working at the time of the survey). *

Select your answer 

2

Please select your role in customer delivery projects. *

- Project Manager
- Project Engineer
- Other

3

Please select your experience in years at Wärtsilä Marine Solutions organization. *

- Less than 1 year
- 1-3
- 4-5
- 6-10
- over 10

APPENDIX 1 – CONTINUED

4

Your country of residence (i.e. where you are living at the time of the survey)? *

Enter your answer

5

Please select your gender.

Optional question.

- Female
- Male

6

Please select your age.

Optional question.

- 18-25
- 26-35
- 36-45
- 46-55
- 56 and over

APPENDIX 1 – CONTINUED

7

Please rank the importance of the following interpersonal skills for project manager in our customer delivery project environment.

Do you agree that these days, it's the interpersonal skills that matter and will increasingly determine the project success?

*

Yes

No

Section 1: Project Manager's Interpersonal Skills

8

Ability to adapt communication style in one to one situations. *

No importance 1 2 3 4 5 Very important

9

Ability to adapt communication style in project team situations. *

No importance 1 2 3 4 5 Very important

10

Ability to express positive and negative feedback in an open and honest way. *

No importance 1 2 3 4 5 Very important

11

Ability to speak with clarity and directness while showing appropriate sensitivity. *

No importance 1 2 3 4 5 Very important

APPENDIX 1 – CONTINUED

12

Ability to openness and transparency of communication. *

No importance 1 2 3 4 5 Very important

13

Ability to select appropriate communication channel and technology (e.g. meeting, phone, email, Skype instant messenger). *

No importance 1 2 3 4 5 Very important

14

Ability to select the appropriate target groups/people for his/her communication. *

No importance 1 2 3 4 5 Very important

15

Ability to confirm message has been received, even if cannot respond to it immediately. *

No importance 1 2 3 4 5 Very important

16

Ability to build and foster trust. *

No importance 1 2 3 4 5 Very important

17

Ability to listen carefully and show an effort to understand the message. *

No importance 1 2 3 4 5 Very important

APPENDIX 1 – CONTINUED

18

Ability to build relationship beyond immediate project for future cooperation. *

No importance 1 2 3 4 5 Very important

19

Ability to build an environment where project team members can express their opinions, weaknesses, mistakes and emotions. *

No importance 1 2 3 4 5 Very important

20

Ability to be open and flexible for new ways of doing things. *

No importance 1 2 3 4 5 Very important

21

Ability to avoid make excuses or blaming others. *

No importance 1 2 3 4 5 Very important

22

Ability to provide incentives and give recognition's to project team members for their work. *

No importance 1 2 3 4 5 Very important

23

Ability to follow up and show interest of the project task to ensure it will be done within the anticipated time. *

No importance 1 2 3 4 5 Very important

APPENDIX 1 – CONTINUED

24

Ability to admit mistakes and reveal weaknesses. *

No importance 1 2 3 4 5 Very important

25

Ability to celebrate the success of the project. *

No importance 1 2 3 4 5 Very important

26

Ability to show an understanding and knowledge of the values and beliefs of other cultures. *

No importance 1 2 3 4 5 Very important

27

Ability to pay attention to global and local communication habits. *

No importance 1 2 3 4 5 Very important

28

Ability to control own emotions and behave appropriately. *

No importance 1 2 3 4 5 Very important

29

Ability to be aware of other's feelings and needs. *

No importance 1 2 3 4 5 Very important

APPENDIX 1 – CONTINUED

30

Ability to take criticism and feedback. *

No importance 1 2 3 4 5 Very important

31

Ability to understand what motivates project team members to perform. *

No importance 1 2 3 4 5 Very important

32

Please respond to the following statements as applied to your customer delivery project environment.

Do you agree organizational climate (i.e. the way you feel and view the project working environment) in our customer delivery projects has direct impact to the project success? *

**Section 2:
Customer Delivery project
organizational climate**

- Yes
 No

33

The roles in the project team are clearly defined, explained and logically structured. *

Strongly disagree 1 2 3 4 5 Strongly agree

34

It is sometimes unclear who has the formal authority to make a decision. *

Strongly disagree 1 2 3 4 5 Strongly agree

35

Excessive bureaucracy is kept to a minimum. *

Strongly disagree 1 2 3 4 5 Strongly agree

APPENDIX 1 – CONTINUED

36

Our philosophy emphasizes that people should solve their problems by themselves. *

Strongly disagree 1 2 3 4 5 Strongly agree

37

There are an awful lot of excuses around here when somebody makes a mistake. *

Strongly disagree 1 2 3 4 5 Strongly agree

38

One of the problems is that individuals won't take responsibility. *

Strongly disagree 1 2 3 4 5 Strongly agree

39

People are rewarded in proportion of their job performance. *

Strongly disagree 1 2 3 4 5 Strongly agree

40

It is encouraged to provide constructive criticism. *

Strongly disagree 1 2 3 4 5 Strongly agree

41

It's very hard to get to know people. *

Strongly disagree 1 2 3 4 5 Strongly agree

APPENDIX 1 – CONTINUED

42

People tend to be reserved toward each other. *

Strongly disagree 1 2 3 4 5 Strongly agree

43

People don't really trust each other enough. *

Strongly disagree 1 2 3 4 5 Strongly agree

44

When I am on a difficult assignment I can usually count on getting assistance from my boss and co-workers. *

Strongly disagree 1 2 3 4 5 Strongly agree

45

We set very high standards for performance. *

Strongly disagree 1 2 3 4 5 Strongly agree

46

Around here there is a feeling of pressure to continually improve our personal and group performance. *

Strongly disagree 1 2 3 4 5 Strongly agree

47

People are proud of belonging to Wärtsilä Marine Solutions customer delivery project organization. *

Strongly disagree 1 2 3 4 5 Strongly agree

APPENDIX 1 – CONTINUED

48

I feel that I am a member of a well functioning team. *

Strongly disagree 1 2 3 4 5 Strongly agree

49

People pretty much look out for their own interest. *

Strongly disagree 1 2 3 4 5 Strongly agree

50

Please rank the importance of the following project criteria's in customer delivery project environment.

Do you agree project success criteria's in our customer delivery projects are well defined? *

Section 3:
Customer Delivery project
Success criteria's

Yes

No

51

To achieve customer (i.e. Contracted party) satisfaction. *

No importance 1 2 3 4 5 Very important

52

To achieve supplier satisfaction. *

No importance 1 2 3 4 5 Very important

53

To achieve internal project team satisfaction. *

No importance 1 2 3 4 5 Very important

APPENDIX 1 – CONTINUED

54

To achieve performance in terms of time. *

No importance 1 2 3 4 5 Very important

55

To achieve performance in terms of cost. *

No importance 1 2 3 4 5 Very important

56

To achieve performance in terms of quality. *

No importance 1 2 3 4 5 Very important

57

To achieve reoccurring business. *

No importance 1 2 3 4 5 Very important

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