

# Impact of organizational influences on project performance and outcome through its life cycle

-An empirical investigation-

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#### Impact of organizational influences on project performance and outcome through its life cycle -An empirical investigation-

The purpose of the assignment is to identify and analyze how and to what extent organizational influences shape project performance and outcome through its-life cycle. The assignment also aims to identify possible countermeasures that could be implemented in order to reduce the impact of these influences.

Organizational influences are usually reflected in numerous factors, including style, structure, competence, shared values, norms and beliefs, policies and procedures, the view of relationships with authority, and work ethics, to mention but a few.

#### Tasks

- Conduct a condensed and comprehensive literature review that covers types and categories and impact of organizational influences. The study should also look into similar research work that addresses the same or similar purpose.
- Identify relevant research methods that fit for the purpose of the assignment,
- Identify possible case studies (type of projects), respondents, informants and means to collect the empirical data from informants and respondents,
- Develop relevant instruments, interview guides, and questionnaires that can be used to collect relevant data from informants and case study,
- Through methods identified above, the student shall identify most prominent organizational influences in each project life cycle. Discuss and analyze their impacts, and elaborate on possible countermeasures that could be used address these organizational influences.

Within three weeks after the date of the task handout, a pre-study report shall be prepared. The report shall cover the following:

- An analysis of the work task's content with specific emphasis of the areas where new knowledge has to be gained.
- A description of the work packages that shall be performed. This description shall lead to a clear definition of the scope and extent of the total task to be performed.
- A time schedule for the project. The plan shall comprise a Gantt diagram with specification of the individual work packages, their scheduled start and end dates and a specification of project milestones.

The pre-study report is a part of the total task reporting. It shall be included in the final report. Progress reports made during the project period shall also be included in the final report.

The report should be edited as a double-spaced high quality research paper with abstract, keywords, introduction, literature review, research method, findings/results, discussions, conclusions and references. In addition to appendices. Referencing and the formatting should comply with for example international journal of project management, project management journal or any other project management journal.

The recommended size of the paper (abstract-conclusions) should be around 12 000- 15000 words.

Equipment and software developed during the project is a part of the fulfilment of the task. Unless outside parties have exclusive property rights or the equipment is physically non-moveable, it should be handed in along with the final report. Suitable documentation for the correct use of such material is also required as part of the final report.

The student must cover travel expenses, telecommunication, and copying unless otherwise agreed.

If the candidate encounters unforeseen difficulties in the work, and if these difficulties warrant a reformation of the task, these problems should immediately be addressed to the Department.

#### The assignment text shall be enclosed and be placed immediately after the title page.

Deadline: 31 Desember 2014.

Two bound copies of the final report and one electronic (pdf-format) version are required according to the routines given in DAIM. Please see <u>http://www.ntnu.edu/ivt/master-s-thesis-regulations</u> regarding master thesis regulations and practical information, inclusive how to use DAIM.

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## Preface

This master thesis was written as a finalization of the MSc. Project Management program at the Norwegian University of science and Technology (NTNU) at the Department of Production and Quality Engineering.

I would like to express my deepest gratitude to my supervisor professor Bassam A. Hussein who aroused my interest in the topic of organizational theories. His advice, ideas and critical comments have been of great value to me. I extend my gratitude to Giedre Pigagite for all her help, encouragement, and comments during this work.

Thank you to all the informants, researchers, leaders, and managers who supported me with important and valuable information.

Above all, special thanks to my family for their constant support during my stay in Norway.

Trondheim, December 2014 Masoumeh Ghazinejad

#### Abstract

Since organizational influences affect project performance and outcome either positively or negatively, it is critical to take into account the importance of role they play in project success. The goal of this research is to investigate the impact of shared values, as the most important organizational influence and as a level of organizational culture, on project performance and outcome. This study focuses on three important shared values, that is, trust, openness, and commitment and examines the impact of these values on project performance and outcome or more specific on the research projects. To this end, I conducted twelve semi-structure interviews with the researchers, research managers, and research leaders in the research institution. The investigation indicates that trust is a practiced value in the research institution and it is essential to effective teamwork. The investigation also shows that trust is a promoted value as one of four core values of the research institution. Trust facilitates the exchange of information, reduces control, improves the relationship and makes work relationship more efficient. It points out that trust as a promoted value reduces transaction cost (search and information cost) in the early phase and increases productivity. According to the investigation, openness as open communication and free thinking is a practiced value in the research institution that increases interaction between employees. It is also a promoted value in the organization to build trust. Through open communication and trust, people share their knowledge that has positive effect on the project performance. The investigation shows that commitment is a practiced value in the institution and there is a meaningful relation between researchers' commitment to projects and their interests in projects. Working on projects in which researchers are interested increases their commitment to the projects. According to the investigation, commitment is a promoted value and organizational commitment as organizational support increases feeling of individual commitment to the organization.

Thus, trust and openness along with effective communication improve atmosphere of relationship, shared understanding, and encourage commitment. Project management's leadership skill can improve organizational commitment and motive people commitment to the projects. Project management with a leadership role can create effective environment and improve productivity.

Keywords: Impact, Organizational culture, organizational performance, commitment, trust, communication, and openness.

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## Abbreviations

- PMM Project Management Maturity
- PM Project Management
- **NPD** New Product Development

#### **1. Introduction**

This chapter describes briefly background of the research, the research scope, the research objectives, and at the end, the structure of the study is represented.

#### 1.1. Background of the research

Project management as a holistic discipline is responsible for achieving organizational efficiency, effectiveness, and innovation (Frisanco, Anglberger, Ang, & Onu, 2008). The awareness that projects as temporary organizations are embedded in complex human activity systems and influenced by the complexity of human interactions has grown significantly among project management researches (Lundin & Söderholm, 1995);(Small & Walker, 2011). Project management researchers have recognized the need to change the direction from the traditional approach which has contributed to the development tools and methods towards the process oriented approach which has contributed to more human element on project (Blomquist, Hällgren, Nilsson, & Söderholm, 2010). In other words, project management became a better account for project phenomena and outcomes by changing the direction from developing principles for optimizing plans, contracts, and charts towards understanding the nature of social relations that occur in projects (Floricel, Bonneau, Aubry, & Sergi, 2014). Viewing projects as social process involving a complexity of human interrelations has led the project management researchers to a better understanding of factors that directly affect projects performance and outcome. Such factors that impact on project performance and outcome are called internal organizational influences and external environmental conditions (McLeod & MacDonell 2011). Organizational influences that received particular attentions are organizational culture, organizational policy and practice, and organizational system history (McLeod & MacDonell 2011). Organizational culture has been long recognized as a significant factor in organizational efficiency, effectiveness, and innovation and as a foundation for organization's management system and practices. Because it determines how decisions are made and how employees response to the environment (Ajmal & Koskinen, 2008). As this is impossible to discuss all elements of organizational influences and their impacts on project performance and outcome in the master thesis, this study will focus on the most important organizational influence, that is, organizational culture. The purpose of this research is to provide project managers and leaders with a better understanding of the impact of organizational culture on project performance and outcome.

#### 1.2. Research scope

Before proceeding of the research, it is important to note the research scope involved in this study and its limitation. Project management body of knowledge classifies organizational influences in five groups: organizational cultures and styles, organizational communication, organizational structures, organizational process assets, and enterprise environmental factors (PMI, 2013). As it is critical to take all these categories to consideration, we narrowed down the list of organizational influences to organizational culture. Organizational culture itself is a very board concept, including values and beliefs, shared values, common understanding, and interpretation and assumptions that shape behavior or action in relation to project performance (Robey & Boudreau, 1999). Therefore, we narrowed down the organizational culture to shared values. According to (Alvesson, 2002) good cultures are specified by norms and values such as teamwork, honesty, commitment to the organization, and pride in one's work and among the values. We selected trust, openness and commitment, the most influential shared values, in order to make it manageable.

Schein's model of culture would be the theoretical framework that provides the structure and guides of the research. Schein's model is classified organizational culture in three levels: artifacts, espoused values, and basic assumptions respectively (Schein, 2010). This study focus is the second level of Schein model in order to analyze impact of shared values on project performance and outcome.

#### 1.3. Research objectives

This master thesis has the following objectives:

- Conduct a comprehensive literature review to gain a better understanding of the concept of organizational culture, leadership style, and shared values.
- Conduct a comprehensive literature review to identify the impact of trust, commitment, and openness on the project performance and outcome and also impact of trust, commitment, and openness in the research institution.
- Conduct empirical investigation to examine the impact of trust, commitment, and openness in the research institution.
- Identify, analyze, and discuss the impact of trust, commitment, and openness on the research projects performance and outcome.
- Identify some remedies that project management can apply to increase the positive effects of trust, commitment, and openness on the research project performance and outcome.

#### 1.4. Thesis structure

This master thesis is organized into seven chapters:

• Chapter one gives a short introduction to the background of the study, scope of research and the thesis objectives.

- Chapter two explains the research methodology including type of research, research method, sample strategy, data collection, validity, and data analysis.
- Chapter three gives a condensed and comprehensive literature review, including classifying organizational factors, the concept of organizational culture, leadership style, and impact of organizational culture on project performance and outcome in order to gain a deeper insight into the research questions.
- Chapter four contains finding and discussion.
- Chapter five offering the possible remedies how to increase positive impact of trust, commitment, and openness on the project performance and outcome.
- Chapter six concludes and sums up the findings and the discussion.
- Chapter seven contains a list of references

#### 2. Methodology

This section explains how the study was conducted. First, a brief description of research type is presented regarding the research questions. Then, it discusses the kind of research method used and how data was collected. Finally, the matter of validity, ethical considerations, and data analysis are explained.

#### 2.1. Research type

According to (Kothari, 2009), qualitative research is used for qualitative phenomena such as human behavior. Qualitative research properly seeks answers to questions by exploring different social setting and the individuals who inhabit these settings (L.Berg, 2001). As the topic of this research revels, organizational influences concern social action and this study aims to explore the impact of these influences. Thus, the type of this research would be considered as qualitative research. According to (Kothari, 2009), empirical research relies on observation and experience. Empirical research is a data-based research leading to conclusions which are capable to be verified by experiment and observation. In empirical research type, a researcher who works on creating hypothesis guesses the possible results and then provides sufficient fact to verify the hypothesis. Wacker (1998) mentioned that this type of research generally uses interview process to gather data for analysis (Wacker, 1998). Therefore, this empirical research considered interview process in order to understand in depth the effects of shared values on project performance and outcome.

#### 2.2. Research method

Methods and techniques of research refer to those methods researcher uses in performing research operations. The objective of a research is arriving at a solution for a specific problem,

therefore available data and the unknown aspects of the problem need to be related to each other in order to make a solution possible (Kothari, 2009). Addressing to the research questions, relevant literature has been reviewed to gain profound insight regarding the research questions. Then, as the type of this research was qualitative, semi structured interview as a means of data collection was selected to provide a deep understanding of the social phenomena. It is suited for exploration of the perception regarding complex issue and probing more information and clarification of answers (Louise Barriball & While, 1994). The main idea behind this choice was to obtain an in-depth understanding of the organizational challenges, produce a total picture of the challenges from the different actors in the research projects. Collected data was analyzed descriptively to show the effects of organizational influences more specific shared values on project performance and project outcome. After that, a comparison between finding in literature and suggestions was made. Finally, some remedies in order to increase positive effects of these factors on project performance and outcome were recommended.

#### 2.3. Data collection

This empirical research used semi-structured interview as a tool to explore the investigation. The individual in-depth interviews conducted in the study were of a face- to face and semistructured nature with 12 informants from research institution. They have been working on various types of the research projects. Before interviews, they were informed about the project work and the purpose of interview. They also were given assurance about ethical principles, such as anonymity and confidentiality. After receiving their agreements, meetings were arranged at their office. Meeting was started with the predetermined questions on special topics. The respondents were determined the direction and content of the interview within a broader framework. Interviews were conducted at informants' office and each interview was lasted between thirty and forty minutes. The questions of the interviews are shown in Appendix A. All the informants are anonymous in the text and they are identified by characters in the sequence as they appeared in the text.

#### 2.3.1. Sample

Sample for qualitative investigations have tended to be small, because qualitative researchers having recognized that some informants are "richer" than others and that these people are more likely to provide insights and understanding to the researcher (Marshall, 1996). An appropriate sample size for a qualitative study is said to be one that adequately answers the research questions. The number of required subjects usually becomes obvious as the study progresses. Clearly this requires a flexible research design and an iterative, cyclical approach to sampling , data collection, analysis and interpretation (Marshall, 1996). As mentioned, the study focus is research institution. All the informants were working on the research projects. The 12 interviews conducted were sufficient in providing in rich insight with the impact of shared values including trust, commitment, and openness on the research project performance and outcome. The characteristics of the participants are shown in Table1. They are working in the largest independent organization in Scandinavia. They create value and innovation through knowledge generation and development of technological solution that are brought into practical use.

Informants	Years of experience in the institution	Nationality	Position	Field of research project
1	8	Norwegian	Research Scientist	Project Management
2	2	Norwegian	Research Scientist	Production and logistics
3	11	Norwegian	Senior Research Scientist	HSE, Psychology
4	1	Norwegian	Researcher	Production and logistics
5	13	Norwegian	Senior Research Scientist	Safety, Maritime Industry,
6	20	Norwegian	Research Director	
7	7	Norwegian	Research Manager	Project Management
8	16	Norwegian	Research Manager	Project Management
9	7	Norwegian	Research Scientist	Financing
10	11	Norwegian	Research Scientist	Economics
11	7	Norwegian	Research Manager	Economics
12	16	Norwegian	Senior Research Scientist	Economics

Table1. Characteristics of the participants

## 2.3.2. Validity

Validity in qualitative research is described as the issue of whether a measure of a concept really measures that concept (Koufteros, Rawski, & Rupak, 2010). In qualitative research, theorists

often appeal to the criterion of "respondent validation"; in other words, researchers' interpretations should be recognizable when presented to the study participants (van den Hooff & de Ridder, 2004). On this purpose, all the interviews were recorded with the permission of the informants. Then, all the interviews were transcribed. The face to face interviews helped to avoid any misunderstanding during the interviews. When it was realized that the informants did not understand the questions or the main concepts, those were explained so that to make sure that those were clear.

#### 2.3.3. Data analysis

The core of qualitative analysis lies in these related processes of describing phenomena, classifying it, and seeing how the concept interconnected (Day, 1993). It has shown in Figure 1. After completing the interviews, those were transcribed into written texts, and then all interview transcripts were carefully checked with audio recordings to ensure accuracy of them. Then, the information was categorized to find some logic of all what had been said and their connection with the literature.

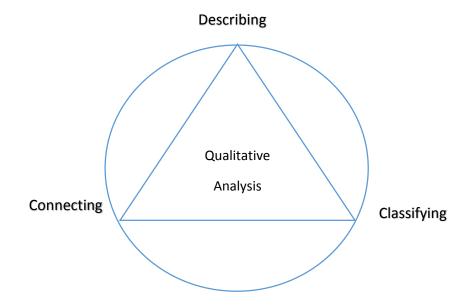


Figure1. Qualitative analysis as a circular process

#### **3. Literature review**

The literature review explores the four dominant themes of the research objectives: classifying organizational influences that shows classification of some authors and choose the classification for this study; the concept of organizational culture and leadership style that represents some definitions of organizational culture and explains Schein's model; impact of shared values as level of organizational culture that include trust, openness, and commitment; and at the end explains impact of trust, openness, and commitment on the research projects performance and outcome.

#### 3.1. Classifying organizational influences

Organizational influences are reflected in numerous factors, including style, structure, competence, shared values, norms and beliefs, policies, and procedures, the view of relationships with authority, and work ethics. Based on (PMI, 2013) organizational influences are classified into five major sections:

- Organizational cultures and styles
- Organizational communications
- Organizational structures
- Organizational process assets
- Enterprise environmental factors

There are different classifications from authors based on types of projects. Some of these classifications are shown in Table2.

Authors	Type of projects	Classification
		1. External business environment
		2. Organizational context-culture,
		structure, strategy, business
(Scott & Vessey, 2002)	System implementation	processes
		3. Systems context- data,
		technology, project governance
		4. Project- project focus and
		scope, project management,
		change management
		1.People and action
(McLeod & MacDonell, 2011)	Software system development	2.Development processes
		3. Project content
		1.End- user-related factors
(Hussein & Hafseld, 2013)	Information system	2.The performing project
		organization
		3.Project owners related factors

Table2.Example of classifying organizational factors

In addition, environmental factors, organizational culture, and pressure such as industrial norms are key success factors that affect project performance (Gu, Hoffman, Cao, & Schniederjans, 2014). Organizational properties that received particular attentions are organizational culture, organizational policy and practice, and organizational system history (McLeod and MacDonell 2011). As mentioned it is critical to take all organizational factors to cosideration. Therefore, this study based on (PMI, 2013) classification, emphasizes on organizational culture as an

organizational influence in order to explore the impact of these influences on project performance and outcome.

#### 3.2. Organizational culture

Culture as a category of social life has been conceptualized in different ways such as; culture as learned behavior, culture as creativity or agency, culture as a system of symbols and meanings, and culture as practice (Sewell Jr, 2005). There are many types of culture such as national culture, ethic culture, regional culture, and more localized cultures such as an organization (Pfister, 2009). Some definitions of organizational culture have been introduced:

- Organizational culture as an umbrella for a way of thinking which takes a serious interest in cultural and symbolic phenomena (Alvesson, 2002).
- Organizational culture is defined as the set of values, beliefs, and behavioral norms that guide how members of the organization get work done (Yazici, 2009).
- A pattern of shared basic assumptions learned by a group as it solved its problems of external adaption and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to percive, think, and feel in relation to the problem (Schein, 2010).

This study will adapt (Schein, 2010) definition of organizational culture. Schein (2010) defined a model of culture that sorts the various elements of culture into three distinct levels. Artifacts; Espoused values; and Assumptions.

Artifacts
 – the most visible level of culture consists of the physical and social
 environment that organizational members have created. Artifacts include the visible
 products of the group, such as architecture, technology, written documents, and art. The

most important point of this level of culture is that it is easy to observe but very difficult to decipher.

- 2. Espoused beliefs and values this level is composed of individual and group values. Values represents preferences what ought to happen. This level of culture represents a pattern of beliefs about how things ought to be done in an organization. Those individual who can influence the group will later be identified as leaders or founders, but the group has not shared any shared knowledge as a group.
- 3. Basic Underlying Assumptions Basic Underlying Assumptions are taken for granted that there is little variation within a social unit. If a group considers a value as a basic assumption, members will find any other behavior is inconvincible. Basic assumptions like theory in use are difficult to change (Schein, 2010). Schein' model is shown in Figure2.

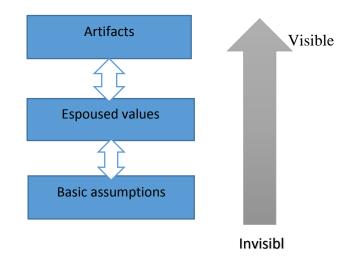


Figure 2. Schein's model on organizational culture (Schein, 2010)

Schein's (2010) stated that culture is a shared group phenomenon. Similarly, it is common to assume that culture means unity and shared values within an organization (Alvesson, 2002).

Thus, organizational culture can be defined as a pattern of shared values and beliefs (Erkutlu, 2012). It is closely linked to an idealistic notion of culture that a set of overall meanings, ideas, and values communicated by senior management and will lead to strong sense of direction and priorities shared within the organization (Neal M.Ashkanasy, 2010). According to (Alvesson, 2002) good cultures are specified by norms and values such as teamwork, honesty, commitment to the organization, and pride in one's work. Organizational culture can be considered as foundation of management system that determines the organization's method of operations(Ajmal & Koskinen, 2008). Pfister (2009) considered two-layered definition for organizational culture by using Schein model as following:

- 1) External adaptation and internal integration: External adaptation concerns the way an organization ,as a group of people, deal with changes (Pfister, 2009). While internal integration is about how a group of people organizes itself, what social structures, and what behaviors accepted in the group and what is not (Pfister, 2009); (Schein, 2010).
- Shared values and social norms: The core variables of culture often described as shared values among members of a group (Pfister, 2009). These two views of cultural interrelation have been shown in Figure3.

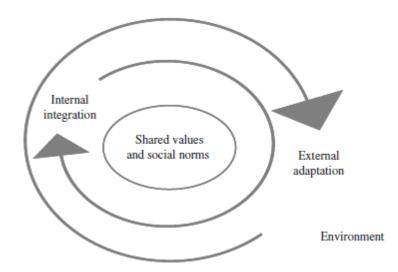


Figure3. Two views of cultural interrelate (Pfister, 2009)

Values must enhance behavior that is appropriate for task performance of the organization. In the terminology of Schein's dynamic definition, values must be adequate for external adaptation and internal integration (Pfister, 2009). The study focus is shared values as level of organizational culture and considers trust, commitment, and openness to investigate the effects of shared value on the project performance and outcome.

According to (Schein, 2010), there is relationship between culture and leadership. Leadership and culture are two sides of the same coin. Thus, before explanation of the impact of shared values, first discuss briefly leadership style.

#### 3.3. Leadership style

Alvesson (2002) assumed that most people expected to exercise leadership in their jobs are strongly influenced by organizational culture. The Cultural context guides the manager to how leadership should be carried out (Alvesson, 2002). With the shift toward team-based knowledge work, it is necessary to revising and rethinking if traditional model is still appropriate. Shared leadership is appropriate for knowledge work that have some characteristics including interdependence, creativity, and complexity (Pearce & Barkus, 2004). Traditionally, leadership has been convinced around the idea of one person while the rest are followers- named vertical leadership (Pearce & Barkus, 2004). However, in shared leadership, leadership is distributed among team members rather than focus on a single designated leader (Carson, Tesluk, & Marrone, 2007). Team leader who is responsible for the team's design must articulate trust and confidence in the team. Without trust, there is no hope to developing shared leadership. Top leader play the important role in development of shared-leadership culture (Pearce & Barkus, 2004). Shared leadership may lead to greater team empowerment by focusing on members' sense of meaningfulness, autonomy, and impact. When people engage in mutual leadership they being committed to and becoming proactive to help the team to achieve the goals and objectives

(Carson et al., 2007). Transformational leadership influences organizational performance through organizational innovation and learning (García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012). According to (Bass, 1999) transformational leader enhances commitment, involvement, loyalty and performance of followers. Top management must articulate the changes that are required such as vision which in needed to be shared about the style of leadership. Leaders who are concerned about organizational renewal will seek to foster organizational cultures that are hospitable and conductive to creativity, problem solving, risk taking, and experimentation. Transformational leadership becomes transmitter of innovative culture to enhance the best possible organizational performance (García-Morales et al., 2012). Transformational leadership committed to the organizational goals and seeks to encourage the people commitment to the result (Bass, 1999) and (García-Morales et al., 2012). Transformational leaders provide inspiration by motivating their followers through communication of high expectations (García-Morales et al., 2012).

#### 3.4. Impact of organizational culture on project performance

Organizational culture influences organizational performance through shaping the behavior of organization members (Zheng, Yang, & McLean, 2010). Corporate culture and leadership are major factors that influence on organizational structures, process, and finally performance of organizations (Yıldırım & Birinci, 2013). According to (Belassi, Kondra, & Tukel, 2007) organizational culture has direct effect on NPD project performance. Belassi (2007) found that organizations with result oriented culture has positively affected on organization performance (Belassi et al., 2007). Yazici (2009) stated that organizations with higher maturity levels are suuceessful in terms of project effectiveness and effeciency. Morover, a correct alighnment of organizational culture and PMM lead to higher project performance (Yazici, 2009). Ajmal and Koskinen (2008) emphasized the importance of organizational culture in the creation and

knowledge sharing in project-based organization (Ajmal & Koskinen, 2008). Culture as values, beliefs, and assumptions that influences the behavior and willingness to share knowledge (Sveiby & Simons, 2002). Practices such as sharing information and employing self-managed work teams were identified as behaviors that reflected successful organizational culture (Belassi et al., 2007). Organization that encourage collaboration and communication among project team members are expected to have better outcome (Yazici, 2009). Competitive and innovative cultures which are sensitive to external conditions have a strong and positive impact on organizational performance (Ogbonna & Harris, 2000). Team with high bonding social factors are more likely to share their knowledge and they positive effect on knowledge sharing and finally project performance (Han & Hovav, 2013). Organizational culture is associated with organizational performance (Ogbonna & Harris, 2000). The right culture- a culture that promotes effectiveness with the right values, supports the organizational purpose and objective, and influence the organizational performance (Pfister, 2009). Thus, culture has the greater contribution than other factors, because culture determines the basic belief, values, and norms (Zheng, Yang et al. 2010). Similarly, cultures and styles have a strong influence on project performance (PMI, 2013). Organizational culture contributes to organizational performance, because it is aligned with organizational purpose and objectives (Pfister, 2009). The performance of an organization is dependent on the alignment of employee values with espoused values of organization (Ogbonna & Harris, 2000). The clan culture specified the importance of participation, cohesion, shared values, commitment, and high moral (Yazici, 2009). Typical characteristics of clan culture are teamwork and employee involvement, loyalty and commitment (Wiewiora, Trigunarsyah, Murphy, & Coffey, 2013). Shared behaviors are intended to produce successful organizational outcome in terms of productivity and profitability (Belassi et al., 2007). Therefore, trust, commitment, and openness are considered as influential shared values and in the following, influence of these values on the project performance and outcome are presented. First, the influence of trust on the project performance and outcome is expressed.

#### • Trust

Rousseau (1998) defined trust as a complex phenomenon that enables cooperative behavior, reduce harmful conflict, decreases transaction costs, and promotes effective responses to crisis (Rousseau, Sitkin, Burt, & Camerer, 1998). Three basic forms of trust are calculus-based trust; trust appears when the trustor (the trusting party) perceives that an action is going to be performed is beneficial for the trustor. In this kind of trust, individual are motivated primarily by economic self-interest. Relational trust; trust appears between individual who repeatedly interact over time. Institution-based trust; trust refers to the role of institution in shaping the conditions necessary to create trust(Kadefors, 2004); (Rousseau et al., 1998). Trust leads to risk taking in a relationship, in other words, "The willingness to take risk" (Schoorman, Mayer, & Davis, 2007). Similarly, trust is needed where there are uncertainties in order to have success outcome (Smyth, Gustafsson, & Ganskau, 2010). Since trust was believed to have a positive effect for the whole duration of the project, it was relevant to try to assess the overall effect of trust. High trust at the beginning of the project should enable teams to start their work on better terms (Aubert, 2000). Information system projects require teamwork and collaboration among team members that depend on social relations (Han & Hovav, 2013). Trust has a strong positive influence on the strength of people relationship and ultimately has positive affect on project outcome (Rousseau et al., 1998). Trust is complex concept due to have variety of meanings, depending of the situation and actors in relationship (Rousseau et al., 1998). It can facilitate the exchange of information and reduce the control and its associated cost and finally making working relationship more efficient (Aubert, 2000). Trust is important both across hierarchical levels and between departments within the organization (J. K. Pinto & Slevin, 1987). Trust can be enhanced through reward system that influence people perception of each other's motivation and the value of joint performance (Ferrin & Dirks, 2003). Team member with high bonding social relation are more likely to share their knowledge with their team. Bonding defined as internal ties such as trust, internal corporative norms and internal team mental models. High bonding intention to share knowledge positively affect project performance (Han & Hovay, 2013). Trust as a facilitator of positive relationship among project stakeholder impact on project success. Affective trust is perceived as belief that bind people together (J. K. Pinto, Slevin, & English, 2009). Organizations in the form of cultural rules influence the preconceptions of the trustworthiness of various categories of people and organizations (Kadefors, 2004); (Rousseau et al., 1998). The quality of communication, shared problem solving, and the management of conflicts determine trust of formation and increase partnership efficiency and project performance (Bstieler, 2006). High level of trust between clients and project design team reduce the transaction costs and maximizing creativity and problem solving (Smyth et al., 2010). Trustbased relationship will not easily become weaker because of differences of opinion. Trust enables the partners to overcome difficulties and facilities mutual understanding (Bstieler, 2006). Therefore, trust can help to strengthen and improve the relationship between project partners in turn, as a result bring a variety of benefits for the project as a whole (Wong, Cheung, Yiu, & Pang, 2008). The summary of trust is shown in Table3. In the following the effects of openness as open communication and open thinking is presented.

#### • Openness

Open communication means anyone must be able to communicate to anyone else and be as open as possible in sharing task-relevant information (Schein, 2010). Bstieler (2006) stated that communication is the exchange of information between parties (Bstieler, 2006). Cultures with clan-type characteristics emphasizes collaborative environment, non-competitive at work, and openly share knowledge (Wiewiora et al., 2013). Figure 4 shows the relevant between the nature of organizational culture and the nature of knowledge flow.

Shared Knowledge	Nature of Organ	nizational Culture
Base and Casual Beliefs	Highly Entrepreneurial	Highly Administrative
High	Constructive	Bureaucratic
Low	Aggregative	Transactive

Figure 4. Interactional contexts and knowledge outcomes in organizations

- Constructivist: in this culture, managers encourage people to involve in creativity, and promoting internal diversity to match the variety and complexity of environments.
- Bureaucratic: organizational cultures are rigidly bureaucratic and they communicate formal and hierarchical. Because if their hierarchical structures, communication flows and knowledge flows are limited to some people.
- Aggregative: participants have low accountability discussion with weak social relationships between them. Knowledge flows across organizational boundaries.
- Transactive: It has high administrative setting and information is easily exchanged, but interpersonal interactions is minimal (Chinying Lang, 2001).

Effective interaction between participants in project can facilitate the alignment of goal and expectations, and achieve mutual understanding (McLeod & MacDonell, 2011). It has also been identified as one of the most important factors to project success (J. Rodney Turner & Müller,

2004). Open, and adequate communication helps to develop a shared understanding, improves the atmosphere of the relationship, fosters commitment, ensures that deadlines are respected, and enhances trust between the partners (Dyer & Chu, 2003); (Bstieler, 2006). Communication reduces the mistrust and conflict of interest and improve project performance (J. Rodney Turner & Müller, 2004). Organizational policies and practice may constrain the appropriation of system development innovations, such as a new standard methods, technique, or tools (McLeod & MacDonell, 2011). To overcome of these difficulties a project team should have a supportive organizational culture to support individual efforts and ensure that the required information is shared and there is a direct communication among all of the members of the team (Cserháti & Szabó). The important key to developing new projects is to have cross- functional cooperation within a project team (M. B. Pinto & Pinto, 1990). Communication is important factor that can affect the whole organization. Lack of communication can be the biggest reason for the failure of many projects to meet their expectations (Clarke, 1999). Effective communication creates contact between clients and service provider. Once tight relationship ties are established, it would not be easy for clients to dissolve the relationship. Effective communication is positively associated commitment and trust level (Park, Lee, Lee, & Truex, 2012). Thus, it is essential to enhance communication in the project management body of knowledge and emphasis on effective communication (Turner and Müller 2004). Implementing development projects need requires timely coordination and integration (De Long & Fahey, 2000). According to (Cserháti & Szabó) in the implementation of fulfilment of project objectives and satisfaction of project stakeholders, relationship oriented factors such as project leadership, cooperation, and communication are essential whereas task oriented factors are less important (Cserháti & Szabó). Misunderstanding often produces negative consequences such as delays. The most common causes of misunderstanding were incompletely expressed information, differences in concepts, uncertainty about tasks and responsibility (McLeod & MacDonell, 2011). Effective communication in the early phase of the project can provide an umbrella of legitimacy and credibility (Rauniar & Rawski, 2012). Culture identifies the pattern of interaction to accomplish work. For example, formal communication process and meeting periodically (De Long & Fahey, 2000). Effective communication is conceptualized as an antecedent of trust and commitment (Park et al., 2012). The summary of openness is shown in Table3. The next part explains commitment and its effect on the project performance and outcome.

#### • Commitment

Commitment is the second major component of social capital (Cullen, Johnson, & Sakano, 2000). Porter (1979) defined Commitment as a strength of an individual's identification within and involvement in an organization. It has three components: a strong belief in and acceptance of the organizational goals and values; a willingness to exert considerable effort on behalf of the organization; and desire to maintain organizational membership (Mowday, Steers, & Porter, 1979). Commitment is strong and important concept with considerable relevance for both employees and organizations. For employees, commitment to work and an organization represents a positive relationship (Mowday, 1998). Commitment is classifed in three forms: effective, continuance, and normative. Afective commitment refers to emotional attachment of individuals to organizations (Meyer, Allen, & Smith, 1993). Continuance commitments means associated with the intention to the organization due to the cost of leaving or the rewards for staying. Ultimately, normative commitment reflects a feel of obligation to saty a member of an organization (Mahdi, Mohd, & Almsafir, 2014). Organizational commitment as the organizational support has a positive impact on achievement of project objectives (Basu, Hartono, Lederer, & Sethi, 2002). In addition, Organizational commitment increases feelings of individuals' involvement and sense of belonging (Zehir, Sehitoglu, & Erdogan, 2012). Supportive leadership has important role in determining the levels of employees' commitment (Mahdi et al., 2014). Typical characteristics of clan culture are teamwork and employee involvement, loyalty and commitment (Wiewiora et al., 2013). Committed employees feel the need to go beyond normal job requirements in order to make a significant contribution to the organization (Perryer & Jordan, 2005). In addition to commitment, the flexibility of the people plays an important role for the participation of people in multiple simultanous tasks(de Oliveira, Possamai, Dalla Valentina, & Flesch, 2012). Team commitment and felexibility are two important factors that can overcome unexpected problems (Walker & Shen, 2002). Commited employees would be beneficial due to the potential to increase performace and reduce turnover (Mowday, 1998). Commitment has a vital role in reducing the variances and slippage in project cost and and schedual (Gulzar, Arshad, Mirza, Hafeez, & Ehsan, 2012). Transformational leader has positive relationship between the supervisor's leadership style and employee commitment to supervisor in the case of employees who believe that leaders pay attention to their interests is an expected outcome (Zehir et al., 2012). The performance of an organization is dependent on the degree to which the values of the culture are comprehensively shared (Denison, 1990). The summary of commitment is shown in Table3. The following section explains the effect of trust, commitment, and openness on the project through knowledge sharing.

# • The effects of trust, commitment ,and openness on project performance through knowledge sharing

In research organizations, people are facing increasing of technological changes, complexity, globalization and dynamics. Therefore, they need to pay attention to the development knowledge and the way they use the existing knowledge (Pérez López & al., 2004). Knowledge

is not information and not some software or hardware. Knowledge must flow among people in the organization (Chinying Lang, 2001). Therefore, people relationships in the organization are important consideration (Chinying Lang, 2001). According to (van den Hooff & de Ridder, 2004) knowledge sharing is the process where individuals exchange their implicit and explicit knowledge and create new knowledge.

- Explicit knowledge is technical data or information that is gained through formal education, or structured study. Explicit knowledge is easily communicated and shared through print, electronic methods, and other formal methods (van den Hooff & de Ridder, 2004).
- Tacit knowledge is defined as knowing to do something without thinking about it. This knowledge is informal and can be found in books, manuals, or databases (Smith, 2001).

Culture shapes the process by which new knowledge is created, organized, and distributed. Knowledge exists at individual, group, and organizational levels and management attempts to improving knowledge creation and use the knowledge at group and organizational level (Long & Fahey, 2000). Factors affecting knowledge sharing process include hard issues such as technologies and tools, and soft issues such as communication climate and organizational climate, and culture (Rauniar & Rawski, 2012). According to (Karlsen & Gottschalk, 2004) system and procedures and culture are affecting knowledge is shared (van den Hooff & de Ridder, 2004). Knowledge and culture are very closely linked in organizations. Culture shapes assumptions about which knowledge is important. Culture specifies what is perceived as useful, important, or valid in an organization (Long & Fahey, 2000). Internal knowledge transfer is very difficult to achieve (Sveiby & Simons, 2002). Knowledge transfer is affected by system and procedure, and culture in organization (Karlsen & Gottschalk, 2004). Culture of trust and collaboration improves knowledge sharing and organizational effectiveness (Sveiby & Simons,

2002). Different organizational culture types differently influence project knowledge sharing behaviors for e.g. knowledge sharing can be achieved by building mutual trust, improving information and communication technologies, motivating employees, and building knowledge sharing culture (Bstieler, 2006). According to (De Long & Fahey, 2000), cultures that emphasize collaboration and frequency of interaction will have greater knowledge sharing outcomes.

In Table 3 we are going to sum up the influence of trust, openness, and commitment on the project performance and outcome.

Shared values	Result of literature review
Trust	<ul> <li>Deal with uncertainty</li> <li>Decrease transaction cost</li> <li>Positive affect on project outcome</li> <li>Enhancing trust through reward system</li> <li>Positive affect on duration of the project</li> <li>Strong influence on the strength of people relationship</li> <li>High trust in the beginning enable teams to start better</li> <li>Overcome difficulties and facilitate mutual understanding</li> <li>Facilitate exchange of information and reduce control cost</li> <li>Affect the quality of communication and shared problem solving</li> <li>Intention to share knowledge that positively affect project performance</li> </ul>
Openness	<ul> <li>Ensure deadline are respected</li> <li>Enhance trust between the participants</li> <li>Facilitate the alignment of goal and expectation</li> <li>Reduce mistrust and improve project performance</li> <li>develop a shared understanding and foster commitment</li> <li>Effective communication is positively associated commitment and trust</li> </ul>
Commitment	<ul> <li>Commitment and flexibility can overcome unexpected problems</li> <li>reducing variances and slippage in project cost and schedule</li> <li>organizational commitment increases feeling of individuals' involvement</li> <li>committed employee increase performance and reduce turn over</li> </ul>

### Table 3.Summary of trust, openness, and commitment

It shows that trust has strong influence on people relationship and facilitates mutual understanding. Trust facilitates knowledge sharing that has positive affect on project performance. It has positive affect on duration of the project and also decrease transaction cost. Open communication reduce mistrust and facilitate the alignment of goal and expectation and finally improve project performance. Commitment reduces variances and slippage in project cost and schedule. It also shows effective communication is positively associated commitment and trust.

As mentioned, the investigation focused on the research organization. Therefore, in the next section, briefly, the effects of trust, commitment, and openness on the research project is presented.

## 3.4.1. The impact of shared values on research projects

Research projects have three main purpose including creating new knowledge and making claims to knowledge; testing the validity of knowledge claims; generating new knowledge theory (Av Jean McNiff, 2010). Action research, which emphasizes collaboration between researchers and practitioners, is a qualitative research that has much potential for the information systems field (Avison, Baskerville, & Myers, 2001). In other words, action research is about findings to improve your practice, so it is about creating knowledge. The created knowledge is knowledge of practice (Av Jean McNiff, 2010). New needs or new technology may develop during the time researchers are working on his/her project. This implies that researcher must have available continues and frequent communication (Ebadi & Utterback, 1984). The free and open communication of the research result is essential to their goals of expanding knowledge (Hemmert, Bstieler, & Okamuro, 2014). Through working together, trust can be built by having information on others, prior experience of working together, and norms of cooperation (Harris & Lyon, 2013). Initially trust can easily break down due to conflict and misunderstanding in exchanges between collaboration partners. Therefore, initial trust needs to be maintained and reinforced (Hemmert et al., 2014). The reinforced is achieved through commitment and efforts of individuals who take an inordinate interest in the success of the projects (Hemmert et al., 2014). Therefore, trust is built through working together, openness and putting themselves at risk from others, discussing issues, and gaining understanding about others (Harris & Lyon, 2013). In action research, researchers aim to adapt to circumstances as they arise, in terms of people's needs and wishes. Researchers must be flexible. They keep the participants informed about how the research is going. Invite their feedback, and let them know it is valued (Harris & Lyon, 2013).

# 4. Findings and Discussion

The investigation examined the impact of shared values on the research projects. This section will provide the detailed description of our collected information, which we gathered from 12 semi-structured interviews in the research institution. The interviews were conducted with researchers, research managers, and research leaders. We are going to compare how finding are match my literature, and what kind of differences it has. All the researchers are indicated as informant from 1 to 12 in order to respect their privacy. The findings can be divided into four sub parts of the impact of shared values including the impact of trust; The impact of commitment; The impact of openness; The relationship between trust, commitment, and openness that will be discussed in details as follows.

### 4.1. Impact of shared values

First, it is necessary to have definition of practiced values, promoted values, and action research used in this study.

- Practiced values: What an organization is defines its practiced values which can be either positive or negative.
- Promoted values: What an organization ideally should be defines its promoted values. These values are usually advertised in documents of an organization such as official policies in speeches or official declaration of leaders or management.
- Action research, which emphasizes collaboration between researchers and practitioners, is a qualitative research that has much potential for the information systems field (Avison et al., 2001).

Before starting to discuss the findings, we are going to present other promoted values pointed out in the research institution by researchers, research managers, and direct leaders. The research institution had four core values that were honesty, courage, generously, and unity. All the informants believed that four core values are really important and they are promoted values in the organization. In addition to these four core values they pointed out some other values that are promoted in the institution. They are shown in Table 4.

Informants	Promoted shared Values			
7,8	Transparency, openness, Accountability			
2,3,1,4,12	Responsibility, Collaboration, Flexibility, Creative, Proactive, Patient, Deliver on time			
6	Sustainable, Competence, Effective			
11, 9	Integrity, Being challenging, Knowledge sharing, Involving			

#### Table 4. Other promoted values

The investigation focused on trust, commitment, and openness. In the following the impact of these values on the research projects has been discussed.

### 4.1.1. The impact of Trust

The finding from empirical research has shown that honesty was a practice value in the research institution and researchers, research managers, and direct leaders value honesty as a vital element to the project performance. Two informants (5 and 7) provided an example that they had experience with European Union projects. They were not satisfied with the project and they

said that the project postponed because of lack of trust. They believed that Norway has high level of trust. Informant 5 stated that:

"...I cooperated with other people in Europe. May be we, in average Norwegian trust each other more than they do. In brief, that [EU project] was tough project to land".

The finding has shown that believe in the researchers' potential help to engage the work. In research work where researchers work alone on her/his project, they need the leader trust to her/his potential in order to move forward. Smyth (2010) found that confidence increases expectations and trust to potential to move to higher levels (Smyth et al., 2010). Informants 9 and 4 believe that trust to potential motive them to move to forward. Informant 4 said that:

"I think she [leader] is not confident about what I am doing then I am losing confidence as well".

The finding also shows that in addition to trust, support from leader is also important. Informant 9 said that:

"I trust my leader and expect feedback and support. Feedback is necessary and important for outcome of my work"

The finding shows trust in different level affect the project. For example, in innovative or problem solving projects, the high level of trust between clients and project group reduces the transaction cost (search and information cost) in the early phase of the project. As Smyth (2010) proved that high level of trust between clients and project design team reduce the transaction costs and maximizing creativity and problem solving (Smyth et al., 2010). In addition, the number of interactions and the duration of relationships increase the communication and exchanges between researchers and third party. It shows that enough interaction makes trust. In other words, long term relation inside or outside the company with client establishes level of trust. According to Rousseau (1998) definition, *Relational trust*: trust appears between

individual who repeatedly interact over time (Rousseau et al., 1998). Informants 7, 8, and 3 who work on action research agreed that and informant7 specified:

"Long term working with companies and also inside, establish level of trust and reduce transactional cost in the project".

The finding has shown that in the early phase of the project researchers from different departments who participate in the project, first they need to know each other. Researchers who do not know each other, it takes longer time to make trust. High trust at the beginning of the project enable teams to start their work on better terms (Aubert, 2000). Informant 12 stated that:

"We trust each other inside the department, but involving in project with other departments need make trust, because we do not know each other".

The finding shows that trust can affect the project through knowledge sharing. It shows that without trust, researchers do not share their knowledge and it is hinder the progress of the project. Some informants believe that researchers are willing to share their knowledge just they have many projects and do not have time for sharing their knowledge. Researchers have access to all the projects that have their own folder on the common server. However, informant 3 and 4 believed that some researchers are not eager to collaborate and share their knowledge. They keep their ideas for future projects. Culture of trust and collaboration improves knowledge sharing and organizational effectiveness (Sveiby & Simons, 2002). Informant 8 expressed that:

"People share their knowledge very well. Just they do not have time to share the knowledge"

However, informant3 stated that:

"Some are not eager to share their competency".

Finding shows that trust reduces control and increases productivity. When people trust each other, they do not need somebody to control their work. It shows that the level of trust grows the need to use formal control diminish. Trust can facilitate the exchange of information and reduce the control and its associated cost and finally making working relationship more efficient (Aubert, 2000). Informant 5 and 6 stated respectively:

"If we don't trust each other, the project will be delayed".

"If people are not honest about different things, this influence the result of the projects"

The finding has shown that trust can be considered ethical value and individually. Interpersonal trust facilitates knowledge sharing (Wiewiora, Murphy, Trigunarsyah, & Brown, 2014). The finding has shown that some people are more likely to trust than are others. Only informant 3 expressed that:

"I trust my collages; it is not good for our company to be protective. I think trust is individually".

The investigation has shown thattrust was considered as promoted value in the organization. All the informants proclaimed that trust is essential to effective teamwork. Maurer (2010) stated that trust facilitates the alignment of partner satisfaction and supports the achievement of project goals (Maurer, 2010). The finding shows that high trust levels within organizations can contribute to increase efficiency of their work and the project performance. Trust tends to develop faster and to higher levels in environments of equity (Smyth et al., 2010). It also has shown that some people who work on the project alone expect their leaders to trust their work and take a risk. Trust leads to risk taking in a relationship, in other words, "The willingness to take a risk" (Schoorman et al., 2007). Informant 8 stated that:

"Trust is very important value in a project. It is very hard to carry out the projects without trust".

Informant 9 agreed that the leaders are not willingness to take risk. Informant 9 said that:

"They [leaders] are not willing to take risk"

The finding has shown that research projects do not need to have reward system to making trust and increase productivity. However, based on literature, trust can be enhanced through reward system that influence people perception of each other's motivation and the value of joint performance (Ferrin & Dirks, 2003). Therefore, reward system cannot consider as motivation issue for the research organization. Informant 8 said that:

"I do not think so about reward system to help. I do not think reward system impact on what we want".

The summary of the impact of trust is shown in Table5.

## **Impact of trust**

- Trust the researcher's potential increases confidence and positively affects project performance.
- High level of trust reduces transactional cost in the project.
- Enough interaction inside and outside the organization can make trust.
- People in the organization with culture of trust are willing to share their knowledge.
- Trust in high level reduces control and increases productivity.
- Trust has positive effect on project performance and outcome.

Table5. The impact of trust on the research projects

### 4.1.2. The impact of commitment

The findings have shown that commitment was a practiced value in the organization. It has shown that the level of commitment in the research institution may affect success or failure of the projects. It was a common approach that researchers had priorities for their tasks based on their interest to the projects. In other words, they preferred to work on some projects that they have an interest. Freedom to do the projects that they have an interest motive them commitment to the project. However, some projects were not completed within the planned schedule. Thus, level of commitment depends on level of interest. Affective commitment refers to emotional attachment of individuals to organizations (Meyer et al., 1993). Informants 2, 4 and 8 said that researchers are freedom to choose the project that they have an interest. Informant 2 said that:

"We have freedom with responsibilities. There is freedom of choice in selecting the project in our field".

The finding has shown that in addition to importance of researchers' freedom that motives them to commitment to the projects, knowing and understanding objectives of the organization can encourage them commitment to the project. It shows that researchers who believe organization's goals and values have commitment to the work. According to (Mowday et al., 1979) three components for commitment are; a strong belief in and acceptance of the organizational goals and values; a willingness to exert considerable effort on behalf of the organization; and desire to maintain organizational membership. Informant 3, 4, and 5 proclaimed that interest in organization value and goals motive them to commitment to the project. Informant 4 said that:

"I think making society better as slogan in our organization encourage commitment to the project".

The finding has shown that in addition to team members' commitment, having support from organization also is very important and affects project performance. Organizational commitment as the organizational support has a positive impact on achievement of project objectives (Basu et al., 2002). It shows that organizational support is necessary to encourage researchers commitment to the project. Majority of researchers were satisfied working at this organization. They were proud of their organization and that was big motivation for them to commitment to the project. Informant 6 said that:

"The organization has shown commitment, both in financial term and appreciates the job you do and they see you".

The findings have shown that researchers have to be flexible, because in project work they faced with a lot of unexpected things. As mentioned researchers had different projects to work simultanously and they had periorities for their projects. They could not involve in all the projects as much as they would like to have. In the middle of the project, they will make an excuse for not performing their own tasks. Leaders tried to deal with that problem with replacing somebody else or dividing the work between team members. These problems affected the project duration and caused delay. Commitment has a vital role in reducing the variances and slippage in project cost and and schedual (Gulzar et al., 2012). Team commitment and felexibility are two important factors that can overcome unexpected problems (Walker & Shen, 2002). Inofrmant 1, 2 and 4, 8, and 7 emphasized on flexibility that is important for these kinds of projects. Informant 4 and 11said that respectively:

"Commitment is not enough, you should be flexible".

"....researchers are busy to contribute as much as they would like. We[research managers] try to deal with that".

The finding shows that when researchers feel beloning to the organization, they feel a stronger sense of commitment to the project. It shows that sense of commitment increases productivity. Commitment is strong and an important concept with considerable relevance for both employees and organizations. For employees, commitment to work and the organization represents a positive relationship (Mowday, 1998). Informant 6 specified that:

"The motivation for our employees is that they understand they are part of the organization" and added "Commitment to the project extremely important and has huge effect on the project performance".

Informant informant 7 pointed out:

"You should prioritize commitment to the project. They [organization] do not have enough resource for their work. This is happening in the organization".

The summary of the impact of commitment is shown in Table6.

### **Impact of commitment**

- Freedom to do projects in their field motives researchers to commitment to the project.
- Organizational commitment as organizational support has positive affect on project performance and outcome.
- In addition to commitment, flexibility is important value in the research organization to prevent the project failure.

Table6. The impact of commitment on the research projects

### 4.1.3. The impact of openness

The finding has shown that openness is a practiced value because of the flat organization. There is direct communication between employees at all level. In other words, the distance between levels is very short in the organization that means they can communicate with leader and manager directly. Direct communication leads to increase knowledge sharing that has positive affect the project performance. Hierarchy has strong dominance on control, structure, achievement, and demanding leader. Cultural values affect the willingness to share knowledge (Wiewiora et al., 2013). Informants believe that openness is their culture. The findings also show that researchers through open communication share the information that affect project outcome. It shows that through communication they ensure that deadlines are respected. According to literature, people through communication share the information which is so critical to the successful implementation projects (M. B. Pinto & Pinto, 1990). Informant 8 and 9 pointed out:

"... openness is one of things actually help us. When we work together as a team, we need to share our knowledge".

"With open communication, everybody can have voice; everybody will be allowed to have an opinion. Involvement I think is important".

The finding has shown that openness was a promoted value in the research institution. The investigation has shown that openness as open and effective communication has strong effect on the research projects outcome. In the early phase of the project, it is very important to make sure that everybody understands the project goals and objectives and researchers know what they are supposed to do. The important thing is that they have to know who the right person to communicate is. Effective interaction between participants in project can facilitate the

alignment of goal and expectations, and achieve mutual understanding (McLeod & MacDonell, 2011). Informant 6 and informant 1 stated that respectively:

".....we often see our projects failure. The quality is good enough. But it [the project] takes longer than expected. For example, duration is 6 months instead of 3 months because of lack of direct communication with the right person".

"....in European Project, we had a lot of miss communication. They were had different perception of words mean".

The investigation shows that research organization with high degree of openness such as having open communication with their collages and their managers, they can solve the projects' problem and this has direct effect on project outcome. In addition, through effective communication, researchers share their knowledge that affects the project performance. In literature we have seen with having supportive organizational culture and direct communication among all of the members, the team can overcome difficulties (Cserháti & Szabó). Informant 7 specified that:

"If you are not open enough, you struggle in your problem. This affect the duration of the project".

The finding has shown that open communication between project team from different groups lead to team have whole picture of the project. If researchers know the whole project, they will have better understanding of the project. It has positive affect on the project outcome. An integrated team facilities team learning and shared knowledge through communication and can improve research project performance. Tseng (2010) found that for organization with informal structure, it is easier to encourage their staff to share their tacit knowledge (Tseng, 2010). Informant 4 stated that:

"You get the task that is part of the bigger task. We make better result, if we can see part of whole picture".

The finding has shown that open communication is very important for innovative organization. Affective communication helps to avoid misunderstanding particularly in the early phase of the project. Effective interaction between participants in project can facilitate the alignment of goal and expectations, and achieve mutual understanding (McLeod & MacDonell, 2011). Informant 3 and 4 expressed that respectively:

"Openness is important to avoid misunderstanding".

"Openness in the research organization is quiet important. Getting efficient information from others, meeting and discuss things".

The finding has shown that accurate communication and also critic or feedback from leader are very important and affect the project performance. Receiving feedback from leaders encourage researchers commitment to the project. In literature review, Bstieler (2006) stated that timely, accurate, open, and adequate communication helps to develop a shared understanding, improves the atmosphere of the relationship, fosters commitment, ensures that deadlines are respected (Bstieler, 2006). Informant 11 said:

"Lack of collaboration and communication between leadership and researcher lead to vague result".

The summary of the impact of openness is shown in Table7.

#### The impact of openness

- Effective communication in the early phase makes better understanding of the project goal and has strong effect on project performance and outcome.
- Through open communication people share their knowledge that has positive affect on the project performance and outcome.
- Open communication enhance people engagement and increase commitment to the project.

Table7. The impact of openness on the research projects

## 4.1.4. Relationship between trust, commitment, and openness

The investigation has shown the relation between tust, openness, and commitment. It shows open communication enhace interaction between people and can help to make trust. In addition, having open communication and sharing information need trust each other. Informant 7 said that:

"Openness is very important for covering the problems of the projects that need to be solved. But I think it needs to create trust first".

The investigation shows open and effective communication and mutual trsut enhace knowledge sharing, reduce misunderstanding, transaction cost and increase productivity. It also reduce control from leader and rework. Effective communication is positively associated commitment and trust level (Park et al., 2012). Open communication and freedom to choose the project based on researchers interest enhance commitment to the project. In the literature we have seen, timely, accurate, trust, and open and adequate communication help people to develop a shared

understanding, improves the atmosphere of the relationship, encourages commitment (Dyer & Chu, 2003); (Bstieler, 2006). Informant 6, 12, and 9 sated that respectively:

"The main benefit of these factors[shared values] in our organization is quality of delivery and reduce the delay".

"It is not enough to be honest, you should be open. In this way it will affect commitment to the work".

"If you don not see commitment, the trust will be missing"

The investigation shows that openness is seen as a main element in order to build trust in the relationship among team members, leaders, and managers. Organization less formal cultures are more likely to communicate openly that create an environment more conductive to the development of trust between individual (Wiewiora et al., 2014). Thus, Organization with openness value, increases relationship between team members that can make trust between them and finally lead to commitment. In literature review, It has seen, mutual trust and commitment are important areas of relationship capital (Cullen et al., 2000) and would be beneficial due to the potential to increase performace and reduce turnover (Mowday, 1998). Figure 5 has shown the relation between three shared values.

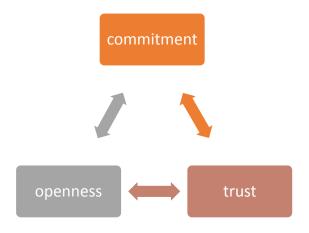


Figure 5. The relation between trust, commitment, and openness

# 5. **Possible Remedies**

In this chapter, we are going to propose some solutions to the problems have been seen in the findings. This current study sought to examine the impact of shared value as the level of organizational culture on project performance and outcome. The effect of three important values including commitment, trust, and openness were investigated. The problems have been seen in the organizations can be categorized in four parts. We are going to suggest some remedies for the problems in order to increase the positive effects of trust, commitment, and openness on project performance and outcome. Before discussing the problems and remedies, it is necessary to explain the role of the project management's leadership style that has main role on increasing positive effects of trust, commitment, and openness on the project performance and outcome.

## 5.1. The project management's leadership style

The investigation has shown that project management has important role to involve the team members, make effective communication and collaboration with inside and outside the organization. Leadership factors can impact directly on project performance, as well as organizational factors (de Oliveira et al., 2012). Then, it is very important to have a good relationship, good working climate, and environment. Project management with a leadership role can create an effective environment for the project team (John Rodney Turner & Müller, 2005). Organizations need to assess their cultural orientation and make change rather than keep organizational culture as an invisible and nonmeasureable element. Project management has essential role in creating a team culture to achieve project goals and group norms (Yazici, 2009). In the following, there are some situations in the organization that are needed to consider some possible remedies for them.

#### • Problem1

The investigation has shown that researchers working on some projects simultaneously. Then, they have priories for their tasks based on their interest to the project. But researchers give up some projects in the middle of work because they do not have enough time for all their tasks. Then project manager have to replace somebody else or divide her/his work between the groups. This problem may affect the project outcome. It shows some projects postponed because of that problems. In addition, if people just follow their own interest, it creates challenge for the team members and also management for a long time. Informant 8 said that:

*"Lack of project manager's competency to pushing enough in proper manner leads to delay".* The informant 6 as a direct leader expressed that:

"If we do not change our way, the market is gone, and then people do not have projects". It shows that lack of communication creates some problems. Informant 11 also stated that: "People do not speak loud. If we have problem, I think it is difficult to bring it up"

### • Suggestion for Problem 1

One of the main responsibilities of project managers is to motive her/his team to complete the project on time. Project managements need leadership skill to develop researchers' interest in different kind of projects. Informant6 and 8 emphasized on the project management dialog. In the other words, project management must be in better communication with the team members. Research managers believe that project management can motive researchers by effective communication. Literature review has shown that culture becomes a critical factor in defining project success and project manager should understand the different organizational cultures that may affect the project (PMI, 2013). The right project managers' leadership style improve organizational commitment (Limsila & Ogunlana, 2008). Finally, appropriate style of leadership motivate individual and teams to work effectively and efficiently towards the

performance goals that the project has to achieve (Rees, 2008). Therefore, Project management in the leadership style can overcome these difficulties. Transformational leadership committed to the organizational goals and seeks to encourage the people commitment to the result (Bass, 1999); (García-Morales et al., 2012). Thus, there is correlation between the manager's leadership style and employees' commitment and motivation (John Rodney Turner & Müller, 2005).

### • Problem2

In addition to freedom to choose projects based on their own field and interest, the findings have shown that project managers select team members based on prior work experience they had. This way leads to some people have a lot projects to do and some of them do not have a lot. This shows lack of communication between project managers and people in the organization cause this problem. Then the sources (researchers in different groups) did not allocate to the projects equity. In addition, in some projects, the big challenge was sometimes people encourage to commitment to the project, but top management had to pursue people that this is not your competence. It has shown that project managers did not have enough meetings and communication with the project teams. Informant 8 expressed that:

"We have project managers and resource manager as well; I think we could be better at this in our organization".

## • Suggestion for Problem 2

Selecting the right person for the project must be based on their competence for that particular work. Project manager have to know team competency. Effective performance and outcomes from team members are expected from appropriate leadership. Leader must help the team to find the path to their goals and help them in the process (John Rodney Turner & Müller, 2005).

Transformational leaders provide inspiration by motivating their followers through communication of high expectations (García-Morales et al., 2012). Thus, a culture that includes listening and meaningful dialogue throughout the organization is critical to effectiveness.

#### • Problem3

The finding has shown that in the early phase of the project, team members have some difficulties to know each other and make trust. Researchers from different background and different nationality need to know each other and have the right understanding of common goals. The finding shows that lack of trust and misunderstandings have negative effects on the project performance and outcome. The lack of time and continuity makes it difficult for project partners to develop familiarity and to prove each others good will and competence. As a consequence, the formation of trust is an important but challenging task which has received only little attention within the discipline of project management so far(Maurer, 2010). Informant 9 said:

"Lack of trust can slow down the project a lot".

## • Suggestion for Problem 3

In the early stage of the project, available information is the lowest but the consequences of decisions for the project is the highest (Williams & Samset, 2010). Poor management of the early stage has negative impact the project performance and project outcome (Khurana & Rosenthal, 1998). Therefore, it is important to examine individual employee's perceptions of the projects. The finding indicated that there is a relation between leadership and project performance and outcome. Informant 1 suggested that project management have to allocate much more time in the early phase in order to learn about the collages. Leaders build considerate

relationship with each individual's need and for growth and achievement, creating supportive climate to higher level of potential (Limsila & Ogunlana, 2008).

#### • Problem4

The finding has shown that project management does not have enough time to spend with project team. We have seen researchers cannot perform all the tasks because they have a lot to do. If project management and team members aware of the project progress then they can decide before project postponed.

### • Suggestion for Problem 4

Project management by delegating his/ her responsibilities can help and support team members. The planning efficiency will increase. Organization with low-control cultures with greater levels of decentralization are more likely to delegate decisions (Wiewiora et al., 2014). With the shift toward team-based knowledge work, it is necessary to revising and rethinking if traditional model is still appropriate. Shared leadership is appropriate for knowledge work that have some characteristics including interdependence, creativity, and complexity (Pearce & Barkus, 2004). Without trust, there is no hope to developing shared leadership. Top leader play the important role in development of shared-leadership culture (Pearce & Barkus, 2004). Thus, the way of leadership is important. Leaders are capable of providing interest to their team. Communication and conscientiousness are important through the project life cycle. If you do not have right culture and values, it takes longer, cost more, and ultimately affects the project performance and outcome. Different leadership styles are appropriate for different types of projects. The project manager's leadership style impacts project success (Müller & Turner, 2007). In addition, organizational member's assigned leaders recognize them as individuals and look out for their interests. It shows that culture determine the outcome of the project. Transformational leadership tends to high performance on project with degree of innovation (de Oliveira et al., 2012). Transactional leader motivates people to perform as expected while the transformational leader inspires followers to do more than originally expected (Den Hartog, Van Muijen, & Koopman, 1997). The Project manager's leadership style influences his or her perception of success in different situations (John Rodney Turner & Müller, 2005). Project managers ideally should possess a repertoire of leadership style rather than just one style (Müller & Turner, 2010). In some cultural situation a highly directive style and in other situation a strongly supportive style may be better (Rees, 2008). The summary of problems and possible remedies are shown in Table8.

Problems	Suggestion remedies		
1. Projects postponed because researchers commitment to the projects depend on the project field and their interest.	1. Increase commitment to the projects by project management's effective communication.		
2. Projects delayed due to researchers were not involved in projects equally.	2. Project managers must know team competency by increasing communication.		
3. Lack of trust and misunderstanding in the early phase has negative effects on the research project performance and outcome.	3. PM must allocate much more time in the early phase in order to avoid misunderstanding and building trust.		
4. Project managements do not have enough time to control the project progress and make decisions before projects postponed.	4. Project managers by delegating their responsibilities can help and support teams. In other words shared leadership is appropriate for knowledge work like research projects.		

Table8. The summary of possible remedies for problems

## 6. Conclusion

After the analysis of result from the interviews, we came to a conclusion that this master thesis set out to explore the impact of shared values as the level of organizational culture on the research project performance and outcome. The empirical investigation examined the impact of trust, commitment, and openness on the research projects.

Honesty was considered as practiced and promoted value in the organization and could be considered as a key factor, which promotes and encourage building trust. The desired level of trust is dependent upon having enough interaction. Researchers who worked on the project alone believed that trust his/ her potential has essential effect on his/her project performance. Researchers, who worked on the project as a member of team, believed that team members in the early phase of the project need to know each other and it takes long time to build trust. High level of trust reduces transaction cost specifically in the early phase of the project. Trust promotes cooperation, higher performance, and interdependencies. It also reduces control and increase efficiency. Trust facilitates exchange of information and researchers in the organization with trust culture are willing to share their knowledge. It has shown that lack of trust in some projects causes delay in the project delivery. Therefore, the investigation has shown that trust as an essential value affects the project performance and outcome during the project lifecycle particularly in the early phase of the project. Commitment was another shared value that the impact of that was investigated on the research projects performance and outcome.

The investigation has shown that commitment is a practiced value in the research institution. However, level of commitment to the research projects depend on the level of interest to the field of project. In other words, researchers have priorities for their tasks based on their interest. The most common motivation for carrying out research projects was freedom to do the project.

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But in some parts it makes some challenges that need to be overcome. Freedom to do their tasks also can have negative effects on the project performance. Some projects will not be completed on time due to freedom to do the responsibilities based on their interest .In addition to importance of researchers' interest that motive them to commitment to the project, believe the organization goals and values can encourage researchers commitment to the project. If researchers believe the organization values and goals, it can motive them commitment to the organization. Organizational commitment as the organizational support has a positive impact on project performance. In addition, support from leaders is necessary to encourage researchers commitment to the project. The investigation has shown that in the research organization, commitment is not enough, they have to be flexible for unexpected things. It has shown when researchers feel they are asset for the organization(feel of belonging) and proud of working there, they feel a stronger sense of commitment to the project. Thus, commitment has a vital role in reducing the variances and slippage in project cost and schedual. Lack of commitment affect the duration of the projects (Gulzar et al., 2012). Openness as open communication and free thinking was the last shared value examined the impact of that on the research projects performance and outcome.

Openness was a practiced value in the research organization. It has shown that communication has strong effect on the project outcome. In the early phase of the project it is very important to make sure that everybody undrestand the project objectives and they know what they are supposed to do. In addition, project team members have to know the right person to communicate. The investigation has shown that effective interaction between researchers can facilitate the alighnment of goals and expectation. In the flat organization people are willing to share their knowledge through effective communication. In the early phase of the projects, effective communication as a promoted value helps to avoid misunderstanding. It shows that the organization with high degree of openness among all the memberss can overcome

difficulties and has positive effect the project performance. Aadequate communication helps to develop a shared understanding, improves the atmosphere of the relationship, fosters commitment, ensures that deadlines are respected (Bstieler, 2006). The investigation has shown that there is relation between trust, commitment, and openness.

Open communication enhance interaction between researchers and build trust. It also has shown in order to share knowledge through communication, first it is neccary to make trust. Effective communication and mutual trust enhance knowledge sharing and also reduce control from managers. Communication is possitively associated commitment and trust. Open communication and freedom to choose your interest enhance commitment to the project. We have discussed possitive outcome associated with researchers who engage in factors that are fundemental to their success; building a strong sense of openness, trust, and community across the organization. Thus, uunderstanding that social context affect project performance and outcome. The investigation has shown some problems in the research projects. The problems are categorized in four parts and suggested some remedies in order to increase the impact of trust, commitment, and openness on the research projects performance and outcome. The investigation has shown that some causes of project failure including poor understanding of the objectives in the early phase, lack of effective communication, insufficient resource due to choosing project team based on previous experience with project managers(the way tasks are assigned to the researchers), and project postponed because of commitment depends on the researchers' interest in the field. The investigation has shown that project management's leadership skill can increase positive impact of trust, commitment, and openness on the research projects performance and outcome. Project managers with frequent, open and effective communication can increase researchers commitment to the projects and finally have positive effects on the project performance and outcome. Project managers' leadership skill reduces monitoring and controlling cost that has positive effect on the project outcome. Thus, project

management has important role to involve the team members, make effective communication and collaboration with inside and outside the organization. Leadership factors can impact directly on project performance, as well as organizational factors (de Oliveira et al., 2012)

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## Appendix A: Interview questions

Demographic Questions:

- 1. How long have been working in the organization?
- 2. What is your position in the organization?
- 3. What is the field of your research?
- 4. How does your research affect the project performance?

#### Main questions:

- 5. What values or beliefs are important or promoted in the organization?
- 6. What values are really practiced in the organization?
- 7. What kind of values should be around you to do your research well?
- 8. Which kinds of behaviors or practice hinder to do your work well?
- 9. During your work experience, have you had any project that lack of trust influenced on your work or the project performance?
- 10. What do you think about the effects of trust on your work and project performance? For example; someone who feel trusted may contributed more ideas and thus have higher work output.
- 11. During your work experience, have you had any project that lack of commitment from employees affected your work or the project?
- 12. What is the level of commitment, which is required to complete the project successfully?
- 13. How does your organization motive you to commitment to the project?
- 14. What styles (tools) are used by organization members for communication?
- 15. How do you think about the effect of open communication on your work?

16. As a project manager, how do you think these factors (trust, commitment, and openness) affect the project performance and the project outcome in terms of cost, time, and quality?

## Appendix B: Pre-study report Master thesis

### Department of production and quality engineering

### **1. Problem description**

#### 1.1. Background

Nowadays researchers aim to better account for project phenomena and outcomes by changing the direction from developing principles for optimizing plans, contracts, and charts towards understanding the nature of social relations that occur in projects (Floricel et al., 2014). In other words, the traditional approach has contributed to the development tools and methods, but process-oriented approach contributed to more human element on project(Blomquist et al., 2010). Projects as temporary organizations embedded in different social contexts (Lundin & Söderholm, 1995) and project management can be identified as a holistic discipline for achieving organizational efficiency, effectiveness, and innovation (Frisanco et al., 2008). Thus, project management has contributed to an understanding of project as social processes with considering the complexities of human life (Doney, Cannon, & Mullen, 1998) and (Blomquist et al., 2010). However, project managements are criticized for their neglect of human and organizational issues (Clegg, 1997). Elements of organizational issues that shape project performance and outcome are internal organizational properties and external environmental conditions. Organizational properties that received particular attentions are organizational culture, organizational policy and practice, and organizational system history (McLeod and MacDonell 2011). According to (Gu et al., 2014) organizational culture and environmental pressures that are competitive and regulatory in nature impact on IT project performance. Therefore, organization's culture can be considered as a foundation for organization's management system and practices. It determines how decisions are made, and how employees response to the environment(Ajmal & Koskinen, 2008). Thus, the purpose of this study is to explore the impact of organizational culture as part of organizational influences on project performance and outcome.

#### **1.2.** Objectives and Scope

The purpose of this research is to investigate impact of organizational influences on project performance and outcome. Organizational influences are reflected in numerous factors, such as style, structure, competence, shared values, norms and beliefs, policies and procedures, the view of relationships with authority, and work ethics. It is critical to take all the influences participate in the master thesis. Thus, the research focus is organizational culture as most important influences of organizational factors and explore the effects of shared values as level of organizational culture on the project performance and outcome through its lifecycle.

This master thesis has following objectives:

- Conduct a condensed and comprehensive literature review in order to identify organizational influences, understand the concept of organizational culture, and shared values.
- Conduct a comprehensive literature review to identify the impact of organizational culture on the project performance and outcome in particularly impact of trust, commitment, and openness.
- Conduct a comprehensive empirical investigation to examine the impact of trust, commitment, and openness on the research projects.

Identify some remedies to decrease the effect of these factors on project performance and outcome and specify the role of project management in this process.

#### **1.3 Research Methodology**

The aim of this project is to conduct a theoretical and qualitative research about a new suggested approach in project management which is "The impact of organizational influences on project performance and outcome through its lifecycle".

This thesis can be divided into two parts: The first one is literature study and the second one is empirical investigation. To conduct comprehensive literature review, there is a need to get a general understanding of the fields of study that is where the finding and studying of the relevant literature comes into play. Predominantly the NTNU's resources has been used for finding the literature: Universitetsbiblioteket's *BIBSYS Ask* and *Google Scholar* search engines which provided the opportunity to search for electronic and journal articles, whitepapers, books etc. After studying, understanding, and analyzing the found sources, the theory will be developed and the research questions that are expected to be answered will be discussed. For the second part, as the research is based on empirical investigation, some interviews with key stakeholders will be conducted. Provided data is classified and discussed as a finding and finally, a conclusion would be made according the finding from literature research and discussion part of the paper.

Next step is preparing a schedule plan to meet the goal of the project, the research structure is as follow:

1. preparing pre study report

First, the objectives and scope of the study is defined, next start to search for relevant theories to understand the subject and preparing the pre report.

2. Conducting a literature review

It is necessary to look for literature that has addressed the topic with regard to the project life cycle. First, search about organizational influences and the effects of these influences on project

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performance and outcome. Next, analyzing how and in what extent these factors impact on project performance and finally to make a model for topic.

#### 3. Methodology

This chapter describes research type and research method, which are applied to accomplish the work. Based on research method the instrument is defined to collecting data. As this research in based on empirical investigation, interview or questionnaires will be conducted to find real data from case study and informants.

4. Empirical investigation

After identifying method and instrument, case studies and informants for interview would be considered. In this part by the help of co supervisor, we contact with some companies and explain the purpose of the interview, type of interview, and duration of that. Then, relevant questions shall be prepared. As a result, Performing analysis and discussion based on provided data from interview.

5. Completion

Writing conclusion, abstract, preface and proof reading and polishing up the report are overlapped with their upstream activities.

Remedy for reducing iteration and rework is submitting report to co supervisor gradually. It means rather than hand in complete report at end, it should be sent to them step by step for receiving comments. Therefore, if there is a variation in work, it requires low efforts to be corrected and it does not have catastrophic consequence at the end.

#### 2. Time Schedule / Gantt Chart

The time schedule was made by using MS Project; Tasks' duration, start and end date of tasks, milestones, and relation between tasks are specified.

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D	WBS	Task Name	Duration	Start	3rd Quarter         4th Quarter         1           Jul         Aug         Sep         Oct         Nov         Dec	<u>.st Quarte</u> Jan
1	1	Master thesis project	90 days	8/20		Jan
2	1.1	Start	0 days	8/20	♦ 8/20	
3	1.2	Prepare pre study report	16 days	8/20		
4	1.2.1	Define objectives and scope	13 days	8/20		
5	1.2.2	Look for primarily literature	13 days	8/20		
6	1.2.3	Write pre study report	3 days	9/8		
7	1.2.4	submit the pre-study report	0 days	9/10	<b>9/10</b>	
8	1.3	Conduct a literature review	26 days	9/15		
9	1.3.1	Complementary literature list	12 days	9/15		
10	1.3.2	Understand, and analyze the literature	12 days	9/15		
11	1.3.3	Write literature	25 days	9/16		
12	1.3.4	Done literature review	0 days	10/20	▲ 10/20	
13	1.4	Methodology	7 days	10/21	r=1	
14	1.4.1	Study and find relevant research method	3 days	10/21	Č,	
15	1.4.2	Define instrument	0 days	10/24	↓ 10/24	
16	1.4.3	Write it down	4 days	10/24		
17	1.5	Empirical investigation	27 days	10/27	·	
18	1.5.1	Idnetify case studies	2 days	10/27		
19	1.5.2	Conduct meetings	3 days	10/27		
20	1.5.3	perform investigation	10 days	10/30		
21	1.5.4	Investigation completed	0 days	11/12	11/12	
22	1.5.5	Categorizing information	5 days	11/13		
23	1.5.6	Analysis and discussion	4 days	11/20		
24	1.5.7	Write analysis and findings	5 days	11/26		
25	1.6	completion	15 days	12/3	n n n n n n n n n n n n n n n n n n n	
26	1.6.1	Writing conclusion and abstract	7 days	12/3		
27	1.6.2	Review and correction	4 days	12/12		
28	1.6.3	Draft review	0 days	12/17	12/1	17
29	1.6.4	Finalizing	4 days	12/18		
30	1.6.5	Submitting thesis	0 days	12/23		2/23
31	1.7	Finish	0 days	12/23	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	2/23