

**THE IMPACT OF EMOTIONAL INTELLIGENCE IN
PROJECT MANAGEMENT TO IMPROVE TEAM
PERFORMANCE**

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January 2017

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ABSTRACT

As both technical world and business world is rapidly changing all organizations in software industry are trying to use different approaches to maximize output of their projects. Improving team performance is one of the ways to achieve higher success rate of software projects. Emotion Intelligence (EI) is a significant predictor for team performance. Therefore, software organizations should keep their focus on EI level of the employees. This research examines the relationships among EI factors and Team performance.

As a methodology for this study, online and offline survey has been conducted. A well-structured questionnaire has been distributed among 310 software professionals. The population for this research is all project managers, Team leaders, software engineers, QA engineers and business analysis in software industry in Sri Lanka which count as 37284 as per the National ICT workforce survey carried out by ICTA of Sri Lanka on 2013. The four main factors which are self-awareness, self-management, social-awareness and relationship management were selected as individual variables for the study. This research found a significant positive correlation between all four variables among team performance.

This research brings out a valuable result which is EI of employees is directly impact on team performance in software industry in Sri Lanka. Further this study suggests set of guidelines to follow in order to improve the EI skills of employee which deliver a better team performance.

Keywords - Emotional intelligence, Team performance, Project management, Software Industry

ACKNOWLEDGEMENT

I wish to express my deep gratitude to all those who have helped me in successfully completing my research study on “The impact of emotional intelligence in project management to improve team performance”.

First and foremost, I would like to thank my research supervisor Dr Indika Perera, a senior Lecturer of the Department of Computer Science and Engineering, University of Moratuwa, for the continuous support, encouragement and attention that was extended to me in realizing the research objectives.

Furthermore, my earnest thanks to MBA in IT Course Co-ordinator Dr. Chandana Gamage, and Jeewa padmini, for the guidance and resources provided to me in bringing this study a success.

Further I wish to convey my special gratitude to the software professionals who helped me by filling out the online and offline survey.

Finally, I wish to convey my heartfelt thanks to all those who helped me in many ways whose names have not been mentioned above, but were instrumental in bringing this study a success.

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LIST OF ABBREVIATIONS

EI – Emotion Inteligence

ICTA - Information and Communication Technology Agency of Sri Lanka

EC - Emotional competences (EC)

ECI -Emotional Competency Inventory

WESI - Wong and Law scale

MSCEIT - Mayer-Salovey-Caruso Emotional Intelligence Test

ECI-U - Emotional Competency Inventory university edition

DK - Declarative knowledge

PKS - Procedural knowledge and skills

MOT - Motivation

ICT – Information communication technology

1. INTRODUCTION

1.1. Background

Organizations are continually putting more attempts to improve their business. Therefore, organizations have to pay more attention on skills and project management practices. Basically there are five key focus area can be identified in project management. Which are Leadership focus, Strategic, Process focus, People focus and Learning and Growth focus. Emotion intelligence (EI) is the combination area of both leadership and people focus in project management. EI is the ability to understand and recognize one's own and others feelings. It has four main focusing areas such as Self Awareness, Self-Management, Social Awareness, and Relationship Management. This is very important in managing team and decision-making in projects as it gives the clear understanding to deal with emotions. Emotion intelligence is required in all stages of project life cycle which are Initiating, Planning, Executing, Monitoring and Controlling, Closing. Even there are many effective hard skills established the most of the projects get failed due to the poor management of people's emotions. Emotions can use to facilitate thinking and managing thinking and how it helps team to engage in interpersonal team process (Nicholas,2010). Therefore, EI plays a vital role in modern day project success. EI helps to assess people, develop relationship, and generate benefits from experience, conflict resolution and leading people. Also EI abilities have direct effect on transition team work process like mission analysis and planning, goal specification and strategy formulation (Nicholas,2010). Work performance depends on several factors such as leadership, Training, organization culture, working environment, motivators, etc... In addition to that Emotion intelligence is conceptually effect on work performance. Every project requires interpersonal interactions of each team member to accomplish the project goals. Apparently, EI is more useful for all project managers as well as project team members to handle their emotions accurately in workplace and that will facilitate better information gathering, better decision-

making and finally, acquire higher performance. Also it helps to enhance team collaboration and increase the speed and quality of functionality of software projects (Gunsel, Acikgoz, 2013)

Human body and mind react according to the information they understand through emotions. Therefore, handling emotions like anger, jealousy, fear is very important in workplace. A talented Project leader or managers can motivate their subordinates by understanding and reacting to their emotions. EI were not given serious attention in project management in the past. But today it considers as one of the main success factor in a project. Higher level of EI leads to higher performance of team and also resulting higher achievements of project milestones.

1.2. Motivation

One of main factor of project failure is poor emotion management. It is very important to identify each team member's emotion and respond to them accordingly in workplace. EI is an essential skill required for project managers to manage human resource within project activities. Not only for Project managers, it is also important for other project team members like Team leaders, Software Engineers, QA Engineers and Business Analysts (According to IT industry) to collaborate with each other within the team. Understanding and managing emotions of your own and others help to build good relationship with project team. Also it facilitates to understand the needs, feelings, and responses to deal successfully with team members within project life cycle and lead to provide the better outcome. Improving EI in team is more productive and helps for successful project deliver. And EI is the one of famous research area in this era.

1.3. Research Scope

Emotional Intelligence is a necessary factor for every job role. All most all emotion competencies are mainly divided into four main clusters which are self-awareness, self-management, social awareness and relationship management (Boyzatis and Goleman, 2002). Each of above clusters consists with many competencies.

Software sector is one of the fastest growing industries in Sri Lanka and Emotional Intelligence is an essential requirement in software projects to be success. This study is aiming to identify the impact of Emotion intelligence to improve team member performance in software projects. The research plan as below;

- Finding EI factors from literature survey
- Conduct a questionnaire based survey to gather data
- Base on the data gathered from the survey identify the relationship between Emotion intelligence and team performance
- By in-depth analysis of data provide suitable recommendations

1.4. Problem Statement

Software project management is getting more challenging day by day. Due to the complexity and the tight schedule of software projects many employees become unhappy and stressful while working. Those negative emotions are directly impact on their daily work schedule. Many organizations are focusing only on technical factors which can be used to improve project success rate and project management. But many companies do not pay attention on human factors such as EI. It will lead to most of the software project failures. Poor emotion identification and management cause to wrong decision-making, communication issues, project failures and budget overcomes. Therefore, EI is essential factor in workplace to accomplish goals.

Employees of software companies are challenged by their working surrounding such as complex requirement, rapidly changing technology, heavy workload, hectic working environments and tight work schedule. Such situations create psychological distress among the employees in software industry. Therefore, many workers in software industry are with the highest level of job stress. Because of the job stress and other negative emotions many problems can occur when working as a team. Hence, the level of their emotion will directly impact on team performance.

Furthermore, Team work is more encourage in software projects. Therefore, maintain a good relationship with team members of the project is very important. Emotion intelligence is positively influencing on team's ability to complete project successfully and speed up project completion as it facilitate collaboration and cooperative environment. Hence, emotions must be wisely handled as poor emotion management processes create many issues which lead projects to failures. Many organizations are only considering quantitative factors get and qualitative factors like Emotions of project team are not sufficiently consider while working in a project and this will cause for negative performance in project Team.

Even though many software organizations neglect the emotion level of the employees, this became a major factor for employee performance. So the EI level of employees needs to be improved to gain higher team performance in software projects.

Therefore, the problem which is going to address from this research as below;

How the business can achieve higher team performance by improving the emotion intelligent skills of project team members?

1.5. Research Objectives

The primary objective of this research is; examine and analyse the impact of EI for team performance in software teams in Sri Lanka. Hence, the research is mainly focused on finding the relationship between EI and team performance.

The three main objectives of this research as below,

- Identify the most significant EI factors.
- Explore the relationship between EI and Team performance in software teams.
- Recommend set of guidelines to improve team performance of employees in software industry (EI perspective)

1.6. Research Significance

Emotion intelligence is a strong internal motivator which increase self-confidence as well as identify others feelings. This will help to focus on project goals and project activities. Identify and understanding emotions creates better communication network between team members. These bonds make supportive environment in workplace.

Moreover, identifying and handling emotions help to improve productivity of the work. Higher level of emotion intelligence help people to gather and regulate correct information and get accurate decision based on that. This process will lead to enhance the performance level of employee in software industry.

When working in a team environment, each team member should be able to identify other members' emotions and correctly respond to them in order to get better outcome and maintain the inter-relationship among team members. The people, who can handle their and other emotions, can easily communicate their needs to others by exchanging correct information and it helps them to accomplish goals.

Also this will minimize the project conflicts and project delays. Hence, strong emotion intelligence improves the team performance and it directly effects on long term project success.

1.7. Outline

The research flows up as below. Chapter 2 explain the literature review by covering the topics; EI, Models of Emotion Intelligence, EI tests, Factors of EI, Team performance, Relationship between EI and Team performance, EI in work place and EI and Project management.

Chapter 3 describes the methodology of the research with sub sections Research methods, Conceptual framework, analysis method and population and sample Research methods, Conceptual framework, Analysis method and Population and sample.

Chapter 4 conducts the detail analysis on collected data by using statistical analysis method such as Reliability Analysis, Pearson Correlation Coefficient Analysis and Regression Analysis.

Finally, Chapter 5 provides the set of recommendations which can be followed by Software organizations to improve Team performance. Furthermore, Conclusion, Research limitations and future research area explain in this chapter.

2. LITERATURE REVIEW

This chapter discusses the facts about EI and its impact on team performance which mentioned in past literature. Furthermore, this is aiming to explain the theoretical background of EI and Team performance. In additionally EI factors will describe in detail in this chapter.

2.1 Emotion Intelligence

In order to study the impact of Emotion intelligence for team performance it is important to understand what Emotion intelligence is. According to the study of Clarke (2010-A), identifying individual differences of the team and use it for team effectiveness is the one of key concept in EI. Also EI is an important factor in team base working environment such as software industry. Also Gunsell and Acikgoz (2013) identified Emotion intelligence and team flexibility are two related factors in software development. Prior to study EI, the term 'emotion' needs to be defined. According to his emotion defines as feelings which immediate, automatic, and uncontrollable effort on human behaviour. According to Offermann, Bailey, Vasilopoulos, Seal, and Sass (2004) said that human decision-making process, Motivation process and human actions and reactions can be affected by their emotions. Moreover, the studies of Gunsell and Acikgoz (2013) indicate that Mayer and Salovey (1995) have given one of the best definitions for EI. In their point of view EI is a four step ability-based approach which contains set of abilities to perceive emotions in the self and in others and to use emotions to facilitate performance, understand emotions and emotional knowledge, and regulate emotions in the self and in others.

In software team Tech leads, Project managers are acting as team leaders, and they have responsibility to guide entire team to achieve project goals. Koman and Wolff, (2008) identified the team leaders emotion intelligence will have significant impact on developing group level emotion intelligence. Also there is a significant

relationship between group emotional intelligence and team performance. Also Cote and Miners (2006) explained emotion intelligence is conceptualized as type as intelligence. Both emotion intelligence and cognitive intelligence were conceptualized as separate set of abilities. Improving EI abilities will speedup work and improve the quality of the product. There for many software companies follow different methods to improve the skills/abilities of employees regarding their EI. According to the studies of Groves, McEnrue and Shen (2008) EI of individuals can be enhanced through deliberate training.

Boyle, Humphrey, Pollack and Hawver (2011) found, EI will help to maintain close relationship with the people specially like team members as it has ability to recognize self-emotions and also regulate others emotion and contributes to effective social interaction

According to Law, Wong and Huang (2008), EI is an important factor in most of the job roles such as enthusiasm in sales persons, perseverance in bill collectors, and empathy in social workers. He identified EI as a significant predictor of job performance. Controlling the emotions such as excitement, anger and fear is required in many job roles in order to maintain good relationship and deliver quality output. Furthermore, Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) identified EI as an intelligence which has cognitive abilities including emotions. The members who are in the team have different kind of personalities, needs and emotions. Therefore, everyone should have some set of skills and senses to understand emotions of their own as well as others and realize how their emotions effect to other people to mage effective relationships among team members. EI is specially more important for team leader and project managers who are leading the team. According to Clarke (2010-A) EI is a very important measurement of individual difference which distinguish the level of effectiveness of project managers when they are identifying human skills. Prati, Douglas, Ferris, Ammeter and Buckley (2003) explained that people with higher EI level can read and understand others in social contexts, and able to identify emotional reactions, and also utilize that knowledge to influence others.

2.2 Models of Emotion Intelligence

According to past researches there are few main EI models can be identified and those models were explained in detail under below subheadings.

2.1.1. Ability Model - Salovey and Mayer

The ability model of Salovey and Mayer is the one of the main model in EI. According to the literature of Clarke (2010-A), there are four specific abilities defined in the model. They are, perceive emotion, using emotion, understanding emotion and managing emotions. This model describes five sub-constructs such as interpersonal skills, adaptability, Stress management and general mood. These specific cognitive abilities have the capacity to identify, reason with and utilize emotions in effective way. According to the literature; Salovey and Mayer ability model theoretically explains that the life outcome and behaviour can depend on nature of the emotions and dealing with emotions. Furthermore, emotions link with social functioning, psychological well-being and work related outcomes like decision-making and negotiation. The emotion intelligence facilitates to monitor once own and others emotion, differentiate them and use that information to guide once actions.

The literature of Günsel and Acikgoz (2013) explained that Mayer and Salovey (1995) has explained emotional intelligence as an ability-based approach which has set of abilities to; perceive emotions in the self and in others and to use emotions to facilitate performance, understand emotions and emotional knowledge, and regulate emotions in the self and in others

In additionally the literature of Cote and Miners (2006) described that Mayer and Salovey's ability base model is supportive for confirmatory factor analysis and also has ability to measure desirable psychometric properties. However Wong and Law's (2002) have considered emotional intelligence as a latent multidimensional factor.

And Cote and Miners (2006) studies further describe focusing the broad view of EI will be better than focusing on individual dimensions of EI.

Apart from that Groves , McEnrue, Shen and (2008) conclude Ability model have more advantages compare to other EI models. It is different from, social desirability, and cognitive intelligence. Furthermore, this model is good instrument for management development,

According to the literature of Law,Wong and Huang (2008) EI is a sub component of social intelligence and it is capable to identify own feelings as well as other's feelings and distinguish those feelings and use them to direct one's action. Base on the above definition Salovey and Mayer have come up with four dimensional ability model.

Recognizing and managing emotions are very important factors not only the individuals but also the team. Not only the above two all four abilities of the Mayer and Salovey's ability model have direct impact on individuals. This model can be used for emotional problems in the society it helps to improve social intelligence.

Rapisarda (2002) studies explained there are four abilities which are recognizing, understanding, and using emotional information are differed from one individual to another. Hence, life success will depend on the ability of dealing with four stages of Ability model.

According to the literature of Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) ,Mayer (2001) define EI as a type of intelligence or a true intellectual ability or set of cognitive abilities which impact on human emotions. The four abilities have been described as below.

- Perceive Emotions

The one's capability to correctly perceive, evaluate and explain emotions is known as Perceive emotions in Ability model.

- Use Emotions

The one's capability to access and use emotion to aid the cognitive process is known as use information in Ability model.

- Understand Emotions

The one's capability to understand emotions as well as emotional knowledge is known as Understand Emotion in Ability model.

- Manage or Regulate Emotions

The one's capability to regulate or manage emotions in order to achieve emotional and intellectual growth is known as Regulate Emotions in Ability model.

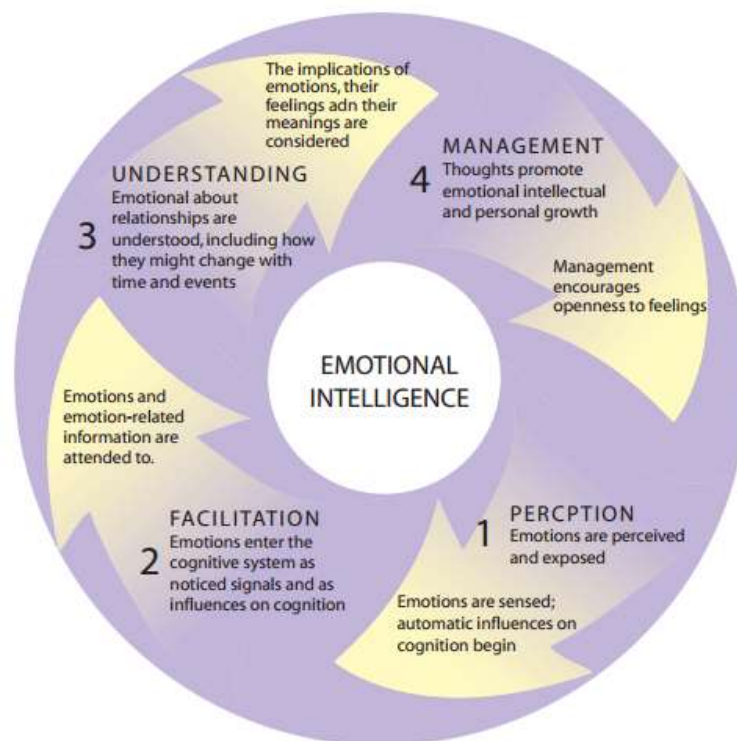


Figure 1-Ability Model of Salovey and Mayer

(Source: Ivey Business Journal, 2002)

In additionally Feyerherm and Rice (2002) explained that the Ability model describes the relationship between emotion and intelligence as skill wise. Furthermore, Mayer and Salovey's ability model mainly target on emotion and cognition.

Lam and Kirby (2010) has given his explanation about Mayer and Salovey ability model as EI is a set of distinct emotional abilities of perceiving, understanding, and regulating emotions rather than a single ability or trait. Recognizing and interpreting different emotional states are sub parts of Perceiving emotions. And Understanding emotions helps to distinguish basic and complex emotions how it impacts to the day today activities. Also Regulating emotions help to control own and other emotions.

2.1.2. Mixed model – Goleman

In addition to the ability model of Salovey and Mayer the famous psychologist Daniel Goleman has found another mixed model of EI. According to the literature of Gonsel and Acikgoz (2013) the mixed model consists with four-dimensional emotional intelligence construct such as self-awareness, self-management, social awareness and social management.

- Self-awareness

Self-awareness describes the ability to express emotions and feelings.

- Self-management

Self-management explains the one's ability to differentiate emotions which impact to one's thoughts and actions.

- Social-awareness

Social-awareness refers to identify complex emotions and the link between the emotions of others.

- Social management

Social management describes the way of connect or disconnect with emotions according to usefulness.

The studies of Koman and Wolff (2008) describes, the mixed model of Goleman consist with overarching EI clusters which are self-awareness, self-management, social awareness, and relationship management. The above clusters also named as recognition and regulation cluster consists with both individual and social competencies.

Table 1-Mixed model of Goleman and competencies

Cluster	Competency
Self-awareness	<ul style="list-style-type: none"> • Emotional self-awareness • Accurate self-assessment • Self-confidence
Self-management	<ul style="list-style-type: none"> • Emotional self-control • Transparency • Adaptability • Achievement orientation • Initiative • Optimism
Social awareness	<ul style="list-style-type: none"> • Empathy • Organizational awareness • Service orientation
Relationship management	<ul style="list-style-type: none"> • Developing others • Teamwork and collaboration • Conflict management • Change catalyst • Inspirational leadership • Influence

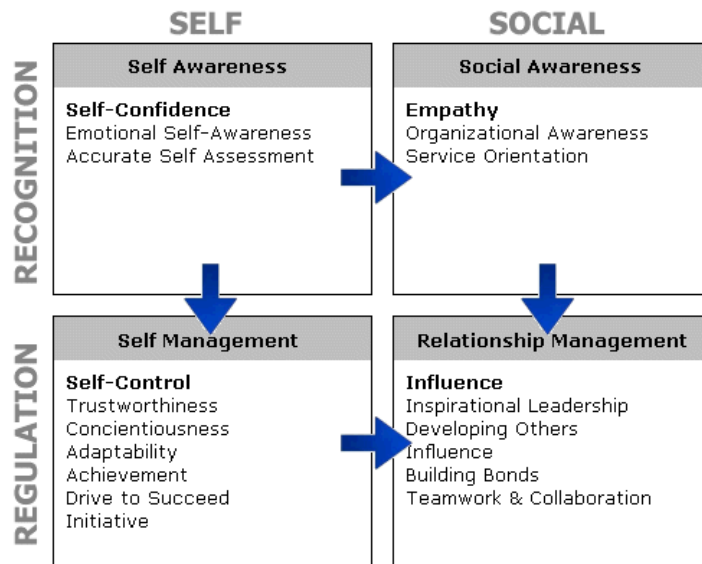


Figure 2-Mixed model of Goleman Mixed model of Goleman

(Source: oialearninghub, 2009)

In 1998 Goleman and his colleagues have expanded Mayer & Salovey theory and came up with the above mentioned four clusters and social competencies which aid in the workplace. And these four clusters can be easily built in individuals in organizations who are willing to change their behaviour. According to his explanations, Self-awareness helps to know what we are feeling at the moment and provides clear guidance for correct decision-making based on the emotions.

Self-management is referring to controlling one's own emotions for proper task management, to avoid deadline failures and emotional distress.

Social-awareness describes as knowing what other people are thinking and feeling and looking at problems from their perspective.

According to the literature of Rapisarda(2002) ,Social skills are known as dealing emotions in people relationships with the skills of negotiation, interacting with other people, teamwork and cooperation.

Furthermore, Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) studies explained, the mixed models are developed based on ability model. Additionally, mixed models have other psychological attributes. The mixed models have emotion-based attributes rather than EI abilities. The model of Goleman and Boyatzis include EI as 21 core competencies which are listed under four clusters. The Emotional Competency Inventory (ECI) can be used for measuring emotional competencies. This approach is linked with emotional abilities as well as products of those abilities

According to view of Feyerherm,Rice(2002) , Goleman and Bar-On model is differ from ability model as it additionally includes some character traits such as trust, optimism, and altruism.

Turner and Walker (2008) have explained in his literature, the first approach of Goldman model consists with five categories which are self-awareness, self-regulation, self-motivation, empathy and social competencies. Later on it has been classified to four clusters as self-awareness, social awareness, self-management social skills and emotional competence inventory (ECI) has been used to measure the competencies.

According to the literature of Prati, Douglas, Ferris, Ammeter and Buckley (2003), the competencies in Self-awareness cluster helps to set priorities to address deeper issues and it is more suitable when work in a team. And the competencies in Self-regulation cluster give the better understand to the individual about social expectations of the team.

2.1.3. Other models

According to the literature of Law, Wong and Huang Davies (2008) et al. have proposed an another model for EI. This model also has four dimensions.

1. Appraisal and expression of emotion in one's self

This dimension explains the abilities of individuals to understand their own emotions and explain emotions naturally. The people who have higher level of Appraisal and expression of emotion can easily sense and acknowledge their emotions than other people.

2. Appraisal and recognition of emotion in others

This dimension describes the abilities of individual to perceive and understand the emotions of others. The people who have good abilities of this area can easily predict other people's responses.

3. Regulation of emotion in one's self

This dimension describes the abilities of individual to regulate one's own emotions. The people who are good in this area can return to normal stage quickly without being upset in some emotional situations.

4. Use of emotion to facilitate performance,

This dimension relates to abilities of individual to make use of emotions to improve personal performance.

These abilities help for individual to make productive directions.

2.2. EI Tests

There are several methods that can be used to measure the level of EI.

According to the literature Gungel and Acikgoz (2013) Wong and Law scale (WEIS) is the one of method which can be used to measure EI. This scale has been developed, based on the four dimensions of ability model. Law, Wong and Huang (2008) has identified this scale as a self-reported scale.

Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is also a very famous EI test which has been developed based on Mayer and Salovey ability model.

Groves, McEnrue and Shen (2008) has described about MSCEIT which is used to demonstrate strong psychometric properties including construct, convergent, discriminant, and predictive validities. This measurement can use for management development applications

Boyle, Humphrey, Pollack and Hawver (2011) has explained that Salovey–Caruso Emotional Intelligence Test (MSCEIT) has 141-item scale in order to measure four branches of ability model.

Moreover, Law, Wong and Huang (2008) described about an another version of EI test which is known as Multifactor Emotional Intelligence Scale (MEIS). MEIS is 12-subscale ability test which has been developed by Mayer, Caruso and Salovey.

Apart from above tests Jordan, Ashkanasy, Hartel, and Hooper (2002) came up Workgroup Emotional Intelligence Profile (WEIP) which consists of different personality scales. WEIP - Version 3 specially developed to measure the level of EI in work teams. In detail, it helps to find the relationship between EI and team process effectiveness and team goal focus. The study was done using three scales of WEIP. The first, second and third scales are focused on sequentially how to deal with own emotions, how to deal with others emotion and how to use emotions to assist in problem solving and decision-making.

Emotional Competency Inventory university edition (ECI-U) is another method found by Boyzatis & Goleman (2002) that can be used measure Emotional

competence. Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) has explained that ECI has 21 competencies come under four clusters of self-awareness, self-management, social awareness, and relationship management.

2.3. Factors of Emotion Intelligence

According to literature survey carried out, there are thirteen EI factors identified as below.

Table 2-EI Factors

EI Factor	Description
1. Perceive emotion	The ability to recognize other's emotions is known as perception of emotion. Non-verbal perceptions, expressions of emotions are come under this. (Mayer, Salovey, Caruso, 2004)
2. Integrate emotion	Use information to facilitate thinking is known as Integrate emotion. This is very important in planning work. Clarke(2010-A), (Mayer, Salovey, Caruso, 2004)
3. Understand emotions	Ability to analysis emotions and understand its outcome is known as Understand emotions. (Mayer, Salovey, Caruso, 2004)
4. Manage emotions	A control emotion in order to achieve goals is known as Manage emotions. (Mayer, Salovey, Caruso, 2004)
5. Self-awareness	Self-awareness means knowing what we feel at the moment and using them as a guide for decision-making. Rapisarda (2002)
6. Self-management	Self-management is handling our own emotions well to facilitate the tasks at the hand. Rapisarda (2002)

7. Social awareness	Social awareness means sensing other's feeling. In detail thinking of other's perception while working with people. Rapisarda (2002)
8. Relationship management.	Relationship management is handling emotions in relationships, accurately handling social situations to maintain the social networks. Rapisarda (2002)
9. Interpersonal skills	The skills need to interact with other people known as Interpersonal skills. Clarke (2010-A)
10. Intrapersonal skills	Intrapersonal skills are ability understand and manage own emotions. Clarke (2010-A)
11. Adaptability	Ability to change according to the situation is known as Adaptability. Clarke (2010-A)
12. Stress management	Handling stress in appropriate matter is known as Stress management. Clarke (2010-A)
13. General mood	Generalized state of feeling is known as General mood. Clarke (2010-A)

2.4. Team Performance

Team performance is a very important factor in an Industry like software Industry. In Software industry the most of the project work is done as a team. Therefore, it is really important to improve team performance continuously. Many past researchers have done deep studies on team performance.

According to the literature of Rapisarda (2002) “Team” is known an individual who see themselves and who are seen by others as a social entity. They are independent and perform the tasks as members of a group. And “Performance” is known as reaching profitability, efficiency and goal attainment.

Clarke (2010-B) has proposed a taxonomy comprising three sets of team processes such as transition, action and interpersonal processes. According to the proposed process there are three process categories which have sect of activities.

The transaction process

- Mission analysis and planning
- Goal specification
- Strategy formulation.

Action process

- Monitoring progress towards goals,
- systems monitoring
- Team monitoring and backup behaviour
- Co-ordination.

EI and interpersonal team processes

- Conflict management
- Motivation and confidence building
- Affect management.

2.4.1. Campbell's (1990) performance model

According to the literature of Law, Wong and Huang (2008) , Campbell's (1990) job performance model is the most prominent model which can use to measure job and team performance. Campbell's (1990) model gives explanations about performance components, performance determinants, and the predictors of performance determinants. According to the model there are three Performance determinants such as Declarative knowledge (DK), Procedural knowledge and skill (PKS) and Motivation (MOT). DK is the understanding the facts, principles, goals of given task requirements. PKS consist with cognitive skills, psychomotor skills, physical skills, self-management skills and interpersonal skills. MOT is about willing to perform with the highest effort. Finally, he has found EI is related with MOT and PKS.

Feyerherm and Rice (2002) explained some important guidelines to improve team performance.

1. Have clear Goals and values.
2. Understand the roles and responsibility.
3. Maintain the trust within the team and support among members.
4. Open Communications.
5. Participate in making correct decisions.
6. Implements decisions with commitment.
7. Leaders must supportive to others
8. Differences are recognized and handled.
9. The team structure and procedures are consistent with the task, goals which people involved.

According to the literature of Prati, Douglas, Ferris, Ammeter, Buckley and (2003) team coordination and cohesion, creativity, interpersonal communication are some of the characteristics of team performance.

2.5. Relationship between EI and Team performance

EI and Team performance are related factors according to many past researches.

Clarke (2010-B) has found a relationship between emotional intelligence abilities and team effectiveness in his studies. In detail EI gives direct impact on team processes such as cooperation and conflict management. The four abilities of Mayer, Salovey model give more advantages for identifying and understanding team members emotions make team bonding, motivating others and improve conflict management when working in a team. Furthermore, he found the team members who have higher levels of average emotional intelligence are performed well than the members who have lower levels. Hence, EI is an essential factor for many teamwork processes such as problem solving, decision-making and creativity.

Gunsel and Acikgoz (2013) examined the relationships between software team flexibility, EI, and software project outputs. The study showed a positive relationship with the emotional recognition and regulation of team members among the performance of the software development process, market success, speed to market, and software functionality. Further EI helps in always to improve information sharing with team members, correct decision-making and better team performance. As a result the team is able to develop software that is successful in the market.

Koman and Wolff (2008) has found that EI of team leader is impact on team members competent group norms and that competent group norms is impact on team performance.

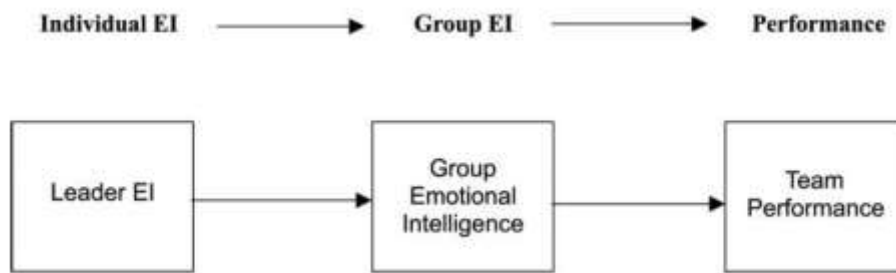


Figure 3-Team leaders' EI for Team performance

(Source: Research paper - Emotional intelligence competencies in the team and team leader, 2008, p.7)

According to the literature of his study there are more evidence to prove the relationship with EI and teamwork. Further he found a positive correlation among the team leader's capability to understand emotion and the team performance and better customer service.

Rapisarda (2002) has explained about the model of group emotional intelligence (GEI) which is used to represent EI at a group level. Managing individual and group-level emotion gives better task processes and group effectiveness.

The study of Cote and Miners (2006) also described that the emotions are related to the performance of organization members he found that the EI in organization members lead organization to reach its goals.

Boyle, Humphrey, Pollack and Hawver (2011) also looked at EI and examined that EI and job performance has a higher relationship than cognitive intelligence and job performance. Also he found EI is maximizing group performance and furthermore, it is a good predictor of team performance in project work.

Law,Wong and Huang (2008) explained that if EI give significant impact on organizational outcomes like employee attitudes, behaviour and job performance then it became an interesting factor to organizational researchers. Moreover, he

found EI gives positive impact on leadership effectiveness and followers' satisfaction. Accurate appraisal and expression of one's emotions help people to build relationship among team members, better communication and achieve goals through better team performance. Appraisal and recognition of other's emotion aid to understand other's emotions and through that people can earn trust easily cooperate with team members. Regulating emotions help to manage own emotions and minimize the bad impact to the work environment from the negative emotions. This helps employee to avoid stressful situations, uncooperative behaviour and impolite behaviour while working in a team. Finally, use one's emotions to improve performance motivate employees to complete the job.

Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) found emotional competences (EC) are good predictors for team performance. Furthermore, emotions give significant impact on human decision-making, motivation, and action. Also in his study he found that there is a relationship between ECI scores and performance ratings. He has use EC model to examine effectiveness of managers. If the group has higher level of EC managing group resources will be very easy. Specially empathy, communication, and collaboration skills are helping to achieve collective goals. Therefore, EC aid to produce superior outcome in teams. According to his study social awareness and relationship management is very important factors for team performance. Managing emotions wisely within the team gives many advantages. Reduce tensions and role conflict, reduce arguments are few of those. Finally, higher level of EI in team members will generate more positive attitudes.

Jordana, Ashkanasyb, Hartelb and Hooperb(2002) found that the emotional factors give have a long-term effect on team performance. Achieving the goals set by the team and decision-making ability are very good indicator of team performance. Hence, group with higher EI members have more effective group processes, and they are goal-focused than others.

Turner and Lloyd (2008) found Social awareness and social regulation are important factors when working as a team. Furthermore, the managers who have higher level of EI can contribute for higher organization performance. Also EI help to make

effective leaders. According to his study EI, leadership style and organizational performance are inter-related factors.

Thomas, Tram, Hara and (2005) looked at EI as a predictor to work related outcomes such as job satisfaction and Team performance. Also he found that positive emotions like excitement aid employees to complete their work as planned and negative emotions such as anxiety gives bad impact on their work.

Even though there are many literatures prove positive relationship between EI and team performance some authors found negative relationship between those two.

Feyerherm and Rice (2002) argued that there is no significant correlation between identifying emotions and any performance measure. Moreover, Gonsel and Acikgoz (2013) found emotions are not important factors for project performance in terms of speed, market success, and functionality. Similarly, Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) found there is a negative relationship with Social awareness with the team performance.

2.6. EI in in the workplace

EI is an essential factor to improve in workplace. The importance of the EI and the way to improve EI in workplace are further explaining in below sections.

2.6.1. Importance of Emotion Intelligence

EI generates many benefits for project teams as well as organization.

Gonsel and Acikgoz (2013) explained the importance of emotions and emotional intelligence at the team level in software development teams. He found the ability of emotional recognition of team members' aid to increase functionality of the new software products.

Rapisarda (2002) identified the importance of focusing on emotion in the workplace as it directly affects the outcomes of team behaviour.

Boyle, Humphrey, Pollack and Hawver (2011) found that EI is very important for the service sector jobs that interact with customer. Therefore, in software industry it is more helpful for the occupations like business analysis.

The study of Law, Wong and Huang (2008) mentioned employees need to have some emotions in the workplaces to manage their day today work. The employees who are well aware about EI effectively interact with their co works in the work environment.

2.6.2. Improve Emotion Intelligence

EI is a very important factor in software development. Gonsel and Acikgoz (2013) suggested enhancing EI of team members during software development projects. For that managers should give opportunity to make valuable decisions, fill the team with the people who have different qualifications and abilities, build psychologically safe environment to easily collaborate with others, pay attention on team member's emotions and use them to benefit the team objectives.

EI can be improved in variance way in workplace. According to the literature of Cote and Miners (2006) EI is more important in managerial practice. Many organizations include EI into their employee development programs.

Groves, McEnrue and Shen (2008) found that EI training also a good method to build EI in workplace. To make the EI trading more success it should conduct base on EI models comprised of mostly personality traits. Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) has recommended mixed

model of EI for management training. Furthermore, he argued improving EC trough EI training aid to improve team performance. Turner and Lloyd (2008) also found positive from EC training to impacting job performance. In addition to EI training Groves, McEnrue and McEnrue (2008) found examine the factors which improve the EI level of managers and workers is a good practice in a workplace.

2.7. EI and Project management

According to the literature of Thomas and Mengel (2008), EI is one of most required skill which needs to be incorporated for a successful project management. Furthermore, EI aids to save project managers in complex project environments. Moreover, he has pointed out relationships and shared leadership become really important due to temporary nature of projects and the simultaneous project management. Especially project manager should be socially competent to develop teams. According to his studies self-management is the most important factor when doing project management.

The studies of Pant and Baroudi,(2006) explained; project management is the combination of complex activities. Therefore, communication between team members and the entire network is very important and supportive for understand the project requirements and its goals. In order to have a successful project management there are mixture of social skills such as interpersonal ability, cognitive aptitude, ability to understand the co-workers and leadership behaviour are needed. Furthermore, he has explained that the PMBOK which is the guiding book for project management is given low consideration for human skills as it more concerned with the hard skills The PMBOK only has the two areas related to human skills which are Project Human Resources Management and Project Communications Management. This may be the one of reasons to have a lesser focus on EI in project management. Apart from that he identified EI as a essential feature for project management as it is linking with Tacit knowledge

2.8. Summary

This chapter explained the concepts such as EI, EI models, Team performance, Factors of EI and the ways of improving EI. The explanations have been done base

on the past literature. In addition to provide the theoretical background, the EI factors were found in order to achieve the first objective of this research study.

The next chapter will discuss the research methodology.

3. RESEARCH METHODOLOGY

This chapter explains in detail the methodology which used to conduct this research. Furthermore, population and sample selection and approaches taken to gather data are discussed in detail. The factors of EI have been identified in literature survey and those factors are used to develop research methodology. Also this chapter will further discuss a conceptual frame work with both independent and dependent variables, hypotheses formulation and questionnaire design .

3.1. Research Method

The research is specially focusing on software industry and tries to find the EI factors which need to be improved among software team members in order to improve the team performance. The research method explains in below flow chart.

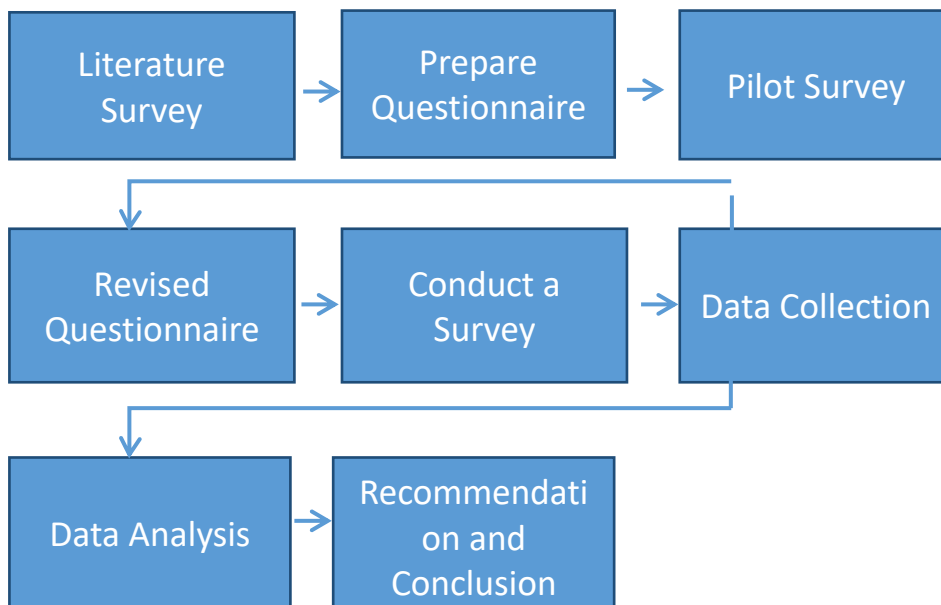


Figure 4- Research Method

The EI factors have been identified through the literature survey. Based on the factors identified questionnaire was created. A pilot survey has been done to check the reliability of the questionnaire before distributed with actual sample.

10 employees of software industry who are representing the all characteristics of sample have been selected for pilot survey. Data collected through the pilot survey has been analyzed and done the required modifications to the questionnaire and distributed the final questionnaire with actual sample.

Base on the frequency of occurrence in past research papers the four factors were selected for the survey from 12 factors.

Table 3-EI factors frequency

Factors	Frequency (No: of Research papers)
Perceive emotion	4
Integrate emotion	4
Understand emotions	5
Manage emotions	5
Self-awareness	7
Self-management	7
Social awareness	6
Relationship management	6
Interpersonal skills	1

Intrapersonal skills	1
Adaptability	1
Stress management	1
General mood	1

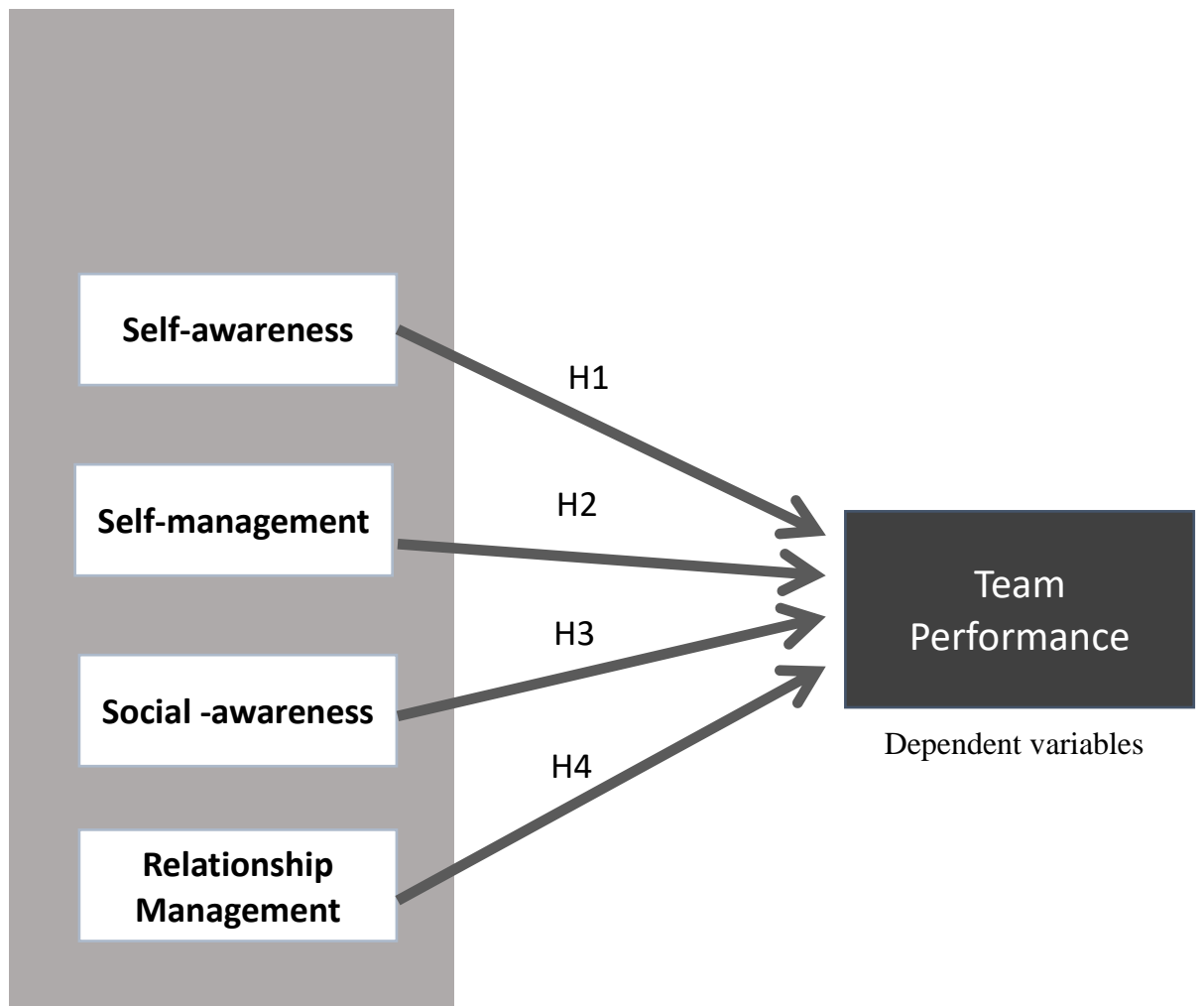
Survey has been conducted in both online and offline way. Emails and social media have been used as distributing sources for online survey and printed copies have been used for offline survey. Questionnaire was distributed with randomly selected employees in software industry.

Finally, analyzed the data collected through the survey and came up with recommendations and conclusions.

3.2. Conceptual Framework

The entire research is based on conceptual framework. It is logically developed for elaborating the relationship among variables related to the research. (Sekaran,2008)

The conceptual framework for this research was developed using the factors derived from literature survey. This framework used as a model in data collection process for gather factors. The conceptual frame work described the interrelationship among the identified variables. Furthermore, it explains set of independent variables and dependent variable identified through the literature survey. In this research the conceptual framework has been developed to study relationship between team performance and EI.



Independent variables

Figure 5-Conceptual Framework

In the above proposed conceptual framework, four variables such as Self-awareness, Self-management, Social awareness, Relationship management are identifies as independent variables and Team performance is identifies as dependent variable.

3.3. Analysis method

As the analysis method, the quantitative approach has been used in this research. Based on the conceptual framework developed the questionnaire was created and distributed among larger number of employees in Software industry to gather response within limited time period.

3.3.1. Variable Identification

The past research work conducted in different countries was used to identified variables of EI which impact to team performance.

According to the literature survey four independent variables identified with their dimensions. The dependent variable is identified as Team performance.

The dimensions of self-awareness are identified as emotional self-awareness, accurate self-assessment and self-confidence. Similarly, self-management dimensions are emotional self-control, conscientiousness and achievement orientation. And social awareness dimensions are empathy, organizational awareness and service orientation. Finally, Relationship management dimensions identified as developing others, inspirational leadership, communication, conflict management, Building bonds, teamwork and collaboration. The questionnaire was created by using above mentioned variables and their dimensions.

The below table explains the independent and dependent variables with past research sources used in this research

Table 4-Variables and research sources

Research source	Variables			
	Self-awareness	Self-management	Social awareness	Relationship management

Gunsel and Acikgoz (2013)	•	•	•	•
Koman and Wolff(2008)	•	•	•	•
Rapisarda(2002)	•	•	•	•
Groves , McEnrue and Shen (2008)	•	•	•	•
Offermann, Bailey, Vasilopoulos, Seal and Sass (2004)	•	•	•	•
Turner and Lloyd (2008)	•	•	•	•
Prati, Douglas, Ferris, Ammeter, Buckley and (2003)	•	•		

3.3.2. Description of Variables

Independent variable – Self-awareness

Self-awareness is identified the importance of one’s feeling and how it impacts to one’s performance. It also aids to recognize own strengths and weaknesses. The people who have good sense of self-awareness have clear idea about their competencies. Emotional self-awareness, accurate self-assessment and self-confidence are the sub categories of self-awareness. The employees who have above skills are always welcome others feedback, try to learn by mistakes and have clear idea about where improvements are needed. These skills are very important for

knowledge workers such as employees in software industry. The research is targeting to find a relationship between this variable with team performance.

Independent variable – Self-management

Self-management is ability to handle one's own value, impulses, resources and disciplines. Controlling own emotions like anger, stress, dispersion is a very important skill in workplace. Ability to manage own emotions enable employees to achieve their personal goals as well as company goals. Proper self-management develops trustworthiness. People with good self-management can take many responsibilities and it creates outstanding performance. Emotional self-control, conscientiousness and achievement orientation are the sub competencies of self-management which are essential in workplace. Also self-management creates emotional resilience and it makes employees to think out of box.

Independent variable – Social-awareness

Social-awareness means one's knowledge about what society acceptable and how to behave at that matter. In software industry this is very important when working in a team. It is good to have good sense on others emotions and concerns to mitigate conflicts among team members. The people who have good awareness about society always think other's perspective and take appropriate actions maintain good relationship between team members. Empathy, organizational awareness and service orientation are the main characteristics of good socially aware person. Furthermore, it is helping to correctly identify customer needs and concerns and convert them to better product and service.

Independent variable – Relationship management

Relationship management means ability to maintain good network among co-workers. For better relationship management social skills, influencing and analyzing others are required. Also clear line of communication is must for relationship management. Maintaining a good relationship is helping to make subordinates work more effective. Developing others, inspirational leadership, communication, conflict management, Building bonds, teamwork and collaboration are essential factors for better relationship management.

Dependent variable – Team performance

Team performance is a good indicator for organization success. Maximizing team performance is the one of main target of every organization. Team performance depends on many factors such as mission analysis and planning, goal Specification, conflict management, team effectiveness, group interaction and creativity. Higher team performance can be achieved from developing these factors. Additionally, the research is targeting to find the impact of EI for the team performance.

3.4. Formation of Hypotheses

Hypothesis is a form of testable statement which can be used to logically explain the relationship between two or more variables (Sekaran, 2008). According to the conceptual framework there are four hypotheses were derived ad below.

Hypothesis 1

The first hypothesis was generated to verify whether there is a significant relationship between self-awareness and team performance.

The null hypothesis developed as;

H10 - There is **no** relationship between self-awareness and team performance

The alternative hypothesis developed as;

H1A - There is a relationship between self-awareness and team performance

Hypothesis 2

The second hypothesis was generated to verify whether there is a significant relationship between self-management and team performance.

The null hypothesis developed as;

H20 - There is **no** relationship between self-management and team performance

The alternative hypothesis developed as;

H2A - There is a relationship between self-management and team performance

Hypothesis 3

The third hypothesis was generated to verify whether there is a significant relationship between social awareness and team performance.

The null hypothesis developed as;

H30 - There is **no** relationship between social awareness and team performance

The alternative hypothesis developed as;

H3A - There is a relationship between social awareness and team performance

Hypothesis 4

The fourth hypothesis was generated to verify whether there is a significant relationship between relationship management and team performance.

The null hypothesis developed as;

H40 - There is **no** relationship between relationship management and team performance

The alternative hypothesis developed as;

H4A - There is a relationship between relationship management and team performance

3.5. Questionnaire

The questionnaire was developed based on conceptual frame work to evaluate each variable. The questionnaire consists with 31 questions including 6 demographic profile questions. The well-structured questionnaire has been distributed to capture industry feedback.

Table 5—Operationalization of variables

Variable	Question	Literature source
Self-awareness	Q7. I am always aware about which emotions I am feeling	Prati, Douglas, Ferris, Ammeter, Buckley and (2003), Koman

		and Wolff (2008) Rapisarda (2002)
	Q8. I can recognize how my feelings and behaviour effect on my daily work	Gunsel and Acikgoz (2013) Koman and Wolff (2008)
	Q9. I am always aware about my strength and weakness	Gunsel and Acikgoz (2013), Groves , McEnrue and Shen (2008)
	Q10. I am always open to feedback, perceptions from my team members	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) Turner and Lloyd (2008)
	Q11. I have confidence to make sound decisions in uncertainties.	Groves , McEnrue and Shen (2008) Offermann, Bailey, Vasilopoulos, Seal and Sass (2004)
	Q12. I have confidence to accept tied work schedule and have ability to plan my work	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004)

		Turner and Lloyd (2008)
Self-management	Q13. I always try to manage my impulsive feelings	Prati, Douglas, Ferris, Ammeter, Buckley and (2003), Turner and Lloyd (2008)
	Q14. I can focus on project goals even I am under pressure	Koman and Wolff(2008) Groves , McEnrue and Shen (2008)
	Q15. I am always held myself accountable for meeting my objectives and team goals	Koman and Wolff(2008) Rapisarda(2002)
	Q16. I am always well organized in my work	Koman and Wolff(2008) Rapisarda(2002)
	Q17. I have a high drive to meet project objectives and standards	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) Turner and Lloyd(2008)
	Q18. I always try to learn new things in order to improve my performance	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004)

		Turner and Lloyd (2008)
Social awareness	Q19. I can understand other team members perspectives and feelings	Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q20. I show sensitivity among my team members when they are facing a trouble	Gunsel and Acikgoz (2013) Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q21. I am well aware about organizational process and procedures	Gunsel and Acikgoz (2013) Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q22. I can understand the politics in the organization and get the minimal impact of it to the project activities.	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) Turner and Lloyd (2008)

	Q.23. I can clearly understand customers' needs and can match them in product development.	Gunsel and Acikgoz (2013) Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q 24. I am happy to offer appropriate assistance to customers when required	Rapisarda(2002) Groves , McEnrue and Shen (2008) Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) Turner and Lloyd (2008)
Relationship management	Q 25. I am always giving useful feedback for my team members and identify who needs development and help them accordingly	Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q 26. I am Inspiring and guiding my subordinates in the team	Offermann, Bailey, Vasilopoulos, Seal and Sass (2004) Turner and Lloyd

		(2008)
	Q 27. I provide clear messages and sharing information to maintain good communication process	Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q 28. I always discuss and handle conflicts and disagreements within the team	Gunsel and Acikgoz (2013) Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q 29. I can maintain extensive informal networks between my team members	Gunsel and Acikgoz (2013) Koman and Wolff(2008) Rapisarda(2002) Groves , McEnrue and Shen (2008)
	Q30. Working as a team motivate me to complete project related task on time	Rapisarda(2002) Groves , McEnrue and Shen (2008) Offermann, Bailey, Vasilopoulos, Seal and Sass

		(2004) Turner and Lloyd (2008)
Team Performance	Q31. I always try to work according to project plan and meet deadlines	Jordana, Ashkanasyb, Hartelb and Hooperb(2002) Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)
	Q32. I am well understood about what my team needs to do to achieve project goals	Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)
	Q33. I always work effectively to give expected project outcome	Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)
	Q34. I am independent and good at making quick decisions	Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)

	Q35. I always find creative and effective solutions to project problems.	Jordana, Ashkanasyb, Hartelb and Hooperb(2002) Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)
	Q36. I have good group interaction with my team members to get the job done	Jordana, Ashkanasyb, Hartelb and Hooperb(2002) Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)
	Q37. I always take the initiative to solve a work problem.	Jordana, Ashkanasyb, Hartelb and Hooperb(2002) Feyerherm and Rice(2002) Prati, Douglas, Ferris, Ammeter, Buckley and (2003)

The above table elaborates the operationalization of the variables of this research. 24 questions were designed to measure the four independent variables (6 four each). Additionally, 7 questions were designed to measure the dependent variable.

Likert scale of unit 5 was used in the research questions as below

Table 6-Scale

Option	Score
Strongly disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly Agree	5

Table 7-Instrument Measures of Variables

Variable	Type of Variable	Item Count	Scale
Self-awareness	Independent variable	6	Five point Likert Scale
Self-management	Independent variable	6	Five point Likert Scale
Social-awareness	Independent variable	6	Five point Likert Scale
Relationship management	Independent variable	6	Five point Likert Scale
Team Performance	Dependent variable	7	Five point Likert Scale

3.6. Data Collection

There are different methods to collect data. In his research well-structured questionnaire has been distributed to collect data. In prior to that sample was identified. Sample identification and method of data collection have been discussed in detail under the below subheadings.

3.7. Population and Sample Selection

The target population for this research is software professionals working in Sri Lanka. According to the National ICT workforce survey carried out by ICTA of Sri Lanka on year 2013 the projected population for ICT work force in Sri Lanka for 2014 is 82854.

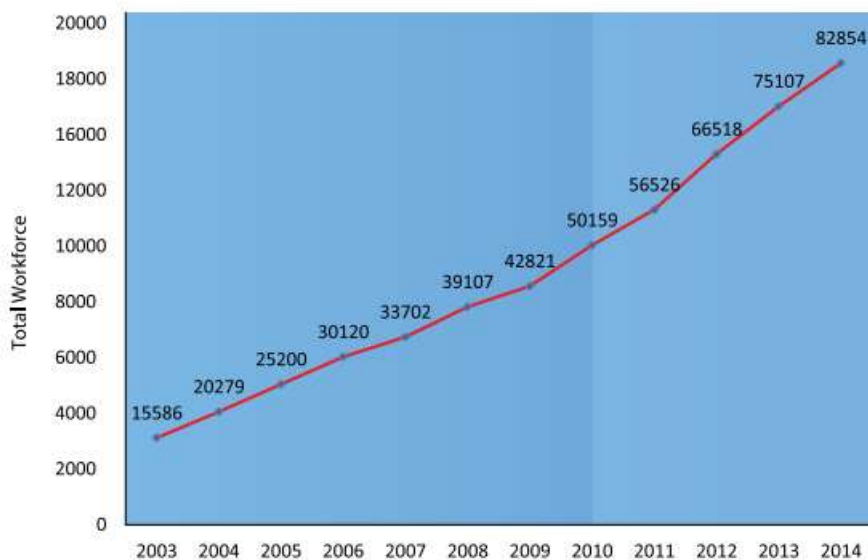


Figure 6-Overall growth of IT Workforce

(Source: National ICT workforce survey by ICTA of Sri Lanka, 2013, p.33)

The above population indicates the all professionals of ICT sector in Sri Lanka. Even though the research is only targeting the ICT professionals such as Project managers, Team leaders, Software Engineers/web developers, QA Engineers and Business Analysis as they are the basic characters of software team. According to the National ICT workforce survey carried out by ICTA of Sri Lanka on year 2013 above occupations represent the 45% of overall ICT workforce. It is further explaining in table 8 and the figure 7. Also it is 37284 from 82854. There for the population is for this research is 37284.

Table 8-Percentages of job categories

Job Category	Percentage
Project managers/scrum masters and product managers	5%
Team leaders, Software Engineers/Programmers, web developers, Solution and technical architectures	25%
QA Engineers	8%
Business Analysis	7%
Total	45%

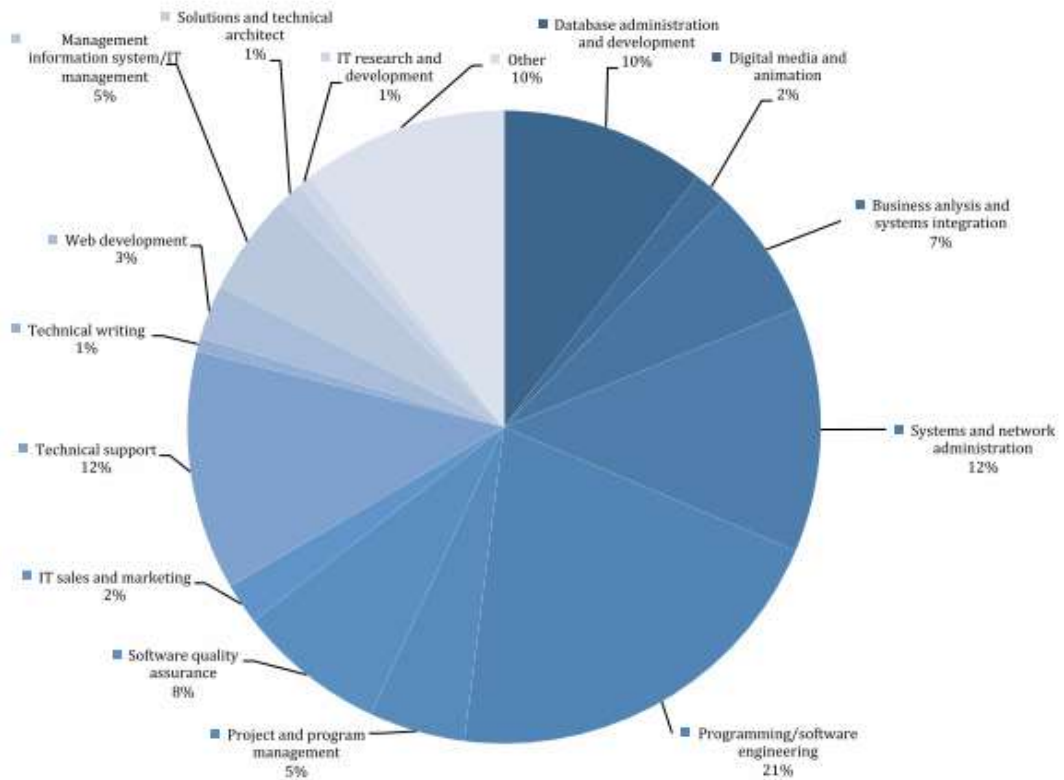


Figure 7-IT Workforce by job category

(Source: National ICT workforce survey by ICTA of Sri Lanka, 2013, p.36)

3.7.1. Sample size

The sample was selected to represent the entire population. And it has been calculated according to William G Zikmund determination of sample size. The confidence level has been taken as 95% and margin error taken as ± 5 .

There for the sample size of this research is 383.

3.8. Method of data collection

The data was collected through structured questionnaire which was distributed among randomly selected software professionals. Online questionnaire and printed hard copies have been use to collect data from target sample. A pilot survey has been carried out among 10 random employees in software industry who represent the target sample in order to check the reliability of the questionnaire. Cronbach's alpha has been calculated to check the internal consistency of the questions and the result as below table. According to the response received from pilot survey all five variables are within the acceptable Cronbach's ratio which is between 1.0 and 0.7.

Table 9-Cronbach's alpha of pilot survey

Variable	No: of Respondents	Cronbach's Alpha Coefficient Value
Self-awareness	10	0.732
Self-management	10	0.858
Social-awareness	10	0.705
Relationship management	10	0.848
Team Performance	10	0.783

According to the analysis done from pilot survey the questionnaire has been verified and finally, distributed among the target population. The data analysis and interpretation was carried out using the SPSS version 24 software.

3.9. Summary

This chapter described the methodology used to conduct the research along with the explanations for Conceptual Framework, Variable Identification and Hypotheses formalizations. Furthermore, Population and Sample Selection and data collection methods used in this research have been described on this chapter.

The next chapter will explain the data analysis part of this study.

4. DATA ANALYSIS

This chapter explains the statics about the responses collected. The questionnaire has been distributed among 400 employees in software industry and only 310 responses received for data analysis. The various data analysis techniques such as Demographic Analysis Reliability Analysis, Pearson Correlation Coefficient Analysis, Regression Analysis used to analysis the data collected and recommendation made base on the result gain from above analysis.

4.1 Pattern of data collection

Approximately two months have been taken for collect 310 responses.

The most of the responses received after one moth of distributing the questionnaire and very responses received in first and last weeks. The pattern of data collection is showing in the Figure 8.

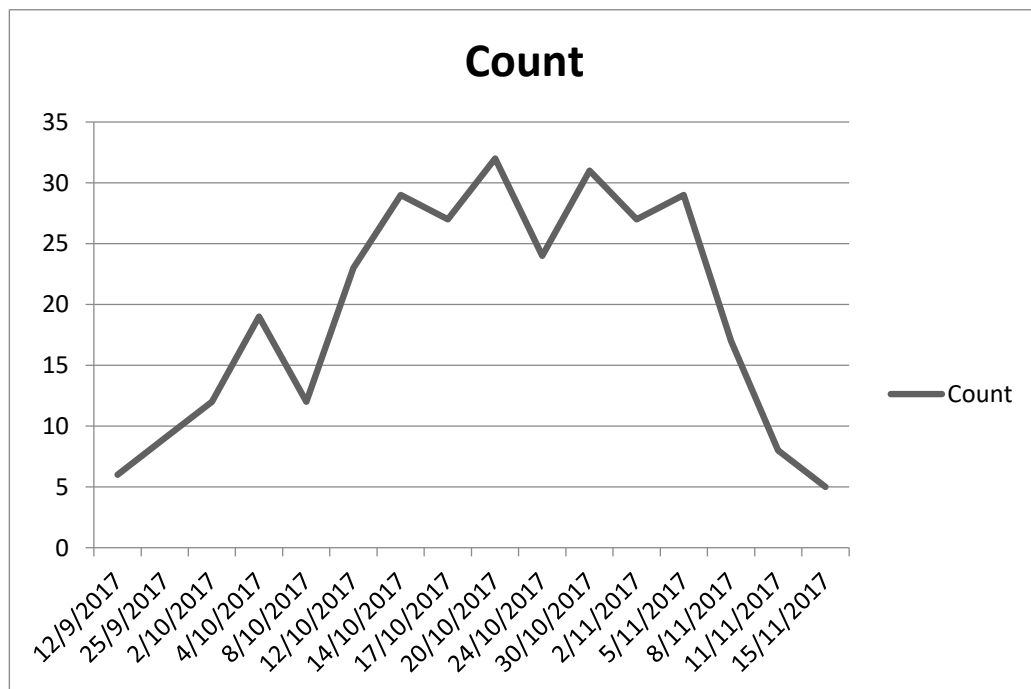


Figure 8-Pattern of data collection

4.1. Analysis with Demographic Data

Gender analysis

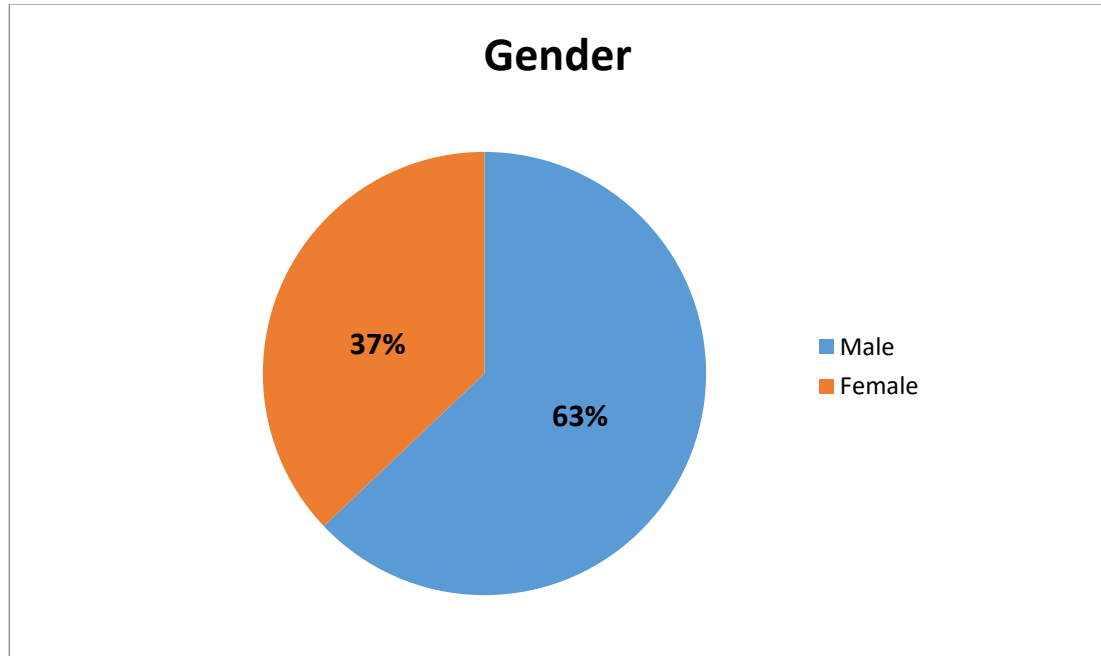


Figure 9- Gender

Table 10-Gender distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	115	37.1	37.1	37.1
	Male	195	62.9	62.9	100.0
Total		310	100.0	100.0	

As per the figure 9 and table 10, 63% of software professionals are male and 37% are female. According to the ICT Workforce Survey Report-2013 the male count of software industry is greater than the female count. And it is respectively 72% : 28%.

Therefore, the sample is approximately similar to the population in gender perspective.

Age distribution analysis

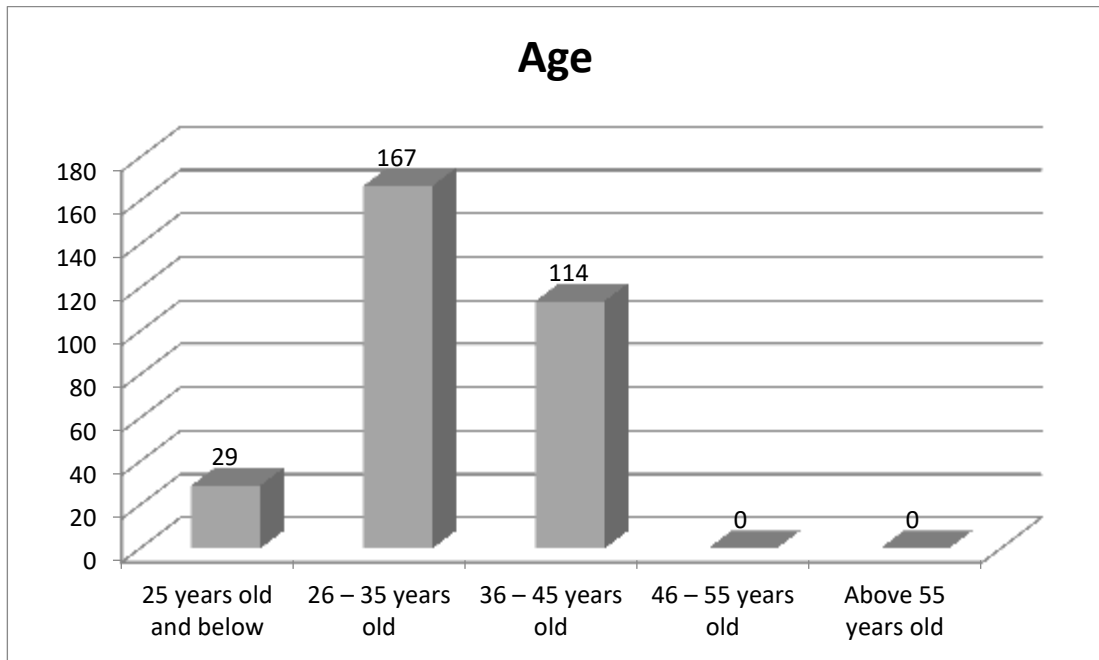


Figure 10-Age distribution

Table 11-Age distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 25 years old and below	29	9.4	9.4	9.4
26 - 35 years old	167	53.9	53.9	63.2
36 - 45 years old	114	36.8	36.8	100.0
Total	310	100.0	100.0	

When considering the age distribution the most of the responses came from the age 26-36 years and 36 – 45 years age groups. That count is respectively 167 and 114.

Few responses got from the age group 25 years and below and there were no responses came from the employees who are older than 46. The age distributions between the groups are shown in the Figure 10 and table 11. It is approximately closer to the normal age distribution of the employees in software industry.

Education qualifications analysis

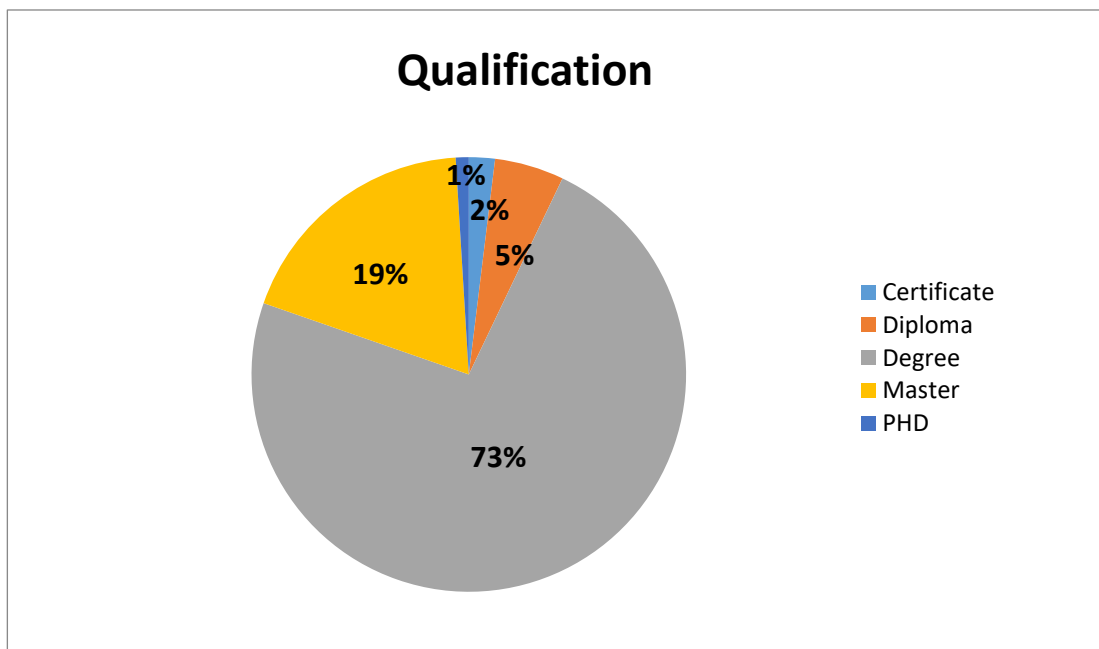


Figure 11-Education qualification distribution

Table 12-Education qualification distribution

Education Qualification		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certif	6	1.9	1.9	1.9
	Degree	227	73.2	73.2	75.2
	Diplom	16	5.2	5.2	80.3
	Master	58	18.7	18.7	99.0
	PHD	3	1.0	1.0	100.0
	Total	310	100.0	100.0	

According to the figure 11 and table 12, most of the software employees are degree holders and it is 73%. Masters, Diploma holders, Certificate level employees and PHD qualified employees are respectively 19%,5%,2%,1%. According to the ICT Workforce Survey Report-2013 the most of the software employees are degree holders also the sample is represented the same. Also the sample is in good level of education as 93% of employees have the degree and above education qualification.

Industry experience analysis

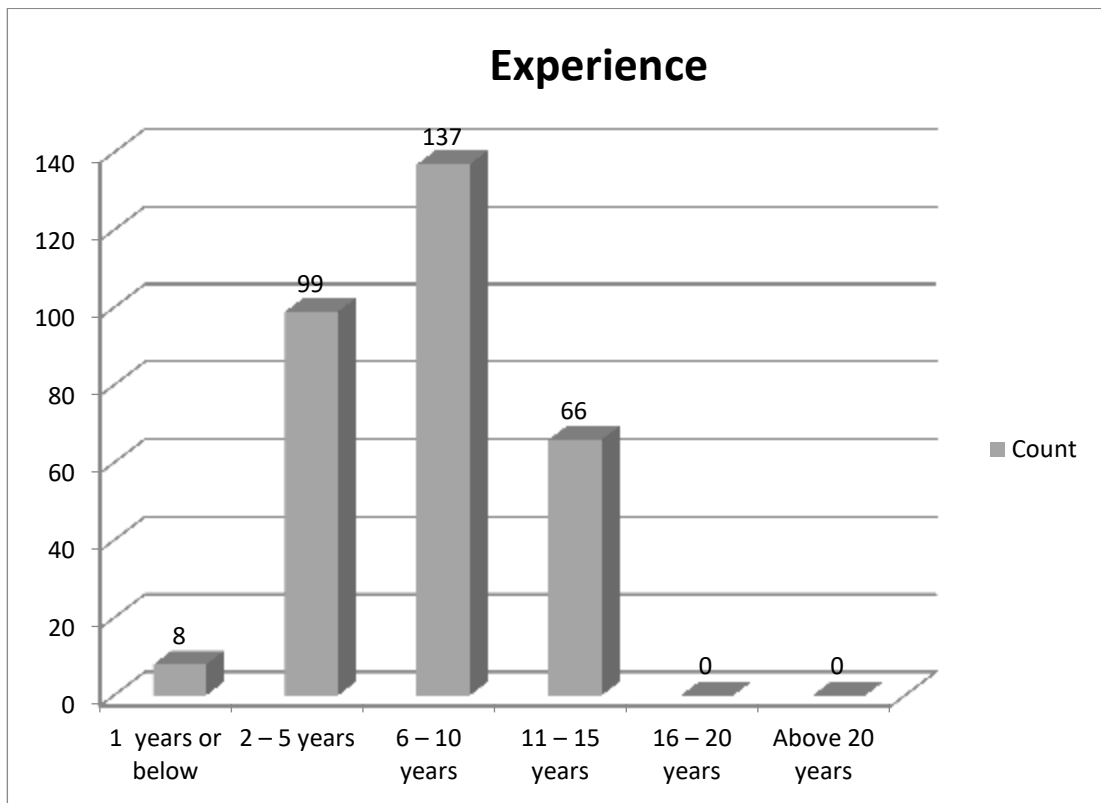


Figure 12-Industry experience distribution

Table 13-Industry experience distribution

		Experience			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	01 - 05 years	99	31.9	31.9	31.9
	01 year or below	8	2.6	2.6	34.5
	06 - 10 years	137	44.2	44.2	78.7
	11 - 15 years	66	21.3	21.3	100.0
	Total	310	100.0	100.0	

As per the figure 12 and table 13, 137 employees of the selected sample have 6-10 years of industry experience. Also 99 employees have 2-5 years of experience and 66 employees have 11-15 years of experience. Only very few people like 8 employee count have 1 year or below experience. According to the data almost all the software employees in the sample (302) have at least more than 2 years of experience in the industry. And interns and training people who are having very low experience are negligible.

Occupation analysis

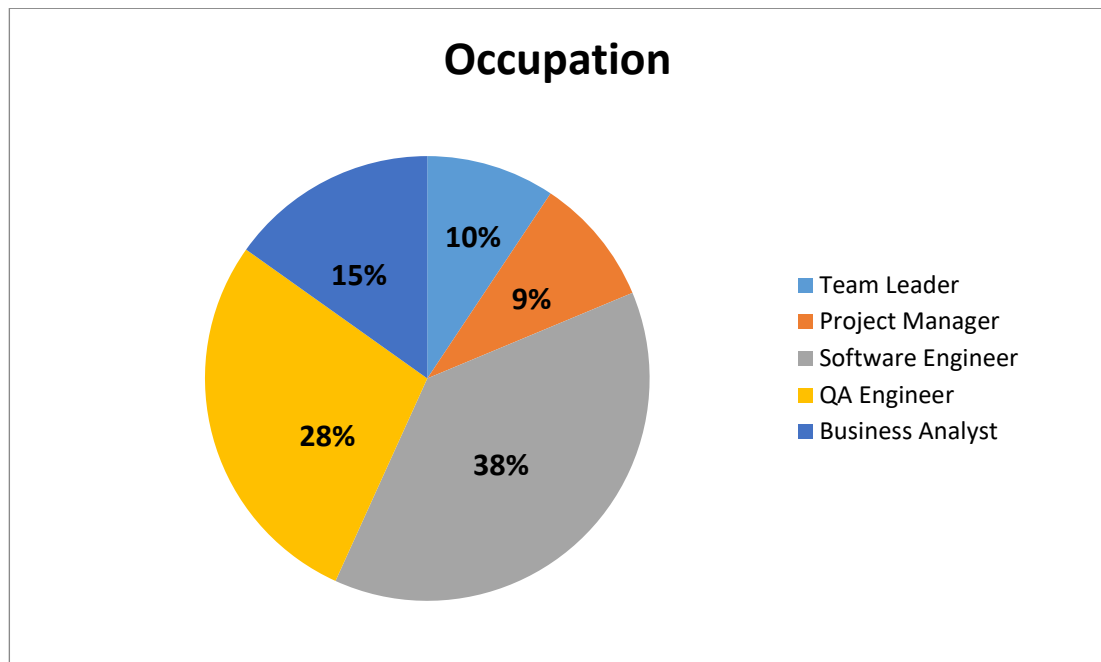


Figure 13-Occupation

Table 14-Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business Analyst	47	15.2	15.2	15.2
	Project Manager/Scrum Master	29	9.4	9.4	24.5
	QA Engineer	87	28.1	28.1	52.6
	Software Engineer	118	38.1	38.1	90.6
	Team Leader	29	9.4	9.4	100.0
	Total	310	100.0	100.0	

According to the figure 13 and table 14, the occupations of responders categorized to 5 main designation which are Business Analyst, Project managers (Program managers, Scrum masters) QA Engineers (Associate QA engineers, QA leads, QA managers), Software engineers (Web developers, programmers, solution architectures) Team leaders . The research is only focusing the above five occupations in software industry. The percentages are respectively 15%, 9%, 28%, 38%, and 10%. The majority is representing by the Software engineers and QA engineers. ICT Workforce Survey Report-2013 the majority of software employees in Sri Lanka are the software engineers and QA engineers compare to the other 3 occupation. There for the sample of the research represent the population of software employees in Sri Lanka.

Team size analysis

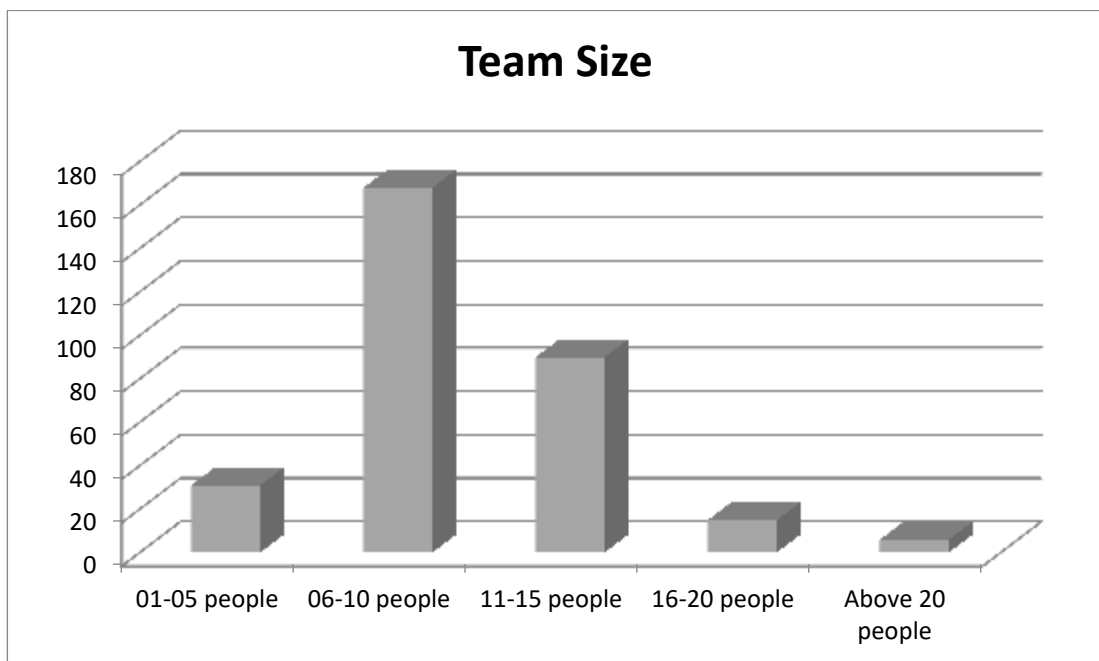


Figure 14-Team size

Table 15-Team size distribution

		Team Size			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	01-05 peop	31	10.0	10.0	10.0
	06-10 peop	168	54.2	54.2	64.2
	11-15 peop	90	29.0	29.0	93.2
	16-20 peop	15	4.8	4.8	98.1
	Above 20 p	6	1.9	1.9	100.0
Total		310	100.0	100.0	

The above figure 14 and the table 15 show the distribution of team sizes of the sample. Out of 310, 168 employees belong to the teams which have 6-10 peoples. Responder count for 1-5 people team, 11-15 people team, 16-20 people team and above 20 people team are respectively 31, 90, 15 and 6. According to the distribution many employees are belonging to medium size groups (6-10 peoples, 11-15 people) and very few are belonging to small (1-5) and large (16-20 people, above 20 people) teams. As research is focusing to find the impact of EI within the software teams there are enough members in most of the responders' teams to interact.

4.2. Reliability Analysis

The reliability test is carried out to check the internal consistency of the measures in the research. In detail, it is a good indicator to see how the questions under each variable are supportive to each other. It is very important to do a reliability test prior to an analysis of data in order to make sure the goodness of the instruments. In this research Cronbach's Alpha Coefficient has been used to verify the reliability of the questions. Finally, the reliability test was carried out for all 310 respondents' data.

Independent Variable: - Self-awareness

Table 16-Self-awareness Cronbach's Alpha

Scale: Self Awareness

Case Processing Summary

		N	%
Cases	Valid	310	100.0
	Excluded ^a	0	.0
	Total	310	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.789	6

Six questions have been listed under the Self-awareness variable. The value received for Cronbach's Alpha is 0.789 which is acceptable.

Independent Variable: - Self-management

Table 17-Self-management Cronbach's Alpha

Scale: Self Management

Case Processing Summary

		N	%
Cases	Valid	310	100.0
	Excluded ^a	0	.0
	Total	310	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.846	6

Six questions have been listed under the Self-management variable. The value received for Cronbach's Alpha is 0.846 which is acceptable.

Independent Variable: - Social-awareness

Table 18-Social-awareness Cronbach's Alpha

Scale: Social Awareness

Case Processing Summary

		N	%
Cases	Valid	310	100.0
	Excluded ^a	0	.0
	Total	310	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.693	6

Six questions have been listed under the Social-awareness variable. The value received for Cronbach's Alpha is 0.693 which is almost similar to 0.7. Hence, it is in acceptable range.

Independent Variable: - Relationship management

Table 19-Relationship management Cronbach's Alpha

Scale: Relationship Management

Case Processing Summary

		N	%
Cases	Valid	310	100.0
	Excluded ^a	0	.0
	Total	310	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.786	6

Six questions have been listed under the Relationship management variable. The value received for Cronbach's Alpha is 0.789 which in acceptable range.

Dependent Variable: -Team Performance

Table 20-Team Performance Cronbach's Alpha

Scale: Team Performance

Case Processing Summary

		N	%
Cases	Valid	310	100.0
	Excluded ^a	0	.0
	Total	310	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.811	7

Seven questions have been listed under the Team Performance variable. The value received for Cronbach's Alpha is 0.811 which is acceptable.

The summary of results gained from the reliability test is shown below

Table 21-Reliability Test for Independent Variables summary

Variable	No: of Respondents	No: of items	Cronbach's Alpha Coefficient Value
Self-awareness	310	6	0.789
Self-management	310	6	0.846
Social-awareness	310	6	0.700
Relationship management	310	6	0.786

Table 22-Reliability Test for Dependent Variables summary

Variable	No: of Respondents	No: of items	Cronbach's Alpha Coefficient Value
Team Performance	310	7	0.811

According to the George and Mallery (2003) thumb for Cronbach's alpha ratio rule acceptable Cronbach's ratio is in between 1.0 and 0.7

- $\alpha > 0.9$ – Excellent
- $0.8 < \alpha < 0.9$ – Very Good
- $0.7 < \alpha < 0.8$ – Good
- $0.6 < \alpha < 0.7$ – Moderate
- $\alpha < 0.6$ – Poor

According to the summary table 21 and 22, all four independent variables and the dependent variable have the Cronbach's alpha value greater than 0.7. Therefore, all five variables are in acceptable range.

Furthermore, Self-awareness, Self-management, Relationship management, Team performance have cronbach's alpha respectively 0.789, 0.846, 0.786, 0.811. Hence, those have very good internal consistency.

Social Awareness has cronbach's alpha 0.693 (approximately equal to 0.7) and it has good internal consistency.

4.3. Pearson Correlation Coefficient Analysis

Pearson Correlation analysis has been done to identify the relationship between independent variable and dependent variable. Bivariate correlation analysis method has been used in this research to find the relationship. As finding relationship among variables is the main objective in this study, correlation analysis is very important.

Independent Variable:-Self-awareness

Table 23-Correlation- Self-awareness and Team Performance

Correlations

		Self_Awareness	Team_Performance
Self_Awareness	Pearson Correlation	1	.987**
	Sig. (2-tailed)		.000
	N	310	310
Team_Performance	Pearson Correlation	.987**	1
	Sig. (2-tailed)	.000	
	N	310	310

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

The table 23 shows the relationship between the independent variable Self-awareness and the dependent variable Team Performance. The pearson Correlation Coefficient for above relationship is 0.987 at a .000 significant level.

Independent Variable:-Self-management

Table 24-Correlation- Self-management and Team Performance

Correlations

		Self_Management	Team_Performance
Self_Management	Pearson Correlation	1	.817**
	Sig. (2-tailed)		.000
	N	310	310
Team_Performance	Pearson Correlation	.817**	1
	Sig. (2-tailed)	.000	
	N	310	310

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

The table 24 shows the relationship between the independent variable Self-management and the dependent variable Team Performance. The Pearson Correlation Coefficient for above relationship is 0.817 at a .000 significant level.

Independent Variable:-Social-awareness

Table 25-Correlation- Social-awareness and Team Performance

		Correlations	
		Social_Awareness	Team_Performance
Social_Awareness	Pearson Correlation	1	.993**
	Sig. (2-tailed)		.000
	N	310	310
Team_Performance	Pearson Correlation	.993**	1
	Sig. (2-tailed)	.000	
	N	310	310

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

The table 25 shows the relationship between the independent variable Social-awareness and the dependent variable Team Performance. The Pearson Correlation Coefficient for above relationship is 0.993 at a .000 significant level.

Independent Variable:-Relationship management

Table 26-Correlation- Relationship management and Team Performance

		Relationship_ Management	Team_ Performance
Relationship_ Management	Pearson Correlation	1	.802**
	Sig. (2-tailed)		.000
	N	310	310
Team_ Performance	Pearson Correlation	.802**	1
	Sig. (2-tailed)	.000	
	N	310	310

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

The table 26 shows the relationship between the independent variable Relationship management and the dependent variable Team Performance. The pearson Correlation Coefficient for above relationship is 0.802 at a .000 significant level.

Table 27-Pearson Correlation Summary

Independent variable	Pearson correlation with Team performance
Self-awareness	0.987
Self-management	0.817
Social-awareness	0.993
Relationship management	0.802

According to Hinkle, Wiersma, & Jurs (2003) the rule of thumb the value should be greater than + or -0.5 to have a significant creation. The rule of thumb as below;

Table 28-Correlation- The rule of thumb

Coefficient Range	Correlation
±0.9 to 1	Very high correlation
±0.7 to 0.9	High correlation
± 0.50 to 0.7	Moderate correlation
± 0.30 and ± 0.49	Low correlation
<+ 0 .3	Negligible correlation

According to the above table 27 and 28, all four independent variables have positive relationship with the dependent variable Team performance.

Furthermore, Self-awareness, Social-awareness have respectively 0.987, 0.993 correlation and it is a very high correlation.

And Self-management and Relationship management have correlation 0.817, 0.802 respectively and it is a high correlation.

4.4. Hypothesis Analysis

As discussed on chapter 3 there are four hypotheses were developed for this research. There after Pearson correlation analysis has been used to test those hypotheses as per the sub heading 4.3 Pearson correlation analysis. The result of Hypothesis analysis as below;

Hypothesis 1

H10 - There is **no** relationship between self-awareness and team performance

H1A - There is a relationship between self-awareness and team performance

According to the table 23, Self-awareness and Team performance have 0.987 statistically very strongly positive correlations at the significant level of 0.000.

The lesser P-value is rejecting null hypothesis. If the significant level is 0.01 then there is only 1% chance to the relationship does not truly exist. In this scenario

P-value = 0.000

P-value < 0.01

Therefore, null hypothesis H10 is rejected and alternative hypothesis H1A is accepted.

Hence, there is a positive relationship between self-awareness and team performance

Hypothesis 2

H20 - There is **no** relationship between self-management and team performance

H2A - There is a relationship between self-management and team performance

According to the table 24, Self-management and Team performance have 0.817 statistically strong positive correlations at the significant level of 0.000.

The lesser P-value in this scenario is;

P-value = 0.000

P-value < 0.01

Therefore, null hypothesis H20 is rejected and alternative hypothesis H2A is accepted.

Hence, there is a positive relationship between self-management and team performance.

Hypothesis 3

H30 - There is **no** relationship between social awareness and team performance

H3A - There is a relationship between social awareness and team performance

The table 25 shows that Social-awareness and Team performance have statistically very strong positive correlation with value 0.993 and the significant level of 0.000.

The lesser P-value in this scenario is;

P-value = 0.000

P-value < 0.01

Therefore, null hypothesis H30 is rejected and alternative hypothesis H3A is accepted.

Hence, there is a positive relationship between social awareness and team performance.

Hypothesis 4

H40 - There is **no** relationship between relationship management and team performance

H4A - There is a relationship between relationship management and team performance

According to the table 26, Relationship management and Team performance have 0.802 statistically strong positive correlations at the significant level of 0.000.

The lesser P-value in this scenario is;

P-value = 0.000

P-value < 0.01

Therefore, null hypothesis H40 is rejected and alternative hypothesis H4A is accepted.

Hence, there is a positive relationship between relationship management and team performance

The summary of hypothesis analysis is shown in below table 29.

Table 29- Summary of hypothesis analysis

Hypothesis	Null Hypothesis H0	Alternative Hypothesis HA	Level of the relationship	Direction
Relationship between Self-awareness and Team performance	Rejected	Accepted	Very Strong	Positive
Relationship between Self-management and Team performance	Rejected	Accepted	Strong	Positive
Relationship between Social-awareness and Team performance	Rejected	Accepted	Very Strong	Positive
Relationship between Relationship management and Team performance	Rejected	Accepted	Strong	Positive

4.5. Regression Analysis

Regression analysis has been carried out to predict the behaviour of the one variable depending on another variable. In this research regression analysis has done for all 4 independent variables against the dependent variable.

Independent variable: - Self-awareness

Table 30-Model summary for Self-awareness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.987 ^a	.974	.974	.48840

a. Predictors: (Constant), Self_Awareness

Table 31- ANOVA for Self-awareness

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2798.415	1	2798.415	11731.620	.000 ^a
	Residual	73.469	308	.239		
	Total	2871.884	309			

a. Predictors: (Constant), Self_Awareness

b. Dependent Variable: Team_Performance

Table 30 shows the summary of the regression model between independent variable Self-awareness and dependent variable Team performance.

R value for this scenario is 0.987 and it indicates the correlation of the two variables.

R square explains the variance which is 0.974

Hence, 97% of the variance is affecting to the team performance by the self-awareness.

The higher R-squared indicate that the data are better the fit to the model.

Furthermore, the table 31 shows the 0.000 significant level.

Table 32-Coefficients for Self-awareness

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.399	.238		10.086	.000
	Self_Awareness	1.075	.010	.987	108.313	.000

a. Dependent Variable: Team_Performance

The table 32 shows 0.987 for Beta value and it indicates positive very strong relationship between two variables.

Hence, Team performance of the employees in software industry increase when self-awareness is high.

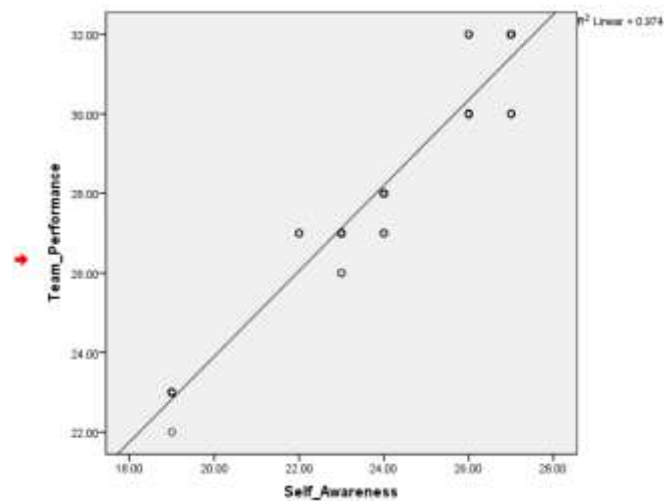


Figure 15-Self-awareness vs Team performance

Figure 15 shows the simple regression diagram for self-awareness and team performance. According to the diagram most of the values are in regression line.

Finally, it shows the very strong relationship between the two variables.

Independent variable: - Self-management

Table 33- Model summary for Self-management

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.817 ^a	.668	.667	1.75910

a. Predictors: (Constant), Self_Management
 b. Dependent Variable: Team_Performance

Table 34-ANOVA for Self-management

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1918.803	1	1918.803	620.085	.000 ^a
	Residual	953.081	308	3.094		
	Total	2871.884	309			

a. Predictors: (Constant), Self_Management
 b. Dependent Variable: Team_Performance

The summary of the regression model between independent variable Self-management and dependent variable Team performance is showed in Table 33 shows.

R value for this scenario is 0.817 and it indicates the correlation of the above two variables. R square explains the variance which is 0.668

Therefore, 66% of the variance is affecting to the team performance by the self-management. Furthermore, the table 34 shows the 0.000 significant level.

Table 35-Coefficients for Self-management

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.157	.962		4.321	.000
	Self_Management	1.029	.041	.817	24.902	.000

a. Dependent Variable: Team_Performance

According to the table 35 Beta value is 0.817 and it indicates positive strong relationship between two variables.

Therefore, higher Team performance can be expected when the employees in software industry have high self-management.

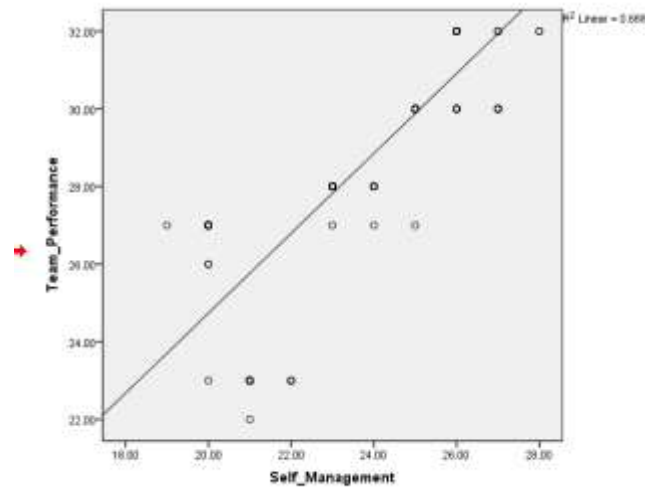


Figure 16-Self-management vs Team performance

Figure16 shows the simple regression diagram for self-management and team performance. It indicates a strong relationship between the two variables.

Independent variable: - Social-awareness

Table 36-Model summary for Social-awareness

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993 ^a	.986	.986	.36285

a. Predictors: (Constant), Social_Awareness
b. Dependent Variable: Team_Performance

Table 37-ANOVA for Social-awareness

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2831.334	1	2831.334	21505.408	.000 ^a
	Residual	40.550	308	.132		
	Total	2871.884	309			

a. Predictors: (Constant), Social_Awareness

b. Dependent Variable: Team_Performance

The table 36 displays the summary of the regression model between independent variable Social-awareness and dependent variable Team .R value for this scenario is 0.993 and it indicates the correlation of the above two variables. R square explains the variance which is 0.986. And according to the table 37, the significant level is 0.000

Hence, 98% of the variance is affecting to the team performance by the social-awareness.

Table 38-Coefficients Social-awareness

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.160	.177		12.187	.000
	Social_Awareness	1.085	.007	.993	146.647	.000

a. Dependent Variable: Team_Performance

The table 38 shows 0.993 for Beta value and it indicates positive very strong relationship between two variables.

Hence, Team performance of the employees in software industry increase when social-awareness is high.

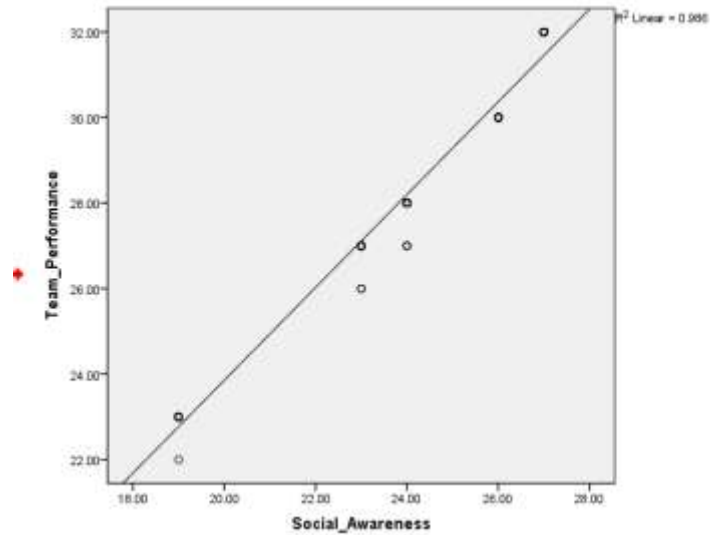


Figure 17-Social-awareness vs Team performance

Figure 17 displays the simple regression diagram for social-awareness and team performance. The diagram shows a very strong relationship between the two variables.

Independent variable: - Relationship management

Table 39-Model summary for Relationship management

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.802 ^a	.644	.643	1.82247

a. Predictors: (Constant), Relationship_Management
 b. Dependent Variable: Team_Performance

Table 40- ANOVA for Relationship management

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1848.894	1	1848.894	556.662	.000 ^a
	Residual	1022.990	308	3.321		
	Total	2871.884	309			

a. Predictors: (Constant), Relationship_Management
 b. Dependent Variable: Team_Performance

The table 39 shows the summary of the regression model between independent variable Relationship management and dependent variable Team .R value is 0.802 in this scenario. R square explains the variance which is 0.644. And the table 40 shows the significant level as 0.000

Hence, 64% of the variance is affecting to the team performance by the relationship management.

Table 41-Coefficients for Relationship management

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.339	.965		5.531	.000
	Relationship_Management	.965	.041	.802	23.594	.000

a. Dependent Variable: Team_Performance

The table 41 shows the Beta value as 0.802 which indicates positive strong relationship between two variables.

Therefore, Team performance in software industry increase when relationship management of the employees is high.

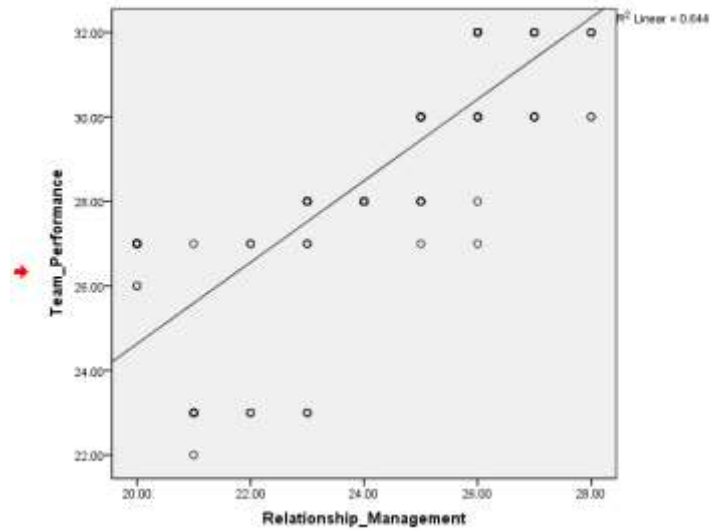


Figure 18-Relationship management vs Team performance

Figure 18 shows the simple regression diagram for relationship management and team performance. According to the diagram there is a strong relationship between the two variables.

4.6. Correlation analysis among demographic data

Gender categorization

Table 42-Correlation according to Male

Gender = Male

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.805**	.995**	.796**	.985**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	195	195	195	195	195
Self_Management	Pearson Correlation	.805**	1	.808**	.932**	.823**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	195	195	195	195	195
Social_Awareness	Pearson Correlation	.995**	.808**	1	.799**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	195	195	195	195	195
Relationship_Management	Pearson Correlation	.796**	.932**	.799**	1	.808**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	195	195	195	195	195
Team_Performance	Pearson Correlation	.985**	.823**	.993**	.808**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	195	195	195	195	195

** Correlation is significant at the 0.01 level (2-tailed).
a. Gender = Male

Table 43- Correlation according to Female

Gender = Female

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.807**	.997**	.786**	.990**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	115	115	115	115	115
Self_Management	Pearson Correlation	.807**	1	.802**	.929**	.817**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	115	115	115	115	115
Social_Awareness	Pearson Correlation	.997**	.802**	1	.780**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	115	115	115	115	115
Relationship_Management	Pearson Correlation	.786**	.929**	.780**	1	.796**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	115	115	115	115	115
Team_Performance	Pearson Correlation	.990**	.817**	.993**	.796**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	115	115	115	115	115

** Correlation is significant at the 0.01 level (2-tailed).
a. Gender = Female

According to the table 42 and 43 Females have high correlation between Self-awareness and team performance than males. Also males have high correlation between Relationship management and team performance than Females

Age categorization

Table 44— Correlation according to Age group 25 years or below

Age = 25 years old and below

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.857**	.998**	.855**	.991**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	29	29	29	29	29
Self_Management	Pearson Correlation	.857**	1	.859**	.927**	.871**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	29	29	29	29	29
Social_Awareness	Pearson Correlation	.998**	.859**	1	.864**	.994**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	29	29	29	29	29
Relationship_Management	Pearson Correlation	.855**	.927**	.864**	1	.876**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	29	29	29	29	29
Team_Performance	Pearson Correlation	.991**	.871**	.994**	.876**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	29	29	29	29	29

** Correlation is significant at the 0.01 level (2-tailed).
a. Age = 25 years old and below

Table 45-Correlation according to Age group 26-35 years

Age = 26 - 35 years old

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.772**	.996**	.756**	.989**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	167	167	167	167	167
Self_Management	Pearson Correlation	.772**	1	.771**	.923**	.787**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	167	167	167	167	167
Social_Awareness	Pearson Correlation	.996**	.771**	1	.756**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	167	167	167	167	167
Relationship_Management	Pearson Correlation	.756**	.923**	.756**	1	.771**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	167	167	167	167	167
Team_Performance	Pearson Correlation	.989**	.787**	.993**	.771**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	167	167	167	167	167

** Correlation is significant at the 0.01 level (2-tailed).
a. Age = 26 - 35 years old

Table 46=Correlation according to Age group 36-45 years

Age = 36 - 45 years old

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.821**	.994**	.812**	.983**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	114	114	114	114	114
Self_Management	Pearson Correlation	.821**	1	.822**	.939**	.837**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	114	114	114	114	114
Social_Awareness	Pearson Correlation	.994**	.822**	1	.809**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	114	114	114	114	114
Relationship_Management	Pearson Correlation	.812**	.939**	.809**	1	.817**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	114	114	114	114	114
Team_Performance	Pearson Correlation	.983**	.837**	.993**	.817**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	114	114	114	114	114

** Correlation is significant at the 0.01 level (2-tailed).
a. Age = 36 - 45 years old

According to the table 44, 45 and 46 the impact of Self-awareness for team performance is reduced over the age. Furthermore, there is no significant difference of the impact of Social awareness for team performance over the age

Education qualification categorization

According to the data collected the most of the responders are Degree and master level employees.

Table 47-Correlation according to Degree level

Education Qualification = Degree

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.790**	.996**	.778**	.988**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	227	227	227	227	227
Self_Management	Pearson Correlation	-.790**	1	.789**	.926**	.804**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	227	227	227	227	227
Social_Awareness	Pearson Correlation	.996**	.789**	1	.775**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	227	227	227	227	227
Relationship_Management	Pearson Correlation	.778**	.926**	.775**	1	.785**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	227	227	227	227	227
Team_Performance	Pearson Correlation	.988**	.804**	.993**	.785**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	227	227	227	227	227

** Correlation is significant at the 0.01 level (2-tailed).
a. Education Qualification = Degree

Table 48-Correlation according to Master level

Education Qualification = Master

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.815**	.993**	.819**	.982**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	58	58	58	58	58
Self_Management	Pearson Correlation	.815**	1	.820**	.937**	.828**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	58	58	58	58	58
Social_Awareness	Pearson Correlation	.993**	.820**	1	.823**	.990**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	58	58	58	58	58
Relationship_Management	Pearson Correlation	.819**	.937**	.823**	1	.832**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	58	58	58	58	58
Team_Performance	Pearson Correlation	.982**	.828**	.990**	.832**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	58	58	58	58	58

** Correlation is significant at the 0.01 level (2-tailed).
a. Education Qualification = Master

The table 48 shows higher value for Social factors such as social awareness and relationship management than self-factors such as self-awareness and self-management. Therefore, Masters social factors have more impact on Team performance compare to the Self Factors

Table 47 and 48 are showing that both Masters and Degree holders have higher value for Social Awareness.

Experience categorization

According to the data very few responders represent the experience 1 year and below group which is 8 (2.5%) from total 310. Hence, the group 1 year and below has not taken for below analysis.

Table 49-Correlation according to 02-05 year experience group

Experience = 02 – 05 years

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.788**	.997**	.765**	.992**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	99	99	99	99	99
Self_Management	Pearson Correlation	.788**	1	.782**	.927**	.807**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	99	99	99	99	99
Social_Awareness	Pearson Correlation	.997**	.782**	1	.761**	.994**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	99	99	99	99	99
Relationship_Management	Pearson Correlation	.765**	.927**	.761**	1	.781**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	99	99	99	99	99
Team_Performance	Pearson Correlation	.992**	.807**	.994**	.781**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	99	99	99	99	99

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

a. Experience = 02 - 05 years

Table 50-Correlation according to 06-10 year experience group

Experience = 06 – 10 years

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.803**	.995**	.788**	.984**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	137	137	137	137	137
Self_Management	Pearson Correlation	.803**	1	.803**	.932**	.814**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	137	137	137	137	137
Social_Awareness	Pearson Correlation	.995**	.803**	1	.788**	.992**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	137	137	137	137	137
Relationship_Management	Pearson Correlation	.788**	.932**	.788**	1	.797**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	137	137	137	137	137
Team_Performance	Pearson Correlation	.984**	.814**	.992**	.797**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	137	137	137	137	137

** Correlation is significant at the 0.01 level (2-tailed).
a. Experience = 06 - 10 years

Table 51-Correlation according to 11-15 year experience group

Experience = 11 – 15 years

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.837**	.995**	.837**	.986**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	66	66	66	66	66
Self_Management	Pearson Correlation	.837**	1	.846**	.936**	.854**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	66	66	66	66	66
Social_Awareness	Pearson Correlation	.995**	.846**	1	.835**	.994**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	66	66	66	66	66
Relationship_Management	Pearson Correlation	.837**	.936**	.835**	1	.841**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	66	66	66	66	66
Team_Performance	Pearson Correlation	.986**	.854**	.994**	.841**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	66	66	66	66	66

** Correlation is significant at the 0.01 level (2-tailed).
a. Experience = 11 - 15 years

As per the tables 49, 50 and 51 Self-Management, Relationship Management impact to the team performance is increasing over the years of experience

Occupation categorization

Table 52-Correlation according to Business Analysis

Occupation = Business Analyst

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.795**	.998**	.785**	.989**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	47	47	47	47	47
Self_Management	Pearson Correlation	.795**	1	.795**	.936**	.816**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	47	47	47	47	47
Social_Awareness	Pearson Correlation	.998**	.795**	1	.787**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	47	47	47	47	47
Relationship_Management	Pearson Correlation	.785**	.936**	.787**	1	.795**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	47	47	47	47	47
Team_Performance	Pearson Correlation	.989**	.816**	.993**	.795**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	47	47	47	47	47

** Correlation is significant at the 0.01 level (2-tailed).
a. Occupation = Business Analyst

Table 53-Correlation according to QA Engineer

Occupation = QA Engineer

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.761**	.996**	.737**	.989**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	87	87	87	87	87
Self_Management	Pearson Correlation	.761**	1	.766**	.937**	.796**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	87	87	87	87	87
Social_Awareness	Pearson Correlation	.996**	.766**	1	.747**	.994**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	87	87	87	87	87
Relationship_Management	Pearson Correlation	.737**	.937**	.747**	1	.775**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	87	87	87	87	87
Team_Performance	Pearson Correlation	.989**	.796**	.994**	.775**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	87	87	87	87	87

** . Correlation is significant at the 0.01 level (2-tailed).
a. Occupation = QA Engineer

Table 54-Correlation according to Software Engineer

Occupation = Software Engineer

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.824**	.997**	.818**	.989**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	118	118	118	118	118
Self_Management	Pearson Correlation	.824**	1	.816**	.921**	.821**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	118	118	118	118	118
Social_Awareness	Pearson Correlation	.997**	.816**	1	.810**	.993**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	118	118	118	118	118
Relationship_Management	Pearson Correlation	.818**	.921**	.810**	1	.811**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	118	118	118	118	118
Team_Performance	Pearson Correlation	.989**	.821**	.993**	.811**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	118	118	118	118	118

** . Correlation is significant at the 0.01 level (2-tailed).
a. Occupation = Software Engineer

Table 55-Correlation according to Project Manager

Occupation = Project Manager/Scrum Master

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.872**	.996**	.832**	.998**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	29	29	29	29	29
Self_Management	Pearson Correlation	.872**	1	.876**	.960**	.892**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	29	29	29	29	29
Social_Awareness	Pearson Correlation	.996**	.876**	1	.836**	.995**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	29	29	29	29	29
Relationship_Management	Pearson Correlation	.832**	.960**	.836**	1	.851**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	29	29	29	29	29
Team_Performance	Pearson Correlation	.998**	.892**	.995**	.851**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	29	29	29	29	29

** . Correlation is significant at the 0.01 level (2-tailed).
a. Occupation = Project Manager/Scrum Master

Table 56-Correlation according to Team Leader

Occupation = Team Leader

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.831**	.989**	.831**	.970**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	29	29	29	29	29
Self_Management	Pearson Correlation	.831**	1	.845**	.907**	.859**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	29	29	29	29	29
Social_Awareness	Pearson Correlation	.989**	.845**	1	.828**	.990**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	29	29	29	29	29
Relationship_Management	Pearson Correlation	.831**	.907**	.828**	1	.839**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	29	29	29	29	29
Team_Performance	Pearson Correlation	.970**	.859**	.990**	.839**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	29	29	29	29	29

** . Correlation is significant at the 0.01 level (2-tailed).
a. Occupation = Team Leader

The above tables 52, 53, 54, 55 and 56 show that all five occupations have higher impact of Self-awareness and Social awareness for Team performance. Furthermore, Team leaders have the highest value for Self-awareness and Social-awareness while Project managers have the highest value for Self-management and Relationship Management.

Team size categorization

Table 57-Correlation according to Team size 01-05 people group

Team Size = 01-05 peop

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.828**	1.000**	.856**	.996**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	31	31	31	31	31
Self_Management	Pearson Correlation	.828**	1	.828**	.908**	.849**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	31	31	31	31	31
Social_Awareness	Pearson Correlation	1.000**	.828**	1	.856**	.996**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	31	31	31	31	31
Relationship_Management	Pearson Correlation	.856**	.908**	.856**	1	.872**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	31	31	31	31	31
Team_Performance	Pearson Correlation	.996**	.849**	.996**	.872**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	31	31	31	31	31

** . Correlation is significant at the 0.01 level (2-tailed).
a. Team Size = 01-05 peop

Table 58-Correlation according to Team size 06-10 people group

Team Size = 06-10 peop

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.802**	.994**	.792**	.965**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	168	168	168	168	168
Self_Management	Pearson Correlation	.802**	1	.804**	.837**	.821**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	168	168	168	168	168
Social_Awareness	Pearson Correlation	.994**	.804**	1	.795**	.992**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	168	168	168	168	168
Relationship_Management	Pearson Correlation	.792**	.837**	.795**	1	.810**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	168	168	168	168	168
Team_Performance	Pearson Correlation	.965**	.821**	.992**	.810**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	168	168	168	168	168

** . Correlation is significant at the 0.01 level (2-tailed).
a. Team Size = 06-10 peop

Table 59-Correlation according to Team size 11-15 people group

Team Size = 11-15 peop

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.799**	.997**	.783**	.990**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	90	90	90	90	90
Self_Management	Pearson Correlation	.799**	1	.793**	.925**	.802**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	90	90	90	90	90
Social_Awareness	Pearson Correlation	.997**	.793**	1	.777**	.994**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	90	90	90	90	90
Relationship_Management	Pearson Correlation	.783**	.925**	.777**	1	.782**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	90	90	90	90	90
Team_Performance	Pearson Correlation	.990**	.802**	.994**	.782**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	90	90	90	90	90

** . Correlation is significant at the 0.01 level (2-tailed).
a. Team Size = 11-15 peop

Table 60-Correlation according to Team size 16-20 people group

Team Size = 16-20 peop

		Correlations ^a				
		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.938**	1.000**	.922**	.989**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	15	15	15	15	15
Self_Management	Pearson Correlation	.938**	1	.938**	.964**	.897**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	15	15	15	15	15
Social_Awareness	Pearson Correlation	1.000**	.938**	1	.922**	.989**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	15	15	15	15	15
Relationship_Management	Pearson Correlation	.922**	.964**	.922**	1	.874**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	15	15	15	15	15
Team_Performance	Pearson Correlation	.989**	.897**	.989**	.874**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	15	15	15	15	15

** . Correlation is significant at the 0.01 level (2-tailed).
a. Team Size = 16-20 peop

Table 61-Correlation according to Team size 20 above people group

Team Size = Above 20 p

Correlations^a

		Self_Awareness	Self_Management	Social_Awareness	Relationship_Management	Team_Performance
Self_Awareness	Pearson Correlation	1	.731	.992**	.766	.972
	Sig. (2-tailed)		.099	.000	.076	.001
	N	6	6	6	6	6
Self_Management	Pearson Correlation	.731	1	.771	.989**	.795
	Sig. (2-tailed)	.099		.072	.000	.059
	N	6	6	6	6	6
Social_Awareness	Pearson Correlation	.992**	.771	1	.800	.994**
	Sig. (2-tailed)	.000	.072		.053	.000
	N	6	6	6	6	6
Relationship_Management	Pearson Correlation	.766	.989**	.800	1	.827
	Sig. (2-tailed)	.076	.000	.053		.042
	N	6	6	6	6	6
Team_Performance	Pearson Correlation	.972	.795	.994**	.827	1
	Sig. (2-tailed)	.001	.059	.000	.042	
	N	6	6	6	6	6

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
a. Team Size = Above 20 p.

According to the data shown in table 57, 58, 59, 60 and 61 the impact of Self Awareness and Social awareness for Team performance is higher value for all size of groups. Apart from that Relationship management has higher impact on Team performance within the small and big size group than the medium size groups.

4.7. Summary

This chapter explained about the data collection and the data analysis. The methods used to analyze gathered the data, have been described in detail. Data validity check has been done as a first step through the reliability analysis. Moreover, Pearson Correlation Coefficient Analysis and Regression Analysis have been conducted to find the relationship between independent and dependent variable which was targeted in research objectives.

The next chapter will discuss the recommendation, Research limitations, Future researchers and Conclusion

5. RECOMMENDATIONS AND CONCLUSION

This chapter is describing the recommendations proposed based on the statistical results obtained in this research. These recommendations can be used as set of guidelines to improve team performance of employees in software industry (EI perspective)

Most of the recommendations were from literature sources and rest all recommendations were verified from two subject specialists in the software industry.

5.1. Findings and Recommendations

According to the analysis of chapter 4 self-awareness and social-awareness have very strong positive correlation with team performance. Also Self-management and relationship management have strong positive correlation with team performance. Therefore, all above four factors of EI have direct impact on the team performance. Because of that the organizations needs to consider EI as a challenging variable for the team performance in every software project. Also the organizations should identify the significant role of EI in day today work and should take the necessary action to improve EI of workers.

Self-awareness and Team performance

As per the result of the research (Table 23) indicates the very high positive correction for self-awareness with team performance, improving Self-awareness skills of the employees in software industry will give better team performance. For that organization can;

- Practice employees to keep note of their key plans and priorities before they start the work.
- Learn them to track the progress by themselves.

- Provide regular feedback at the workplace and encourage them to learn by mistakes.
- Provide self-assessment training.

While implementing above practice the organization should consider the gender as well. The result of Table 43 shows that females have high correlation of Self-awareness and team performance than males. There for building social awareness skills in females is more successful in software industry.

When considering the age of the employees table 44, 45 and 46 shows that the impact of Self-awareness for team performance is reduced over the age. There for the Self-awareness building activities are good for younger people than elders in the Software industry.

Self-awareness is an important skill for all five occupations which are software engineers, QA engineers, Project managers, Team leaders and Business analysis. The tables 52, 53, 54, 55 and 56 shows higher value for self-awareness. Hence, building Self-awareness skills is good for all occupations. Furthermore, Team leaders' self-awareness gives higher impact on team performance. Therefore, Self-awareness trainings are more suitable for team leaders.

Developing self-awareness among the employees is suitable for any size of teams. The tables 57, 58, 59, 60 and 61 also show higher value for Self Awareness for Team performance.

Self-management and Team performance

The result of this research study indicates high correlation among self-management and team performance (Table 24). Therefore, self-management has a significant effect to the Team performance of employees in software industry. By doing below activities self-management of the employees can be improved.

- Provide self-development trainings

- Provide necessary advises and practice employee to handle stressful and unexpected situations in project life cycle.
- Schedule and prioritize the tasks

Also the impact of Self-management to the team performance is increasing over the years of working experience. Hence, building self-management in professionals (Higher experience people) will give more outcomes to the company (Table 49, 50, and 51).

As Project managers have the highest correlation among self-management and team performance, self-development trainings are more suitable for Project managers.

Social-awareness and Team performance

The research result found that the social-awareness have very high correlation with team performance (Table 25). Hence, improving social-awareness of the employees will give higher team performance in the context of software industry. Below activates can be used for improve social-awareness.

- Advise employees to observe and be aware of behaviour in other team members and how it impacts on daily work at the workplace
- Practice employee to be aware of body language and Non-verbal communication
- Improve the listening skills

Furthermore, building social awareness activities are good for any age group as there is no significant difference of the impact of Social awareness for team performance over the age according to the tables 44, 45 and 46.

Both Masters and Degree holders have higher correlation for Social Awareness to Team performance. There for building Social awareness is good for both Degree holders as well as Masters. Moreover, Social factors have more impact on Team performance of Masters than Self Factors. Social-awareness is the one of social

factor and improving social awareness is more suitable for masters (Table 47, and 48).

Social-awareness is also more important for all five occupations which described in this research. Specially, it is more important for team leaders. Therefore, organizing Social awareness trainings for team leaders are more effective (Tables 52, 53, 54, 55 and 56).

Moreover, building social awareness is effective for all size of teams in the software industry (Table 57, 58, 59, 60 and 61)

Relationship management and Team performance

The analysis shows a high positive correlation with relationship management and team performance as per the table 26. It indicates that Relationship Management has a significant effect to the Team performance of employees in software industry.

To develop relationship management among the employees in software industry below steps can be followed,

- Improve communication skills of team members
- Conduct daily meetings to improve interaction with co-team workers
- Organize get together in the workplace
- Organize team lunch once in a while
- Always give team targets to achieve

Additionally the statistics in the analysis of this study shows that males have high correlation of Relationship management with team performance than Females. Therefore, bulling Relationship skills in males are more suitable in a workplace. (Table 42)

Relationship management is a kind of social factor. As social factors have more impact on Team performance of Masters, developing relationship management will lead for higher team performance of the masters (Table 47 and 48.)

Over the years of experience impact of relationship management to team performance is increasing (Table 49, 50 and 51). Hence, building relationship management skills more on higher experience people is more effective.

The results indicate that the relationship Management trainings are more suitable for Project managers. (Table 52, 53, 54, 55 and 56)

Furthermore, Relationship management has higher impact on Team performance within the small and big size group than the medium size groups. There for when building relationship management skills the small and big teams need to be focused (Table 57, 58, 59, 60 and 61.)

5.2. Research limitations

This research contains several limitations. This study has been conducted for software industry in Sri Lanka. The study has only considered the five occupations in software industry which are Project manager, Team leader, Software engineer, QA engineer and Business analysis. The other occupations have not been considered

Apart from that this research is limited to the software industry in Sri Lanka due to easy of gathering the data.

Further emotions are subjective and it can be different from person to person and organization culture. Therefore, gathering, analyzing information about EI is a bit of challenging work.

5.3. Future research

EI is an important factor for any kind of industry. And the concept of EI will never become obsolete. There for in this research can be enhanced further more in future researches. The future researches can use different area of samples or subset of the present study sample for further analysis. Moreover, this study can be done for

different geographical locations and different industries. Furthermore, the future researchers further split the EI factors to several sub factors and find the impact of for team performance in detail. The main objective of this research is finding the relationship between EI and team performance and providing set of guidelines to improve team performance. The future researchers can more focus on the benefits gain from EI.

The quantitative approach has been used for this research. Future researchers can do mix of quantitative and qualitative approach for enhance the research. Interviews can be conducted to gather more important data relevant to EI.

5.4. Conclusion

As a summary, the researcher has found EI factors through the literature survey. And there are four main EI factors have been selected for the study base on the frequency of occurrence in past literature. Furthermore, this research found a significant relationship between EI factors which are self-awareness, self-management, social-awareness, relationship management with the team performance. Out of the four factors, social-awareness has the highest correlation with team performance. And relationship management has the lowest correlation with team performance. Based on the statistical analysis, several recommendations have been provided to improve EI in workplace. Finally, the teams with the employees, who have higher EI level, deliver the higher team performance in context of software industry in Sri Lanka.

Therefore, all software organizations should keep their eye on the EI level of their employees and need to take appropriate actions to improve EI on employees to achieve higher team performance in software projects.

6. REFERENCES

Barling, J., Slater, F., & Kevin Kelloway, E. (2000). Transformational leadership and emotional intelligence: An exploratory study. *Leadership & Organization Development Journal*, 21(3), 157-161.

Carmeli, A., & Josman, Z. E. (2006). The relationship among emotional intelligence, task performance, and organizational citizenship behaviours. *Human performance*, 19(4), 403-419.

Ciarrochi, J. V., Chan, A. Y., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual differences*, 28(3), 539-561.

Clarke, N. (2010-A). Emotional intelligence abilities and their relationships with team processes. *Team Performance Management: An International Journal*, 16(1/2), 6-32.

Clarke, N. (2010-B). The impact of a training programme designed to target the emotional intelligence abilities of project managers. *International Journal of Project Management*, 28(5), 461-468.

Cote, S., & Miners, C. T. (2006). Emotional intelligence, cognitive intelligence, and job performance. *Administrative Science Quarterly*, 51(1), 1-28.

Davis, S. A. (2011). Investigating the impact of project managers' emotional intelligence on their interpersonal competence. *Project Management Journal*, 42(4), 37-57

Day, A. L., & Carroll, S. A. (2004). Using an ability-based measure of emotional intelligence to predict individual performance, group performance, and group citizenship behaviours. *Personality and Individual differences*, 36(6), 1443-1458.

Feyerherm, A. E., & Rice, C. L. (2002). Emotional intelligence and team performance: The good, the bad and the ugly. *The International Journal of Organizational Analysis*, 10(4), 343-362.

Groves, K. S., Pat McEnrue, M., & Shen, W. (2008). Developing and measuring the emotional intelligence of leaders. *Journal of Management Development*, 27(2), 225-250.

Gunsel, A., & Açıkgöz, A. (2013). The effects of team flexibility and emotional intelligence on software development performance. *Group Decision and Negotiation*, 1-19.

Higgs, M. (2004). A study of the relationship between emotional intelligence and performance in UK call centres. *Journal of Managerial Psychology*, 19(4), 442-454.

Jordan, P. J., Ashkanasy, N. M., Härtel, C. E., & Hooper, G. S. (2002). Workgroup emotional intelligence: Scale development and relationship to team process effectiveness and goal focus. *Human resource management review*, 12(2), 195-214.

Koman, E. S., & Wolff, S. B. (2008). Emotional intelligence competencies in the team and team leader. *The Journal of Management Development*, 27(1), 55.

Lam, L. T., & Kirby, S. L. (2002). Is emotional intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *The journal of social Psychology*, 142(1), 133-143.

Law, K. S., Wong, C. S., Huang, G. H., & Li, X. (2008). The effects of emotional intelligence on job performance and life satisfaction for the research and development scientists in China. *Asia Pacific Journal of Management*, 25(1), 51-69.

Lyons, J. B., & Schneider, T. R. (2005). The influence of emotional intelligence on performance. *Personality and Individual Differences*, 39(4), 693-703.

Mayer, D. J., Salovey, P., & Caruso, R. D. (2004). Emotional Intelligence: Theory, Findings, and Implications. Department of Psychology. University of New Hampshire; Yale University. *Psychological Inquiry*, 15(3),197-215).

Melita Prati, L., Douglas, C., Ferris, G. R., Ammeter, A. P., & Buckley, M. R. (2003). Emotional intelligence, leadership effectiveness, and team outcomes. *The International Journal of Organizational Analysis*, 11(1), 21-40.

O'Boyle, E. H., Humphrey, R. H., Pollack, J. M., Hawver, T. H., & Story, P. A. (2011). The relation between emotional intelligence and job performance: A meta analysis. *Journal of Organizational Behaviour*, 32(5), 788-818.

Offermann, L. R., Bailey, J. R., Vasilopoulos, N. L., Seal, C., & Sass, M. (2004). The relative contribution of emotional competence and cognitive ability to individual and team performance. *Human performance*, 17(2), 219-243.

Pant, I., & Baroudi, B. (2008). Project management education: The human skills imperative. *International journal of project management*, 26(2), 124-128.

Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and individual differences*, 29(2), 313-320.

Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European journal of personality*, 15(6), 425-448.

Rapisarda, B. A. (2002). The impact of emotional intelligence on work team cohesiveness and performance. *The International Journal of Organizational Analysis*, 10(4), 363-379.

Rosete, D., & Ciarrochi, J. (2005). Emotional intelligence and its relationship to workplace performance outcomes of leadership effectiveness. *Leadership & Organization Development Journal*, 26(5), 388-399.

Schutte, N. S., Malouff, J. M., Bobik, C., Coston, T. D., Greeson, C., Jedlicka, C., & Wendorf, G. (2001). Emotional intelligence and interpersonal relations. *The Journal of social psychology*, 141(4), 523-536.

Sy, T., Tram, S., & O'Hara, L. A. (2006). Relation of employee and manager emotional intelligence to job satisfaction and performance. *Journal of vocational behaviour*, 68(3), 461-473.

Thomas, J., & Mengel, T. (2008). Preparing project managers to deal with complexity—Advanced project management education. *International journal of project management*, 26(3), 304-315.

Turner, R., & Lloyd, B. (2008). Emotional intelligence (EI) capabilities training: can it develop EI in project teams?. *International Journal of Managing Projects in Business*, 1(4), 512-534.

7. APPENDIX A: QUESTIONNAIRE INSTRUMENT

The impact of emotional intelligence for project management to improve team members' performance

Hello,

This questionnaire is prepared as a part of my thesis for the MBA in Information Technology at the Department of Computer Science & Engineering, University of Moratuwa. My research is focused on impact of emotional intelligence on team performance.

This data collection is done anonymously and will be used for academic purposes only. No personally identifiable information is collected during this questionnaire.

I would be very thankful for your participation in this questionnaire.

Demographic data

1. What is your gender?

Male

Female

2. How old are you? (in years):

25 years old and below

26 – 35 years old

36 – 45 years old

46 – 55 years old

Above 55 years old

3. What is your highest educational qualification?

Certificate

Diploma

Degree

Master

PHD

4. How long have you been working in IT industry:

Below 1 year

2 – 5 years

6 – 10 years

11 – 15 years

5. What is your occupation

Team Leader

Project Manager

Software Engineer

QA Engineer

Business Analyst

6. What is your team size

Below 5

1-5

6-10

11-15

16-20

Above 20

Scale

1 Strongly Disagree

2 Disagree

3 Neither agree nor disagree

4 Agree

5 Strongly Agree

Self-awareness

7. I am always aware about which emotions I am feeling
8. I can recognize how my feelings and behaviour effect on my daily work
9. I am always aware about my strength and weakness
10. I am always open to feedback, perceptions from my team members
11. I have confidence to make sound decisions in uncertainties.
12. I have confidence to accept tied work schedule and have ability to plan my work

Self-management

13. I always try to manage my impulsive feelings
14. I can focus on project goals even I am under pressure
15. I am always held myself accountable for meeting my objectives and team goals
16. I am always well organized in my work
17. I have a high drive to meet project objectives and standards

18. I always try to learn new things in order to improve my performance

Social awareness

19. I can understand other team members' perspectives and feelings

20. I show sensitivity among my team members when they are facing a trouble

21. I am well aware about organizational process and procedures

22. I can understand the politics in the organization and get the minimal impact of it to the project activities.

23. I can clearly understand customers' needs and can match them in product development.

24. I am happy to offer appropriate assistance to customers when required

Relationship management

25. I am always giving useful feedback for my team members and identify who needs development and help them accordingly

26. I am Inspiring and guiding my subordinates in the team

27. I provide clear messages and sharing information to maintain good communication process

28. I am always discuss and handle conflicts and disagreements within the team

29. I can maintain extensive informal networks between my team members

30. Working as a team motivate me to complete project related task on time

Team performance

31. I always try to work according to project plan and meet deadlines

32. I am well understood about what my team needs to do to achieve project goals

33. I always work effectively to give expected project outcome

34. I am independent and good at making quick decisions

35. I always find creative and effective solutions to project problems.

36. I have good group interaction with my team members to get the job done

37. I always take the initiative to solve a work problem.