

**A CASE STUDY OF FACTORS AFFECTING TO IMPROVE JOB
SATISFACTION OF EMPLOYEES ON SCOPE CREEP
SOFTWARE DEVELOPMENT PROJECTS**

Dilsha Tharanga

169137D

Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

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Abstract

The main objective of this research study was to identify the factors affected to improve job satisfaction when a software development project is in a scope creep stage. Therefore, the researcher has defined research objectives and research hypothesis at the beginning. Furthermore, this research conducted as a case base study and the survey questionnaires are design based on the research objectives and defined variables in earlier stage.

In here the researcher conducted this research by selecting ABC Pvt Ltd to gather data from the target audients. ABC Pvt Ltd is a multinational IT Company in Sri Lanka. And it is running as a project base company, certified from CMMI level 5. Currently this company is executing both foreign and local software development projects. But unfortunately some of the projects are run under a risk as a result of scope creep.

The researcher has been able to identify major benefits that can be gathered for ABC Pvt Ltd. After completing the analysis with gathered data, the researcher has identified different set of factors which leads to poor job satisfaction of the employees in scope creep projects of the selected company. At the same time, it allows to recognize existing issues faced by employees in scope creep project and to find solutions to overcome those problems. But on the other hand, this research was not designed to identify job satisfaction levels of the employees in other projects in ABC Pvt Ltd.

Quantitative data analysis techniques have been used to analyze the gathered information. Therefore, SPSS was used as the main statistical tool to analyze data and measure the reliability of the questions in the survey questionnaire. At an early stage, 120 employees in a scope creep project has been selected as a sample to gather data. However, at the end only 104 employees responded for the questionnaire.

By analyzing responses provided by the employees, it was obvious that most of the employees in scope creep projects were not satisfied about the remuneration packages, working conditions, work load and the recognitions they got from the particular project or organization. Hence, the researcher has proposed some solutions to overcome these issues in near future by revising the compensation structure, redesigning the roles and responsibilities and redesigning the facilities for the scope creep project.

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1.0 Introduction

1.1 Background

Information technology is the most rapidly growing industry in the modern world due to the revolutionary advancement of technology. It plays a very dominant role in every shape of modern lifecycle, as a result IT industry indicates a rapid growth in the global market in comparison to other industries.

Considering Sri Lanka, IT industry plays a major role in bringing foreign investment to the country. Because of the current market trend, it indicates continuous growth of new companies entering to the IT industry. This rapid growth in IT industry is very healthy for the Sri Lanka economic growth and it will indirectly lead towards the development of country's education level and will ultimately increase the IT skilled labor force because of the imminent job opportunities.

Software development organizations are mainly divided into two categories such as project based and product based, among them most of the Sri Lankan IT companies are running under the project based category. Then the software development projects within these organizations are considered as unique projects due to the different nature and characteristics associated with the particular client.

Therefore the scope creeping in an IT project identified as a major risk in software development cycle. Furthermore the project management guide lines also define the project scope management is a critical task of the project. In that phase by amalgamating project objectives and project requirements the project scope will be defined. Hence failing the project scope will directly impact the other phases of the software development life cycle including both human resource management and financial management aspects as well. As a result of that project, status will convert into a very critical status (Code Red) and employees of the project have to deliver the expected product to particular client according to the agreements whatever the uncertainties happened. With this situation major problems may arise in the organization, regarding the job satisfaction of the employees in these type of projects. If that particular organization did not take any action regarding this problem it may lead to increase the employee turnover rate of the organization and, with the demand they have they might move to another IT organization.

As a solution for the above problem IT industry introduced an agile software development methodology. Because the industry assumes that it will be a good methodology to avoid software

scope creeping through this methodology. But this survey based research study conducted to identify the factors affected to improve job satisfaction when the project is in scope creep. As a result it may lead to reduce the employee turnover by improving their job satisfaction based on the identified factors through this research.

1.2 Motivation

Project leadership understand the importance of their roles and responsibilities when developing the project team and project scope. Consequently they will follow a proper guideline or a framework when developing the project scope and assigning the employees by aligning their skills according to the project scope. Since this is the foundation of the project and it has a huge impact in leading the project into a target position in a successful manner. Otherwise if it is not designed and assigned properly the project will be unsuccessful. Since they are aware of the importance of the job satisfaction of team members in order to drive the project into a successful stage, they try to maintain the team members' job satisfaction continuously to keep their team morale until the completion of the project target.

1.3 Research Scope

Improving employee job satisfaction is an essential fact when the project is in scope creep stage. When the project is in scope creep the employees are working under huge pressure due to the excessive amounts of work. As a result, their performance and productivity will decrease. Hence improving their job satisfaction under this kind of critical situation would be a core task of this research and certainly it will provide a great advantage to the IT industry.

- Gather the input from the employees those who have worked on scope creep projects by conducting questionnaire based survey. Because those data would be supportive to determine the factors those are affected to improve employee job satisfaction by analyzing the gathered data through building a relationship.
- Refer the already existing research papers to identify the background of the project when it suffer from the scope creeping. Furthermore trying to identify the new risks which are expecting with that critical stage, disadvantages happened and changes of employees behaviors
- Based on the above identification, propose some factors to improve employee job satisfaction when they were working on a scope creeped project.

1.4 Problem Statement

IT industry is the rapidly growing industry in Sri Lanka. Due to the influence of globalization on most of the industries in Sri Lanka are automating their processes to deliver more efficient and quality service. According to this growing trend there is a requirement of quality IT solutions and customized solution to Sri Lankan Industries. Due to the requirement the IT industry became a number one rising industry in Sri Lanka. Because it directly involves to increase the economic growth of Sri Lanka. But maintaining this industry in a sustainable manner is not an easy task because every software development project is considered as a unique project due to the difference in business nature and the characteristics associate with the each client companies. Then the employees of this industry should develop the proper software solution according to the client expectation and every project expecting a different kind of risk when developing the project. The major risk occurred for an IT project is scope creeping and some of the ongoing projects are already suffering from this risk. With this risk most of the projects are facing to a challenge due to the client dissatisfaction and employee dissatisfaction. If the project suffers from the scope creep, it may lead reducing the productivity of their employee with the low job satisfaction. As a result of that their client also dissatisfy because the client cannot get their expected outcome of the project. Therefore if not handled the project carefully there will be a risk to black listing the company from the client end and it would affect the country's reputation on quality as well.

This research conducted to identify the solutions for following areas,

- Identify the benefits that can be gathered by improving employee job satisfaction in already scope creep projects.
- Identify the factors affected to improve employee job satisfaction when the project is in scope creep stage.

1.5 Research Objective

1. Identify the factors affected for scope creeping in software development project.
2. Find out the project criticalities faced on the project activities and project team members when the project status is in a scope creeping stage.
3. Identify the factors affected to improve employee job satisfaction when the project is in scope creeping stage.

1.6 Research Significance

The main significance of this research is to find out solutions to improve job satisfaction of employees who work on scope creep projects in ABC Pvt Ltd. As a result of scope creep projects, most of the employees who work in such projects have to work overtime to cover the huge work load with tight deadlines; this would directly affect the employee's health conditions, work life balance and finally job satisfaction. Considering from a company perspective, this will lead towards demotivated, low performed, non-loyal and low-productive employees. Also this would have an impact in generating a bad reputation for the company.

Upon completion of this research we will identify the factors which would improve job satisfaction for them and ultimately will help the critical project to improve their employee job satisfaction, productivity and performance. This will lead in generating a happy environment within the project team and will be easier to get the project on track.

1.7 Summary

At the beginning of this chapter the problem background for this research which led to identifying the factors to improve job satisfaction of the employees in scope creep project. At this point problem definitions are given for each identified problem. Along with the problem definitions, the objectives of this project has been described. An appropriate scope is specified for this project in order to achieve the objectives.

2.0 Literature Review

2.1 Introduction

In this chapter, the researcher was able to investigate wide range of literature associated with the employee job satisfaction when the software development projects is in scope creep stage, and their contribution towards achieving projects goals. The researcher was done a great job by analyzing the factors which influence employees' job satisfaction when the software development project is in scope creep stage. Furthermore, the researcher was critically evaluated some of the theories related with employee motivation and job satisfaction

2.2 What is Scope Creep?

According to the Doll (2001), Kuprenas and Nasr (2003) and Gardiner (2005), the typical explanation of the scope creep is uncontrolled expansion of the project scope by including work from outside which does not exist in the initial boundaries signoff. Even though in Suresh (2005), Nokes and Kelly (2007) explains the expansion of the project scope is not a bad thing for the project because it is converted to the problem when the particular software project does not revised the earlier planed budget, resources and time against the expanded scope of the project.

2.3 How does Scope Creep Happen?

Zimmerman (2000) identified two ways of how change requests occur in a software project. Those are adding brand new requirements to the existing scope of project and modification or update of the existing requirements in scope. Generally this kind of change request are attaining to the software development projects. Then the management team should have responsibility to manage the situation. If they are not manage it appropriately then there is a possibility to lead the project into a scope creep state. In addition Mathur (2007) argues that “ambiguous, incomplete, transient and uncollaborated” project scopes are causes to the misinterpretations, confusion and rework. Then this is also eventually leads to scope creep.

Base on the Gill (2002) identified three ways of scope creep and affect sources for each categories.

- Project does not keep proper communication between related parties.
- No control on the change management process
- Poor project management
- Invalid or wrong identification of the project objectives in initial stage.

2.4 Factors Affected to Scope Creeping in Software Development Project.

According to the Quah and Prabhakar (2008) describes what factors are affected to arise the scope creeping in the software project and what are the ways that can be used to manage scope effectively by avoiding the scope creeping and reducing the possibility of project failure. In here author is highlights the change management procedure as the best thing that should be established within the software project to effectively control the scope creep instead of having the control of the project. Because there is a high possibility to fail the software project due to the scope creep and requirement mismatch. This expectation can be proved according to the survey of Lamri London and Newcastle Seminars (2003), because this article explains 63% of the project is budget overrun due to the effect of scope creep. And Mathur (2007) also states that 80% of a software projects are failed due to the inability to effectively manage and control scope creep and poor project management.

Category 1:- Overlooked requirements

Poor requirements gathering due to:

- Insufficient planning
- Inadequate requirements analysis
- Lack of user involvement
- Incorrect Estimation
- Misunderstandings about the state of work
- Lack of communication between the relevant parties
- Project objectives are not clear in the initial stage.
- Inadequate project management

Category 2:- Functionality enhancements

Additional features that appeared in the application:

- Change requests from project drivers
- Enhancements added by the developer
- Gold-plating
- Perfectionist attitude of developers
- Merging multiple projects
- Trying to avoid conflict between application and customer

Category 3:- Changing requirements

External powers:

- Changes happen for the Third-party products, supporting systems and technologies
- Regulations of the Government
- Changes in the expected market and trends
- lack of control in change management

2.5 Pros and Cons of the Scope Creep

2.5.1 Pros

Some of the literatures are saying the scope creep is helpful to deliver the perfect software product by rearranging the product requirement until the exact client requirements are met. Also it provides the iterative prototyping model as evidence for that. Because of that the iterative process helps to gather the feedback from the client and time to time rearrangement of the requirement in scope until the client is satisfied with the software product. Hence Vervard (2001) argues the scope creep is the hidden blessing to the project because it realigns the existing requirements and adds the necessary requirement.

On the other hand Helm (2002) and Weigers (2005) argues that the scope creep is an unavoidable circumstance of a project and if this does not happen the project team will release irrelevant product by ignoring the risks and real expectation of the product. Also the author is considering the scope creep in a business perspective and said the scope creep may lead to win new business opportunities such as product consultation and maintenance services for a particular organization.

2.5.2 Cons

If the project is suffering from scope creeps it may lead to arise series of uncertainties within a project such as delay in some important deadlines, quality deduction and budget overrun. In the other way Javed (2006) elaborates the constant scope creep will generate frustration and demotivation within the project team. As a result of that team performance and efficiency will be reduced, delays and budget overrun will take place with the product release. And then it may lead to project confusion, customer dissatisfaction and quality problems on the release of the software product.

2.6 Responsibilities for Senior Management to avoid Scope Creep from the Software Development Project

According to the Key (2002) currently most of the researchers have identified the scope creep as one of the major challenge which is affecting software project failure. Hence managing and changing the specification is a highly challengeable task for complex, large-scale, multi-site software development projects environment. Therefore the IT consultants have addressed some best practices that can be followed before the scope creep. Then it will be helpful to avoid scope creep.

- Conduct frequent reviews on the design and strategy.
- Keep proper documentation required for each and every aspects.
- Incorporate contingency time and plan into schedules.
- Take proper measurement in the project starting phase.

According to the Mochal (2007) highlights, when the project deliverables which are existed in the scope has been changed then the current estimated budget, deadlines and resources should be modified or re-estimated against the adjusted scope of the project. Hence the Jenkins (2000) state that if the scope creep happen within the project the particular project manager should follow the below given three things to reduce the destruction.

1. Add more times for the deliverables
2. Add more cost for recruitment, hiring or acquire the resources.
3. Reduce the quality by trading –off non-essential requirement.

In generally certain amount of scope creep is expected from the most of software project. Hence further more teams following commonly planed guidelines to manage scope creep that can be happen in future.

2.7 General Guideline to Protect the Software Development Projects before going to the Scope Creep Stage.

According to the Farok & Garcia (2016). Prevention of the scope creep is not possible to achieve 100%. But the managing the scope creep is a possible task and 100% achievable. To achieve this task successfully by controlling the scope of the project, every team should have to follow a guideline.

- As mentioned in Weigers (2005), keep end-user involvement from the earliest stage. Because it helps to gather the crystal clear requirement and the expectation of the end users. Furthermore follow the Employ prototyping techniques such as wireframes or text only software sample to identify the hidden requirements and the expectations.
- Ensure the project vision is clearly defined and properly understood. Then arrange a session to meet up the project drivers to do the review on the overview of the project. In here gather the review comment from the project drivers and do the alignment by incorporating those comment as expected.
- Based on the Suresh (2005), clearly define the project requirements and keep the better understanding based on the defined priorities of the task and the requirements. Make and document all the prioritized task list and requirements to use in throughout the project cycle. This list should be including the features to be delivered, deadlines, required resources, budget, and satisfaction of both employees and clients. Use this document when justify the project decision in the project starting phase.
- Suresh (2005) said that, Define the deliverables with the delivery dates. And make sure the time duration of the delivery is achievable for the existing team. Clearly describe each functionality which has to be delivered in each delivery and then keeps the approval of the delivery plan from the project drivers such as client and senior management of the project.
- Start to breakdown the signoff deliverables into a work plan. Inhere should have to keep the requirement as expected from the project drivers with the detailed manner. Those details are varied according to the project size. If the particular project is decided to expand the duration the responsible person should have to add the more time for software upgrades for current development time frame into a document.

- Identify the project milestone and break down those as a major and minor milestone. Once the milestone breaks down is completed this schedule should be approved by the project drivers and make sure to do not expand the time duration more than a month for minor milestones. If the team is having new members or unknown member add time into a schedule as expected (140% -160%). In the other hand the schedule is tight then do the re-validate the expected deliverables. If the project is in under budget then try to address the additional enhancement to fill out the budget gap.
- Once the scheduling part of the project is completed then start to assign the resources for the team and ensure the critical path of the project deliverables by evaluating time frame using techniques such as PERT or GANT and work break down a structure. It will be helpful to identify the task which has to be complete in on time. If this activity is missed the project will lead to risk category because one of those on time completion task is delay the entire time duration of the project should be delay.
- Implement and maintain a process to accept the requirement change request. Then advice to conduct the impact evaluation using the implemented process.
- Expect there is a possibility to occur a scope creep and define the change management process clearly to minimize the impact. Hence arrange some meeting to provide the awareness regarding the change management process to the project drivers. Because this process allows you to get a chance to accept the changes after the proper evaluation. According to the evaluation the project manager can decide is this change accepted within the existing budget, need penalties to implement this changes or reject the required changes completely.

2.8 How to Manage a Software Development Project when the Project is in Scope Creep Stage

The budget needs to be shared with the client after the Re-estimation.

- As mentioned in Mochal (2007), the most effective and easy way to manage scope creep is to provide detailed tracking and re-estimation on the budget against the change request. When you acknowledge the client regarding this they will know that the particular team is willing to complete the change request but the existing budget will be an issue to do that changes. After knowing this client will provide their opinion such as whether they are willing to pay more for the particular change request or not. Also the client may be having an agreement with the organization to do some small changes or enhancement within the existing agreed estimated budget. In this situation team drivers should be having thorough awareness of the contract and what kind of condition or limitation should be full filled to do that kind of changes without adding more budgets.

The team needs to be acknowledged the client if they are unable to achieve the deadline.

- According to Bellanca (2008) don't hesitate to tell the reality to the client. Because it is better to know the actual situation earlier for both the client and team whether the project can be completed on time or not. Then client will understand the team will take more time than the estimated time with these changes. As a result of that it will helpful to avoid conflict between the client and further escalation from the client.

Follow a change control process.

- When there are some conflicts or issues, then try to check the documents related to the original proposal and try to solve those doubtful things before changing the scope. And also used the particular process when arising the requirement change request. Based on that provide the justification for the acceptance or rejection of the change request. After that prepare the change log according the priorities of the accepted change requests. Then Accepted scope changes should be communicated with the project stakeholders

Reject the change request if it is not reachable

- Based on the Zimmerman (2000), if the client change request is unreasonable. Directly communicate that this task or change is unreasonable and not feasible for the existing team. Then apologize the client by addressing the valid reasons. On the other way ask the client if they are in agreement to do those changes as a new project once completing the existing project.

2.9 Issues Arise in the Scope Creep Project

Based on the Schmidt, Lyytinen and Mark (2001), simple description of scope creep is expanding the scope by adding more and more requirements into the already finalized scope. With this scope increment it will lead in increased tasks that needs to be completed and change the priority of the task list and requirements again and again. Then those uncertainties will lead to an extension of the estimated timelines and budget therefore by delaying the deliverables. When those expansion takes place within the project while resources are limited to complete the task within the budget and time. Then the team requires more resources or available resources should work on extra hours under pressurized environment, the members of the team.

The scope creep is simply an expansion of scope by adding new thing to the existing project scope. Then it lead to increase the work load of the project to be done in the expected time duration. As results of that the planed cost and the work forces will increase when increasing the work load. Then it turns to extend the project time line, requires additional workforce or decrease the required quality of the final product. Hence Schmidt, Lyytinen and Mark (2001) said, entire environment of the project will be changed in different ways as follows.

Resource Constraints: When scope expansion happen in time to time, the first concern is requiring additional resources to the particular project to cover up the expanded work load. When increasing the number of resources is overhead for the project and the result would be the productivity decrement. Then it directly impacted to the project and business of the particular organization.

Employee Turnover: In the other hand scope creep will make resource burnout with heavy work load in a limited time frame. With this situation project drivers are forcing them to work on over

time and generate pressure environment. Then the employees are working under the stressful environment and they were not having work life balancing. As a result of that employees take an action to leave the job as soon as possible. Then it cause to increase the employee turnover rate in the project.

Project requirement implication: Requirement mismatches are arisen when project scope is creeping continuously and it will affect to fail the entire project as well. Because this requirement mismatches are affected to dissatisfy the customer. Without having the better customer satisfaction organization were not be able to build up the strong customer relationship. In here without building those criteria successful the team was not able to deliver the successful product to the client and as a result of that project may lead to a failure. Failures of the project may impact to crack the organization image and future business of the organization as well.

Estimated Budget: Bad estimation is not an only reason to overrun the project budget. Because it happens through results of a scope creep. When scope is expanded from time to time some of the clients do not agree to expand the budget and then project manager should be in a trouble with budget overrun. Because the project manager needs to get the more resource to cover the expanded scope and release the deliverable by aligning to the time plan. But resource increment is directly influenced to the budget overrun. In this situation most of the project managers are not adding more resource and try to avoid the budget overrun by utilizing the existing resources. As a result of that the existing resources are highly burnout and demotivated. Then try to complete the allocated impossible work load under high stress. Finally the resource are taken action to left the job when they having uncontrolled task allocation continuously. In the other way management will take action to terminate the employment to reduce the budget.

Time Duration: Scope creeping would be an impact to complete the tasks which belong to the particular project. When the increasing the scope is impacted to increase the effort of the particular task. But in here the project was not able to increase the resources against the effort increment. Then there is an issue arise to deliver the agreed deliverables according to the agreed time. In here onwards project will start to suffer from the “schedule lengthening”. With this issue the project completion date will be a delay and it might be impacted to arise other side effect as well. Because when the product is delay to the market that target audience may reduce and they were willing to buy another project which is coming early to the market. As result of that the expected revenue of

the product will be decreased. For the team perspective all are working in highly stress environment with the overload work and overtime. Then some of the valuable resources are taken a decision to leave the organization prior to complete their allocated tasks, some of them are very demotivated and they are performance level is reduced.

Quality of Life: When happening the late project delivery most of the people are having huge work load with limited time period the team members are spent more hours for office work and reduce the time to spend the time with family. Without having work life balance workers are unable to perform as usual because they are suffering from the symptom “Not having a life” and it might lead reduce the energy to boost their performance.

2.10 Impact of the Scope Creep in the Traditional or Agile Based Projects

2.10.1 Impact of the Scope Creep in the Traditional Based Project:-

According to the Suma and LakshmiMadhuri (2013), generally the traditional waterfall methodology based project is to increase the estimated time duration to complete deliverables when the scope creep is increased. In the other hand cost of the project is increased and estimated budget also moderate. When increasing the scope it will directly impact on allocated number of resources for the project. Because it will requires expanding the resource limit or requires do more commitments by working late nights or forcing them to increase their working capacity. Scope creep also impacted to the number of function points and it will increase by the noticeable count. Hence the project which is based on the traditional methodology will decrease the success rate when the project is started to suffer from the scope creep.

2.9.2 Impact of the Scope Creep in the Agile Based Project:-

Ramos and Mota (2014) explained, agile based project having some similar impact as traditional based project when it is suffered from scope creep. Because it is also moderate the estimated time duration and budget by increasing it with scope creep. But there is minimum impact on the number of the resources having the agile project and number of expected function point if it suffered from scope creep. Hence the scope creep impact is negligible for success rate of the agile based project.

2.11 Employee Job Satisfaction

2.11.1 Introduction

Job satisfaction is one of main concern arise in IT industry when most of the software project are suffering from scope creep. Then this becomes a main challenge for many IT organizations to retain their experienced employees for longer time period. As a result of that, they have to spent unnecessary cost for recruitment and trainings of new employees. Hence the researcher is trying to identify the factors which can contribute to increase the job satisfaction of the employees in IT industry by using some of the articles, research and web sources.

2.11.2 What is Job Satisfaction?

Number of different definitions are available for job satisfaction. Although the most used definition is written by the Locke. According to the Hersen (2004), it was defined as “a pleasurable or positive emotional state is resulting from the appraisal of one’s job or job experiences”. And also he said that, the Range of Affect Theory model introduced by Locke was another interesting model related to job satisfaction. Based on that model, job satisfaction was determined by the discrepancy what one has in a job and what one wants in a job. Job satisfaction is kind of a measurement how happy employees are with their job and working environment.

According to the Grigoroudis and Siskos (2009), “job satisfaction can be defined as a gratification an employee feels regarding the work load and the current status of the specific person”. In addition, Grigoroudis and Siskos (2009) had explained that a “job satisfaction is different from one person to another person”. Because, it is assumed that they have two different employees such as Employee A and Employee B. Also those who are performing similar job roles within an organization. Although one person may be not satisfied with the current job role and another person may be highly satisfying with the duties and responsibilities assigned to the currently job role. According to that researcher critically analyzed that organizations does not take any favor from the satisfied employee with the satisfied jobs. Because there are some situations most of the employees are very happy about their currently playing role and responsibilities and the management is also happy with their employee’s behaviors. But the reason is that organization does not have a considerable growth when comparing other companies which belongs to the similar industry. Hence the researcher introduces and recommends the challenging job roles are

continually increase and make employee think when spend the time within their assigned roles and responsibilities. Otherwise it may lead to reducing the organizational performance and unable to retain and grow as a sustainable organization within their market.

2.12 Theoretical Frameworks of Job Satisfaction

There are many different theories and models which can be useful to increase the level of the job satisfaction of the employee. According to the Tripathi & Reddy (2008) organizations are able to apply three main models such as job characteristic model, Maslow's theory and Herzberg theory to maintain their employee's job satisfaction.

2.12.1 Maslow's Hierarchical Needs



Figure 1:1 Maslow's Hierarchy

(Source: <http://businesscasestudies.co.uk/virgin-media/motivating-and-engaging-employees-for-better-business/maslows-hierarchy-of-needs.html>)

According to the Maslow (2013), introduced five types of factors which are influencing to the satisfaction of the human in a general way. Hence this is also can be applied for organization to create satisfaction among the employee within the organization. Because employees usually have expectations about the compensation and life insurance facilities from their work place as physical needs. After that employees are expecting the security for their employment, because the employee will give the maximum effort for the company if the company believe and value their effort only.

Also the organization should provide safety environment and it should be enough for employees to recognize they are not working in the danger zone.

Most of the software organization are following very flexible and team working culture. Generally employees are working very smart if they have task to with the team base manner. With this team base culture will help to the organization to increase the productivity other than the organization those who are following working as individually. In team base culture the employees are continually brush up their competencies, minimize their faults and learn to respect others opinion. Hence it will lead to generate self-motivated employees within the organization.

According to the Maslow (2013), considered the human need as hierarchical. Although it difficult to considerers as hierarchical in real life. Also the organizations system are very complex and dynamically change. Because it requires well established social connection and collaboration with the external and internal environment to the organization sustainability. Furthermore ability to established more interaction between inside and outside of the organization is becoming criteria to determine the success of the employee.

In the other way Maslow (2013) said that this theory is valuable to determine the gaps in traditional management. Although it provides impracticable way to minimize those gaps. Hence it is not suitable for every company because the culture and the attitude of the employees are too different from one company to another company. As a result of that researcher does not provide any recommendation to take strategic decision without reviewing the model.

2.12.2 Herzberg's two factor theory

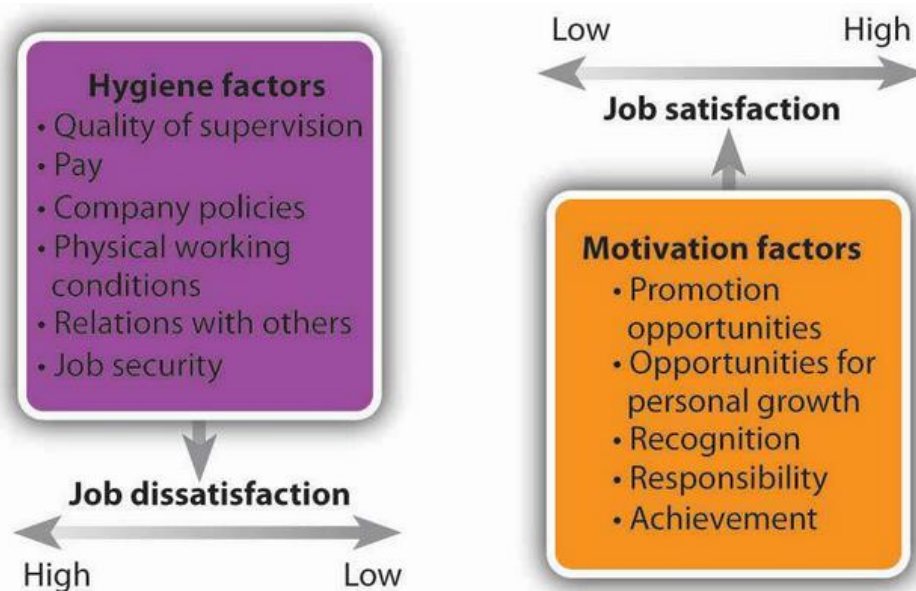


Figure 2: Herzberg's two factor theory

(Source: http://catalog.flatworldknowledge.com/bookhub/7?e=collins-ch07_s03)

According to the Herzberg (2011) this two factor theory help to determine the factors affected to job satisfaction and dissatisfaction. Also it explains the factors that are impacted to increase job satisfaction as motivation factors. Such as promotion, increments, responsibilities. When this factors are consist within the organization definitely there are employees are motivated and those employees are performing extra to complete the task with high standards. In the other way if the organization is unable to include those factors within their organization definitely their employees are demotivated and they were unhappy about the organization. Hence as organization they have to prevent their employees from the job dissatisfaction by adding safety, healthcare, salary, company rules and regulations,

According to the researcher's argument salary is the hygiene factor. Because most of the employees are being hard workers by expecting the salary and their satisfaction level depending upon the amount of the salary increment or amount of the bonus. Hence it cannot be categorized factor such as salary infringement. In here Herzberg theory does not consider about the education level, age, feelings, attitude and sex when identifying the motivational factors or hygiene factors related to the employee. But this is not valid for real scenarios because those factors are directly

influence to the working pattern of the employees in organization. As an example the one assigned task is feels in different way and satisfied in differently for men and women in the organization.

2.12.3 Job Characteristics Model

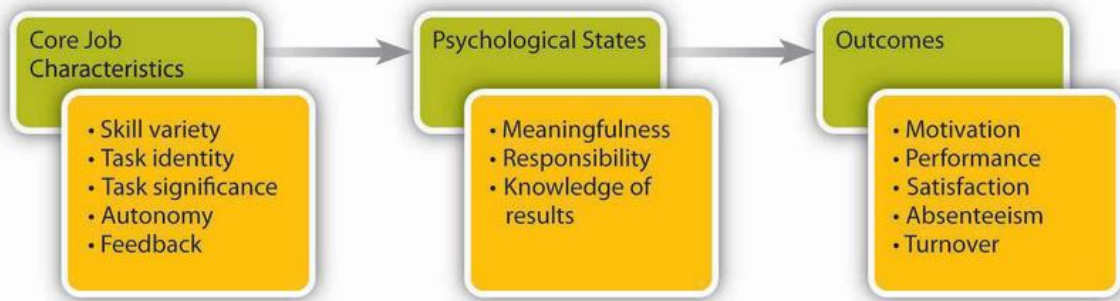


Figure 3: Job Characteristics Model

(Source: <https://new.edu/resources/job-characteristics-model>)

According to the Hackman and Oldham, there are five key factors that should be consist within the typical organization environment. Then the Studies of Lussier (2008) is identified and define those factors as skill variety, task significance, task identity, autonomy and feedback. Then these factors are going to three psychological stages within the job such as responsibility, meaningfulness and knowledge of result. As a conclusion those three states are in employee mind and it will lead to converting into the job satisfaction. With this conversion will showed as performance, reducing the absent rate, motivation, low turnover rate. Similarly these three stages are inter connected with each other and this three should be covered to satisfy the employees.

According to the above model the researcher found out the developed formula by Lussier (2008) related to calculate the motivational potential score (MPS). Then it generate the index related to the level of motivation of the employees in organization by considering the above mention characteristics.

$$\text{MPS} = [(\text{Skill Variety} + \text{Task Significance} + \text{Task Identity})/3] * \text{Autonomy} * \text{Feedback}$$

By considering this formula able to calculate MPS index and highest MPS will explain the satisfaction about the employee with the roles and responsibilities of the job. In the other hand there are some employees working very well within the organization but they don't have higher MPS index. Hence researcher is trying to justify this factor by introducing self-organization team

and work competences. Generally these external factors are influence to the employee's motivation to complete their assigned task in very good manner and play their roles and responsibilities successfully. Therefore avoiding the performance factor from the formula is not fair. Then the particular organization should be responsible to understand the factors which are impacted to the job satisfaction of their employees and performance of the organization.

2.12.4 Theory X and Theory Y

Douglas McGregor (1960) was introduced another employee motivation theory called Theory X and Theory Y. In here theory X is representing the demotivated person who is having average performance in a playing role, dislike to complete assigned task. Also neglecting the responsibility and management need to be highly interact and guide them to complete those task and responsibilities. Because this kind of person does not have any future goals and task for their own life to follow and they don't care about the organization goals and objectives as well.

But the theory Y person is playing the different character than the theory X person. Because this type of person is self-motivated and playing their role and complete their task very well without having any interaction or guidance from the management. They have their own goals and following those goals and task. In the other hand they are considering their organization goals and actively participating to achieve those company goals.

Currently most of the IT companies are mainly rely on their Employee's talent. Because if they have resources with unique and valuable rare technology knowledge, they can create and introduce new product and service to the market by gathering competitive advantage. Hence this types of resources are vital assets for the organization and they have to struggle to retain those employees. In the other hand organizations are facing on lots of issues regarding the expenses on recruitment, selection and trainings when they hire new employees by replacing the existing employees. Also it might be impacted to the software project failure as well. Hence most of the organization are trying to retain their employees by identifying the factors related to enhancing their job satisfaction. As per the Westlund & Hannon (2008) identify that independents factors having greatest influence to improve job satisfaction of the employees in software project such as,

- Contingent rewards
- Promotion
- Supervision
- Pay
- Operating condition
- Co-workers
- Benefits
- Communication
- Nature of the work

As mention in the Westlund and Hannon (2008) identified three core need such as existence, relatedness, and growth which has to be fulfilled before measure the job satisfaction. In here existence covers the need which are represented in the physiological need and security needs under Maslow needs theory. Relatedness needs are considered about the needs which is important to maintain interpersonal relationships and this need is represented from the social, security and esteem needs layers of the Maslow hierarchy. The growth need expecting to full fill the needs for personal development and which is represented through the self-actualization and esteem need layers of the Maslow theory.

According to the two factors theory above mention job satisfaction factors are divided into two categories as intrinsic and extrinsic. Also that theory will consider intrinsic factors are focused on the job satisfaction and extrinsic factors are focused on job dissatisfaction. In here intrinsic factors are considered as advancement, responsibility, achievement, recognition and employee empowerment, team work, and trainings and extrinsic factors are supervision, pay, and Company policies, Relations to others, working conditions, stress and burnout. But this statement is argued by the Herzberg. Because Herzberg says removing the extrinsic factors from the job is not guaranteed that employees are having a satisfaction on their job and they will not have dissatisfied when the employees are having sufficient hygiene factors. Furthermore the author recommended to highlights job characteristics, to motivate the employees because then the employees are naturally trying to satisfy their job when they know the exact job characteristics. Those

characteristics are considered as promotion, personal growth, recognition, responsibility, and achievement.

But maintaining the job satisfaction of the employees in a projects are directly does not depend on the Operating condition, Contingent rewards, Promotion, Supervision, Pay, Benefits, Communication, Co-workers and Nature of the work factors. Because those factors always depend on the other external conditions such as age, sex, marital status, and education and occupation status of the employee.

2.13 How to Measure Job Satisfaction

According to the researcher's perception measuring the job satisfaction is very difficult in workplace. Because the employer unable to measures if the employee is actually satisfied with the given benefits such as pay, promotion, supervision etc. in a work place they were measuring their employee's satisfaction using some metrics while providing the facilities according to the job satisfaction factors. In this metrics they were measure the attending and problem solving, attendance, testing the workers ability and carrier progress, innovations, rate for increase in wage, number of promotions per year, employee evaluation ratings and resignation rate of employee.

But the researcher highlights in modern work places most of the employers are unable to measure their employee's job satisfaction properly but they provide the facilities based on the job satisfaction factors as well. Because the modern organization cultures, process and systems are very complex and difficult to understand. Hence unable to established the properly standardized process or formula to measure the job satisfaction and satisfying the modern generation employees are not an easy task if what they have.

Hence employees always expect more facilities, more benefits and more increments. When considering the organizational growth increasing the facilities and other benefits would be and remarkable point for sustainable business. But on the other hand it may lead generate some conflicts between employees and management of the organization because growth and expansion of business increase the layers between employees and management. When generating this kind of environment employee resignation rate might increase because employees may try to leave the organization within short duration by generating skill gap to the organization.

2.14 How the job stress influence to the job satisfaction and productivity

IT project environment is starting to change when the project is reached the scope creep stage. Because with this stage most of the employees are needed to commit with the unreasonable work load. When they having unreasonable work load they have to spend more hours on their job because project will have limited the allocated budget with scope creep then they try to complete their huge work load under minimum resources. While the management running project under this limitation workers don't have time to spend on their family. Then they will start to suffer without having work life balance and gaining stress. Also when rushing them with the unreasonable work load the productivity and quality will be lesser. Because they cannot provide a better concentration on the allocated task with the stress full environment.

2.15 Challenger for Deriving Job Satisfaction in IT Sector

- Some of the senior level individuals are provided positive motivation or demotivation on their subordinates if the organization doing many things to improve job satisfaction of their employees. In the other way harder to find true leaders those who are careering their subordinates by taking the more responsibilities and getting less credit when they have any achievements or success.
- Some of the other leaders are in organization will involve only team get any awards or credits. But they did not involve when the team having any troubles or whatever the critical situation.
- If the organization arrange any facilities to their employees to improve job satisfaction. But they cannot reduce their employee's stress in mind which arise with the complexity of the assigned tasks.
- IT organizations are unable to fulfill the employees' expectations due to the high demand of this IT employees.
- Holding the extraordinary skilled persons within the IT origination is hard. Because when the HR team trying to retain that kind of individuals by adding additional offers is unfair to the other resources in the organization. In the other hand same time fulfilling that kind of extraordinary person's vacancy is the other hardest thing to the HR department.
- In generally job satisfaction is not the behavior because it is attitude. Then changing the attitude is harder than trying to change behavior.

2.16 Summary

The investigation of a wide range of literature provides detailed information about the job satisfaction, scope creeped IT projects and its relationship towards the working patterns of the employees those who are working in scope creep project. In generally the frameworks such as Maslow's Hierarchical Theory, and Herzberg's Motivational Theory were very helpful in determining the factors which enhance the job satisfaction of the employees working for an organization.

However it shows the importance to customize some of the features when applying into the real time organization based on the type of organization. This is because the organizational structure, company policies, types, and standards have been different from one company to another. Through the literature review, author has been able to identify key reasons for job satisfaction and the scope creep in IT project. And also able to identify the criticalities faced in scope creep projects, how it impacted to change the behaviors of the employees and how to prevent the IT project from the scope creep risk.

3.0 Research Methodology

3.1 Introduction

This chapter will discuss the information related the methodology for this research regarding factors affected to improve job satisfaction when the project is in scope creep state. This included about the sample size, sampling method, target population, scale of measurement, operational measurement, data analysis techniques that used to analyze the gathered data.

3.2 Sample Design

This research was conducted to identify the factors affected to improve job satisfaction when the project is in scope creep stage. Then this research is conducted within the multinational project based IT company in Sri Lanka. This company is consisted with the software development projects based on the different domains. When considering the client base of this organization, it has local and foreign client base but the majority from the client base is foreign. Furthermore this company certified from the CMMI level 5 and they are following a proper process for each activity to maintain their CMMI level continuously. Even though still this company has software development projects that are suffered from the scope creep risk. Also those projects are developed based on the waterfall methodology. Hence this research was targeting the employees those who are work in the scope creep projects of the particular company.

3.3 Target population/Sample Size

According to the research topic, identify the scope creep project from the particular company by interviewing the senior management of it. After gathering information from the senior management identify the eight projects that are goes under scope creep stage. Four out of the eight project was currently closed and other four projects are still running in the company. According to the interviews summary researcher will identify the all the type of employees does not suffer from the scope creep issue of the currently allocated project. Mainly below mention employees types of project is suffered from the scope creep issue when it actually arise in the currently allocated project. According to the company database those eight project has 100 -120 employees then the total population and sample size of this research would be same as 100 -120.

Designation	Tier Type	Number of Employees
Tech Lead	Tier 2	8
QA Lead	Tier 2	8
Project Manager	Tier 2	8
Software Engineers/ Senior software Engineers	Tier 3/Tier 4	50
QA Engineers/Senior QA Engineers	Tier 3/Tier 4	30
Business Analyst	Tier 2	8

Table 1: Classification of the Selected Sample Size

3.4 Conceptual Framework of the Research

As per the Duncan (2012), conceptual framework defines each variables and associated relationships on the variables based on the research topic. As an example this researcher was able to identify the independent variables and dependent variable related to the topic. In here independent variables are fixed variables. Dependent variable is changed to measure the changes in independent variables.

Researcher identified eight independent variables based on the literature resources reviewed for this research. Those are contingent rewards, promotion, supervision, salary and other benefit, operating condition, co-workers, communication and nature of the work. Based on the above identification researcher was able to select four independent variables among the above mention eight variables. This variables selection is based on the variable occurrences in the literature resources followed by the researcher for this research.

Lit Sources	Variables							
	Contingent reward	Promotion	Supervision	Salary and other benefit	Operating condition	Co-workers	Communication	Nature of the work
Westlund, S. G., & Hannon, J. C. (2008). Retaining talent: Assessing job satisfaction facets most significantly related to software developer turnover	x	x		x				
Hoboubi, N., Choobineh, A., Ghanavati, F. K., Keshavarzi, S., & Hosseini, A. A. (2017). The Impact of Job Stress and Job Satisfaction on	x					x	x	x
Diala, I., & Nemani, R. (2011). Job satisfaction: Key factors influencing information technology (IT) professionals in Washington DC. <i>International Journal</i>	x	x	x		x			
Parvin, M. M., & Kabir, M. N. (2011). Factors affecting employee job satisfaction of pharmaceutical sector. <i>Australian journal of business and</i>	x	x		x				x
Hanaysha, J., & Tahir, P. R. (2016). Examining the Effects of Employee Empowerment, Teamwork, and Employee Training on Job Satisfaction. <i>Procedia</i>				x		x	x	x
Nanjamari, K. (2013). Job Satisfaction amongst Information Technology (IT) Employees in Bangalore	x		x	x	x		x	
Lal, I. B., Pathak, V., & Kumar, S. K. (2015). A Study of Job Satisfaction in Software Industry—Myths	x		x	x	x			
Platis, C., Reklitis, P., & Zimeras, S. (2015). Relation between job satisfaction and job performance in	x		x		x	x		
Madhuri, K. L., Rao, J. J., & Suma, V. (2014). Effect of Scope Creep in Software Projects -Its Bearing on			x		x		x	
Ramos, P., & Mota, C. (2014). Perceptions of success and failure factors in information technology			x		x			
Montequin, V. R., Cousillas, S., Ortega, F., & Villanueva, J. (2014). Analysis of the success factors	x	x	x		x		x	x
	8	4	7	5	7	3	5	4

Figure 4: Factors selection through literature reviews

In this research, the dependent variable can be identified as job satisfaction in scope creep project. The independent variables are defined as salary and other benefits, operating conditions, contingent rewards, and supervision. There are number of factors which contribute directly or indirectly to the enhancement of the job satisfaction of the employees. However, the researcher was able to recognize the major influencing factors by reviewing through literature reviews and discussing with the employees. These dependent variables were selected based on the research problem and objectives drafted at the beginning of this research.

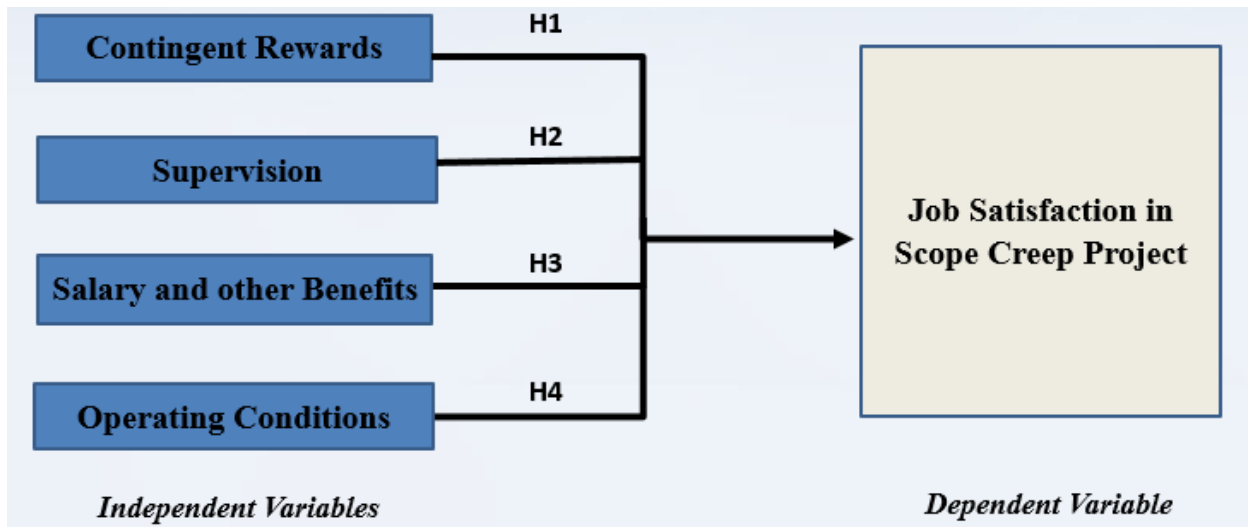


Figure 5: Conceptual Framework

According to the analysis of the literature reviews, most of the research papers are discussed about the factors such as salary and other benefits, supervision, contingent rewards and operating conditions when considering the job satisfaction of the employees. Employees are willing to take higher salary and be recognized among others on their work. On the other side, when lower the above mention factors will lead to decrease the job satisfaction. Sometimes, operating conditions are not motivating or de-motivating either. But the good working environment will increase the productivity and efficiency of the work allocated to the employees.

3.5 Development of Hypotheses

Below mention research hypotheses are used by the researcher to forecast the outcomes of the research. Therefore, the researcher identified those hypotheses factors by analyzing the dependent variables contribution on the job satisfaction of the employees in scope creep project.

3.5.1 Contingent Rewards

H1: There is a relationship between contingent Rewards and job satisfaction when the project is in scope creep stage.

3.5.2 Supervision

H2: There is a relationship between supervision and job satisfaction when the project is in scope creep stage.

3.5.3 Salary and other benefits

H3: There is a relationship between salary and other benefits and job satisfaction when the project is in scope creep stage.

3.5.4 Operating condition

H4: There is a relationship between operating condition and job satisfaction when the project is in scope creep stage.

3.6 Operationalization

The Questioner was designed by adding thirty two questions, those 32 questions are divided into six number of sections. Section I is consisted with demographic questions and other sections are consist with questions related to the variables salary and other benefit, supervision, contingent Rewards, operating conditions and job satisfaction in scope creep project respectively. Each section's questions are designed to measure the expected measuring indicators as below.

Concept	Measuring Indicators	Questions
Salary and Other Benefits	Competitive Salary, increments and benefit than the other projects which are not scope creep. Promotions	Q5 – Q9
Supervision	Roles and Responsibilities Job Function Feedback/Evaluation Task Allocation	Q10 – Q15
Contingent Rewards	Rewards Performance Appraisal Leave utilization	Q16 – Q21
Operating Conditions	Working Hours and Location Flexibility Authorities, resources and facilities	Q22 – Q27

	Respect	
Job satisfaction in scope creep project	Company change Opportunity Training & Development Remuneration Package Career path	Q28 – Q32

Table 2: Operationalize Table

Excepting the demographic questions, other questions have gathered the answers from the respondents by using five Likert scale as follow.

Response	Score
Strongly Disagree	1
Disagree	2
Some What Agree	3
Agree	4
Strongly Agree	5

Table 3: Five Likert Scales

3.7 Research Approach

According to Worthington (2008), research approach can be described as how the researcher should align to the research in order to investigate research findings and fulfill the objectives. In the process, the researcher requires to generate assumptions regarding the research objectives, research questions, and research hypothesis. There are two common research approaches such as deductive and inductive.

In deductive reasoning, the researcher initiates the research with broader theoretical frameworks and narrow down to more specific concepts such as research hypothesis, and observations. Moreover, at the end of the testing cycle it narrows down further to test the research hypothesis which has some specific data. This is more suitable to collect quantitative data rather than qualitative data.

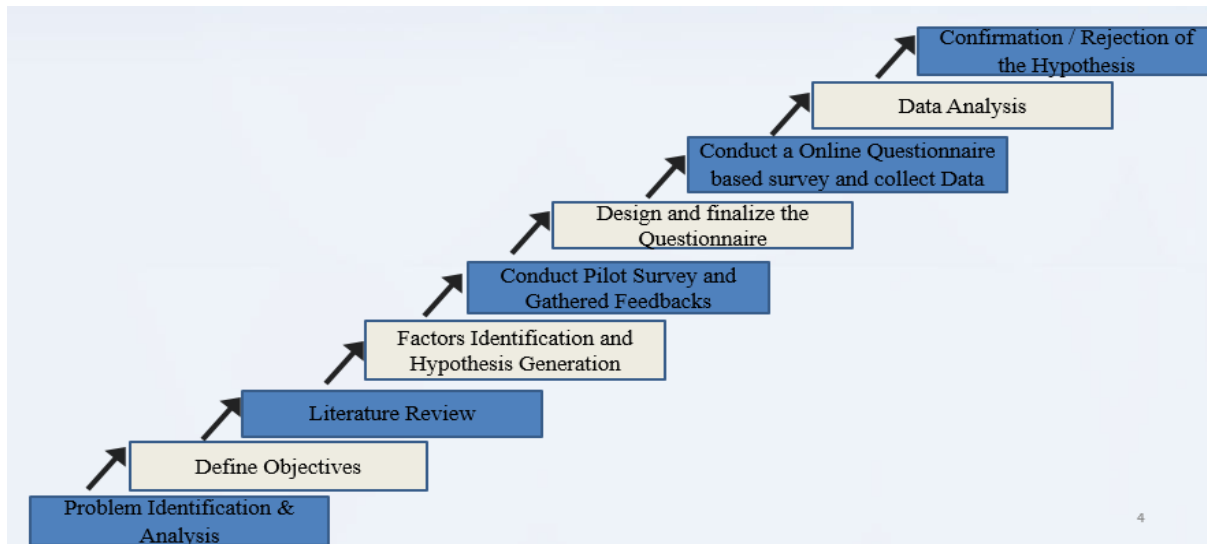


Figure 6: Research Approach

3.8 Research Strategy

As indicated by Metcalfe (2007), the main purpose of the research strategy is to identify a practical and logical plan to continue the research until reach the particular objectives of the research. A good research strategy will generate successful results at the end of the research. Hence, it is important to identify a suitable strategy to develop the research concepts. There are 4 common types of strategies available for research studies and those are identified as survey, archival, action, and experiment.

Survey strategy is able to conduct when the researcher finds the sample size from the target population. Then researcher would be distributing a questionnaire among the selected sample size to gather their responses regarding the related research questions. Archival strategy is used when there are adequate historical data is available to be used in the research topic. Then researcher tries to use past records and data analysis to apply to a similar research. In action strategy, the researcher is always wanted to find a conclusion by performing a series of steps. Experiment strategy is used when there are two or more variables available to be used. The researcher can measure the outcomes of one variable by changing the other variable or set of variables.

In this research topic, the researcher was able selected the survey strategy as the research strategy to conduct the particular research concepts and methodologies. This strategy was selected mainly considering about its simplicity and convenience. Then researcher was able to select a sample of

employees to distribute the questionnaire. The responses provided by the target employees are used to analyze research findings and make recommendations.

3.9 Data Collection

Data gathering is another important part of the research. Because the overall success of the research is mainly depending on the type of data collected from different resources. The researcher was used many different sources to collect required data. This data can be gathered in two different way as quantitative data and qualitative data.

Quantitative data formatted with numbers, statistics, and numerical figures. Hence Most of the quantitative data can be measured by using various kinds of statistical tools. The questionnaire, and interviews are the most familiar ways to gather the quantitative data from the different resources. Then the responses provided by the target employees will be analyzed in later to find data patterns and trends between the independent and dependent variable. As a result of that find the solutions to the defined research objectives and research questions.

Interviews will helps to identify the correlations between several variables use in the research. When considering qualitative data it is more descriptive than quantitative and cannot be directly measured like quantitative data. It can be gathered through observations, focus groups, and in-depth interviews.

In this research, the researcher was used a quantitative data to increase the research coverage and achieve the research objective by using accurate data. This will provide numerous options to analyze data by using many segmentations and criteria. Hence, it may leads to get correct decisions based on the respondent's data.

3.10 Data Analysis

As per the opinion of Boeije (2009), data analysis is a very important phase of the research. Because the real value for a gathered raw data set is provided by a proper analysis. Otherwise, the collected data becomes meaningless. There are two types of techniques available to analyze both quantitative data and qualitative data for research studies. SPSS is the widely used statistical tool to analyze, interpret, and evaluate quantitative data. In the other hand thematic analysis is used to describe and identify relationships of qualitative data.

According to this research study, the researcher was used SPSS statistical tool to analyze quantitative data gathered from the employees. It is an IBM product, and widely used in the research analysis purposes. Mainly it facilitates creating pie charts, bar charts, multiple bar charts, and finding correlation between two or more variables defined at the time of executing the research.

3.11 Reliability Analysis

The reliability analysis is conducted to measure the reliability and internal consistency of the data related to the defined variables in the conceptual framework. Because the Cronbach's alpha indicate how each items in a set is correlated with other items of another set.

In this research study, researcher will follow the below given reliability analysis standards.

Cronbach's alpha	Strength of Association
< 0.6	Poor
0.6 – 0.7	Moderate
0.7 – 0.8	Good
0.8 – 0.9	Very Good
> 0.9	Excellent

Table 4: Standards for Reliability Analysis

After completing the pilot survey, reliability analysis was conducted to each variables which are mention in the conceptual framework such as contingent Rewards, supervision, salary and other benefit, operating condition and job satisfaction in scope creep project.

Results of the reliability analysis for all independent variables and dependent variable are mention in the below given table.

Independent Variables:-

Salary and other Benefit

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.794	.796	5

Table 5: Reliability Analysis of Salary and other Benefit

According to the analysis of the data for salary and other benefit variable, indicate it has a good reliability with 0.794 Cronbach's alpha value. Therefore it has a good internal consistency of the questions used to measure the particular variable.

Supervision

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.732	.726	6

Table 6: Reliability Analysis of Supervision

Supervision variable indicates a 0.732 Cronbach's alpha value and it shows it has good reliability with the data for particular variable. Therefore it has good internal consistency of the questions used to measure the particular variable.

Contingent Rewards

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.743	.759	6

Table 7: Reliability Analysis of Contingent Rewards

Contingent Rewards variable indicates a 0.743 Cronbach's alpha value and it shows it has good reliability with the data for particular variable. Therefore it has good internal consistency of the questions used to measure the particular variable.

Operating Condition

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.657	.669	6

Table 8: Reliability Analysis of Operating Condition

Operating condition variable indicates a 0.657 Cronbach's alpha value and it shows it has moderate reliability with the data for particular variable. Therefore it has moderate internal consistency of the questions used to measure the particular variable.

Dependent Variable:-

Job satisfaction in scope creep project

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.701	.709	5

Table 9: Reliability Analysis of Job Satisfaction in Scope Creep Project

“Job satisfaction in scope creep project” variable indicates a 0.701 Cronbach’s alpha value and it shows it has good reliability with the data for particular variable. Therefore it has good internal consistency of the questions used to measure the particular variable.

3.12 Statistical Analysis

Below given data analyses techniques are used to measure the independent and dependent variable by using the gathered respondents’ data.

Variables	Variable Type	Correlation	Regression
Salary and other Benefit	Independent	Yes	Yes
Supervision	Independent	Yes	Yes
Contingent Rewards	Independent	Yes	Yes
Operating Condition	Independent	Yes	Yes
Job satisfaction in scope creep project	Dependent	Yes	Yes

Table 10: Data Analysis Techniques

Other information such as gender, tier, age and working experience of the employee work in scope creep projects are used to gather the better understanding of the target population through descriptive analysis of this research.

3.13 Summary

Author used this chapter to discuss the methodology that has been adapted to this particular research study. This section also provides the details of the population, sample size and how this sample was selected for the research by the researcher. Then it discusses the operationalization of the variables and Cronbach alpha for all defined independent and dependent variables. Later part of this chapter is discussed about the statistical analysis tool that is used to analyze the gathered data from the target population. Next chapter will continue the analysis of the collected data for this research.

4.0 Data Analysis

4.1 Introduction

This chapter will discuss the analysis of the collected data from the target population for this research study. Descriptive analysis is conducted to get the better understanding by simplifying the dataset. Statistical analysis was used to complete the correlation analysis of variables and regression analysis of the dataset. As a result of above analysis, later part of this chapter will provide the details related to the hypothesis validation.

4.2 Data Collection

As a case based research qualitative data gathered from the interviews of senior management in ABC Company to identify the scope creep project as target population. Then researcher identifies sample size same as the population because this is case based research. Quantitative data are gathered by conducting the survey through employees those who have worked in scope creep project. Then the collected data is used to measure the variables which are stated in conceptual framework and validate the hypothesis. As first step of quantitative data collection through survey researcher decided to conduct the pilot survey to measure the reliability of the questioners which has designed according to variable include in conceptual framework. Once capturing the reliability of the questioner then researcher decided to distribute the questioner throughout the selected sample of this research. This research survey is distributed using both online and hand delivery of questioner hard copy method. In here to handle the online survey researcher was used email and social media.

4.3 Research Questioner

This research questioner is consisted with thirty two questions and it was designed to gather the important data related to the employee job satisfaction when the employee is work on the scope creep project. Out of thirty two questions first four questions are designed as demographic question to evaluate the sample of the research, another five questions were designed to capture the data related to dependent variable and all the other question were designed to capture the data related to the identified four independent variables.

This survey was created by using google forms and it provides many features to capture data from the respondents because it guide them in a proper manner by decreasing the number of incomplete questions. Although the researcher was identified sending the hard copy to the respondent is the better way to gather the data than the online distribution. Because most of them are fill the questioner as soon as possible and send it back to the researcher. But the capturing data through online method efficiency is very low because some of the respondents are neglect the survey with their heavy work load.

4.4 Interviews

During this research interviews are conducted to gather the qualitative data for selecting a target population. Inhere randomly select the senior management and middle management persons to gather the qualitative data regarding the scope creep project. According to the gathered data researcher is identified eight numbers of projects from the ABC Company and employees' those who are working on that scope creep project. When providing this details they mention about the major reasons that are affected to scope creeping of project and what kind of criticalities happen in the project.

4.5 Reliability Analysis

As a first analysis researcher conduct the reliability analysis before going to the other detailed analysis. Because it is necessary to check the validity and the goodness of the data collection which are gathered by the target population of this research study. Then researcher conduct reliability analysis for the entire data set which is aligned to the defined variables and below given table displays the Cronbach alpha value for each variables.

Variables	Cronbach's Alpha	Number of Items
Independent		
Contingent Rewards	0.743	6
Supervision	0.732	6
Salary and other Benefits	0.784	5
Operating Conditions	0.657	6
Dependent		
Job Satisfaction in Scope Creep Project	0.728	5

Table 11: Summary of the Reliability Analysis

According to the above reliability analysis results three independent variables such as contingent Rewards, supervision and salary and other benefit has more than 0.7 Cronbach's alpha values. Therefore it means that variable has good internal consistency. But the operating condition variable has 0.657 alpha value and those data for variable has moderate internal consistency.

When considering the consistency about the data for dependent variable has more than 0.7 Cronbach's alpha value. Therefore the data related on dependent variable has good internal consistency.

4.6 Demographic Analysis

Demographic analysis is conducted to identify the basic features of the data set that are gathered for this research. Furthermore it provides the explanation about the data set in manageable form by simplifying the large number of data. Therefore the gathered data for this research study was simplified as below.

Working Experience of the Employees in Scope Creep Project

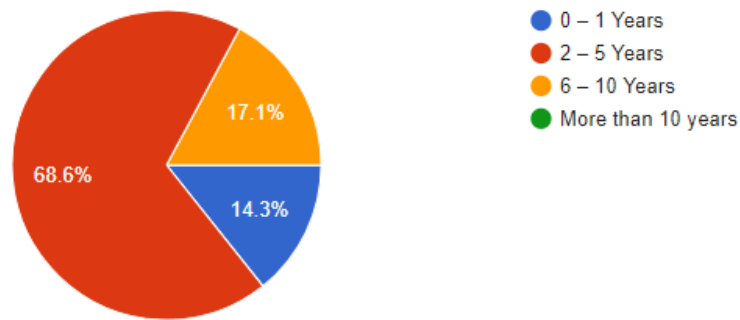


Figure 7: Graph of the Respondent based on the Working Experience

Most of the respondents are having 2 to 5 years working experience and which is 69% of the sample size. Therefore researcher was assuming most of the respondent are belongs to the tier 3 or tier 4. Also there are no employees those who are having more than ten year experience. Because researcher is avoiding the tier 1 and tier 0 employees by considering the impact of the scope creep risk.

Designation Tier of the Employees in Scope Creep Project

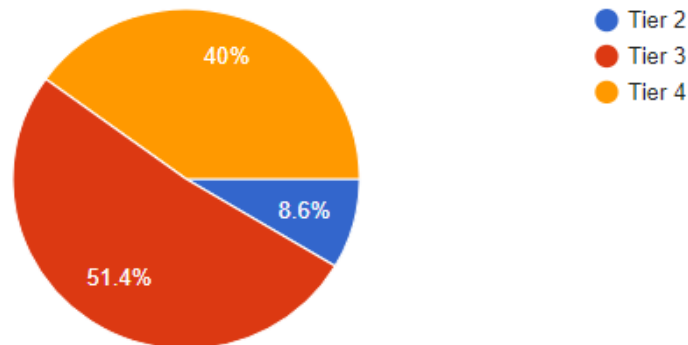


Figure 8: Graph of the Respondent based on the Tier of Designation

Target organization has 4 to 0 tier categories but tier 1 and tier 0 peoples are worked within the scope creep project but there are not suffered from the scope creep risk when compared with the other tiers employees. Hence researcher was targeting only the tier 2, tier 3 and tier 4 employees for this study. According to that most of the respondents are belongs to the tier 3 employee category

and which is 51% from the entire sample. It means they are playing a senior role or lead role within the project by having the more than 2 years' experience.

Classification of the Respondent based on the Gender

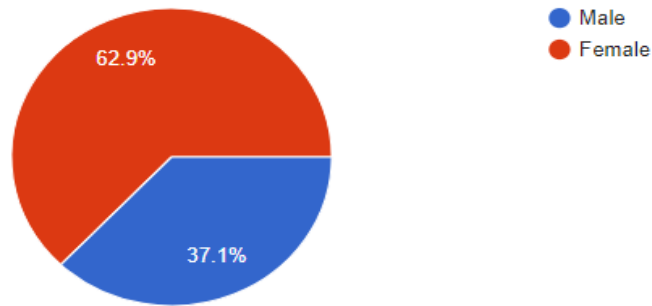


Figure 9: Graph of the Respondent based on the Gender

Most of the respondents are females. Which is 63% of the sample size.

Classification of the respondents based on the age

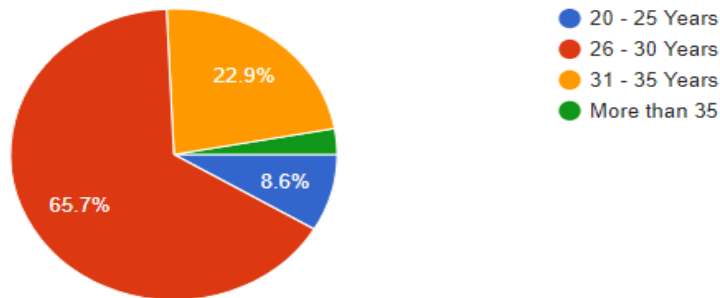


Figure 10: Graph of the Respondent based on the Age

Most of the respondents are belongs to the 26 to 30 years age group. Which is 66% of the sample size. In the other way it will display that respondents are having maximum five years' experience and playing the engineer, senior engineer or lead role within the project.

4.7 Inferential analysis

End of this research inferential analysis is conducted to identify the relationship between the variables and difference behaviors of the variables when categorized the data into different sub categories. Hence this inferential analysis were useful to reach the conclusion reading the data with the variables and complete the hypothesis testing by doing the correlation analysis and regression analysis.

4.7.1 Correlation Analysis for Entire Sample Data

Below given table will display the identified values according to the bivariate correlation analysis to ensure the relationship between the independent and dependent variables.

According to this table independent variables are defined such as salary and other benefit, supervision, contingent rewards and operating condition. Job satisfaction in scope creep project will be the depended variable.

		Correlations				
		Salary_and Other_Benefit s	Supervision	Contingent_ Rewards	Operating_ Condition	Job Satisfaction_ in_Scope_ Creep_Projec t
Salary_and_Other_ Benefits	Pearson Correlation	1	.654**	.653**	-.040	.542**
	Sig. (2-tailed)		.000	.000	.688	.000
	N	104	104	104	104	104
Supervision	Pearson Correlation	.654**	1	.732**	.027	.506**
	Sig. (2-tailed)	.000		.000	.782	.000
	N	104	104	104	104	104
Contingent_Rewards	Pearson Correlation	.653**	.732**	1	.081	.446**
	Sig. (2-tailed)	.000	.000		.412	.000
	N	104	104	104	104	104
Operating_Condition	Pearson Correlation	-.040	.027	.081	1	.004
	Sig. (2-tailed)	.688	.782	.412		.968
	N	104	104	104	104	104
Job_Satisfaction_in_ Scope_Creep_Project	Pearson Correlation	.542**	.506**	.446**	.004	1
	Sig. (2-tailed)	.000	.000	.000	.968	
	N	104	104	104	104	104

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

Table 12: Correlation Analysis for Variables based on the Entire Data Set

According to the above table all the variables have positive relationship towards the dependent variable “Job Satisfaction in Scope Creep Project.” As an independent variables salary and Other Benefits, Supervision and contingent rewards has a positive correlation (+0.542, +0.506, +0.446) respectively with dependent variable Job Satisfaction in Scope Creep Project.

Also the operating condition does not have a correlation (+0.004) with Job Satisfaction in Scope Creep Project.

Above table also define the independent variable relationship with another independent variables and there is high correlation approximating 0.732 between contingent Rewards and supervision. And high correlation approximating 0.654 between salary and other benefit and supervision. Similarly the high correlation approximating 0.653 between salary and other benefit and contingent Rewards.

4.7.2 Hypothesis Testing

As per the methodology chapter, this research was generated four hypothesis and those four hypothesis are tested based on the person correlation analysis. This correlation analysis was discussed in the above sub heading 4.7.1 and results of the hypothesis testing were discussed in below.

Hypothesis 1

H₁₀: There is **no** relationship between contingent Rewards and job satisfaction when the project is in scope creep stage.

H_{1A}: There is a relationship between contingent Rewards and job satisfaction when the project is in scope creep stage.

According to the correlation value in table 12, above relationship has 0.000 significant value and it is lesser than the 0.05. Then the researcher was able to ensure that null hypothesis was rejected and accept the alternative hypothesis. Because there is positive correlation between contingent Rewards and job satisfaction of the scope creep project and its value is 0.446.

Hypothesis 2

H2₀: There is **no** relationship between supervision and job satisfaction when the project is in scope creep stage.

H2_A: There is a relationship between supervision and job satisfaction when the project is in scope creep stage.

When considering the correlation for above hypothesis through the table 12, that relationship has 0.000 significant value and it is lesser than the 0.05. Then the researcher was able to ensure that null hypothesis was rejected and accept the alternative hypothesis. Because there is positive correlation between supervision and job satisfaction of the scope creep project and its value is 0.506.

Hypothesis 3

H3₀: There is **no** relationship between salary and other benefits and job satisfaction when the project is in scope creep stage.

H3_A: There is a relationship between salary and other benefits and job satisfaction when the project is in scope creep stage.

According to the correlation value in table 12, above relationship has 0.000 significant value and it is lesser than the 0.05. Then the researcher was able to ensure that null hypothesis was rejected and accept the alternative hypothesis. Because there is positive correlation between salary and other benefits and job satisfaction of the scope creep project and its value is 0.542.

Hypothesis 4

H4₀: There is **no** relationship between the operating condition and job satisfaction when the project is in scope creep stage.

H4_A: There is a relationship between the operating condition and job satisfaction when the project is in scope creep stage.

When considering the correlation for above hypothesis through the table 12, that relationship has 0.968 significant value and it is higher than the 0.05. Then the researcher was able to ensure that null hypothesis was accepted and reject the alternative hypothesis. Because there is no

considerable correlation between the operating condition and job satisfaction of the scope creep project and its value is 0.004.

Summary of the Hypothesis Test

Hypothesis	Null Hypothesis	Alternative Hypothesis	Level of the Relationship	Direction
There is a relationship between contingents' Rewards and job satisfaction when the project is in scope creep stage.	Rejected	Accepted	Medium	Positive
There is a relationship between supervision and job satisfaction when the project is in scope creep stage.	Rejected	Accepted	High	Positive
There is a relationship between salaries and other benefits and job satisfaction when the project is in scope creep stage.	Rejected	Accepted	High	Positive
There is a relationship between operating condition and job satisfaction when the project is in scope creep stage.	Accepted	Rejected	Lower	Positive

Table 13: Summary Table of the Hypothesis Test

4.7.3 Simple Regression Analysis

This analysis is used as a continuation of the person correlation. Because after the deification of the strength of relationship from the person correlation, regression analysis was used to predict the behavior depends on the two variables. Hence the simple regression was conducted will all the independent variables against the dependent variable and that indication was provided below.

Independent Variable: Salary and Other Benefit

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.542 ^a	.294	.287	2.70446	.294	42.514	1	102	.000

a. Predictors: (Constant), Salary_and_Other_Benefits
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 14: Model Summary for Salary and Other Benefit

Summary of the regression between independent variable and dependent variable was display in above table. Correlation is display through R value which is 0.542. R square is 0.294 and it will display the variance between two variables.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	310.954	1	310.954	42.514	.000 ^a
	Residual	746.036	102	7.314		
	Total	1056.990	103			

a. Predictors: (Constant), Salary_and_Other_Benefits
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 15: ANOVA for Salary and Other Benefit

According to the ANOVA table the F value is 42.514 when the significant level is 0.000. Hence it displays 29% of variation is affected to the job satisfaction of the scope creep project by the salary and other benefit.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	8.078	1.059		7.631	.000	5.978	10.177
	Salary_and_Other_Benefits	.501	.077	.542	6.520	.000	.349	.654

a. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 16: Coefficient for Salary and Other Benefit

According to the coefficient value table beta value is displayed as 0.542. It means there is positive relationship between two variables. Therefore organization needs to increase the salary and other benefits for the employees when the organization wants to increase job satisfaction of the employee in the scope creep project.

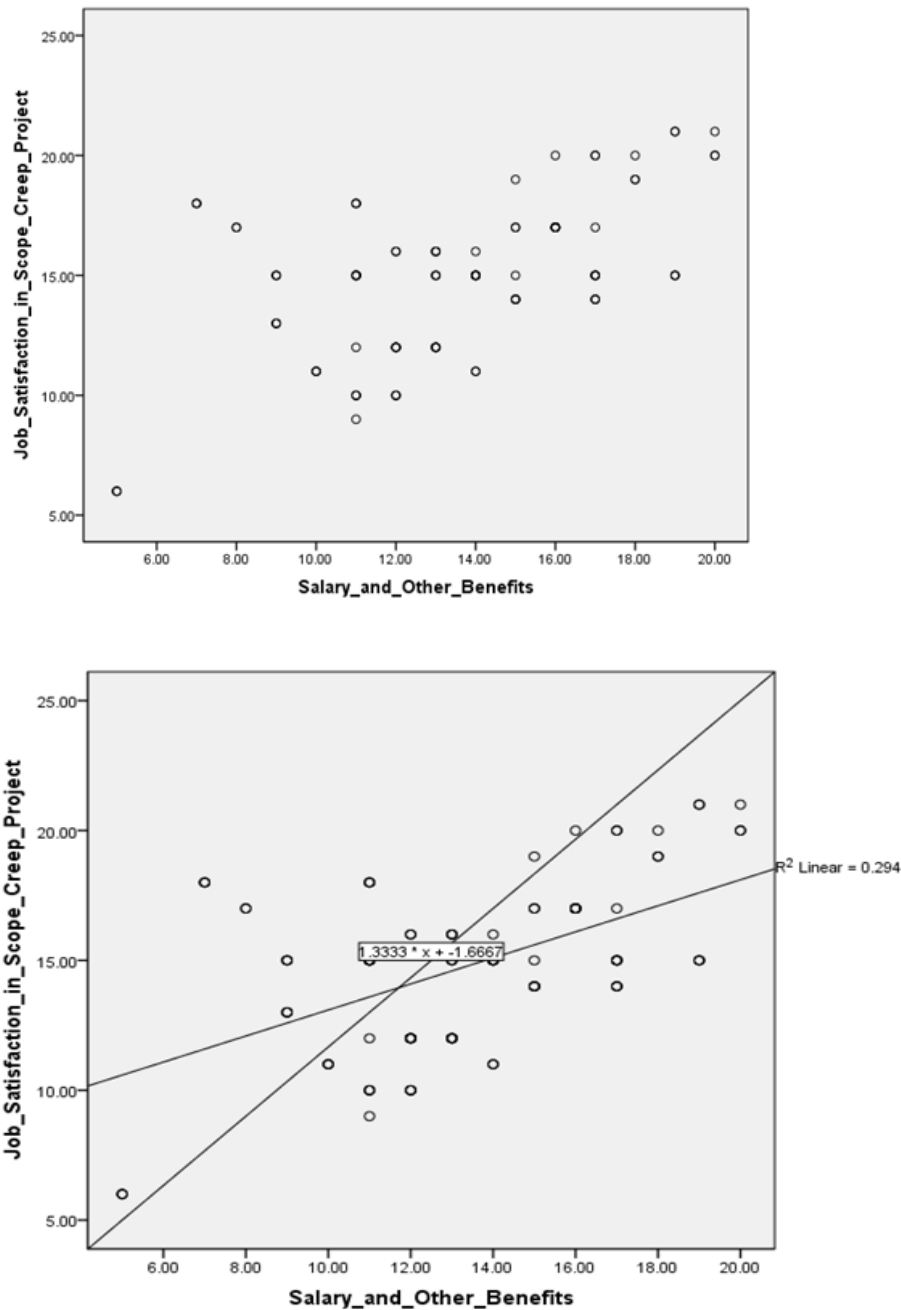


Figure 11: Regression Analysis for Salary and Other Benifit

Above mention scatter plot diagram displayed the plotted simple regression model between the salary and other benefit and job satisfaction of employee in scope creep project. According to that model it has positive correlation between those two variables and there are some values in out of the regression line when considering the other values. Because most of the values are closer to the positive regression line by displaying the positive correlation between two variables.

Independent Variable: Supervision

Model Summary^{a,b}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.506 ^a	.256	.249	2.77701	.256	35.061	1	102	.000

a. Predictors: (Constant), Supervision
b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 17: Model Summary for Supervision

Summary of the regression between independent variable and dependent variable was displayed in above table. Correlation is display through R value which is 0.506. R square is 0.249 and it will display the variance between two variables.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	270.386	1	270.386	35.061	.000 ^a
	Residual	786.604	102	7.712		
	Total	1056.990	103			

a. Predictors: (Constant), Supervision
b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 18: ANOVA for Supervision

According to the ANOVA table the F value is 35.061 when the significant level is 0.000. Hence it displays 24% of variation is affected to the job satisfaction of the scope creep project by the supervision.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	7.281	1.292		5.636	.000	4.719	9.844
	Supervision	.419	.071	.506	5.921	.000	.279	.560

a. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 19: Coefficients for Supervision

According to the coefficient value table beta value is displayed as 0.506. It means there is positive relationship between two variables. Therefore organization needs to increase the supervision of the employees when the organization wants to increase job satisfaction of the employee in the scope creep project.

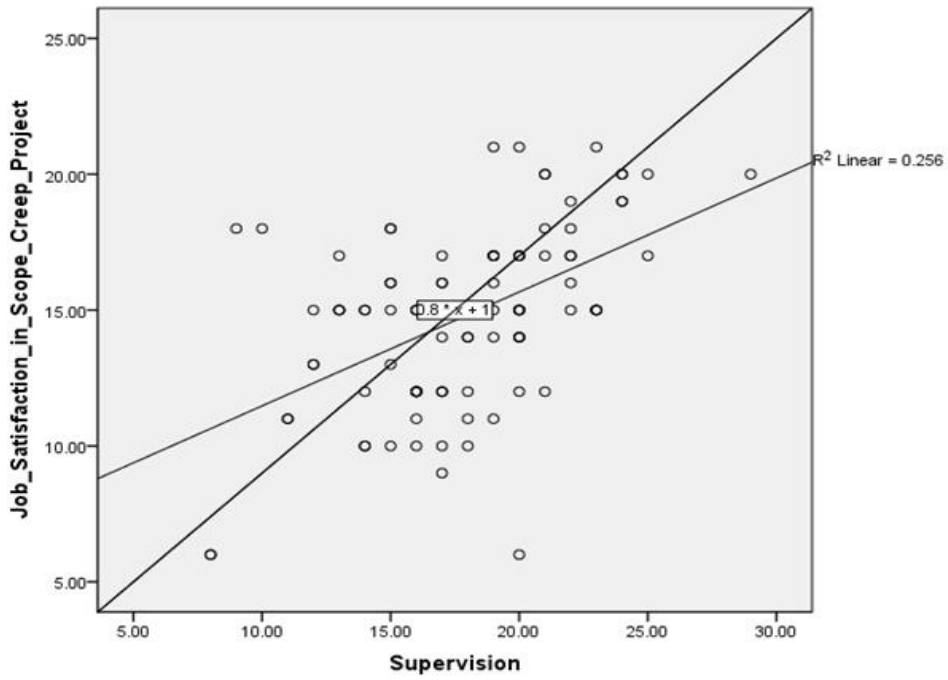
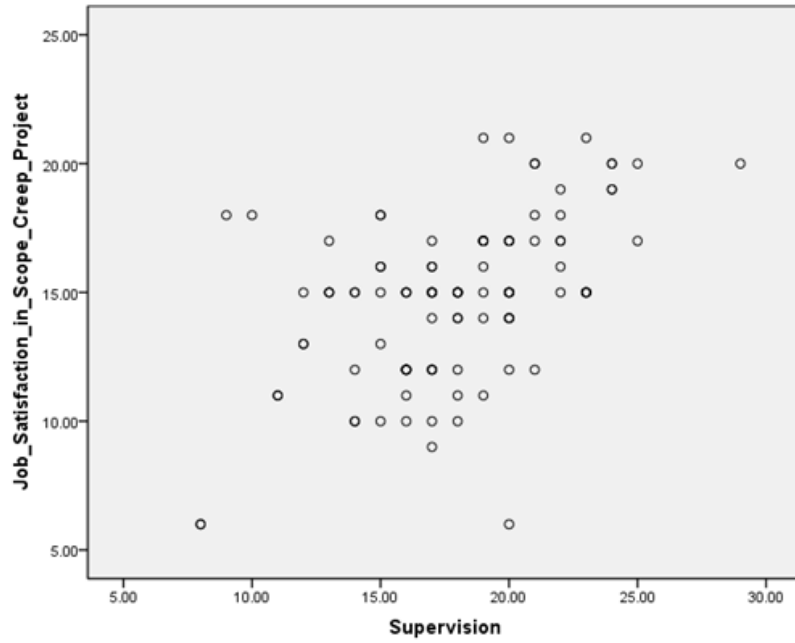


Figure 12: Regression Analysis for Supervision

Above mention scatter plot diagram displayed the plotted simple regression model between the supervision and job satisfaction of employee in scope creep project. According to that model it has positive correlation between those two variables and there are some values in out of the regression line when considering the other values. Because most of the values are closer to the positive regression line by displaying the high correlation between two variables.

Independent Variable: Contingent Rewards

Model Summary^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.446 ^a	.199	.191	2.88051	.199	25.389	1	102	.000

a. Predictors: (Constant), Contingent_Rewards
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 20: Model Summary for Contingent Rewards

Summary of the regression between independent variable and dependent variable was displayed in above table. Correlation is display through R value which is 0.446. R square is 0.199 and it will display the variance between two variables.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	210.664	1	210.664	25.389	.000 ^a
	Residual	846.326	102	8.297		
	Total	1056.990	103			

a. Predictors: (Constant), Contingent_Rewards
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 21: ANOVA for Contingent Rewards

According to the ANOVA table the F value is 25.389 when the significant level is 0.000. Hence it displays 19% of variation is affected to the job satisfaction of the scope creep project by the contingent Rewards.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	8.853	1.206		7.343	.000	6.462	11.245
	Contingent_Rewards	.360	.071	.446	5.039	.000	.218	.502

a. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 22: Coefficient for Contingent Rewards

According to the coefficient value table beta value is displayed as 0.446. It means there is medium positive relationship between two variables. Therefore organization needs to increase the contingent Rewards for the employees when the organization wants to increase job satisfaction of the employee in the scope creep project.

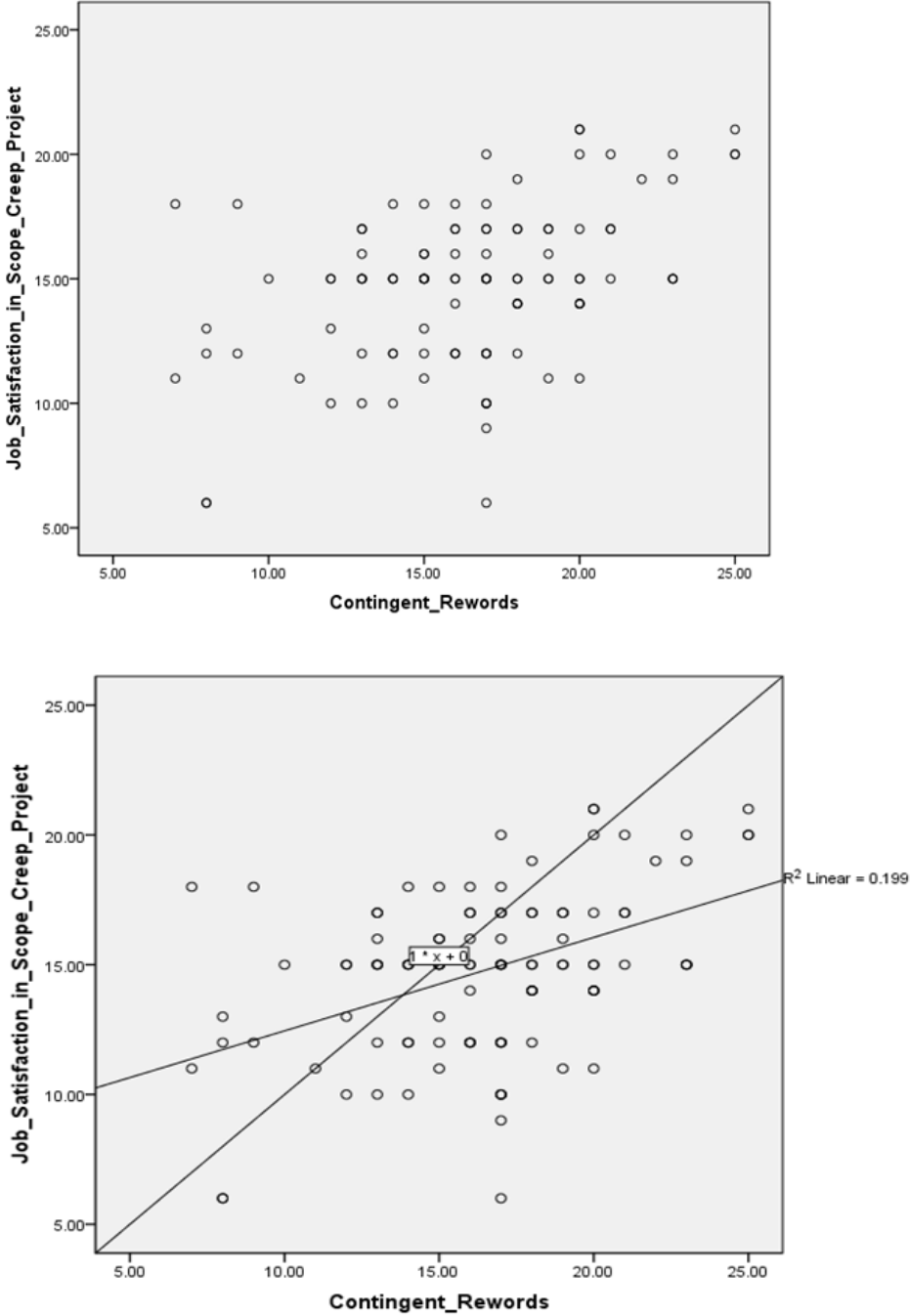


Figure 13: Regression Analysis for Contingent Rewards

Above mention scatter plot diagram displayed the plotted simple regression model between the contingent rewards and job satisfaction of employee in scope creep project. According to that model it has positive correlation between those two variables and there are some values in out of the regression line when considering the other values. Because most of the values are closer to the positive regression line by displaying the medium correlation between two variables.

Independent Variable: Operating Condition

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.004 ^a	.000	-.010	3.21908	.000	.002	1	102	.968

a. Predictors: (Constant), Operating_Condition
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 23: Model Summary for Operating Condition

Summary of the regression between independent variable and dependent variable was displayed in above table. Correlation is display through R value which is 0.004. R square is 0.000 and it will not display the variance between two variable.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.016	1	.016	.002	.968 ^a
	Residual	1056.974	102	10.362		
	Total	1056.990	103			

a. Predictors: (Constant), Operating_Condition
 b. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 24: ANOVA for Operating Condition

According to the ANOVA table the F value is 0.002 when the significant level is 0.968. Hence it is display 0.4% of variation is affected to the job satisfaction of the scope creep project by the operating condition.

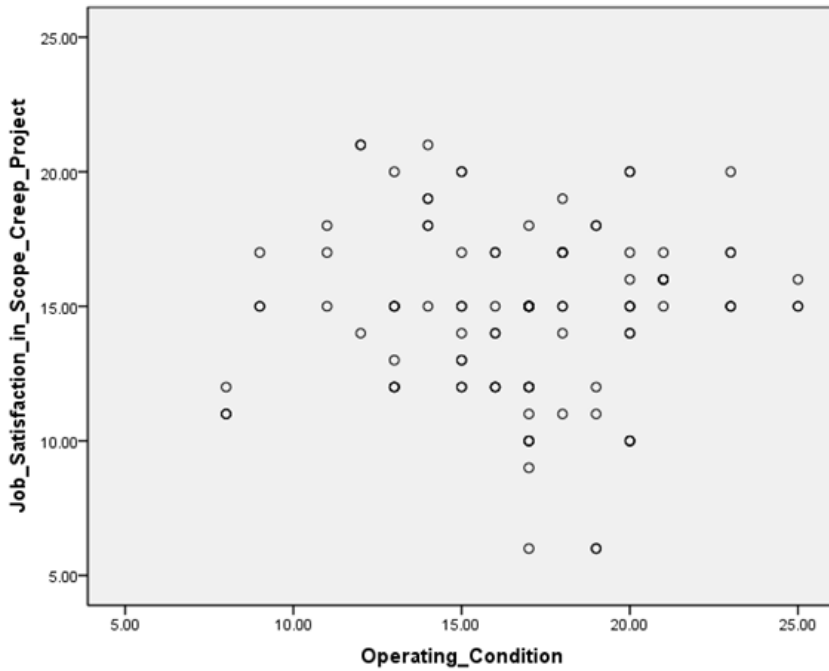
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	14.704	1.437		10.235	.000	11.854	17.553
	Operating_Condition	.003	.083	.004	.040	.968	-.162	.169

a. Dependent Variable: Job_Satisfaction_in_Scope_Creep_Project

Table 25: Coefficient for Operating Condition

According to the coefficient value table beta value is displayed as 0.004. It means there is no relationship between two variables. Therefore organization no needs to increase the operating conditions for the employees when the organization wants to increase job satisfaction of the employee in the scope creep project.



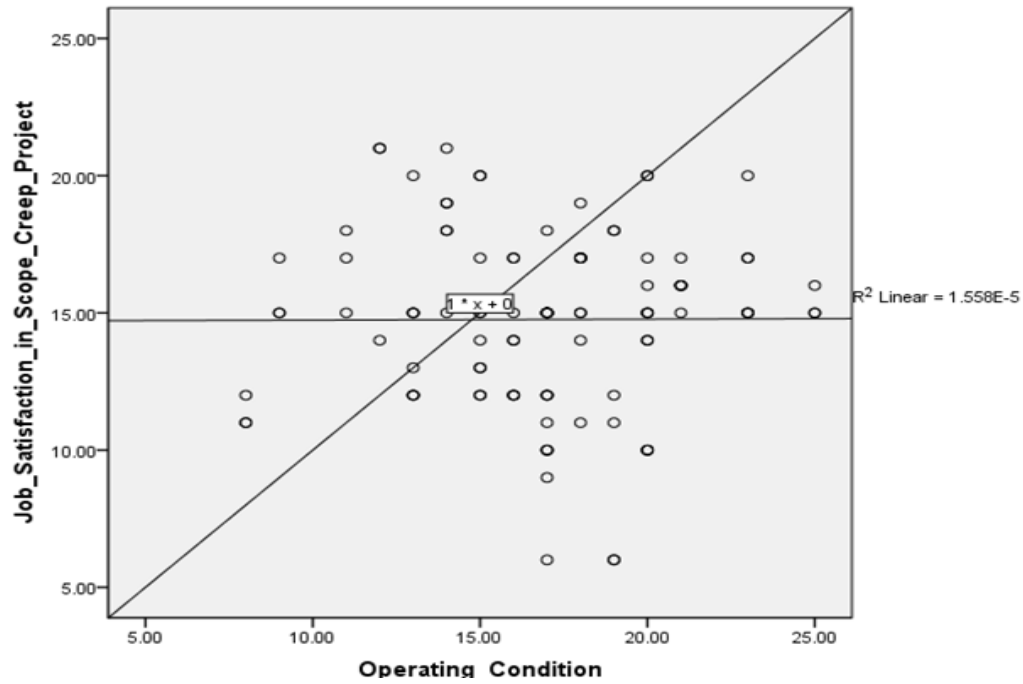


Figure 14: Regression Analysis for Operating Condition

Above mention scatter plot diagram displayed the plotted simple regression model between the operating condition and job satisfaction of employee in scope creep project. According to that model it has no correlation between those two variables.

4.7.4 Correlation Analysis for the Female Employees in the Sample

		Correlations				
		Salary_and_Other	Supervision	Contingent_Reward	Operating_Condition	Job_satisfaction_of_Scope_Creep_Project
Salary_and_Other	Pearson Correlation	1	.574**	.583**	.058	.240
	Sig. (2-tailed)		.000	.000	.647	.056
	N	64	64	64	64	64
Supervision	Pearson Correlation	.574**	1	.734**	.172	.384**
	Sig. (2-tailed)	.000		.000	.173	.002
	N	64	64	64	64	64
Contingent_Reward	Pearson Correlation	.583**	.734**	1	.156	.277*
	Sig. (2-tailed)	.000	.000		.220	.027
	N	64	64	64	64	64
Operating_Condition	Pearson Correlation	.058	.172	.156	1	.231
	Sig. (2-tailed)	.647	.173	.220		.066
	N	64	64	64	64	64
Job_satisfaction_of_Scope_Creep_Project	Pearson Correlation	.240	.384**	.277*	.231	1
	Sig. (2-tailed)	.056	.002	.027	.066	
	N	64	64	64	64	64

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

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

Table 266: Correlation Analysis for Female Respondents

The researcher was able to conduct the correlation by categorizing the respondent's data as females and males. When considering the data of female respondents there are some small correlation among salary and other benefit, supervision, contingent Rewards, operating condition with job satisfaction of employees in scope creep project which are +0.240, +0.384, +0.277 and +0.231 respectively. In the other way there are is another high positive correlation between two independent variables such as supervision and contingent Rewards which is +0.734.

4.7.5 Correlation Analysis for the Male Employees in the Sample

		Correlations				
		Salary_and other_Benefit	Supervision	Contigent_ Reword	Operating_ Condition	Job Satisfaction_ in_Scope_ Creep_Projec T
Salary_and_other_Benefit	Pearson Correlation	1	.771**	.732**	-.161	.820**
	Sig. (2-tailed)		.000	.000	.320	.000
	N	40	40	40	40	40
Supervision	Pearson Correlation	.771**	1	.735**	-.207	.661**
	Sig. (2-tailed)	.000		.000	.200	.000
	N	40	40	40	40	40
Contigent_Reword	Pearson Correlation	.732**	.735**	1	.011	.599**
	Sig. (2-tailed)	.000	.000		.949	.000
	N	40	40	40	40	40
Operating_Condition	Pearson Correlation	-.161	-.207	.011	1	-.224
	Sig. (2-tailed)	.320	.200	.949		.165
	N	40	40	40	40	40
Job_Satisfaction_in_ Scope_Creep_Project	Pearson Correlation	.820**	.661**	.599**	-.224	1
	Sig. (2-tailed)	.000	.000	.000	.165	
	N	40	40	40	40	40

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

Table 277: Correlation Analysis for Male Respondents

Correlation analysis conducted by considering the data of male respondents there are some high correlation among salary and other benefit, supervision, contingent Rewards, with job satisfaction of employees in scope creep project which are +0.820, +0.661 and +0.599 respectively. But this correlation analysis was showing that males do not consider about the operating condition because operating condition and job satisfaction of the employee in scope creep project has negative small correlation. Therefore it means that particular organization needs to decrease the operating condition when the organization expecting to increase the job satisfaction of the male employees in the scope creep project. In the other way there are is another high positive correlation between two independent variables such as supervision and contingent Rewards, salary and other benefit and supervision, contingent Rewards and salary and other benefit which are +0.735, +0.771 and +0.732 respectively.

4.7.6 Correlation Analysis for the Tier 4 Employees in the Sample

Correlations

		Salary_and_o ther_Variable	Supervision	Contingent_R ewords	Operating_Co ndition	Job_Satisfacti on_in_Scope _Creep_Proje ct
Salary_and_other_Variab le	Pearson Correlation	1	.526**	.545**	.068	.333*
	Sig. (2-tailed)		.000	.000	.668	.031
	N	42	42	42	42	42
Supervision	Pearson Correlation	.526**	1	.612**	-.087	.331*
	Sig. (2-tailed)	.000		.000	.585	.032
	N	42	42	42	42	42
Contingent_Rewards	Pearson Correlation	.545**	.612**	1	.144	.222
	Sig. (2-tailed)	.000	.000		.363	.159
	N	42	42	42	42	42
Operating_Condition	Pearson Correlation	.068	-.087	.144	1	.029
	Sig. (2-tailed)	.668	.585	.363		.856
	N	42	42	42	42	42
Job_Satisfaction_in_Sco pe_Creep_Project	Pearson Correlation	.333*	.331*	.222	.029	1
	Sig. (2-tailed)	.031	.032	.159	.856	
	N	42	42	42	42	42

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

Table 288: Correlation Analysis for Tier 4 Respondents

Correlation analysis conducted by considering the data of tier 4 respondents there are some moderate correlation among salary and other benefit, supervision, with job satisfaction of employees in scope creep project which are +0.333 and +0.331 respectively. And the contingent rewards and job satisfaction of the scope creep project has low correlation such as +0.222. But this correlation analysis was showing that tier 4s do not consider about the operating condition because operating condition and job satisfaction of the employee in scope creep project has no correlation. Therefore it means that particular organization no needs consider about the operating condition when the organization expecting to increase the job satisfaction of the tier 4 employees in the scope creep project. In the other way there are is another positive correlation between two independent variable such as supervision and contingent Rewards, salary and other benefit and supervision, contingent Rewards and salary and other benefit which are +0.612, +0.526 and +0.545 respectively.

4.7.6 Correlation Analysis for the Tier 3 Employees in the Sample

Correlations

		Salary_and_Other_Benefit	Supervision	Contingent_Rewards	Operating_Condition	Job_Satisfaction_in_Scope_Creep_Project
Salary_and_Other_Benefit	Pearson Correlation	1	.715**	.577**	-.006	.525**
	Sig. (2-tailed)		.000	.000	.968	.000
	N	52	52	52	52	52
Supervision	Pearson Correlation	.715**	1	.806**	.156	.622**
	Sig. (2-tailed)	.000		.000	.268	.000
	N	52	52	52	52	52
Contingent_Rewards	Pearson Correlation	.577**	.806**	1	.189	.443**
	Sig. (2-tailed)	.000	.000		.180	.001
	N	52	52	52	52	52
Operating_Condition	Pearson Correlation	-.006	.156	.189	1	.168
	Sig. (2-tailed)	.968	.268	.180		.234
	N	52	52	52	52	52
Job_Satisfaction_in_Scope_Creep_Project	Pearson Correlation	.525**	.622**	.443**	.168	1
	Sig. (2-tailed)	.000	.000	.001	.234	
	N	52	52	52	52	52

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

Table 29: Correlation Analysis for Tier 3 Respondents

Correlation analysis conducted by considering the data of tier 3 respondents there are some high correlation among salary and other benefit, supervision, with job satisfaction of employees in scope creep project which are +0.525 and +0.622 respectively. And the contingent rewards and job satisfaction of the scope creep project has moderate correlation such as +0.443. But this correlation analysis was showing that tier 3s do not consider about the operating condition because operating condition and job satisfaction of the employee in scope creep project does not have correlation. Therefore it means that particular organization no needs more consider about the operating condition when the organization expecting to increase the job satisfaction of the tier 3 employees in the scope creep project. In the other way there are is another high positive correlation between two independent variables such as supervision and contingent Rewards, salary and other benefit and supervision, contingent Rewards and salary and other benefit which are +0.806, +0.715 and +0.577 respectively.

4.7.6 Correlation Analysis for the Tier 2 Employees in the Sample

Correlations

		Salary_and_Other_Benefit	Supervision	Contingent_Rewards	Operating_Condition	Job_Satisfaction_in_Scope_Creep_Project
Salary_and_Other_Benefit	Pearson Correlation	1	.854**	.840**	-.323	.943**
	Sig. (2-tailed)		.002	.002	.362	.000
	N	10	10	10	10	10
Supervision	Pearson Correlation	.854**	1	.810**	-.291	.778**
	Sig. (2-tailed)	.002		.004	.415	.008
	N	10	10	10	10	10
Contingent_Rewards	Pearson Correlation	.840**	.810**	1	-.342	.828**
	Sig. (2-tailed)	.002	.004		.334	.003
	N	10	10	10	10	10
Operating_Condition	Pearson Correlation	-.323	-.291	-.342	1	-.135
	Sig. (2-tailed)	.362	.415	.334		.710
	N	10	10	10	10	10
Job_Satisfaction_in_Scope_Creep_Project	Pearson Correlation	.943**	.778**	.828**	-.135	1
	Sig. (2-tailed)	.000	.008	.003	.710	
	N	10	10	10	10	10

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

Table 30: Correlation Analysis for Tier 2 Respondents

Correlation analysis conducted by considering the data of tier 2 respondents there are some highest correlation among salary and other benefit, supervision, contingent Rewards with job satisfaction of employees in scope creep project which are +0.943, +0.778 and +0.828 respectively. But this correlation analysis was showing that tier 2s do not consider about the operating condition because operating condition and job satisfaction of the employee in scope creep project has negative low correlation. Therefore it means that particular organization no needs more consider about the operating condition when the organization expecting to increase the job satisfaction of the tier 2 employees in the scope creep project. In the other way there are is another high positive correlation between two independent variables such as supervision and contingent Rewards, salary and other benefit and supervision, contingent Rewards and salary and other benefit which are +0.810, +0.854 and +0.840 respectively.

4.8 Summary

This chapter explains about the data collection methods and data analysis used for this research. Online survey is conducted as a data collection method to gather the data form the employees those who are working in scope creep project and interviews are conducted with the senior management of the ABC pvt ltd to identify the scope creep project from the particular organization. Data analysis part has begun once completing reliability analysis by confirming the validity of the data. Then conducted the demographic analysis to explain the gathered data set by identifying the basic features of the data set. Once completing this two analysis researcher was conduct the inferential analysis such as correlation analysis and simple regression to analysis the data set and test the defined hypothesis.

5.0 Recommendation

5.1 Summary of the Study

As per the findings, analysis and the observation done in earlier chapters, scope creep projects are one of main concerns of global IT Industry. Because employees' behavior is one of the main factors leading to success of the company, Well-motivated employees are the key driving force of any organization especially when organization is expecting to achieve higher goals in the future. Further technology is subjected to many changes over a limited period of time. In this context, most of the customers those who are linked IT organization are rapidly changing their requirement and expectation and then those changes are impacting to the existing project of the particular customers. Based on these changes, project timelines are extended with huge workload and the cost of the projects will be increased. As a result of that the employees those who are working in such scope creep projects will be dissatisfied with their job. Hence, their job satisfaction should be vital, and should be more focused towards enhancing their capabilities.

Therefore the author of this research study, described many different factors under the Chapter 2 – Literature Review, with regards to the job satisfaction of employees working in scope creep projects of IT industry. Furthermore, it was used in many different theories such as Maslow's Hierarchy, Herzberg's Motivational Theory, and Job Characteristic Model to understand the several factors which lead to employee job satisfaction.

5.2 Conclusion of the Study

As per the detailed analysis and discussion, it was evident that the existing employees in scope creep projects are not satisfied with their work load, salary and other benefit, supervision and the roles and responsibilities assigned to them. As a result of that, most of the staff members are continuously leaving the particular project or organization. Therefore, the management should resolve this matter by providing their consideration and proper attention. Otherwise, the organization will lose some of their key talented resources from the company. Furthermore, as per the questionnaire, it was understandable that the employees have shown their dissatisfaction towards the existing performance appraisal system, increment process and the promotion process of the ABC Company (Pvt) Ltd. Hence, it requires major upgrade to the current system to streamline the business with the industry standards.

5.3 Recommendations

Recommendation 1 – Revise the Compensation Structure of the ABC Company (Pvt) Ltd

As per the Chapter 4 – Data Analysis, most of the employees were not happy because they feel that they are not getting a good enough pay grade considering their qualifications and efforts they put into the assigned tasks and responsibilities of the allocated project. Most of the people believe that they are getting a salary below par of what industry offers. As a result, majority of the key resources who are in scope creep project were leaving the company. Hence, it was proposed to revise the existing compensation procedure to make it more satisfactory for the employees. For an example, the researcher has recommended that additional incentives should be provided based on the performances of the employees, criticalities and the status of the allocated project. It is obvious that, there are people who belong to different skill levels, and some are very highly skilled whereas others possess average skill levels. Therefore, high performers will be encouraged if they can get an incentive or a bonus based on their performances in the project. On the other hand this may be used as a motivating factor for other average employees to increase their performance up to the outstanding employees.

The management should be responsible to initiate and implement the revised strategy for the organization. All the Managers and Department Heads of Human Resources, Finance, and various Segments should get together and conduct brainstorming sessions regarding the revised plan for the compensation. It will be useful to discuss several options available and determine the best one based on different factors. Also it will be important to select a compensation strategy which will be best suited to the organizational requirements, and the job satisfaction of the employee in scope creep project.

Recommendation 2 – Maintain better supervision when assigning the Jobs, Roles, and Responsibilities of the employees those who are working in scope creep project

As per the analysis in the Chapter 4 – Data Analysis, it was obvious that the employees were not very satisfied with their existing job roles, responsibilities, and the way they are treated in the company. Therefore, it is high time to do introduce a mechanism which makes them motivated and increase productivity in order to achieve company goals. The researcher has strongly advised to apply concepts such as job redesign and job enrichment to the company with the supervision. Because job redesign is a technique use by many IT companies in order to review the existing structure of the roles and responsibilities. Thereafter, they are re-structured or shuffled in way to enhance the output of the organization. The main benefit can be identified as employees will have diversity in their job roles and be more interested in the work assigned to them.

At the same time, job enrichment is also a good concept to be used together with the job redesign. Because job enrichment has been defined as redesigning of jobs in order to provide more challenging tasks to the employees by reducing the repetitive tasks.

Increasing the job satisfaction of an employee while taking more responsibility and ownership of the work based on the supervision. Likewise, it is important to apply these techniques to the ABC Company (Pvt) Ltd to work more efficiently and effectively. The HR department of the company should initiate this framework and need to discuss with the other Segment Heads, Departmental Managers, and Leads. Furthermore, they can get more insight by organizing brainstorming sessions with these people.

Recommendation 03 – Redesigning the facilities to manage the work load in scope creep project

According to the chapter 4 – Data analysis most of the employees are in scope creep project were not satisfied with their work load. Because the assigned work load per person is not reasonable and then they are work with huge stress. In the other hand most of them are neglecting their personal life they are unable to work with peaceful mind. Then it may lead to reduce their performance, innovations and efficiency. As a solution for that organization management can arrange another facilities for the employees those who are work in scope creep projects. When the project is in scope creep stage the management can introduce the shift based working facilities

with transport. Then the team can arrange the roster to manage the shift and shift allowances. Also management can arrange the working from home facilities for the employees by considering the assigned task and responsibilities of the employees not considering only the tier of the employee. I will be helpful to manage the work load issues of the employees in scope creep project. In the other hand organization can be arrange the fair evaluation regarding the achievements of the assigned tasks of the employees in the project or segment of the project and awarding them by arranging the small ceremony of the project or segment of the project.

5.4 Limitation of the Study

In this section researcher wanted to highlight the boundaries and limitations faced for this research. The researcher has limited the scope by finding the factors related to improve job satisfaction of the employee when the project is in scope creep stage. Which means this research will not be valid for employees assigned to the other projects those are not in scope creep state.

According to the details gathered from the senior management, tier 1 and tier 0 designation categories are not that much suffered like other tiers when the project goes to the scope creep stage. Because they involving only the decision makings of the project. Hence this researcher did not considered about the details of the tier 1 and tier 0 employees. And only gathered the data from the tier 4, tier 3 and tier 2 employees. Therefore this research valid only the tier 2, tier 3 and tier 4 employees those who are working in scope creep project.

Researcher was unable to gather the data from employees in all the scope creep project of ABC Pvt Ltd due to the data confidentiality.

5.5 Further Research of the Study

According to the analysis of this research, the researcher is suggesting some improvements to the upcoming research studies. The main findings and analysis of this research can be re-used to a similar research in the future. Further this research will be able to use to develop a framework to improve the job satisfaction of the employees and reduce employee turnover of the scope creep projects.

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7.0 Appendix

7.1 Questionnaire

General Question

1. How many years you have been worked on this organization.
 - a) 0-1 Years
 - b) 2-5 Years
 - c) 6-10 Years
 - d) More than 10 years

2. What is your current position?
 - a) Tier 0
 - b) Tier 1
 - c) Tier 2
 - d) Tier 3
 - e) Tier 4

3. What is your gender?
 - a) Male
 - b) Female

4. What is your age?
 - a) 20 – 25 years
 - b) 26 – 30 years
 - c) 31 – 35 years
 - d) More than 35

Salary and Other Benefits

1. Are you satisfied with the appreciation, rewards, and bonus or incentives system provided by your management?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
2. Are you satisfied with the overall compensation package when align your assigned responsibilities?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
3. Are you having any special rewards or benefits when works on the critical project?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
4. Those who do well on the job stand a fair chance of being promoted.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
5. I am satisfied with my chances for promotion
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

Supervision

1. The amount of work expected from you is reasonable and provide the necessary tools and resources to complete the job/task?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
2. When I have question or concern my supervisor is able to address them.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
3. Supervisor is able to protect the team from external interferences and protect the team spirit in working environment.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
4. My supervisor is unfair to me and evaluation is done by considering very recent incident only.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
5. My supervisor is ramp up the entire team by reducing the dependency of the allocated task between team member and it helps to manage the daily task if the team members got a sudden leave.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

6. My manager/supervisor provides me with constructive feedback on my performance continuously and it helps me to achieve the task and improve what I can do by minimizing weakness.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

Contingent Rewards

1. Highlight each individuals if someone do the innovations or appreciate if the desired targets are accomplished.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
2. Accept the unplanned leaves when I take for urgent matter by considering the allocated work of the particular person and deliverables.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
3. Did you earn extra leaves when you provide the commitment and happy with the leave utilization within the project.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
4. Are you happy with the frequency and amount of bonuses and there is connection between pay and performance.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
5. Project allocation and de-allocation process is fair enough in critical project.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
6. Do receive praise and recognition from the management for your extraordinary effort.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

Operating condition

1. Do you have necessary authorities, resources and facilities to perform the assigned duties within the job role and personal life in effective manner?
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
2. I find I have to work harder at my job because of the incompetence of people I work with.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
3. Is the top management flexible to respect to your family responsibilities and may help to maintain a reasonable balance between your family life and your work life.
a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

4. Are you satisfied with the working hours and flexibility of the working location at XYZ Organization?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
5. I observe that there are smooth and good working relationship and teamwork at most level in most project and departments.
 - a. Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
6. Do you have the ability to influence the top management decisions if that affect your allocated task or personal life.
 - a. Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree

Job satisfaction in scope creep project

1. Are you satisfied with the currently allocated project in ABC Company?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
2. Are you satisfied with your current job and job role you played.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
3. Are you satisfied with the opportunities you have for training and development.
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
4. Are you satisfied with the current salary?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree
5. Do you have satisfaction on the carrier ladder that you have reach currently according to the working experience you have gained?
 - a) Strongly disagree b) disagree c) somewhat agree d) agree e) strongly agree