Managerial Perceptions of Scope Creep in Projects:  

A Multiple-Case Study 

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Abstract

Introduction - Scope creep is uncontrolled and unauthorized changes to a project, extending the project beyond its initial boundaries. An extensive literature review indicated that scope creep is a common occurrence in projects with dire consequences. There are two dominant perspectives on scope creep. Either it is preventable, or inevitable. Based on these findings, the author seeks to investigate the phenomena by answering the research question of this thesis: Why do project managers have opposing perceptions of scope creep in projects?

Purpose - This paper explores the managerial perceptions on the two opposing viewpoints on scope creep and potential variations. No previous studies investigate the phenomena in a matter of perception. The paper aims to open new insights about how project managers perceive scope creep based on their own experiences through project management in practice.

Design/methodology/approach - The thesis employs a multiple, cross-sectional and mono-method case study design. A qualitative research method is utilized in combination with interpretative and inductive approaches. Sampling criteria techniques used are purposive and snowballing, focusing on project managers in Norway. Five project managers were interviewed in-depth following an interview guide facilitating semi-structured interviews. The interviews were later translated, transcribed and categorized in a thematic analysis template.

Findings - The study’s findings indicate that the opposing managerial perspectives on scope creep are due to a varying degree of knowledge on the phenomena and its definition. Low comprehension of scope creep in project management teams generates ambiguity and uncertainty. Insufficient awareness of scope creep inclines project members to misuse the term, resulting in an inability to detect or discern scope creep from formalized changes to the project scope. The academic debate concerns whether scope creep is preventable or inevitable. This study found that the academic discrepancy is owed to a dissonance between academic project management literature and the real-world experiences from practicing project managers.

Research limitations/implications - The paper is limited by investigating scope creep based only on data collected from Norwegian nationals. Furthermore, the sample size of the case study is relatively small. These limitations might inhibit the generalization of findings.

Practical implication - The following findings and results aids practicing project managers by highlighting the importance of a clear definition of scope creep. Awareness of scope creep assists project team members to discover unauthorized changes, resulting in proper communication within the project management team concerning rogue changes.

Originality/value - The paper examines experienced project managers different perspectives of scope creep from practical applications in the project management field.

Keywords - Project Management, Scope Change, Scope Creep, Scope Management

Paper type - Master's thesis
Abbreviations

APM - Association of Project Managers
CPM - Critical Path Method
CSF - Critical Success Factor
KPI - Key Performance Indicator
OBS - Organizational Breakdown Structure
PERT - Program Evaluation and Review Technique
PMBOK - Project Management Body of Knowledge
PMI - Project Management Institute
WBS - Work Breakdown Structure
Table of Contents

1. Introduction ........................................................................................................... 1
   1.1 Research Question Background ................................................................. 1
   1.2 Motivation for Research .............................................................................. 2
   1.3 Research Question ....................................................................................... 3
   1.4 Research Question Aims & Objectives ....................................................... 3
   1.5 Literature Selection Methods .................................................................... 3

2. Theoretical Frame of Reference ........................................................................ 6
   2.1 Projects & Project Management ................................................................. 6
      2.1.1 What is a project? .................................................................................. 6
      2.1.2 Project Management ......................................................................... 7
   2.2 Project Life Cycle Phases & Processes ....................................................... 7
      2.2.1 Project Initiation Phase ....................................................................... 8
      2.2.2 Project Planning Phase ..................................................................... 9
      2.2.3 Project Execution Phase .................................................................... 9
      2.2.4 Project Monitor & Control Phase ....................................................... 9
      2.2.5 Project Closing Phase ....................................................................... 10
      2.2.6 Project Life Cycle Types .................................................................. 10
   2.3 Project Management Knowledge Areas ..................................................... 11
      2.3.1 Project Schedule Management ........................................................... 11
      2.3.2 Project Cost Management ................................................................ 12
      2.3.3 Project Quality Management ............................................................ 12
      2.3.4 Project Scope Management ............................................................... 13
   2.4 Project Scope Statement ............................................................................ 14
      2.4.1 Defining the Project Scope .................................................................. 15
      2.4.2 Establishing Project Priorities ............................................................. 15
      2.4.3 Creating a WBS ............................................................................... 15
      2.4.4 Integrating the WBS with the Organization ...................................... 16
   2.5 Scope Creep ................................................................................................. 16
      2.5.1 Scope Change .................................................................................... 17
      2.5.2 Scope Creep Definitions .................................................................. 18
      2.5.3 Impacts of Scope Creep .................................................................... 19
   2.6 Scope Creep Causes ...................................................................................... 20
      2.6.1 Project Life Cycle ............................................................................... 20
      2.6.2 Poor Scope Definition ...................................................................... 20
      2.6.3 Poor Communication ....................................................................... 21
2.6.4 Neglecting Stakeholder Requirements and Expectations .......................................22
2.6.5 Project Organization Systems ..................................................................................22
2.6.6 Underestimating Complexity ...................................................................................23
2.6.7 Lack of Change Control ..........................................................................................23
2.6.8 Perfectionism ...........................................................................................................23
2.6.9 Other Causes of Scope Creep ..................................................................................23

2.7 Perspectives on Scope Creep ....................................................................................24
2.7.1 Inevitable but Controllable .......................................................................................24
2.7.2 Preventable ...............................................................................................................25

2.8 Theoretical Background Summary & Research Gap Identification ..........................25

3. Theoretical Methodology ............................................................................................27
3.1 Research Philosophy ..................................................................................................27
3.1.1 Ontological Considerations ....................................................................................28
3.1.2 Epistemological Considerations .............................................................................29
3.1.3 Axiological Considerations ....................................................................................30
3.2 Research Approach ....................................................................................................31

4. Research Methodology ...............................................................................................33
4.1 Research Design ..........................................................................................................33
4.1.1 Explanatory & Exploratory Research ....................................................................34
4.2 Research Strategy .......................................................................................................34
4.2.1 Case Design ............................................................................................................35

5. Data Collection & Analysis ........................................................................................37
5.1 Data Collection ............................................................................................................37
5.2 Data Collection Method ..............................................................................................37
5.2.1 Qualitative vs. Quantitative approach ...................................................................37
5.2.2 Mono Method & Multiple Methods ......................................................................38
5.2.3 Time Horizons ........................................................................................................39
5.2.4 Sampling ................................................................................................................39
5.2.5 Participant Selection Criteria .................................................................................40
5.2.6 Interview Design ...................................................................................................40
5.2.7 Semi-structured Interview ....................................................................................41
5.2.8 Interview Guide .....................................................................................................41
5.2.9 Interview Process ..................................................................................................42

5.3 Data Analysis ..............................................................................................................43
5.3.1 Data Analysis Approach .........................................................................................43
5.3.1.2 Unit of Analysis .................................................................................................45
5.4 Quality Criteria of the Study ......................................................................................46
List of Figures

Figure 1. Reverse-pyramid Structure of the Theoretical Frame of Reference............... 6
Figure 2. Five Phases of the Project Life Cycle....................................................... 10
Figure 3. Research Onion.................................................................................. 27
Figure 4. Research Methodology........................................................................ 33

List of Tables

Table 1. Positivist and Interpretivist Paradigm Comparison.................................. 30
Table 2. Deduction and Induction Comparison...................................................... 31
Table 3. Interview Information........................................................................... 42
Table 4. Participant Information.......................................................................... 43
1. Introduction

1.1 Research Question Background

In media, projects that are completed within the specified timeframe and cost usually focus on the successful outcome. Yet, projects experiencing delays with massive cost overruns draws attention to the management of the project instead. For example, high profile public construction projects encountering problems is a common newspaper headline. The author of this thesis was thus intrigued by these seemingly common negative occurrences in projects. How can a project expand several times in terms of initially estimated time and resources? What happens? The author learned that this phenomenon is called scope creep in project management literature. During the authors personal attendance of a presentation from The Association for Project Management (APM), the chartered body for the project management profession at Heriot-Watt University Edinburgh, it was the very first topic to be introduced.

After further investigation, the author discovered that scope creep is an under-researched field in project management, yet a widespread occurrence in projects. During the literature review of this thesis, the author discovered that most of the literature and material on scope creep are retrievable on websites and blogs from managers with practical involvement in project management professions sharing their thoughts and experiences on scope creep. Using the resources available, the author found that only a lesser amount of literature or frameworks examines scope creep.

Articles and papers which discuss scope creep are mostly related to IT and construction projects. Especially software projects are notorious for scope creep. The material on the subject in ABS-journals was often not be found in the title of publications but on subheadings in papers which discussed other matters related to scope creep in project management. The subject of scope creep is not quantified or made into a subject of its own by the existing body of knowledge, especially in PMI’s PMBOK. Textbooks and academic papers in the project management field mentions scope creep causes and effects but refer to obscure, outdated or references which is not considered academic but more or less personal anecdotes from professional experiences.

A probable reason scope creep is an under-researched, yet well-known phenomena can be rooted in the temporary nature and complexity of project management. The lack of focus on scope creep indicates that the phenomena needs to be shed light on, not only for filling a gap in the existing body of knowledge but to increase the awareness on the topic, and, hopefully, spark more interest and subsequent research into the area. The implications of scope creep are tremendous, ranging from increased work stress to bankruptcy to the drainage and misuse of public funds which could have found use elsewhere. By gaining awareness of scope creep, practitioners and contractors alike can be mindful of significant schedule pitfalls, cost overruns and loss of reputation.

The elusiveness of scope creep is also related to the human psyche and behavioral economics. Human beings tend to underestimate the downstream consequences when making changes on large and complex projects, where adding and removing specifications to the scope of a project seems to have no impact on paper or in the meeting room. The real consequences appear when a project reaches the execution phase. Before the execution phase, inhibiting scope creep is viewed as a preventative effort at the
planning stage. When the impact of scope creep hits the project organization, it might be too late to revert to the original specifications. Thus, on the surface, scope creep can be seen unavoidable and a natural part of projects. However, there are claims by authors and researchers that scope creep is preventable by proper scope and change management. These differing opinions inspired the author to investigate scope creep and the managerial perceptions thereof.

1.2 Motivation for Research

According to Kerzner (2017, p. 751), “There are three things that most project managers know will happen with almost certainty: death, taxes, and scope creep”. The amount of existing research investigating or even theorizing scope creep in project management is severely limited, yet a very familiar phenomenon. Moustafaev (2014, p. 3) melancholically informs that “the field of project scope management seems to be one of the most neglected domains in project management”. Padalkar & Gopinath (2016, p. 1314) literature review study found that out of 189 academic project management articles, there were no representations of studies regarding project scope in their sample. Padalkar & Gopinath (2016, p. 1315) further elaborates:

“Research attention on several PMBOK knowledge areas such as Quality, Scope, Integration, is minimal. This is surprising since these areas are often featured in studies on success or failure factors. For instance, scope creep is commonly listed as one of the causes of failure”

In the PMI PMBOK, the project management official body of knowledge, the word “creep” is only used in conjunction with scope, thereby “scope creep”. By counting the occurrence of words in the PMBOK, “creep” is mentioned four times, while “risk” is mentioned 1.463 times, “schedule” 990 times, “cost” 793 times and “quality” 748 times. This primitive semantic analysis can serve as a testament to how little emphasis is placed on the topic of scope creep in the standardized project management handbook.

Project management theory has remained mostly unchanged and that the origins of project management emerged in a period where change, complexity, and flexibility was far lesser than what it is today (Morris, 1994, p. 217). Laufer (2012, p. 5) puts project management in perspective in the sense that project management theory is in many ways “still stuck in 1960’s time warp” Lewin’s (1951, p. 169) famous argument that “nothing is as practical as a good theory” is countered by Ghoshal (2005, p. 86), suggesting that the obverse is also true, nothing is as dangerous as lousy theory. In the case of scope creep in project management literature, there is very little theory, which might, arguably, be better or worse than existing inferior academic theory. Hussain (2012, p. 74) found that 97% of construction projects experienced scope creep in some way or another. Farok & Garcia (2016, p. 16) notes that scope creep is the leading cause of project failure globally, an ironic statistic when taking Schoonwinkel & Fourie’s (2016, p. 27) finding into account that only 6% of project managers lists preventing scope creep as a method of risk management.

Andersen et al. (2011, p. 311) explain the assumption that to fully know a project scope in advance is a considerable limitation in project management theory. The researchers further argue that there is a broad consensus amongst authors that shortly after a project life cycle begins, scope changes reduce the efficiency of projects and often cause cost overruns. Madhuri et al. (2018, p. 69) study of scope creep in software projects led to the
conclusion that present project management strategies do not measure or predict scope creep in an effective manner. Nelson’s (2007, p. 73) study in the same field as Madhuri et al. found that scope creep did not make the top ten mistakes in IT project management, even though he states that scope creep is often cited in the literature as a causal factor of project failure. He further adds that one in four of the studied projects experienced scope creep. Kerzner (2014, p. 258) substantiates and underlines the previous arguments made by researchers that the neglection and underestimation of the seriousness, probability, and impacts of scope creep is widespread both in projects and project management theory.

1.3 Research Question

There were numerous gaps identified in project management by conducting a critical review of the existing managerial literature related to the research question. The author recognized a gap in the literature to which both sides of scope creep were discussed, but not how they relate to each other or how it may be perceived. Further investigation revealed that project practitioners usually have one out of two general perspectives on scope creep. Either, scope creep occurs no matter how well-planned the project scope is and needs controlling efforts as opposed to elimination. The opposing view is that scope creep usually occurs due to poor planning in the early stages of the project or a lack of adherence to the initial project scope as the project progresses. In other words, this perspective’s underlying assumption is that scope creep is preventable and eligible for elimination. On the grounds given in the background and motivational arguments for the research question, the author defines the main research question as:

*RQ: Why do project managers have opposing perceptions of scope creep in projects?*

Existing literature has expressed the different perceptions of scope creep. However, there is no literature as to why the phenomenon is perceived differently. Therefore, this paper attempts to answer the research question to not only add to the body of knowledge but provide project managers with applicable knowledge which any practitioner or researcher can use.

1.4 Research Question Aims & Objectives

The thesis intends to explore a highly specific topic in project management. This involves why scope creep occurs, the different managerial perspectives and perceptions of scope creep. The research aims to explore project managers perceptions of scope creep and what experiences might have shaped their viewpoint. In order to give context and more in-depth understanding of the research question, the following research objectives are made:

- Identify project managers perspectives, definitions and opinions of scope creep.
- Explore the different academic and managerial opinions scope creep causes, impacts and how it is related to scope change.
- Contribute to the project management body of knowledge by increasing awareness of what scope creep is, how it is perceived and how it is defined.

1.5 Literature Selection Methods

In order to define and specify the research questions and objectives for this paper, an extensive literature review on scope creep was carried out. The outlining parameters in
the collection of literature were as follows: language (English), subject area (scope creep, scope management), context (projects, project management) and literature type (articles from peer-review journals, project management textbooks, project management body of knowledge (PMI, APM) and other credible web-based material.

After outlining the parameters mentioned above, specific keywords were identified as an essential step to find the most relevant sources. The relevant keywords for finding literature on scope creep were scope creep, scope creeps, scope drift, scope management, scope in projects, scope creep in projects, scope change, scope change control, uncontrolled scope, uncontrolled scope changes, unauthorized change, managing scope, risk management, project risk, and scope. It is worth mentioning that the peer-reviewed articles on the subject were difficult to retrieve due to the phenomenon’s different names. Academic sources which discuss scope creep might overlook the term as it has not been referenced extensively in the relevant papers.

Besides, project management textbooks briefly mention scope creep while referring to outdated or physical articles which were not retrievable in any way. Such sources are cited in the citations. Through several platforms, the search for literature included using the online library databases such as Umeå Library Search Tool and Heriot-Watt’s Discovery. Furthermore, journals such as ScienceDirect and Emerald Insight were used extensively, supplemented by Google Scholar and Google which lead to material accessible through the university library portal. Sources of information are peer-reviewed articles, journals, e-books, textbooks, and dissertations. Some of the articles listed were in the ABS rankings, but due to the scarcity of information on the subject, some of the journals are not to be found in the ABS rankings.

After the literature review, a gap in the existing academic material was identified. The gap in literature was substantial enough to give room for a more extensive selection and choice of relevant research questions. Subsequently, the literature review led to modification and improvement of the formulated research question and objectives at the beginning of the thesis. However, as scope creep is under-researched and not a subject of focus within the project management body of knowledge, finding proper material on scope creep was challenging, as information is hidden behind ambiguous headlines and termed differently. Papers discussing scope creep, thus, might not use the term directly. Furthermore, the material on project management seems largely dictated by project manager experience in practice translated to comprise as a theory. Journals and academic articles often cite project management textbooks when substantiating claims or elaborating existing project management theory.


Academic literature on scope creep in projects often cite these textbooks extensively, as the authors are considered to be premier project management scholars, often basing their arguments on extensive professional experience in conjunction with the Project Management Institute’s Project Management Body of Knowledge Book (2017). As an
end note, the PMBOK serves as the literary foundation in defining and explaining project management practices and terms, albeit much supplementary material from researchers was included. PMI’s PMBOK is regarded as the industry standard for project management practice by the American National Standards Institute (ANSI), the Institute of Electrical and Electronics Engineers (IEEE) (Rozemeijer & Van Bon, 2007, pp. 135, 137) and the International Organization for Standardization (ISO) (Stellingwerf & Zandhuis, 2013, p. 93), rendering it as a highly reliable and credible source of material.
2. Theoretical Frame of Reference

The purpose of the theoretical frame of reference is to substantiate cases and interviews while at the same time justify the research question and how it contributes to the existing body of knowledge. In order to explore the phenomena which is scope creep, the theoretical frame of reference is structured as a reverse-pyramid. The structure initially presents project management in a broader sense, before closing in on the topic relevant to the research question. The argument for choosing this approach is to illustrate how scope creep relates to the all aspects of project management in a holistic view.

The theoretical frame of reference will focus on present project management practices and theory related to project scope and scope creep. The author begins with explaining what a project is and what it is not, while subsequently discussing the management of a project in a defining manner. Furthermore, the project life cycle is presented to assess at which phases of a project scope creep occurs. After the project life cycle phases, the theory moves to project management knowledge areas and in-depth exploration on the topic of scope management, scope statement and the WBS. For the second part of the theoretical frame of reference, the author discusses the definition of scope creep itself and what the difference between scope change and scope creep is. Finally, the causes, impacts, and perspectives on scope creep is discussed.

![Figure 1. Reverse-pyramid Structure of the Theoretical Frame of Reference](image)

2.1 Projects & Project Management

2.1.1 What is a project?
According to the Project Management Institute’s Project Management Body of Knowledge (PMBOK), a project is “a temporary endeavor undertaken to create a unique product, service or result” (PMI, 2017, p. 4). Projects are characterized by inheriting an
established objective, a defined life-span, the involvement of cross-disciplinaries and creating or providing the unique result. The identification by entities of unmet needs leads to the use of projects (Wysocki, 2011, p. 4). Projects are a critical component to generate organizational value in an environment where budgets are becoming increasingly tighter, timelines are shorter and resources scarcer. Projects act as the main driver of change in incumbent organizations by moving them from one organizational state to another through accomplishing deliverables and achieving specific objectives (PMI, 2017, p. 6). A project is under constant time, cost and quality constraints throughout the project life cycle (Larson & Gray, 2014, p. 5; Sokowski, 2015, p. 37). Effective project management, therefore, result in satisfied stakeholders and increased chances of project success while delivering objectives at the estimated time and cost. However, poorly managed projects have a reverse effect on the same success criteria of effective project management, which means time and cost overruns, insufficient quality, loss of reputation and disgruntled stakeholders (Meredith & Mantel, 2011, p. 31; PMI, 2017, p. 10).

Projects are not defined as routine or repetitive work (Larson & Gray, 2014, p. 6). For example, a T-shirt factory producing identical T-shirts will not be considered a project. This is because the same personnel produce an identical product and can, in theory, continue to do so indefinitely. In other words, a traditional retailer or manufacturing organization is not temporary, nor are the deliverables unique. On the other hand, two construction projects of two identical bridges are classified as two uniquely different projects. The bridges will not be in the same location even if nearby to each other and are therefore subject to external factors resulting in changes. The project organization responsible for the construction of the bridges is temporary – the workers and managers will disperse to different projects and departments after the project’s completion. Projects close when they have fulfilled their purpose and achieved the objectives stated in the project scope and accomplished the deliverables in the work breakdown structure (Sokowski, 2015, p. 37).

2.1.2 Project Management
While projects have been practiced for millennia throughout human history, it was only a couple of decades ago that systematic project management was put to use (Carayannis et al., 2005, p. 1). It dawned upon executives and managers that the existing traditional corporate bureaucratic hierarchy hampered the deep complexity of a project’s intertwined resources and requirements of competencies at the time (Kerzner, 2017, p. 1). This discovery sparked the development towards formalized project management beginning in the 1950s (Sokowski, 2015, p. 38). Wysocki (2011, p. 29) suggests that project management is “an organized common-sense approach that utilizes the appropriate client involvement in order to meet sponsor needs and deliver expected incremental business value”. A project is a collective term for work performed. Therefore, project management can, according to Sokowski (2015, p. 7), be considered a summarizing term for all the managerial effort of work performed in planning, organizing and executing the project. Elaborating further on Sokowski’s definition, project management, according to Kerzner (2017, p. 2) and PMI (2017, p. 10) is “the application of knowledge, skills and tools necessary to achieve the project’s requirements”.

2.2 Project Life Cycle Phases & Processes
A project has several distinct life cycle phases in project management literature. All the elements of a project adhere to one or more of the phases. To understand how the project scope and scope creep affects the project work and outcome, the author discusses the
different elements of the project life cycle and the overlapping or succeeding relations thereof. In order to achieve the desired objectives, project management literature dictates that a specific process has to be followed, called the project life cycle (Cleland & King, 1988, p. 19). The project life cycle can be described as “the series of phases that a project passes through from its start to its completion” (PMI, 2017, p. 19) and consists of five process groups, called phases. The phases serve as the building blocks of every project life cycle (Wysocki, 2011, p. 66). Furthermore, APM (2006, p. 80) suggests that depending on sectors and industries, all projects follow a life cycle, supported by Labuschagne & Brent (2005, p. 162) and Meredith & Mantel (2011, p. 11). The project life cycles’ five distinct phases are; initiation, planning, execution, monitor and control, and closing. Each life cycle phase has a specific purpose and is intended to be included and followed successively or overlap over the course of a project (APM, 2006, p. 81).

The five phases of the project life cycle mentioned above have the most substantial consensus in project management literature and will, therefore, serve the basis for the project life cycle. Although the different phases have different names in project management literature (Cleland & King, 1988, p. 211; Havila et al., 2013, p. 90; Labuschagne & Brent, 2005, pp. 162-163; PMI, 2017, p. 23) the researchers generally agree or include the standard Project Management Body of Knowledge’s (PMI, 2017, p. 23) project life cycles which is used in this paper. On the other hand, Kerzner (2017, p. 62) supported by Labuschagne & Brent (2005, p. 162) suggests that there is no official agreement in academics or industries to which life-cycle phases are standard. There is, however, some criticism of the project life cycle model. The biggest drawback is failing to take into account that the elements of a project are not static or linear but rather a large, complex and intricate system with a multitude of interacting and interdependent parts (Shapiro & Lorenz, 2000, p. 6). However, most academic models, no matter how large and advanced, oversimplifies the complex nature of any field in practice.

Project managers view the project life cycle as the cornerstone for managing projects. It reasonable to assume that the project scope, which is part of the initial stages of the lifecycle, constitutes as the most essential part of the cornerstone itself (Larson & Gray, 2014, p. 7). However, Wysocki (2011, p. 46) suggests that the linear, five-phase project life cycle which is the most prominent in project management literature and discussed later, is intolerant to project change. He argues that the lack of revision can lead to scope change, even though the linear life cycle it is intolerant to it. Shapiro & Lorenz (2000, p. 5), on the other hand, suggests that linear project management is deemed necessary for the prevention of scope creep, albeit insufficient for preventing the problem in its entirety. The different types of non-linear life cycles are discussed in section 2.2.6.

2.2.1 Project Initiation Phase

First and foremost, the initiation stage is a preliminary evaluation of ideas and the associated risk that the project might impose on the project organization and customer (Kerzner, 2017, p. 62). Poorly carried-out initiation phases and mistakes early in the project is deemed to have compounding consequences which can affect other well-defined parts of the project. The initiation phase specifies and defines the project as a whole based on its purpose, objectives and deliverables by greenlighting the other phases in the project life cycle, resulting in the creation of the project scope (PMI, 2017, p. 23). The overall feasibility a project is evaluated concerning resource limitations, time, objectives and strategic alignment with the organization (APM, 2006, p. 82; Meredith & Mantel, 2011, p. 39). As such, the project should be suitable according to the identified
resource constraints and the realistic benefits which the project might bestow on the customers or stakeholders (Kerzner, 2017, p. 2). The project scope is part of the initial project life cycle phase, exercising a tremendous impact on the rest of the project life cycle due to its roadmap function for the entire project. In addition to the creation of the project scope document, the formation of teams and assignment of main responsibilities also occur in this phase (Larson & Gray, 2014, p. 7), with the final preparations of the appropriate documents to certify, approve and commence the project (Kerzner, 2017, p. 3).

2.2.2 **Project Planning Phase**

The first phase in the project life cycle, the initiation phase, is followed by the planning phase (PMI, 2017, p. 23). The project scope is elaborated and outlined together with the refinement of the objectives and deliverables required to complete the objectives of the preferred solution as requested by the customer (APM, 2006, p. 84). In the project planning phase, communication is vital when evaluating and proposing solutions for a customer’s needs. (Wich, 2009, p. 2). The refinement of the planning phase is an iterative process (APM, 2006, p. 84) when establishing the resource requirements of different elements together with a realistic estimate through KPI’s (Key Performance Indicators) and CSF’s (Critical Success Factors) of schedule, budget, quality and performance (Kerzner, 2017, p. 62; Larson & Gray, p. 7; Meredith & Mantel, 2011, p. 219).

2.2.3 **Project Execution Phase**

The most significant portion of the project work is undertaken during the execution phase according to the outlined project scope in the initiation and planning phase (Pinto & Prescott, 1988, p. 9). Morris & Pinto (2007, p. 1) states that project success is the result of proper planning and proper execution, indicating that these two life cycles are the most crucial during the entire life cycle of a project. During the execution phase, the documentation produced from the previous phases are optimized (APM, 2006, p. 86). It is not only mechanical processes such as documentation which is assessed during the initial stages of execution. Decisions regarding organic and intangible assets such as team member negotiations also take place, along with delegating, directing and managing the work itself (Kerzner, 2017, p. 3). The physical manifestation of the project is then built, shaped or produced by working towards the established goals and requirements according to the project scope statement (Larson & Gray, 2014, p. 8).

2.2.4 **Project Monitor & Control Phase**

As the project progresses, the monitor and control phase overlap and runs in parallel with the execution phase. The monitor and control phase intrinsically revolve around the analysis of the deviations and discrepancies which might impact the work and adjusting the project accordingly (Kerzner, 2017, p. 3). The project manager keeps track of the progress and makes sure potential changes align with the predefined objectives, deliverables and strategy of the customer organization (PMI 2017, p. 23). The overall purpose of monitor and control is to minimize the risk that can occur during the project (Meredith & Mantel, 2011, p. 441). No matter how well-oiled the internal machinery of a project management organization is, unforeseen external factors are still likely to affect the project in some way or another. Corrective actions are required in order to control sudden or incremental deviations from the project scope (scope creep) by reports to the project team and stakeholders (APM 2006, p. 86). Regular review and regulation of project performance concerning cost, time and quality is essential in this overlapping phase. In addition to project performance, identifying the aspects of the project which are
subject to and benefits from change is advised for increasing the value which the project can and should produce (PMI 2017, p. 23). Lastly, the actual project outcomes are measured with the predicted outcome defined in the project scope.

### 2.2.5 Project Closing Phase

Towards the end of the project life cycle, the closing phase formally completes the project. It is comprised of three main activities such as handing over the project to the customer or integrating it to the organization, re-allocating project resources and formal gate reviews (Larson & Gray, 2014, p. 8). According to Kerzner (2017, p. 65), project closures are contractual gate review meetings which disseminate and analyzes the project life cycle to verify that the objectives and deliverables are completed in congruence with the project scope. Aside from the contractual review, an administrative closure follows with documentation and data gathered for lessons learned and deviations from the project scope.

![The Five Phases of the Project Life Cycle](image)

*Figure 2. Five Phases of the Project Life Cycle. (Adapted from Figure 1.1. in Larson & Gray, 2011, p. 7)*

### 2.2.6 Project Life Cycle Types

The five-phased project life cycle proposed by PMI (2017, p. 23) serves as a framework which is universally applicable to projects, regardless of details and can be specified by what the project management team decides is the most appropriate life cycle for their unique project (Meredith & Mantel, 2011, p. 11). However, project life cycles can deviate from the standardized five phases recently discussed in section 2.2.1 to 2.2.5. Project life cycles are adaptable towards specific industries, sectors or other factors (Labuschagne & Brent, 2005, p. 162). In essence, the chosen project life cycle type dictates how the project scope is determined and shaped concerning the objectives of the project.

There are numerous project life cycle approaches both in academic and non-academic project management literature, but due to the complex nature of projects, there is no agreement about a standard project life cycle. Specific project life cycles affecting the project scope are predictive, iterative, incremental, adaptive or hybrid models (PMI, 2017, p. 19; Wysocki, 2011, pp. 335, 340). The predictive and adaptive life cycles dictate and define the project scope in the early phases of the life cycle. Therefore, any changes
to the scope are precisely regulated and controlled. A hybrid model of the project life cycle is a combination of the two, where static requirements are aligned with the predictive cycle, and the evolving elements of the project scope are in line with the adaptive development life cycle (PMI, 2017, p. 19). On the other hand, and iterative and incremental life cycle does not define and dictate the project scope as time and cost are modified routinely or iteratively within specified time frames. However, while these alternative life cycles might have specific advantages and disadvantages compared to that of traditional project management methods, they are not investigated further.

2.3 Project Management Knowledge Areas

The project management knowledge areas are several interrelated areas of project management, defined separately by the different knowledge requirements and practices (PMI, 2017, p. 23). According to PMI’s PMBOK (2017, pp. 23-24) there are ten different knowledge areas in project management which PMI argue are used in nearly all projects. The ten knowledge areas are: project integration, scope, schedule, cost, quality, resource, communications, risk, procurement, and stakeholder management. For this thesis, the author has selected relevant knowledge areas from PMI’s PMBOK based on Sokowski’s (2015, p. 22) rationale to only address the appropriate project management knowledge areas leading to factors impacting managerial activity, which translates to the scope related aspects consistent with the research question. These knowledge areas include project schedule management, project cost management and, project quality management to substantiate the theoretical background for the research questions.

2.3.1 Project Schedule Management

Project schedule management is the processes required to manage the completion of the project on time within the given project constraints (PMI, 2017, p. 24). Furthermore, APM (2006, p. 36) suggest a different definition and argues that project schedule management is the identification of different activities in a project necessary to complete the work. In turn, the project schedule provides the project managers and organization with a detailed plan that presents the “how” and “when” of deliverables (PMI, 2017, p. 175). The schedule management plan is created by project team members in collaboration with stakeholders under the leadership of the project manager. The plan ensures that the formulated schedule is feasible, manageable and easy to update or change (Sokowski, 2015, p. 148). Furthermore, Wysocki (2011, p. 70) adds that project schedule management is not only a planning activity but can also serve as a platform of control throughout the project.

Scheduling methods such as Program Evaluation and Review Technique (PERT) Critical Path Method (CPM) together with specific data on the project before and after initiation are pooled together, creating a Gantt chart scheduling tool. The Gantt chart is a graphical representation of the timelines and their overlaps or successions, providing a visual overview of the project for straightforward control and modification while ensuring no task affects others in a negative manner (Meredith & Mantel, 2011, p. 335). These scheduling methods are used to break down complexity in projects by helping project managers to deal with all details involved (Shapiro & Lorenz, 2000, p. 8). Project scheduling should be carried out by the responsible individuals who are the most experienced in the related field or previous tasks with different competencies to ensure accuracy and realistic forecasts (Larson & Gray, 2014, p. 130).
The schedule is the prototype of the work breakdown structure (WBS). The Gantt chart then functions as the operational timetable. Different scheduling techniques usually form a network of activity, interrelatedness, and interdependence of all tasks into a graphic depiction of the overlapping and sequential relations between the task, work to be done and deliverables in a project (Meredith & Mantel, 2011, p. 336).

### 2.3.2 Project Cost Management

Project cost management is the planning, control, and management of project estimation, budgeting and financing (PMI, 2017, p. 24). Cost management is the practical application of monitoring and controlling running project cost (Wysocki, 2011, p. 70) and is reviewed regularly (APM, 2006, p. 40). The budgeting, estimation, and financing can provide a realistic image of actual work in progress, making problem identification straightforward while highlighting the relationship between cost and schedule performance (Kerzner, 2017, p. 502). Project cost management is, essentially, a plan for allocating resources and competencies while providing a more unobstructed view of the patterns the different constraints might impose on the project (Meredith & Mantel, 2011, p. 285).

However, cost management and control are not just recording and monitoring data to ensure the performed work is within the given constraints in the project scope. The analysis of the cost data enables preemptive detection and correction of scope deviations (Kerzner, 2017, p. 501). Larson & Gray (2014, p. 273) arguing that a failed schedule and cost management leads to project delays and cost overruns which is proven to manifest itself midway during a project consistently, thereby making quick alterations and improvement difficult. If a defined cost management plan is absent at the beginning of a project’s life cycle, the effort to plan, measure, report and control the costs can prove impossible for the project managers while at the same time preventing the project from staying within the budget or let alone establishing the budget at all (Sokowski, 2015, p. 140). Excessive trust in the accuracy of up-front cost and schedule forecast is a common occurrence while managing projects. Shapiro & Lorenz (2000, p. 11) warns that these expectations and assumptions are unrealistic due to the inherent nature of change in projects, further advising that plans ought to be inherently flexible for extension and change during review and regulation.

### 2.3.3 Project Quality Management

Project quality management is the incorporation of an organization or customer’s quality criteria during the planning, managing and controlling of a project in order to satisfy the stakeholders’ expectations (PMI, 2017, p. 24). Furthermore, quality management and customer requirements ensure that the outputs of the project are delivered and meets the needs of the stakeholders expressed in measurable terms (APM, 2006, p. 28). Despite the definitions from the official project management associations and institutes, the importance of quality in project management is not well-communicated (Basu, 2014, p. 178). Project management with focus on quality includes a broad spectrum of management issues, such as practical implications of project management practices (Anderson, 1992, p. 138). Focus on quality in projects are often not incentivized in projects. A lack of quality fixation stems from the project managerial assumption that quality comes as a result of control (Greiman, 2013, p. 318).

While defining quality in projects can be challenging, the definition of quality appears to be customer defined and driven (Kerzner, 2017, pp. 697-698). Furthermore, Kerzner’s (2017, pp. 697-698) claim that customers define quality is substantiated by Bubshait
(1994, p. 116) who suggests that owners have a high impact on quality, and owner involvement is essential to ensure quality. The project quality will suffer if the owner or related managers are not present and actively influencing decisions. The degree of owner involvement can is defined by the identification of important tasks related to quality (Bubshait, 1994, p. 117). Yaseen & El-Marashly (1989, p. 90) concludes that quality control in projects cannot be managed properly unless it is well-defined by customers. Quality in projects, therefore, relates to the definition of owners and customers to which the project is undertaken for by project managers. Bubshait (1994, p. 115) argues that quality in projects “is achieved if the completed project conforms to the stated requirements of the owner, the designer and the contractor”, making the perspective on quality wholly dependent on these three stakeholders in projects. On the other hand, Heisler (1990, p. 133) debates that ultimately, the project manager is responsible for the quality of the project. Quality should be a part of every project managers vision and not just a checkmark in processes and procedures (Greiman, 2013, p. 316).

2.3.4 Project Scope Management
Project scope management is deemed the most crucial project management knowledge area by the author on the grounds of the relevance of the research question and is, therefore, investigated more in-depth than the other knowledge areas. PMI (2017, pp. 23, 129) defines scope management as the processes required to guarantee the inclusion of all work required in order to complete the project successfully. However, project management researchers and academic literature employ a different view on project scope management, arguing that the primary concerns of scope management are the defining and controlling of what is included and excluded in the particular project (APM, 2006, p. 34; Larson & Larson, 2009, p. 5; Moustafaev, 2014, p. 13; Wysocki, 2011, p. 11). Kerzner (2017, p. 361) expands the definition in more general terms as work that must be completed to finish the project. Put in even more simpler terms by Wysocki (2011, p. 104), scope management must answer two questions: “What will you do?” and “How will you know you did it?”, anchoring scope management with monitor and control. As an amalgamation of the previous takes on scope management, Larson & Larson, 2009, p. 6 elaborates that scope management is the administering to ensure that all elements, objectives, and deliverables requested by stakeholders are satisfactorily taken care of.

Mirza et al. (2013, p. 722) suggest that the lack of proper knowledge, comprehension or defining a project scope at the beginning of a project leads to scope creep and is a significant contributor to project failures. The researcher’s arguments are also supported by Dumont et al. (1997, p. 59) study in the construction industry which found that poor scope definition is one of the leading causes of project failure. Farok & Garcia (2016, p. 16) goes further and notes that scope creep is the leading cause of project failure globally. According to the researchers, the most common causes of project failures are traceable to a lack of scope management and scope change control.

The main focus in the formulation of the project scope is the managerial identification and translation of client needs and requirements into documentation (Wysocki, 2011, p. 70). The client requirements are recommended to be quantifiable, measurable and verifiable in order to make them more traceable for root-cause identification in case the project deviates from the initial scope requirements (Larson & Larson, 2009, p. 6; Turk, 2010, p. 54). According to Khan (2006, p. 13) & Wich (2009, p. 2), the planning of a project scope is a summary of the WBS on an intermediate level which identifies deliverables to be accomplished by the project. As such, the project scope is a written-
down description of the end-result or the expected outcome of a project (Davis & Radford, 2014, p. 34; Larson & Gray, 2014, p. 102). Therefore, it is critical that the project scope statement is correct and as comprehensive as possible (Wysocki, 2011, p. 11). The contents of a project scope will vary by the type of project and that the progress of the project is confined to the defined boundaries at the project start (Kuprenas & Nasr, 2003, p. 1).

Previously, the project scope used to be perceived by project managers as a rigid and static target. The project scope is, instead, an evolving and naturally fluctuating target which lays the assumption that scope change is an inevitable occurrence (Davis & Radford, 2014, p. 34; Millhollan, 2008). The precise definition of the project through the scope statement is one of the first and most important tasks when planning a project during the initiation and planning life cycle phases, as the absence of clear definitions of requirements in the project scope is a consistent hallmark of failed projects (Larson & Gray, 2014, p. 102; Moustafaev, 2014, p. 210).

The most vital function of a project manager is the management of the project scope (Khan, 2006, p. 12). Hacker & Doolen’s (2007, p. 38) study underlines the importance of implementing a proper scope, concluding that the most frequent factor affecting project success is a poorly defined scope. Larson & Gray (2014, p. 102) adds to this finding, stating that 50 percent of planning problems relate to an unclear formulation of the project scope and goals. If scope management does not take place, it might lead to unclear change processes, resulting in scope creep (Larson & Larson, 2009, p. 6). The project scope statement is a document created as a result of the project scope requirements.

2.4 Project Scope Statement

The scope statement serves as the reference for future decision-making in case the scope has to be amended. Furthermore, the scope statement summarizes and clarifies the boundaries of the project such as time, cost and quality (Wysocki, 2011, p. 11). If the project boundaries are unclear, project managers are likely to devote excessive time and effort to identify and mitigate the factors causing scope creep (Burek, 2006). Besides serving as a roadmap and early plan for the project, the scope statement is also utilized to ensure that all internal and external stakeholders are familiar with the project’s technicalities and other valuable information (Farok & Garcia, 2016, p. 16; Greiman, 2006, p. 154; Kerzner, 2017, p. 361). The project scope, priorities, and WBS are crucial to every aspect of managing a project properly (Larson & Gray, 2014, p. 121). If the scope statement is inaccurate, subsequent alterations, statements, and estimates will propagate the original errors (Sokowski, 2015, p. 65) and can lead to exponential scope creep. If a project manager fails to formulate a wholesome project scope statement, the project is likely to be beleaguered by scope creep (Burek, 2006). Khan (2006, p. 12) clarifies that project scope management has the same components as the project life cycle, but the main difference is that the WBS interlinks the project life cycle elements. Larson & Gray (2014, p. 101) lists steps to create a structured approach for gathering information necessary to create a WBS, which Moustafaev (2014, p. 14) claims is the final output of the definition process minding the project scope statement. The steps are:

- Defining the Project Scope
- Establishing Project Priorities
- Creating a WBS
- Integrating the WBS with the organization
2.4.1 Defining the Project Scope
According to Martinelli (2016, p. 118), the most basic and crucial aspect of a scope statement is making it as resistant to unforeseen future changes as possible. The viewpoint should not be seen as a counter-argument to Davis & Radford (2014, p. 34) suggestion that scope change is inevitable, but instead a recommendation to evaluate every possible outcome and unforeseen events to make the impacts of scope change smaller and more manageable when it manifests. Larson & Gray (2014, pp. 102-103) provides a generic checklist to which the scope statement should;

- Define objectives to meet customer needs
- Deliverables of the expected outcome
- Milestones, categorizing significant events at points in time during the project
- Technical considerations ensure a smooth and satisfying performance
- The project’s limits and exclusions should be formulated to prevent false expectations
- Final review with the customer to ensure the agreement of expectations

2.4.2 Establishing Project Priorities
Priorities can differ from one project to another according to the unique needs of the customer or owner. Defining and agreeing on these priorities in the scope statement ensures that the right trade-off decisions are made if the project faces difficulties (Larson & Gray, 2014, p. 107). These prioritizations are set by the customer (Turk, 2010, p. 54). Examples of such prioritizations are to ask the customer simple questions. What is the most important of time, cost or quality? A change in project prioritizations as the project progresses might force a project manager or customer to choose one over the others, which will automatically de-prioritize the other prioritizations due to the project scope boundaries and limited resources. Wysocki (2011, p. 36) suggests that linking the project requirements to CSF’s can provide a prioritization baseline. Proper and unambiguous requirements is a necessity for avoiding scope creep (Turk, 2010, p. 54). Clear prioritizations are imperative when changes to the project scope occurs in order to put the appropriate measures into action to rectify the mistakes or deviations from the original scope statement.

2.4.3 Creating a WBS
After the project scope statement is formally approved, it is divided into activities and work packages. The work packages are natural subdivisions of cost accounts and tasks and is described merely as job assignments (Kerzner, 2017, p. 392). The work packages are outlined in a separate document termed the work breakdown structure (WBS) (Greiman, 2013, p. 162). The WBS serves as the primary tool for project scope management (Meredith & Mantel, 2011, p. 234) by decomposing and sub-dividing the work elements successively into increasingly smaller fragments which gives a clearer definition of work awaiting execution (Globerson, 1994, p. 165; PMI, 2017, p. 242).

As it provides a common framework of all the work involved in a project, the WBS is deemed the most crucial execution document, lying in the heart of project management and planning (Cleland & King, 1988, p. 72; Kerzner, 2017, p. 390; Khan, 2006, p. 12). The WBS aids in organizing and defining the total extent of work and time schedules of a project (Moustafaev, 2014, p. 239). The structure of the WBS directs attention to establishing realistic requirements (Larson & Gray, 2014, p. 121). One of the main
advantages a WBS provides the project organization with is breaking down the complexity of intimidating projects to manageable components and tasks (Leeman, 2002, p. 11), much like the adage that a whale is eaten piece by piece. The WBS is constructed as a hierarchical planning system (Meredith & Mantel, 2011, p. 232), usually depicted visually as a hierarchy tree. During the planning phase of the project, the WBS serves as a comprehensive directory of elements and tasks of the project (Wich, 2009, p. 2). Formulating the contents of a project in the early life cycle phases through the WBS is essential, as the definition of requirements and estimation of time and resources necessary to complete the project is made clearer (Globerson, 1994, pp. 165-166).

Globerson (1994, p. 171) metaphorically suggests that the WBS is the backbone of a project by providing proper planning, execution, and control of a project related to the project life cycle. If the WBS is not complete in detail, a gap of understanding in the project management organization will arise (Larson & Larson, 2009, p. 4). However, Leeman (2002, p. 13) emphasizes that the WBS alone does not determine duration or the sequence of tasks, but instead serves as the fundament for attaining the information required to do so. As such, the hierarchical process of dividing the work makes the WBS a detailed outline of the project at all levels (Larson & Gray, 2014, p. 108; Wysocki, 2011, p. 157). A fitting and flexible WBS secures the regulation, information effectiveness, and project control for all stakeholders (Globerson, 1994, p. 166). However, the WBS sees multiple uses in project management by not only serving as a planning tool but also one for monitoring and control. No WBS can suit all needs or give all the answers to a project manager. The WBS is created with specific uses and aims in mind. It is neither classified as a standalone document and it is intended to be used in conjunction with other plans and documentation to make it more detailed by putting it in a broader context (Meredith & Mantel, 2011, p. 235).

2.4.4 Integrating the WBS with the Organization
The WBS transforms into the organizational breakdown structure (OBS) by linking the work packages to the units and departments in the project organization which has the responsibility towards performing the specified work. Therefore, the OBS portrays how an organization has arranged, systemized and determined work responsibilities into a framework of sub-deliverables in smaller and smaller units (Larson & Gray, 2014, p. 113). Dividing project deliverables and work packages is a process called decomposition (Greiman, 2013, p. 163). If the WBS and OBS are highly detailed, the accuracy of project management increases in proportion to the level of detail (Khan, 2006, p. 12). As the name implies, the OBS is broken down to different levels, where the top level represents the organization as a whole and the top level the most substantial elements in the organization. Furthermore, the smallest pieces of work packages are broken down to the lowest level which usually are workgroups or individuals performing the actual work (Harrison & Lock, 2017, p. 111; Moustafaev, 2014, p. 239). The WBS and OBS intersection presents themselves as a collection of work packages deemed necessary to deliver the objectives while at the same time placing them in the organizational hierarchy (Larson & Gray, 2014, p. 113).

2.5 Scope Creep
The author aims to provide sufficient background on the topic of scope creep by presenting its differentiation between regular scope change. Furthermore, scope creep causes and impacts on a project are presented before exploring the academic perceptions of the two different perspectives on scope creep.
2.5.1 Scope Change
The term scope change is often used interchangeably with scope creep. The author, therefore, deems it essential to investigate and explain the difference between the two through the causes and impacts of scope change in projects.

Changes to the project scope does not necessarily mean it classifies as scope creep (Teye Amoatey & Anson, 2017, p. 395). Although changes to the project scope is considered to be inevitable by some researchers, so might the possibility of scope creep be (Larson & Larson, 2009, p. 2). On the other hand, Hussain (2012, p. 73) and Farok & Garcia (2016, p. 18) suggests that scope creep and scope change are entirely different. Changing the scope of a project is an official decision from the project manager, whereas scope creep is unofficial change to the scope that grows slowly and incrementally, thereby the name “creeping”. The unofficial, creeping nature of unauthorized scope changes is supported by Kerzner (2017, p. 751) who states that some project managers view scope creep as scope changes without approval.

However, in some instances, unauthorized changes to the project scope can yield positive results by changes presenting themselves as previously overlooked opportunities which adds value for the customer (Larson & Gray, 2014, p. 475; Orlando, 2013). Such opportunities are a natural part of the project evolution process, where the customer does not know what they want, leading to iterative methods and changes where positive project features are added (Kerzner, 2014, p. 258). An owner’s trust in project management teams can lead to freer project modifications if they see the need or situational timing to do so by gaining leverage room for more autonomous creativity and imagination to propose new scope changes (Wich, 2009, p. 3). Orlando (2013) goes as far as recommending scope change to be embraced on the pretense that the changes are defined, while scope creep is best avoided. Even though scope changes can prove to be positive for projects and the expected deliverables, there is research evidence pointing out that that the amount of change incurred on a project is negatively correlated with project cost and overall productivity of project team members (Ibbs, 1997, p. 308). Furthermore, Ibbs’ (1997, p. 308) quantitative assessment of project change impacts found that the amount of changes applied to a project is directly correlated to increased costs and decline in productivity. However, Ibbs (1997) discusses controlled change with negative results and does not qualify as scope creep.

Prabhakar & Quah’s (2008, p. 49) literature review on scope creep in software projects argues that scope creep holds praise by functioning as a perfecting-mechanism towards the end of the project, acting as a regulator for aligning project objectives with customer requirements. However, the arguments for scope changes and scope creep having a positive impact is grounded in internal factors. Scope change can also depend on external factors, errors or value adding features resulting in change. A change in scope always results in need of adjusting to the project baselines (Shirazi et al., 2017, p. 397). From a project management literature and practical perspective, the main difference between scope change and scope creep lies in the control and monitor phases of the project life cycle. Changes to the project scope ought to be a controlled modification by the project managers (Madhuri et al., 2018, p. 71) and could happen at any point in time or phase in the project life cycle. Scope creep, on the other hand, due to its unauthorized and uncontrolled nature, usually manifests itself in the early phases of the project (Larson & Gray, 2014, p. 475). However, Schoonwinkel & Fourie’s (2016, p. 28) findings from their
analysis on scope changes in construction projects indicate that project managers in practice do not manage or record changes appropriately, failing to assess the impacts of scope change regarding risk, cost and time.

Meredith & Mantel (2011, pp. 159, 496) suggest that regardless of how detailed a project is planned, scope changes before project completion are almost guaranteed. Similar to that of Meredith & Mantel, Kerzner (2017, p. 751) notes that scope changes happen due to the human nature of not being able to completely comprehend, or even less so, entirely describe a project at the very start, especially on larger, complex projects. Scope creep usually results in formalized scope change for rectification, and the reverse can also occur. Scope change can transform itself to scope creep if the intended changes are not correctly managed, thereby preventing the project from completing its objectives (Love et al., 2002, p. 425).

2.5.2 Scope Creep Definitions
In order to properly discuss and assess scope creep before proceeding to the perspectives thereof, the author examines the definition of scope creep. The process of defining scope creep is carried out in order to bring clarity to what is discussed, reducing misconceptions on the topic further in this thesis. According to existing project management literature, the definitions are varied and somewhat disputable as to the causes and extent of scope creep in projects.

While scope change is a natural occurrence in projects since the inception of project management practices, the term scope creep seems to have its origins in the early and mid-1990’s. There was no agreed use of the term in the 1980s (Larson & Larson, 2009). Albeit there are some indications in paper-only literature, these papers are excluded. The first mention of scope creep can be found in Johnson (1991, pp. 25, 258), although without further explanation of what scope creep involves. Golan & Ziarko (1995, p. 71) and McIntosh (1995, p. 28) provides a definition that “scope creep evolves from the improper management of expectations of the user or expert and moving project goals or changing objectives”. However, Hurst & Hanessian (1995, p.109) report regarding IT outsourcing is the first article to highlight that scope creep is a negative event, arguing that “all projects must be linked to specific business objectives to prevent scope creep”. APM (2006, p. 158) defines scope creep as “the term sometimes given to the continual extension of the scope of some projects” also adopted by Kerzner (2017, p. 751). APM’s definition bases itself on the assumption that it happens sometimes in projects and only extends the scope of these projects. The APM definition neglects cost and quality aspects which other literature takes into consideration. PMI (2017, p. 722) employs a wider definition of scope creep as “the uncontrolled expansion to product or project scope without adjustments to time, cost and resources”. The PMI definition includes cost and resources as opposed to APM with emphasis on the words uncontrolled expansion.

Scope can creep manifest itself in different ways, but no matter how scope creep embodies itself in the various phases the project life cycle, scope creep is deemed detrimental, especially to the overall project budget and schedule (Kuprenas & Nasr, 2003, p. 1). Orlando (2013) recommends that scope creep should be averted due to its inherently harmful properties to which it might bestow on a project. Larson & Gray (2014, p. 105) supported by Farok & Garcia (2016, p. 15) found that many projects do indeed suffer from scope creep, noting that scope creep is the tendency for the project scope to expand over time. Researchers make the argument that changing requirements,
specifications and priorities is usually the culprits behind scope creep (Greiman, 2013, p. 169), a statement which is more in line with PMI’s definition and countering APM’s stance that it only happens sometimes to some projects.

Meredith & Mantel (2011, p. 22) and Teye Amoatey & Anson (2017, p. 395) formulates a narrower description of scope creep as a frequent disruption to projects, arguing that scope creep is the tendency for project objectives to be changed by management or stakeholders without prior notification or discussion with other parties involved in the work of the project. Sokowski (2014, p. 7) take on scope creep is that the phenomena occurs as a result of an undocumented and stepwise expansion of the original scope without predetermined agreement towards scope change while Greiman (2013, p. 446) adds to this definition that the uncontrolled growth is due to changing requirements with an emphasis that these changes are carried out without considerations to the potential impacts on the organization’s resources or project schedule. Wysocki (2011, p. 33) follows the same line as Sokowski, but elaborates that the unauthorized changes are due to unnoticeable actions of project team members. Kerzner (2014, p. 264) calls scope creep a necessity due to the dynamic nature of projects, but must, however, be controlled.

With the researcher’s viewpoints and definitions as mentioned above on how scope creep can be defined, the project management literature on scope creep definition varies, but generally points in the same direction albeit using different words and language. The consensus lies in the conclusion that scope creep has negative impacts on projects, the project management organization and customers (Teye Amoatey & Anson, 2017, p. 398). While scope change is familiar, the uncontrolled nature of scope creep denotes a highly negative association and stems from changes within the project’s organization. Based on the previous scope creep research and the definitions thereof, Teye Amoatey & Anson’s (2017, p. 396) literature review on scope creep concludes that "scope creep could be viewed as any uncontrolled and unexpected changes in project requirements that extend the initial boundaries of the project". The given definition is additionally supported by Inder & Rivera (2007, p. 1). The author of the thesis deems Teye Amoatey & Anson’s (2017, p. 396) take on scope creep as the best-suited and summarized definition of scope creep. The definition contains the most essential elements from previous researchers’ definitions in this subchapter.

2.5.3 Impacts of Scope Creep
Project management literature widely accepts that scope creep, in most cases, results in added cost and project delays (Greiman, 2013, p. 169; Larson & Larson, 2009, p. 1; Larson & Gray, 2014, p. 105; Moneke & Echeme, 2016, p. 172; Sliger, 2010). However, Kerzner (2017, p. 751) suggests that scope creep can be detrimental to a project’s success because scope deviation leads to increased costs and delays. Prabhakar & Quah’s (2008, p. 49) literature review on scope creep in software projects states that the most common negative consequences are missed deadlines and over-spending. Wich (2009, p. 3) proposes that a wandering scope will not only affect cost and time but is catastrophic in every imaginable aspect of a project. The researcher further argues that the most harmful aspect of uncontrolled scope is the increased project cost. On the other hand, scope creep can in some instances lead to unforeseen scope modifications which yield better results by giving products a competitive advantage (Kerzner, 2017, p. 751).

Besides cost overruns and delays, scope creep makes the project quality poor (Moustafaev, 2014, p. 315). As mentioned in chapter 2.3.3, if the customer definitions of
quality are ambiguous, it can ultimately ruin the project in the eyes of the customer even though instructions were followed by the project management organization. Scope creep in specific areas of a project can have a significant impact due to the interdependent nature of project life cycles and objectives, thereby influencing other areas in the project (Madhuri et al., 2018, p. 82). These dependencies are one of the primary causes for the severe financial impacts scope creep has on projects, as the overturn of previous scope change decisions are proved to be costly (Kerzner, 2014, p. 261).

As such, scope creep is a self-perpetuating cost factor leading to even more scope creep by compounding problems as the project progresses. With a widening scope due to scope creep, the intricacy of interactions and interdependencies amongst work packages and tasks in the WBS grows until it causes project delay, further aggregating pressure on the project organization. The increased pressure can, in turn, lead to even more unauthorized decisions in and in-between departments. The accuracy of cost and schedule estimates are thereby diminished, resulting in more scope creep than initially identified (Shapiro & Lorenz, 2000, p. 4).

2.6 Scope Creep Causes

2.6.1 Project Life Cycle
The point to which scope creep manifests itself in the project life-cycle is somewhat ambiguous and debated in research the literature. As previously mentioned, scope creep shows in the early phases of the project according to Larson & Gray (2014, p. 475) while Davis & Radford (2014, p. 92) and Kerzner (2017, p. 751) suggests that scope creep can occur during any of the project life cycle phases. Barry et al. (2002, p. 117) takes an external stance on scope creep and suggests that scope creep is the result of the incremental changes to project requirements. These changes originate as a response to the ever-changing environment surrounding the project across the entire project life cycle. The researchers further argue that the size of projects grows with scope creep, resulting in higher project efforts. Therefore, the environmental rate of change dictates the amount of scope creep and project duration. Kerzner (2014, pp. 261-263) lists several topics on the potential causes of scope creep, which are highlighted in the next subchapters. Kerzner’s extensive list serves as the topic categorization basis for assessing the different elements and causes leading to scope creep. Some of his definitions are used as explanatory aid where other researchers contemplate specifics or fill gaps in these topic areas.

2.6.2 Poor Scope Definition
A poor scope definition and WBS leads to assumption-making in the project organization (Kerzner, 2014, p. 262) In its most rudimentary sense, a too-broad scope statement is an open invitation for scope creep (Greiman, 2013, p. 169; Larson & Gray, 2014, p. 105, 477). While the scope can be formulated in a too-broad sense, the consensus amongst researchers strongly indicates scope creep occurs as a result of a poorly defined scope, either by the customers or project managers (Carkenord, 2014; Farok & Garcia, 2016, p. 16; Hacker & Doolen, 2007, p. 38; Larson & Larson, 2009, p. 2; Shirazi et al., 2017, p. 398; Teye Amoatey & Anson, 2017, p. 396). In the instances of a too-broad or poor scope definitions, both serve as high-potential breeding-grounds for creating a vacuum to be filled of misunderstanding requirements and what the intended results of the project are, steering the project into unfamiliar directions. Davis & Radford (2014, p. 99, p. 184) notes that ambiguity in projects is a direct result from a poorly defined scope statement.
2.6.3 Poor Communication

A weak or broad scope definition is likely to affect communication negatively as a consequence. Scope creep stemming from a poorly defined or too-broadly formulated scope can cause misinterpretations in the project organization and ill-defined requirements (Kerzner, 2014, p. 262; Turk, 2010, p. 54). Misinterpretation can derive from the mixing of tasks, use of imprecise language, lack of patterns, structure or a clear chronological work assignment order like the WBS (Inder & Rivera, 2007, p. 2). Furthermore, considerable variation in task sizes and work description within these same tasks is a factor which can lead to misinterpretation. Furthermore, the lack of a third party or a change management team to review the project progress and scope worsens communication efforts. Other identified communication-related causes of scope creep are the lack of procedures for managing change, lack of risk analysis and a lack of a formal communication plan. The absence of these formalities and plans can make the scope challenging to control by presenting a confusing set of documents leading the project team to rely on assumption-making (Inder & Rivera, 2007, p. 2). Poor contingency planning and formal communication may make essential information to decision-makers unavailable which could influence them to make conclusions on false or inaccurate grounds.

Furthermore, miscommunication can happen by a project manager’s unwillingness to say no to clients, stakeholders or project team members with the intention to a please (Turk, 2010, p. 53). Another line of thought regarding the integration of proposed ideas, Baker (2006) suggests that by unconditionally saying no to all requests for change will eliminate scope creep. Although saying yes and accepting change on behalf of project team members and customers is well-intentioned, failing to take into account the impacts of accepting seemingly small change requests without officially communicating the changes to the scope is a significant factor for enabling scope creep. The consequences of accepting change and not communicating the agreed changes affect the sponsor, project team and stakeholders by unknowingly forcing longer work hours in addition to increased costs and delays for the project customer (Zimmerman, 2000, p. 18). According to Abramovid (2000, p. 44, cited in Inder & Rivera, 2007, p. 2), internal and external factors include changes in requirements from customers, environmental circumstances and a poor understanding of the points above before formulating the scope statement.

While Abramovid (2000, p. 44) emphasizes the importance of communicating scope changes, Teye Amoatey & Anson (2017, p. 395) presents a different angle on project communication. Low stakeholder involvement in combination with a lack of a proper communication plan plays a role in increasing the likelihood of scope creep by producing uncertainty and ambiguity. If these are circumstances surrounding the project, unauthorized or uncontrolled decisions and changes are not sufficiently communicated or conveyed at all. The researchers further state that scope creep originating from scope change stems from the inability to make other parties in the project organization aware of the changes. Furthermore, changes without an official agreement in conjunction with little to no review or acceptance of the potential impacts serves as an aggregator of scope creep. Irregular communication to sponsors and stakeholders may lead to disinterest and a lack of involvement. Such events are ranked as the top and second main reasons for project failure (Larson & Larson, 2009, p. 7). Disengagement in the project due to poor communication creates voids to which the project management team has to fill in the blanks by themselves. In turn, the detached and independently proposed changes from an uninformed project team could be perceived as unauthorized or unwanted in the eyes of
the stakeholders. The communicative dissonance between the project manager and stakeholders increase both scope creep and the potential for internal conflicts.

2.6.4 Neglecting Stakeholder Requirements and Expectations

The lack of stakeholder engagement or stakeholder ignorance of the project scope can lead to scope creep as suggested by Hussain (2012, p. 76). The suggestion is in line with Bellenger’s (2003, p. 58) engineering perspective, proposing that scope creep can occur by unforeseen conditions and inexperienced clients without proper knowledge of the project’s technical processes. Inexperience and insufficient knowledge result in a poorly and inaccurately formulated scope document. Furthermore, not only stakeholder engagement and inexperience affect the scope. Internal stakeholder disagreement and failure to include relevant stakeholders in planning can play a crucial role for enabling stakeholder related scope creep (Carkenord, 2014). On the other hand, Larson & Gray (2014, p. 405) specifies that strong customer interest leads to excessive scope creep by taking precedence over the parent organization’s interests. However, scope creep can be positive in the eyes of stakeholders and sponsors, only intending to do good for the project by adding value or supplying a better way to perform work which could potentially solve a problem. However, progressive and incremental idea-generation can make project managers fail to consider the potential long-term impacts the changes and ideas can have (Walker, 2012).

A bright and complete formulation of the project scope is still not enough to minimize scope creep if project managers ignore stakeholders opinions and concerns (Greiman, 2013, p. 169). Failure to understand what is in the customer’s best interest or managing their expectations in the initial phase of the project life cycle can lead to costly downstream changes (Kerzner, 2014, p. 262). The project managers likelihood of encountering scope creep is reduced if there is a good understanding of what the stakeholders wish to see completed according to Farok & Garcia (2016, p. 18). Sponsors and stakeholders typically tends to expect that others will match their level of understanding of the scope, where the underlying assumption is that the different aspects of the scope are self-explanatory to project managers regardless of quality (Larson & Larson, 2009, p. 4).

2.6.5 Project Organization Systems

Moneke & Echeme’s (2016, p. 172) cause and effect analysis indicate that the underlying project management processes and systemic problems are the enabling factors of scope creep by allowing it to culminate and eventually harm a project. The study, therefore, dismisses external factors as causes of scope creep. Shirazi et al. (2017, p. 398) further list poor information transformation, external and internal changes and unmanaged expectations as the main reasons for scope creep. On the notion that scope creep can stem from systemic and procedural issues, the assumption that projects are only manageable by its individual parts leads to a narrow managerial perspective, failing to see minor changes and the subsequent impacts on the project in a holistic view (Shapiro & Lorenz, 2000, pp. 4-5). These minor and “foggy” changes may seem small by looking at the project’s smaller parts but can, in reality, lead to cost overruns, increased project complexity and extension of the project scope. Shapiro & Lorenz (2000, pp. 3-4) notes that project managers excessive faith in the accuracy of the project schedule and cost predictions leads to overestimation. If a project has become subject to delays and increased costs during project reviews, project managers might add or remove project
features in an exaggerated or panicked response to the information derived from project review updates.

2.6.6 Underestimating Complexity
Large and complex projects such as megaprojects are more prone to scope creep due to the sheer size and complexity which usually involves rework to some extent according to Greiman (2013, p. 169) and Farok & Garcia (2016, p. 19). The larger the project, the larger the ambitions might be, leading to overconfidence in the estimation of realistic achievements (Kerzner, 2014, p. 262). Hussain (2012, p. 78) counters Greiman’s argument by stating that there is an inverse relationship between the size of the project and the direct cost of scope creep. However, Hussain adds that in the context of construction projects, this is likely due to the hiring of a professional external project manager for megaprojects. The complexity of larger projects can create a “fog of war”, where downstream effects of decisions are not visible, even though they are deemed positive at the time and point in the organization where the decision is made (Kerzner, 2014, p. 261; Shapiro & Lorenz, 2000, p. 4).

2.6.7 Lack of Change Control
A weak or lenient change control process will be unable to perform its reason for existence, to prevent unnecessary changes leading to continuous scope creep (Kerzner, 2014, p. 262). A formalized framework of change control is imperative for preventing scope creep from occurring by acting as the first line of defense against unauthorized and uncontrolled changes (Nielsen, 2011 & Salapats, 2000). If approval and review processes are lacking, the acceptance criteria of change are non-existent, and project team members are free to make unnoticed changes (Turk, 2010, p. 54). A lack of change control diminishes the value of the implemented changes to stakeholders, and without proper documentation, the reflection of these unauthorized changes will materialize in the final cost account of the project (Wich, 2009, p. 3). The event of unauthorized changes to the project scope is one of the critical issues to whether the scope change will lead to scope creep (Larson & Larson, 2009, p. 2).

2.6.8 Perfectionism
Perfectionism can occur by project team hubris, causing scope change to exceed specifications and requirements in the project scope further instead of achieving deliverables and objectives in the agreed manner and terms (Kerzner, 2014, p. 262). Inder & Rivera (2007, p. 2) suggests that project engineers are perfectionist individuals by nature, which can lead to scope creep by excessive focus on perfecting parts of the project instead of focusing on the project as a whole.

2.6.9 Other Causes of Scope Creep
Hunsberger & Gibson (2011; 1998, cited in Meredith & Mantel, 2011, pp. 497-498) suggests that internal jealousy, mistrust, and conflict between departments can lead to uncontrolled scope creep, in addition to lesser involvement of stakeholders in the later project life cycle phases. A lack of managerial information, poor understanding of the original project and conflict in the decision-making process are other lesser-known perpetrators of scope creep (Farok & Garcia, 2016, pp. 18-19).
2.7 Perspectives on Scope Creep

The different perspectives on scope creep lies at the heart of this thesis and theoretical frame of reference. Academic project management literature on the perspectives of scope creep, as with the definitions thereof, varies to a great extent. During the literature review, the author has found that the two predominant stances regard scope creep as either inevitable and must be dealt with when it occurs, or that scope creep is entirely preventable by proper scope definition and proper change management. However, the literature on these perspectives is ambiguous and lacking, as no studies are devoted to discussing this specific issue. In turn, the theories concerning perspectives on scope creep will serve as the basis for answering the formulated research questions and objectives for this thesis.

PMI’s PMBOK (2017) does not take an implicit stance regarding the viewpoint on scope creep. According to APM (2006, p. 35), the scope is monitored in order to ensure that scope creep does not occur at all, meaning that the APM stance on scope creep is that it can be eliminated by sufficient planning. The stance carries the implication that projects which experience scope creep are faulty themselves by not monitoring or defining the project scope thoroughly enough in the initiation and planning phase of the project life cycle.

2.7.1 Inevitable but Controllable

It appears to be a broader consensus in project management literature that both scope creep and scope change are interlinked and inevitable. According to several researchers and authors, scope creep is a natural occurrence in projects and argues that project managers must accept the fact that it is bound to happen in any project (Greiman, 2013, p. 166; Meredith & Mantel, 2011, p. 498; Walker, 2012; Wysocki, 2011, p. 11). On the other hand, Kerzner (2017, p. 751) somewhat sarcastically argues that project managers who believe that scope creep are preventable do so by using “magical charms, potions and rituals”. The author dismisses the rationale that scope creep is preventable as simply not true and opposes the idea that scope creep is preventable in its entirety. Lamont (2013, p. 2) follows the same hard line as Kerzner and states that the hazardous effects of scope creep are not preventable and that the belief of doing otherwise is nothing else than “wishful thinking”. However, the researchers and authors provide little arguments as to why others have a different take on scope creep or fail to discuss hallmarks and commonalities of projects devoid of uncontrolled changes.

Since change in a project is constant, scope creep will also be an inevitable occurrence, and the expectation otherwise is unrealistic (Wysocki, 2011, p. 33). This stance is further substantiated by Teye Amoatey & Anson (2017, p. 398) who suggest that the complete prevention of scope creep can prove to be a near impossible task and if so, tremendously difficult. In their analysis of the top five causes of scope creep, Larson & Larson (2009, p. 2) found that scope creep is inevitable and impossible to control. Perhaps most pessimistic of all regarding scope creep in projects, Voetsch & Myers (2005) suggests that because scope creep is inevitable and unavoidable, all projects will result in the overrun costs and time, unless the primary objectives become unachievable because of extreme project obstacles. However, there are rich examples of successful projects which makes Voetsch & Myers (2005) argument dismissive. Academic literature arguing for scope creep’s inevitable nature are somewhat conflicting in their arguments and
reasoning. The prevention of scope creep is not possible in all cases dependent on the type of project, size and other unique traits to the original project (Farok & Garcia, 2016, p. 16). However, the researcher’s paper concludes that scope creep is a factor which has to be removed from the project equation, giving conflicting opinions on the subject. Larson & Larson (2009, p. 9) contradicts their own suggestion that scope change is inevitable and so is scope creep, by later arguing that scope creep is not inevitable.

### 2.7.2 Preventable
The perception that scope creep is preventable carries more implications than the arguments that scope creep is inherently inevitable. The project management literature that defend the possibility of preventing scope creep, specific methods and measures for doing so are presented. The author of this thesis, therefore, deems it necessary to include researcher’s arguments as to why and what measures the researchers present that allegedly prevents scope creep.

Scope creep is preventable by keeping regular reviews of the project scope and project progress to assess the alignment of project scope and project outcomes (Davis & Radford, 2014, p. 130). APM (2006, p. 33) underpins this claim by suggesting that scope monitoring ensures that scope creep cannot occur. On the other hand, there are indications that a well-written scope is sufficient enough to avoid scope creep (Bellenger, 2003, p. 58). The assertion that scope creep is preventable or does not have an influence on projects is also noted by Madhuri et al. (2018, p. 72) on the presumption that the agile project management model is used. The claim that agile project management is the cure for scope creep is supported by Sliger (2010). On the other hand, according to Hunsberger (2011, p. 48), whether a project manager uses traditional or agile project management methods, scope creep still needs control management to harness it. The topic of traditional project management versus agile project management methods remains debatable. Moneke & Echeme (2016, p. 172) provides another angle to the topic of prevention. The researchers claim that total prevention of scope creep is advantageous over solving it by managerial efforts, thereby fortifying the viewpoint that scope creep is indeed preventable.

Inder & Rivera (2007, p. 4) identified data-driven risk-analysis as preventable measures against scope creep by laying the groundwork for more well-informed decisions, preventing uncontrolled spirals of change and finally argues that “prevention is the best medicine”. Further arguments for eliminating scope creep entirely is made by Barry et al. (2002, p. 134) who demonstrates that project managers should employ time-limits extensively, thereby enabling the scoping of projects within a tightly defined and controlled planning horizon, resulting in realistic time-spans. Doing so, according to their research, will prevent scope creep. Although vague in the arguments as to which measures are appropriate against scope creep that makes it preventable, Prabhakar & Quah (2008, p. 49) notes that preventing scope creep is possible if the correct measures are performed at the initial phases of the project.

### 2.8 Theoretical Background Summary & Research Gap Identification
Project management as an academic field is relatively young in comparison to other business management related fields. The discussion of scope change and its subsequent impacts on projects is not a new phenomenon nor unfamiliar in early project management literature (Cleland & King, 1988; Pinto & Prescott, 1988). However, the term scope creep
and its unauthorized and uncontrollable nature seem to have emerged in the research literature in the early-to-mid-1990’s (Golan & Ziarko, 1995, p. 71; Hurst & Hanessian, 1995, p.109; McIntosh, 1995, p. 28).

Significant effort is made by the author to explore scope creep in academic literature to illustrate what the term involves and implies. Much of the literature on scope creep lists the same causes and impacts on a project, therefore resulting in a broader consensus on specific claims about scope creep as shown in the various parts of the theoretical frame of reference. As scope creep is under-researched, the author of this thesis deems a wider consensus on specific topics as an indication that the claims are valid and reliable. Viewpoints on scope creep causes and impacts is, therefore, not great in variation. There is, however, an extensive amount of non-academic material concerning scope creep, although limited in its use in the theoretical frame of reference. Several research papers discussing scope creep as the main topic originates mostly in the construction and IT development sector. Furthermore, it is evident that scope creep is linked with the project life cycle, scope management, scope statement and the subsequent WBS that results out of these natural project management processes.

While scope creep is a topic frequently mentioned in project management literature, there is no specific methodology or techniques on to how to handle or recognize scope creep. Scope creep is, however, defined by the same literature, often in greater detail. In summary of the theoretical frame of reference, the largest gap of academic literature on scope creep is the researcher’s perspectives on scope creep. Almost an equal amount of literature argues that scope creep is either inevitable or preventable. Furthermore, the researchers often do not provide substance to back their views on the subject. Therefore, the perspectives on scope creep as either inevitable or entirely preventable has presented itself as the research gap to which this thesis explores further.
3. Theoretical Methodology

This chapter gives a robust analysis and outlines the philosophical and theoretical perspectives undertaken in this study. The philosophical topics of ontology, epistemology, and axiology is justified. Besides, a detailed elaboration of the research approach, strategy and design is discussed by the author. Saunders (2009, p. 108) graphic depiction of the research onion will serve as the base of detailing the different steps behind the considered research philosophies.

![Research Onion Diagram](image)

*Figure 3. Research Onion. (Adapted from Figure 4.1, “The research onion” in Saunders, 2009, p. 108)*

3.1 Research Philosophy

The adopted research philosophy involves assumptions about how and in which way the world is viewed by an observer. As a consequence, these underlying philosophical assumptions will substantiate the research strategy and methods as a part of the research strategy (Saunders, 2009, p. 108). Any research project can benefit from a clear outline of the project in order to give substance for claiming to know what is known (O’Gorman & MacIntosh, 2015, pp. 52-53). The outline is of great importance as it affects not only how research is carried out, but also in order to sufficiently comprehend what we are investigating (Saunders, 2009, p. 108). Therefore, it is not about the degree to which research philosophy is used, but the ability to demonstrate and display the philosophical choices made while at the same time defending why other philosophical choices where not adopted. Research philosophy is influenced by the viewpoint of the relationship between knowledge and the development processes of the very same knowledge (Saunders, 2009, p. 108). Furthermore, there is no “better” philosophy than others as they
each serve different purposes and cannot be measured directly. In essence, it is how the philosophical choices are reflected in research (Saunders, 2009, p. 108).

Pragmatism, or rather, what the research question involves, is the most critical factor when deciding which type of epistemology, ontology, and axiology is adopted (Saunders, 2009, p.109). What the research question involves, is the most important factor when deciding upon which epistemology, ontology, and axiology are adopted (Saunders, 2009, p.109). Pragmatism is, therefore, an argument that a mixed methods approach with different variations in epistemology, ontology and axiology is acceptable. The three different and determining ways of research philosophy previously mentioned is discussed further in the subchapters concerning ontology, epistemology, and axiology.

3.1.1 Ontological Considerations
Ontology is the theory about how reality and things are interconnected, the nature of reality and social entities, which naturally leads to raising questions about how the world operates and commitments to particular views (Saunders, 2009, p. 110, Bryman & Bell, 2011, p. 20). Furthermore, ontology specifies whether the world is looked at through an objective or subjective lens (O’Gorman & MacIntosh, 2015, p. 55). Subjectivism and constructionism are two different terms for the same thing, and the author has chosen to employ the term “constructionism”. There are two ontological considerations, which is objectivism and constructionism (Bryman & Bell, 2011, p. 20).

Objectivism involves looking at social circumstances, such as organizations and cultures which can be viewed as external forces that objectively affect humans, since it is beyond their reach or influence (Bryman & Bell, 2011, p. 21). It can be thought of as investigating the reality of solid objects that exists independently of our perception of it (O’Gorman & MacIntosh, 2015, pp. 56, 57). The opposite approach is constructionism, which investigates the same reality, but is instead composed of the perceptions and interactions of living subjects which lays the assumption that our perceptions shape reality (O’Gorman & MacIntosh, 2015, p. 56, 57). Human-beings are instead considered to create and influence the surrounding environment, organization, and culture (Bryman & Bell, 2011, p. 22). The constructionist way of influencing the environment stems from perceptions and following actions of social actors (Saunders, 2009, p. 111). By these definitions, managerial perspectives on scope creep is in line with constructionism, as it is the managers own internal perspectives which is researched and not the external factors imposed on them.

The author of this thesis aims to describe a specific version of social reality, in a non-definitive construction, resulting in this thesis to have the ontological position of constructionism (Bryman & Bell, 2011, p. 22). The research question is linked to the worldview the author wants to present based on project managers views on scope creep. It is an attempt to understand and explain how the managers perceive the occurrence of scope creep. The presentation the author makes in this paper is based on his ontological position and cannot be thought of as a fact or a definitive description of how something is. It is not possible to make a static constructionist world-view of social interactions because, much like a desert, social environments are continually changing and different in each given time and separate situation.
3.1.2 Epistemological Considerations

Epistemology is learning about issues of what is thought to comprise acceptable and obtain valid knowledge which concerns specific disciplines or fields of study (O’Gorman & MacIntosh, 2015, p. 58; Saunders, 2009, p. 112). The central epistemological question is whether or not the intangible social reality can be studied with the same principles used in natural sciences (Bryman & Bell, 2011, p. 15). If there is clarity about how valid knowledge is obtained, the subsequent claims about any earned knowledge is made clear (O’Gorman & MacIntosh, 2015, p. 59). There is, however, some debate to which approach is suitable for each specific purpose, called hermeneutics, which represents this clash between explaining and understanding human behavior (Bryman & Bell, 2011, p. 16)

For example, the positivist epistemological approach views knowledge of human behavior as something a researcher can explain, akin to that of natural sciences. Positivism is hard facts, where objects represent reality (Saunders, 2009, p. 112), such as, for example, the thermodynamics of a turbocharger. The positivist approach’s perhaps most important advantage is that the presented research is value free due to the inherent objectivity of representing physical reality (O’Gorman & MacIntosh, 2015, p. 60). That is why a positivist researcher should aim for a research structure methodology which allows for replication of a study and its results (Saunders, 2009, p. 114). Furthermore, positivist research tends to emphasize the testing of hypotheses by identifying and collecting empirical data with quantitative approaches such as, for example, controlled experiments or questionnaires (Cassel et al., 2017, p. 18). Positivism can contain elements from both a deductive approach and inductive strategy (Brymann & Bell, 2011, p. 16). While the researched “hard facts” might be objective, the formulated research question, or, hypothesis itself is inherently inductive.

On the other hand, the interpretative epistemological approach views human behavior as something that should be understood instead of explained (Saunders, 2009, pp. 112-113, 115) and is a term for contrasting positivism (Bryman & Bell, 2011, p. 16). The interpretative approach identifies the differences between the natural and human sciences (O’Gorman & MacIntosh, 2015, p. 64). Therefore, a strategy is needed for respecting the differences between people, which requires the researcher to understand the subjective and different meaning of social interactions between humans in our own role as social actors (Bryman & Bell, 2011, p. 16; Saunders, 2009, p. 116). The researched objects in an interpretative epistemological approach would have their “feelings” studied by the researcher, which Saunders (2009, p. 112) argues is a “social phenomena which have no external reality”. As a consequence, the objects studied are invisible and are not affected, modified or calculated but is instead an observable social reality. The researcher must be empathetic and enter the social world and understand people’s world view from their perspective (Saunders, 2009, p. 116). The interpretative approach can lead to surprising findings or support previous findings (Bryman & Bell, 2011, p. 19).
The thesis is based using the interpretative epistemological approach. The author of this thesis argues that the interpretative approach fits better than a positivist one because the aim of the thesis is to understand the project managers' subjective perspectives on scope creep. Project managers are social actors, which might have their personal views on every single interaction with other humans or any viewpoint in any matter discussed. This argument is supported by Saunders (2009, p. 116), stating that the interpretivist stance is highly suitable for management research. Besides, questionnaires and surveys are not used in this thesis, which would qualify as a more positivist leaning inquiry.

### 3.1.3 Axiological Considerations

Axiology is the study of value in general (Heron, 1995, p. 126) and concerns judgments about values (Saunders, 2009, p. 116). Furthermore, the study of value is a collective of ethics and aesthetics, both dependent on subjective value (O’Gorman & MacIntosh, 2015, p. 69). Axiology means that the authors own values will play a role in all stages of the research process. The authors values are evaluated to make the research results more credible. The values in question reflect the researchers’ personal feelings or beliefs, and the expectation is that research is value-free and objective (Brymann & Bell, 2011, p. 29).

As an example, the choice of the research question and the topic is due to axiological considerations (Saunders, 2009, p. 116) whereas the author’s inherent bias and judgment of values effectively results in the choice of a specific topic over others. A researcher’s inherent values can manifest at any point during research, especially if affection or sympathy towards the study subjects is developed (Brymann & Bell, 2011, p. 30).

A researcher’s axiological skills means that he or she are able to formulate their subjective values (Heron, 1995, p. 126). The personal formulations will, in turn, serve as a basis for

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<tr>
<th>Positivist Paradigm</th>
<th>Interpretivist Paradigm</th>
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<tr>
<td>Concentrated on facts</td>
<td>Concentrated on meanings</td>
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<tr>
<td>Find causality and fundamental laws</td>
<td>Understand what is happening</td>
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<td>Breakdown of phenomena into simplest components</td>
<td>Look at the situation from a holistic view</td>
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<td>Create hypotheses and test them</td>
<td>Ideas derive from data induction</td>
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<td>Concepts are operationalized in order to make them measurable</td>
<td>Utilizing multiple methods for creating different views of phenomena</td>
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<td>Take data from large samples</td>
<td>Smaller data samples gathered in depth over time</td>
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*Table 1. Positivist and Interpretivist Paradigm Comparison. (Adapted from Figure 4.2 "Epistemologies with Positive and Interpretivist influence" in O’Gorman & MacIntosh, 2015, p. 60)*
judging the relevance of what is investigated and how it is performed. To discuss axiology thoroughly, the author has written a statement of personal values concerning the thesis and the research question. As an axiological statement, the author is personally curious about how scope creep can happen due to its significant impacts on the project, stakeholders and its environment making the research process value-bound throughout. Before commencing research on the subject, the author has perceived scope creep as a negative occurrence, although aware of his bias. The author is studying an MSc in strategic project management, where cost and time overruns are consistently associated with a project’s scope and the hazardous effects it has on projects. However, effort is made not to let preconceived opinions on the subject affect the assertion whether or not academic literature is aligned with the author’s values. In order to mitigate the potential of personal biases and values, the thesis is conducted transparently with awareness of possible preconceptions that might deviate the researcher from remaining objective. The awareness of personal values and biases will, therefore, serve as protection regarding ensuring credible contributions to the project management literature body of knowledge, linking managerial perceptions of scope creep with project management.

3.2 Research Approach

The research approach places emphasis on the design of the research project. There are two research approaches, deductive and inductive (Brymann & Bell, 2011, p. 11). Inductive argument and deductive argument is radically different (Cooper & Schindler, 2014, p. 68). The main difference between the two lies in the development of theory. If a theoretical approach is constructed before the data collection, it is a deductive approach. If a theory is developed after the collection of data, then it classifies as an inductive approach. A deductive research approach concerns that of positivistic epistemological approach, whereas induction to interpretivist epistemological approach (Saunders, 2009, p. 124).

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<td>Scientific principles</td>
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</table>

*Table 2. Deduction and Induction Comparison. (Adapted from Figure 4.2 “Major differences between deductive and inductive approaches to research" in Saunders, 2009, p. 127)*
Deductive theory is the approach to which most individuals will associate with traditional research such as the exploration of the relationship between theory and research (Brymann & Bell, 2011, p. 11). A deductive approach is more theoretically and scientifically inclined, as it involves the testing of hypothesis and theories rigorously, posing as the dominant natural sciences approach (Saunders, 2009, p. 124), tending to analyze quantitative data (O’Gorman & MacIntosh, 2015, p. 71). That is why the deductive approach must be conclusive, true and valid, making a false conclusion impossible (Cooper & Schindler, 2014, pp. 66-67). A researcher has to find how the data is collected minding the relation to the theory that constitutes the hypothesis (Brymann & Bell, 2011, p. 11). Deduction allows for explaining the causal relationship between variables, and the establishment of a hypothesis which is then tested (Brymann & Bell, 2011, p. 11). The replication aspect of a deductive approach lies at the core of its definition in addition to the objectiveness of the researcher, who ought to be independent during observations (Saunders, 2009, p. 125).

An inductive approach is best suited when there is limited and contradictory or unclear knowledge about a phenomenon (Yin, 2014, pp. 149-150). The inductive approach is the formulation of a theory based on the results of an analysis, where theory follows the data, whereas this is opposite with a deductive approach (Saunders, 2009, p. 126). As such, the theoretical outcome of inductive research is its hallmark (Brymann & Bell, 2011, p. 4). However, the conclusion of an inductive approach is only a hypothesis which does not necessarily mean that other facts are not true (Cooper & Schindler, 2014, p. 68). The inductive approach inclines toward analyzing qualitative data (O’Gorman & MacIntosh, 2015, p. 71). The tendency of rigid methodology to bar alternative explanation is a criticism of the deductive approach from an inductive stance, where inductive approaches take the context of the research more into account, arguing that a small sample of subjects is more suitable for inductive approaches (Saunders, 2009, p. 126). Furthermore, the inductive approach aids in questioning the origin of evidence and interpretation, leading to the comprehension of why something is happening rather than what is happening (Saunders, 2009, p. 126).

As the research question is epistemologically interpretive due to its theory-building purposes and is exploring a phenomenon which is limited in literature and unclear in nature, the most appropriate research approach for the thesis is an inductive approach. Inductive research approach suits that of semi-structured interviews that will take place in the data collection, where the result of the analysis of data will result in the formulation of a theory to fill a gap in the literature (Saunders, 2009, p. 126). Furthermore, an inductive approach allows for alternative explanations rather than following rigid and established theories. The research question is highly contextual as to where the events take place, allowing for a study of smaller samples as opposed to more significant numbers in a deductive approach (Saunders, 2009, p. 126).
4. Research Methodology

The research methodology chapter presents how the systematic investigation is carried out to sufficiently answer the research question and research objectives. A multiple qualitative case study together with a subjective ontology, interpretivist epistemology and inductive data analysis approach is, therefore, applied. The choices made in this chapter and the previous is depicted graphically in Figure 4 below.

![Research Methodology Diagram]

*Figure 4. Research Methodology. (Adapted from Figure 4.1, “Methods Map” in O’Gorman & MacIntosh, 2015, p. 69)*

The research design subchapter presents the research design and arguing for its exploratory nature, while the research strategy chapter explains the case study approach and the chosen variations within.

4.1 Research Design

Research design is the process of transforming the research question into a research project (Saunders, 2009, p. 137). It refers to the different steps taken for relating the research questions to the data collection and analysis (O’Gorman & MacIntosh, 2015, p. 82). The way it is answered will subsequently be impacted by the following research philosophy, approach, strategy, collection techniques, analysis procedures, and time
horizon. All of the topics mentioned above is taken into consideration when undertaking the research (Cooper & Schindler, 2014, p. 125). The purpose of the research methodology is to reflect and justify why a particular research design is used (Saunders, 2009, p. 137). The research design itself is thought of as the generalized plan of how the research questions are answered. Furthermore, the research methodology will contain clear objectives from the research question, discuss constraints and from which sources the data is collected. Finally, ethical considerations are discussed.

4.1.1 Explanatory & Exploratory Research

An exploratory study aims to find out what is happening to gain new insights (Saunders, 2009, p. 139) by asking questions in order to research a phenomenon in a new light (Robson, 2002, p. 59). The exploratory study is useful for defining and clarifying an understanding of the uncertain nature of a problem. Explorative studies are especially useful if it is uncertainty about which problems are encountered by the researchers during the study (Cooper & Schindler, 2014, p. 129). For example, explorative research is utilized when academic literature and knowledge on the research subject is inadequate while allowing for flexibility if the research questions are broad, leading to modification thereof (O’Gorman & MacIntosh, 2015, p. 82). Furthermore, explorative research allows for the development of more clear concepts and the improvement of the final research design, meaning this approach can save the researcher resources concerning time and money (Cooper & Schindler, 2014, p. 129). According to Saunders (2009, p. 140), there are three ways of doing exploratory research; search of literature, interviewing “experts” in the field or subject and conducting focus group interviews.

On the other hand, explanatory studies aim to find causal relationships between variables which is suitable for analysis of quantitative data (Saunders, 2009, p. 140). It is mostly employed when using causal explanations to elaborate on how certain events occur and is deemed the only appropriate type for hypotheses and theory testing (O’Gorman & MacIntosh, 2015, p. 82). An explanatory study, therefore, tries to explain the causes of the phenomenon thereby going beyond mere description (Cooper & Schindler, 2014, p. 22). On the grounds of lacking knowledge on the research question and the aim to use qualitative methods for data collection by interviewing experts on the subject, the explorative research method is best suited in order to answer the research question for this thesis, meaning that the case study’s purpose is to identify the research questions (Yin, 2014, p. 239).

4.2 Research Strategy

There are several different suitable research strategies for this study which are discerned and accounted for. Furthermore, the differences between qualitative and quantitative approaches and explanatory and exploratory research is explained and justifiably chosen. Every research strategy can be used for either exploratory, descriptive or explanatory research. Some of the research strategies do, however, strongly adhere to deductive or inductive approaches (Saunders, 2009, p. 141). The choice of strategy depends on the level of existing knowledge, time and resources available in addition to the researchers own philosophical standpoint, which is guided by the formulated research question and objectives towards the thesis (Saunders, 2009, p. 141). Saunders (2009, p. 141) lists the different strategies as; experiment, survey, case study, action research, grounded theory, ethnography, and archival research. In this paper, the research strategy goal is to conduct a collection of qualitative data and subsequent analysis based on the research question in
order to arrive at a conclusion derived from the qualitative analysis and discussion. Furthermore, a case study is employed to gather qualitative data. In order to find conclusions, the author aims to conduct semi-structured and in-depth interviews with participants involved in project management from different organizations and sectors. Interview questions are based on existing literature and from the authors own formulations and literature interpretations in order to cover potential gaps which would be relevant in order to substantiate the thesis. In other words, the thesis will employ a multiple-case, exploratory, mono-method study.

4.2.1 Case Design
A case study can be defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence” (Robson, 2002, p. 178). This type of research approach is currently trending and extensively utilized in business and management research (Eisenhardt & Graebner, 2007, p. 30). The theory building from case studies is one of the best facilitators of qualitative data and conclusions to inductive research (Eisenhardt & Graebner, 2007, p. 25). Case studies are very well equipped in their ability to give answers to the “why, what and how” type of questions (Saunders, 2009, p. 146), a category to which the research question for this thesis belongs. First and foremost, there are two choices in case designs, namely single or multiple case designs. The choice of a case depends mainly on the research questions (Yin, 2014, p. 31). It is important to decide who or what to study and evaluate the possibility of accessibility, time, resources and other practical implications are important for the selection of the case study type. Single and multiple-case studies are variants of the same method, and not different methodologies (Yin, 2014, p. 78). Furthermore, the same is true for multiple-case studies and comparative case methodology which are based on the same principles (Yin, 2014, p. 43).

As this thesis contains more than a single case, the thesis is utilizing a multiple-case design (Brymann & Bell, 2014, p. 66). As the name implies, multiple-case studies investigate several cases, which enables the author to analyze inside and across the cases, which leads to the argument that multiple case studies lead to more robust and generalizable results (O’Gorman & MacIntosh, 2014, p. 84). Multiple-case research is usually preferred over single case research (O’Gorman & MacIntosh, 2014, p. 83). A single case, for example, focuses on a single organization, individual or process. Therefore, it is imperative for single case research to extensively define the actual case (Saunders, 2009, p. 146). Single case studies are more vulnerable because they lay all the eggs in one basket, while the analytical benefits of several comparative cases will be important (Yin, 2014, p. 77) However, single case studies are appropriate if a study investigates a critical case that is unique and extreme, or the logic gravitates towards testing an established theory (O’Gorman & MacIntosh, 2014, p. 83; Saunders, 2009, p. 146).

The appropriate number of cases depends on the complexity of a topic, whereas the more complex, the more cases need to be discussed (Yin, 2014, p. 81). Yin (2014, pp. 51, 78) suggests that a multiple case study is often seen as more convincing and may appear more robust and stronger. This claim is further supported by Eisenhardt (1989, p. 545) who, also, argues that a multiple case study design should not contain fewer than four cases, as its empirical base can come across as unconvincing. Cases should be selected in order to produce or predict similar results or contradictory results according to what is researched (O’Gorman & MacIntosh, 2014, p. 83). A multiple-case study focuses on main variables
and their relationships by replication (Yin, 2014, p. 79). Therefore, a comparative study opens for greater precision and can simultaneously reveal inequalities, nuances, and diversity. The author would also like to note that such a study would more likely lead the possibility of generalization in the conclusions related to the research question. This thesis will employ a multiple-case study due to its theory building properties and inherent suitability to answer the “why” questions to which the research question qualifies. Furthermore, the multiple case research design leads to analyzing the wider context and subsequently generate more generalizable results while being considered more convincing.
5. Data Collection & Analysis

Data can be defined as “facts presented to the researcher from the study’s environment” (Cooper & Schindler, 2014, p. 85), further defined by the abstractness, verifiability, elusiveness, and closeness to the phenomenon. As the study is using qualitative data in the form of interview transcripts, the interview data has a constructionist epistemological approach. This approach is useful for understanding the complexity of everyday life by anecdotal accounts of personal experiences, views, and emotions (Suter, 2011, p. 364). The data collection has to be balanced towards the interest level, time and resource constraints (O’Gorman & MacIntosh, 2014, p. 85). Case studies can use numerous data collection techniques. For this thesis, the author conducts semi-structured, in-depth interviews (O’Gorman & MacIntosh, 2014, p. 86).

5.1 Data Collection

An essential step in data collection is to determine whether the gathered data is primary or secondary. Primary data is the collection of new information which the researcher collects from a research object. Participants answering research questions serves as the purpose of the information gathering. Secondary data, however, is already existing data obtained by others and usually for other intended purposes and is at least one level of interpretation between the observed event and subsequent recording (Cooper & Schindler, 2014, p. 85). The advantage of primary data is that the researcher has a greater influence on what is collected and the flexibility of time. The potential downsides of primary data are the cost of obtaining, classifying and manufacturing the data. Both primary and secondary data falls under the same category minding qualitative and quantitative nature. To ensure closeness to the truth and avoiding errors (Cooper & Schindler, 2014, p. 85), primary data is the sole source of data collection for this thesis.

5.2 Data Collection Method

The selected data collection method for the study is a qualitative, mono-method and cross-sectional study which is explained in this chapter’s subsections.

5.2.1 Qualitative vs. Quantitative approach

Quantitative and qualitative data is widely used in connection with business and management research (Saunders, 2009, p. 151). In order to justify the authors choice of using a qualitative approach, the differences between the two approaches are investigated. The quantitative and qualitative approach differs according to the type of information that is collected: numbers (quantitative) or words (qualitative).

Quantitative data usually employs a deductive approach when investigating the connection between theory and research, embodying the view of social reality in an objectively and externally (Brymann & Bell, 2011, p. 28). Furthermore, quantitative methods are a part of positivist epistemology and objective ontology (O’Gorman & MacIntosh, 2014, p. 155). Quantitative data is often used interchangeably with data collection technique or analysis procedures such as statistics, surveys and graphical representation of the data. Quantitative research tries to measure something precisely to give a detailed description of events between humans and physical objects (Cooper & Schindler, 2014, p. 146). However, in order to choose a quantitative approach, a researcher must categorize before the data collection by meanings derived from numbers.
The prerequisite for a quantitative approach is that the variables are explicit and that the values that can be assigned to numbers.

In contrast to quantitative data, qualitative research emphasizes words rather than numbers and measurements. It uses interpretative techniques for describing and learning the meaning behind occurring phenomena in the social world (Cooper & Schindler, 2014, p. 167). The ability of qualitative research to create deeper understanding is a reason for behind its increased use (Cooper & Schindler, 2014, p. 167). Qualitative research advocates an inductive approach for linking theory and research and views the social reality as a dynamic entity which is constantly fluctuating (Brymann & Bell, 2011, p. 27). Therefore, the data informs the researcher of how and why events occur the way they do (Cooper & Schindler, 2014, p. 167). After the data is collected, it is structured, put into categories and divided into variables that are linked to each other. In this way, the author will receive information that is highly relevant to the interviewed or observed individual (Saunders, 2009, p. 482). Relevance is critical. However, qualitative data is frequently used as a synonym for data collection techniques and analysis such as interviews and the categorization of non-numerical data. Therefore, qualitative data is more comprehensive and include more than words, such as images and video footage (Saunders, 2009, p. 151). Furthermore, qualitative methods can involve the use of written or recorded materials. These materials originate from personal opinions, expressions and behaviors either observed or expressed from participants (Cooper & Schindler, 2014, p. 167).

The qualitative approach is most eligible for attempting to clarify what is behind the phenomenon scope creep. For example, a qualitative study intends to show how people interpret and understand a given situation. The qualitative method is often best suited to clarify a topic more closely and for a more detailed description of the topic. This approach can, therefore, look at the relationship between individuals and the surrounding context. For this thesis, the qualitative method is used because little is known about the research question and contains unclear issues. Participant’s potentially inadequate or lack of knowledge about scope creep will make it challenging to formulate reasonable questions for a questionnaire. Therefore, the qualitative approach is best suited for answering the research question in this thesis, due to the epistemological and ontological orientation which aligns with qualitative research strategies (Brymann & Bell, 2011, p. 27).

5.2.2 Mono-Method & Multiple Methods

There is the methodological research option of using a single data collection technique, and the subsequent corresponding analysis called mono-method, or more than one data collection called multiple methods (Saunders, 2009, p. 151). The mono-method is using the data analysis in correspondence to the collected data. Multiple methods usually combine qualitative data collection techniques with quantitative analysis (Saunders, 2009, p. 151) This mixture is where the combinations of data collection and analysis are different but restricted in a world view that is either quantitative or qualitative. The mixed method approach, however, uses quantitative and qualitative data collection techniques and analysis in parallel (Saunders, 2009, p. 152). The multiple methods approach is increasingly promoted in business and management research (Curran & Blackburn, 2001, p. 46). As a side note, the mixed methods design can also involve triangulation (Dagnino & Cinici, 2016, p. 343). The primary purpose of performing triangulation is the ability to simultaneously collect quantitative and qualitative data for the subsequent merging of the two (Curran & Blackburn, 2000, p. 72). The interpretation of the data can support or contradict each other. Therefore, the mixed methods usually involve gathering the
qualitative data first to explore a problem and then collecting the quantitative data to explain the potential relationships found in the qualitative data (Dagnino & Cinici, 2016, p. 343).

For this thesis research strategy, a mono-method is best suited due to the in-depth interviews and subsequent corresponding analysis while considering the given time and resource constraints at the same time. The research strategy will lack any quantitative elements, which, therefore, excludes other research methods.

5.2.3 Time Horizons
Time horizon refers to the length and intervals to which a case is studied. Case studies can either be longitudinal or cross-sectional. Longitudinal cases involve “studying the same single case at two or more different points in time” (Yin, 2014, p. 75), usually involving a substantially longer period than that of cross-sectional studies (Cooper & Schindler, 2014, p. 128). Longitudinal research is often used to study change and development in a case (Saunders, 2009, p. 155). On the other hand, cross-sectional studies are a “snapshot” in time, useful for studying a specific phenomenon at a specific time (Saunders, 2009, p. 155). Due to the limited time constraints and multiple case study design, a cross-sectional time horizon is chosen for the thesis. Additionally, the research question does not seek to answer a phenomenon that evolves over time with the interviewees.

5.2.4 Sampling
The purpose of sampling is to reduce the amount of collected data minding constraints such as time, money and accessibility. Sampling techniques, therefore, considers data from sub-groups instead of a complete census in the different cases (Saunders, 2009, p. 242). Sampling is a viable option as opposed to reaching census due to the practical implications of doing so. The author of the thesis has formulated a set of sample criteria for both organizations and participants in order to “narrow” the sampling size. Not only does establishing sampling criteria limit the number of sources where data can be collected but also ensures that the selected samples have more commonalities, leading to more valid and reliable data.

Sampling techniques are differentiated into two different groups: probability and non-probability sampling (Saunders, 2009, p. 211). Probability samples concerns samples where the case is usually known and equal for all participants, which means that it is converted into statistics and is mostly used in conjunction with surveys and questionnaires (Saunders, 2009, p. 242). Non-probability sampling, on the other hand, is opposite to probability sampling in the sense that the cases are not known. These differences are statistical in nature. However, sampling logic can be misplaced in case studies due to the impossibly large sample of cases (Yin, 2014, p. 81). The author deems this study as requiring a smaller size of samples than that of probability sampling would require.

Therefore, a combination of purposive and snowball sampling is selected, which is a form of non-probability sampling (Bryman & Bell, 2011, p. 442). Purposive or judgmental sampling enables the researcher to use his or her judgement for deciding and purposively selecting cases deemed to answer the research questions in the best way possible (O’Gorman & MacIntosh, 2014, p. 162; Saunders, 2009, p. 268). Furthermore, this type of sampling is frequently utilized when assessing smaller samples, such as in case studies.
The aim of purposive sampling is a more strategic way of researching by not enabling the generalization into the general population (Bryman & Bell, 2011, p. 442). Snowballing, on the other hand, enables the researcher to identify individuals who meet the criteria set by the purposive sampling, where the person can connect other participants via their personal network to the author (O’Gorman & MacIntosh, 2014, p. 162). This is particularly helpful for identifying project managers, where the samples are hidden in populations and challenging to discover. However, snowball sampling is problematic due to the unlikely chance that samples are representative of the population (Bryman & Bell, 2011, p. 193). The author has, therefore, decided to combine purposive and snowball sampling techniques given the time and money constraints in connection with the data collection process.

5.2.5 Participant Selection Criteria

There are multiple things to consider when deciding who, when and where interviews take place. Not only is the title of project manager used liberally in businesses and organizations, but it is also difficult to anticipate whether the participant is familiar with present project management practices. There was most likely a wide availability of participants. Google and snowballing techniques were used to a great extent, including using the author’s personal network to gain access to eligible participants. The samples include participants from Norway in different organizations and sectors, such as consultancies, IT and construction. The diversity of sectors gave the author the opportunity to get different perspectives on the research question, leading to a greater generalization of results. Based on Saunders (2009, p. 237) purposive sampling arguments, several criteria are defined in order to ensure a degree of conformity and homogeneity leading to more reliable and valid answers which could lead to greater generalization. The selection criteria assisted to narrow which participants are eligible for the research. However, because scope creep is a common occurrence in projects, the selection criteria are few and broad as the author assumes most project managers are familiar and have experienced the phenomenon under different terms.

- The participant has more than two years of experience in managing projects
- The participant is familiar with project scope statements

5.2.6 Interview Design

Interviews are the most used method in qualitative research for primary data collection (Bryman & Bell, 2011, p. 465; Cooper & Schindler, 2014, p. 152). According to Kahn & Carnell (1957, p. 9), “an interview is a purposeful discussion between two or more people”. The interviews conducted where non-standardized, one to one telephone interviews (Saunders, 2009, p. 321). As the study is exploratory, a non-standardized research interview is qualitatively appropriate (Saunders, 2009, p. 323). There are several types of interviews which are consistent with the adopted research strategy; structured interviews, semi-structured interviews and unstructured interviews (Bryman & Bell, 2011, p. 467; Saunders, 2009, p. 318). Structured interviews are surveys which contained identical questions, usually with predictable or pre-determined answers, allowing for more direct comparison of answers (Cooper & Schindler, 2014, p. 153). Value is placed in answers that can be quantified quickly, with an emphasis on maximizing reliability and validity (Bryman & Bell, 2011, pp. 466-467). Structured interviews are appropriate for positivist research, as the answers are quantifiable (Saunders, 2009, p. 320). Unstructured interviews are informal and go in-depth into the areas of interest. It can contain a single question, with unrestricted responses from the participant allowing the researcher to
probe into the more interesting points of what the participant conveyed (Bryman & Bell, 2011, p. 467). It is the polar opposite of structured interviews, as there are very few predetermined questions, leading to the participant answering the questions freely (Cooper & Schindler, 2014, p. 153). The author has decided to use the semi-structured interview approach for the data collection due to the specific nature of the research question. In-depth interviews would be likely to produce either ambiguous results, too many or too few amounts of data, depending on the participants in question. As the research is qualitative in nature, the structured interview approach is discarded due to its qualitative nature.

5.2.7 Semi-structured Interview
Semi-structured interviews are deemed the most suitable primary data collection by the author of this thesis. This type of interview includes a list of topics and predetermined questions which might vary in relevance and order of appearance in accordance when conversing with the participant (Saunders, 2009, p. 320). The semi-structured approach makes the interview process flexible with room for what kind of replies are given. Questions initially excluded can be asked if the researcher deems it relevant and interesting (Bryman & Bell, 2011, p. 467). Furthermore, the semi-structured interview design is appropriate due to the interpretivist nature of the thesis and allows for probing answers given to modify the depth of the data and lead to new insights that the predetermined questions might not have covered (Saunders, 2009, p. 324). The list of specific topics and questions for a semi-structured interview is called an interview guide (Bryman & Bell, 2011, p. 467) and can be found in Appendix 1 & 2. As the research is a multiple-case study, Bryman & Bell (2011, p. 473) recommends that a similar structure in the interview guide is employed to all participants to “ensure cross-case comparability”, a recommendation to which the author has implemented.

5.2.8 Interview Guide
The devised interview guide comprises of a list of questions but does not have to be specific and could, for example, consist of a short list of bullet points of topics instead (Bryman & Bell, 2011, p. 473). However, the author has deemed it necessary to have formulated questions instead of memory points due to the specific nature of the research question. The questions are formulated to facilitate answers towards the research question with simple language (Bryman & Bell, 2011, p. 475). The interview guide contains questions pulled from the theoretical frame of reference, chosen during the literature review on the background of best answering the research question. The original interview guide is found in Appendix 1, whereas the amended version is found in Appendix 2. The guide is sectioned into distinct segments in conjunction with the structure of the theoretical frame of reference. This form of interview question hierarchy is akin to that of the reverse-pyramid structure found in the theoretical frame of reference is advocated by Cooper & Schindler (2014, p. 154). Furthermore, the different segments have a subset of several questions related to the topic. The topics, following the same structure as the theoretical frame of reference, begins broadly concerning projects and project management before narrowing down to the final questions that are directly related to answering the research question. The questions in the interview guide are open-ended and allows the participants to formulate their perspectives on scope creep freely in order to fill the research gap and improve the current body of knowledge. By doing so, different perspectives on related areas around the research question might lead to new insights.
The interview guide (Appendix 1) is divided into seven stages. The first stage is an introductory part informing the participant of the formalities regarding the interview and thesis. Second is the warm-up stage where the participant introduces him or herself and their respective organization. Stage three to six comprises of questions related to the theoretical frame of reference which has relevance towards the research question. These stages might reveal insights or lead to new questions regarding the research question to which the author might not have yet considered. Finally, stage seven and eight go directly into the research question topic of scope creep.

5.2.9 Interview Process

The interviews began on the 10th of December 2018 and ended on the 14th of December 2018. Before reaching out to a potential participant, a worksheet was made containing data about the potential participants such as full name, telephone number, and organization. Names and organizations have been excluded for considerations of anonymity. Furthermore, the worksheet served as a preliminary schedule with the first contact date and the agreed interview date. Potential participants were initially contacted either directly by telephone or by SMS with a small introduction of the thesis, interview process and a request for participation in the study. Initial contact was also used in order to find an appropriate time that would suit the researcher and participant. On the agreed date and time, participants were called by telephone by the author. The participants were interviewed by telephone due to time, money and geographical constraints (Cooper & Schindler, 2014, p. 153). Before the interview began, the participant was informed of the nature of the study, the preservation of their anonymity, the free publication of the thesis and the recording of the interview. Furthermore, a duration estimation of 30-45 minutes was given in order to inform the participant of how much effort is required in order to answer the questions.

<table>
<thead>
<tr>
<th>Interview Number</th>
<th>Participant</th>
<th>Organization</th>
<th>Interview Date (dd.mm.yyyy)</th>
<th>Interview Location</th>
<th>Interview Duration (hh:mm:ss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P1</td>
<td>A</td>
<td>10.12.2018</td>
<td>Telephone</td>
<td>00:49:28</td>
</tr>
<tr>
<td>2</td>
<td>P2</td>
<td>B</td>
<td>12.12.2018</td>
<td>Telephone</td>
<td>00:27:09</td>
</tr>
<tr>
<td>3</td>
<td>P3</td>
<td>C</td>
<td>12.12.2018</td>
<td>Telephone</td>
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</tr>
<tr>
<td>4</td>
<td>P4</td>
<td>D</td>
<td>13.12.2018</td>
<td>Telephone</td>
<td>00:28:51</td>
</tr>
<tr>
<td>5</td>
<td>P5</td>
<td>E</td>
<td>14.12.2018</td>
<td>Telephone</td>
<td>00:27:42</td>
</tr>
</tbody>
</table>

Table 3. Interview Information.

Five interviews were carried out via telephone. The participants were free to choose their whereabouts at the time of the interview in order to make them feel as comfortable as possible. At the beginning of the interview, small talk and expressing gratitude towards the interviewee’s participation took place. The small talk included information about the author, the master’s program, project management and the thesis in general as per the
The participants were informed of ethical guidelines regarding anonymity and confidentiality in addition to consent for recording the interview.

The interview followed the structure as laid out in the interview guide (Appendix 1). If the conversation flowed into later or earlier parts of the interview guide, these were addressed at the same point in time they occurred during the interview. Furthermore, probing questions were asked where the author deemed it relevant based on what the participant conveyed. The conversation was informal, further making the participant more at ease to further facilitate free thinking. The interviews were recorded during the entire conversation, from initial dial-up until completion. After every single interview, data about the participant was recorded to provide contextual background. Each participant, and thereby the data, is assigned a unique code in order to preserve participant anonymity and facilitate transcription.

<table>
<thead>
<tr>
<th>Participant Code</th>
<th>Project Experience in Years</th>
<th>Education &amp; Competencies</th>
<th>Organization size in employees</th>
<th>Position</th>
<th>Type of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>10</td>
<td>MSc. Module in Project Management, PMP, Prince2, Scrum, Agile, ITIL, QMS</td>
<td>55</td>
<td>Project Consultant</td>
<td>Offshore, IT</td>
</tr>
<tr>
<td>P2</td>
<td>42</td>
<td>MSc. Engineering &amp; Economics</td>
<td>3.000</td>
<td>Project Director</td>
<td>Construction</td>
</tr>
<tr>
<td>P3</td>
<td>11</td>
<td>ITIL</td>
<td>5.000</td>
<td>Sr. Project Manager</td>
<td>IT</td>
</tr>
<tr>
<td>P4</td>
<td>8</td>
<td>MSc. Strategic Project Management, PMP, Prince2, Agile</td>
<td>1.200</td>
<td>Project Planner</td>
<td>Offshore, IT</td>
</tr>
<tr>
<td>P5</td>
<td>9</td>
<td>MSc. Information and Communication Technology, PMP, Prince2, SPL, ITIL</td>
<td>70</td>
<td>Advisor</td>
<td>ICT, Telecommunication</td>
</tr>
</tbody>
</table>

Table 4. Participant Information

5.3 Data Analysis

The data analysis chapter will explain the data analysis approach, the coding of data and transcription of interviews. Furthermore, the quality criteria of the research and ethical considerations is discussed.

5.3.1 Data Analysis Approach

Data analysis can be complicated and time-consuming in case studies due to the massive amounts of data collected. The type of data analysis depends on the research philosophy
and approach (O’Gorman & MacIntosh, 2014, p. 88). Therefore, data analysis segments into deductive and inductive approaches. For this thesis, the author has chosen to follow an inductive approach (O’Gorman & MacIntosh, 2014, p. 88).

For analyzing qualitative data, Saunders (2009, p. 502) lists several inductively based analytical procedures such as data display and analysis, template analysis, analytic induction, grounded theory, discourse analysis, and narrative analysis. Template analysis is the chosen data analysis approach for this thesis. Template analysis entails an inductive and deductive approach to the analysis of the qualitative material collected, where codes are defined and added to the collected data during analyzation (Saunders, 2009, p. 505). The template analysis underlines the use of hierarchical coding while at the same time balancing the structure in addition to providing flexibility towards adaptability according to each study (Brooks et al., 2015, p. 203). Furthermore, the thematic analysis does not require predetermined coding and adhering levels but instead advocates an additive approach to developing themes according to the identification of the richest data (Brooks et al., 2015, p. 203). The interviews were open-ended, and the raw (unprocessed) data came from several different viewpoints formulated in each participant own words. Therefore, the reorganizing, splitting, and joining of data made them more meaningful by employing the template analysis approach. A template analysis depends on the researcher to formulate topics before the analytic process begins, which later amalgamates into a priori themes which is discussed later in this chapter.

Categorization of data entails the development of categories and attaching the categories into relevant pieces of coded data by recognizing the potential relationships the data might have (Saunders, 2009, p. 492). The categorization process is an effort to reduce the number of data segments by “grouping” the coded parts. Categories are coherent in order to substantiate a structured, analytical framework which is relatable to the other categories (Saunders, 2009, p. 493). Both codes and categories will draw upon the theoretical frame of reference in order to create a relevant structure which can further facilitate data analysis and the discovery of relevant pieces of information that are similar. Furthermore, the different categories are combined to form themes, or a priori themes and a posteriori themes which relates to the theoretical frame of reference and research question (King & Horrocks, 2010, p. 168). The template analysis is favorable when there are a priori themes as they are essential to research areas to this study. The themes can
are the overarching and higher-level categories formulated to form the major parts of the analysis. The a priori themes are developed before the data collection, distinguished from a posteriori themes which are formulated after the data collection (O’Gorman & MacIntosh, 2014, p. 140). Furthermore, it is advised that not too many a priori themes are identified as it may result in a narrow research approach (King & Horrocks, 2010, p. 168). A posteriori themes are often used in connection with grounded theory, while the analytical procedures chosen by the author, template analysis, allows for both themes (O’Gorman & MacIntosh, 2014, p. 140). Codes, categories, and themes form a hierarchical structure for analyzing qualitative data.

5.3.1.1 Recording & Transcribing Interviews
Bryman & Bell (2011, p. 476) suggests that qualitative researchers “nearly always tape-record and then transcribe their interviews” which the author has done when conversing with participants. The audio-recordings were later transcribed to make sure that the verbally communicated data was recorded precisely. Not only does audio-recording ensure accuracy but it also gives an opportunity of revisiting and re-examining the answers more closely (Bryman & Bell, 2011, p. 481). Furthermore, it keeps the researcher less distracted and able to keep the focus on what information the participants are sharing with the researcher. Taking notes can lead to the loss of the specific phrases or language the participant uses (Bryman & Bell, 2015, p. 493). Notes were not taken in order to maintain focus, although Saunders (2009, p. 334) debates that notes should be written during the interview in case there are technical difficulties which could result in problems with the recorded data.

The recorded interviews were in spoken Norwegian, which was translated during the transcription of interviews. The drawback of recording and transcribing interviews is excessive time-consumption, where 1 hour of speech can lead up to six hours of transcribing (Bryman & Bell, 2011, p. 483; Saunders, 2009, p. 485). However, the time spent transcribing the recordings can make up for lost time when doing the data analysis as it is easier to have it in wording rather than listening to the recordings repeatedly (Bryman & Bell, 2011, p. 487). There are some limitations imposed on the author while transcribing the semi-structured interviews. During the transcription process, the author decided to transcribe in verbatim selectively due to time constraints. Although the transcription was selective, it was not strict or followed a set of criteria for exclusion. For example, unnecessary technical details about past experiences in projects are left out, as such statements do not underline the statements made from the participant further. Filler-words and pauses are not included as the research strategy do not involve discursive elements. On the other hand, if the participant made an objectively absurd or humorous claim, “(laughter)” or “(laughing)” are included to emphasize that the statement is not to be interpreted in a wholly literary manner.

5.3.1.2 Unit of Analysis
The clarity of the unit of analysis is vital in order to ensure that the research objectives and questions are being met (Bryman & Bell, 2011, p. 303). The definition of the case is an essential requirement due to the context of the investigation and defines where the case begins and ends (O’Gorman & MacIntosh, 2014, p. 83). Furthermore, the data is unitized in order to attach the relevant pieces of information to the appropriate categories, where a unit of data can be anything from words to a complete paragraph, as long as it fits the category (Saunders, 2009, p. 493). The unit of analysis is a selective process, where data is reduced or rearranged to make it more coherent and manageable. During the process,
the categories are revised and rearranged to make the units of data more meaningful, resulting in refinement and focus of the analysis (Dey, 1993, p. 95). The unit of analysis of this thesis is the participant’s perspectives on scope creep in projects following the semi-structured interviews and interview guide.

5.4 Quality Criteria of the Study

According to the USBE Thesis Manual (2018, pp. 13-14) requirements, the qualitative nature of this study can lead to difficulty in exact replication of the research. However, it is not possible to know the answer if a study is truly reliable or not, it is only possible to reduce the possibility of getting wrong answers (Saunders, 2009, p. 156). Reliability, validity, and generalizability in qualitative research are different kinds of control procedures for ensuring the quality and widening the potential for research (Mason, 1996, p. 21). Therefore, several criteria assess the quality, reliability, and validity of this thesis. These criteria are drawn upon from Miles et al. (2014, p. 271) in order to ensure that the findings are satisfactory. Furthermore, quality criteria aids when judging the quality of the conclusions. The criteria are drawn upon from critical realist traditions (Miles et al., 2014, p. 271).

5.4.1 Objectivity / Confirmability

Objectivity refers to neutrality and the absence of researcher bias or explicitly stating the biases of the researcher (Miles et al., 2014, p. 272), underlined in the axiological statement found in chapter 3.1.3. The absence of objectivity can impair the accuracy of data analysis (Saunders, 2009, p. 194). Data are collected precisely and carefully in order to avoid imposing subjective viewpoints or selectivity on the collected data (Saunders, 2009, p. 193). Confirmability is the researcher’s realization that while complete objectivity is impossible, the researcher appears to act in good faith (Bryman & Bell, 2011, p. 398). This study’s methods and background information are described in detail while retaining a chronological order of how data were collected and analyzed. Furthermore, conclusions are linked to the analyzed data while the collected data is preserved in order to facilitate future replication (Miles et al., 2014, p. 272). The objectivity of the researcher can subsequently affect the validity and reliability of the research.

5.4.2 Dependability / Reliability

Reliability involves the topics of quality and integrity, ensuring that research is conducted thoughtfully (Miles et al., 2014, p. 272). According to Bryman & Bell (2011, p. 395), reliability is the “degree to which a study can be replicated”. However, when doing qualitative research, gauging the degree of reliability is challenging, as the use of structured data is generally lacking. Reliability is linked which data in the survey the researcher decides to use, how it is collected and how it is analyzed. Reliability is better assured by evaluating whether the data will yield the same results in another context, if observations are similar to that of other observers and the degree of transparency between raw data, analysis and conclusion (Easterby-Smith et al., 2008, p. 109). On the other hand, dependability is the assurance that all field work material such as notes, and transcripts are accessible.

The data and subsequent analysis in this thesis is exhibited through semi-structured in-depth interviews over the telephone as primary data sources. The author has not used information from secondary sources. The formulated questions are clear, and the
researcher’s role is clearly stated (Appendix 1; Miles et al., 2014, p. 272). All interviews that the author performed was recorded using an external tape recorder with prior consent to do so given by the participants and the interviewer, which increases reliability. The interviews were recorded and immediately transcribed in verbatim to ensure that none of the collected data was neglected. Copies of the interview guide and transcriptions used in the data collection and analysis is found in Appendix 1 & 2. In order to ensure that the theoretical frame of reference has a high degree of reliability, the author has relied on papers and books written by well-known project management researchers and authors. There is, however, some areas of the theoretical frame of reference where the theory is unclear and substantiated by project manager practitioners in papers from the official PMI website, although the use of these sources were minimal. To ensure further reliability and that the authors and researchers are well-established, the author has looked at the citation frequency on different articles.

5.4.4 Credibility / Internal Validity
Validity is about the extent to how valid conclusions are derived from the analyzed results (Saunders, 2009, p. 166), or in other words if the objects observed and identified are actually observed and identified (Mason, 1996, p. 24). Validity is divided into external and internal validity. Internal validity concerns whether the results are true or not. External validity is about how the results of the study are generalizable or not. Credibility is essentially equal to that of trustworthiness (Bryman & Bell, 2011, p. 396) and if there is congruence between the researcher’s observations and the theoretical ideas derived from the observation (Bryman & Bell, 2011, p. 396). The credibility of the thesis depends on the information from interviewees seem trustworthy and probable, which also largely depends on the fact that the participants interviewed for this study are practicing project managers. Furthermore, the findings are clear and coherent while expressing uncertain areas (Miles et al., 2014, p. 273). Furthermore, the interview guide and questions are clearly linked to the different parts and categories of the theoretical frame of reference, both in structure and content.

5.4.3 Transferability / External Validity
External validity concerns whether one can transfer the research data and conclusions to other contexts and to what extent the data are generalizable across social settings (Bryman & Bell, 2011, p. 395; Miles et al., 2014, p. 274; Saunders, 2009, p. 158). Furthermore, the characteristics of the participants and organizations are fully described to allow for comparisons with other examples (Miles et al., 2014, p. 274). Transferability concerns the worry that small groups of cases can yield empirical problems (Lincoln & Guba, 1985, p. 316). Therefore, a thick description is recommended, meaning that the researcher has a proper database to make robust personal judgments from whether the research is transferrable or not (Bryman & Bell, 2011, p. 398). This multiple-case study involves Norwegian participants, where the project managers conduct their projects in Norway. It is not certain that findings concerning the project managers experiences can be generalized or that the knowledge is transferrable to domestic or foreign practitioners. However, most projects are carried out in the same fashion worldwide according to the PMI principles as laid out in the PMBOK (2017). Besides, multiple-case studies, as opposed to single case studies, yield more generalizable results (Saunders, 2009, p. 158). Parts of the findings are congruent with prior project management theory, and the reported experiences and perceptions concerning the research question are relatable to each other.
5.5 Ethical Considerations

Cooper & Schindler (2014, p. 28) suggests that “ethics are norms or standards of behavior that guide moral choices about our behavior and our relationships with others”. As outlined in the USBE Thesis Manual (2018, p. 6), ethical guidelines for this thesis are taken into consideration. An important question when conducting research minds the ethical implications the study might have (Maxwell, 2012, p. 226). Can it harm the participants or researcher? Can other people or organizations not directly related to the research be harmed? Such questions are necessary to keep in mind while conducting research. Further points to consider in qualitative studies are explicitly stating ethical concerns and dilemmas (Miles et al., 2014, p. 274). The author of this thesis has not identified any person or organization that might come to harm before, during and after the thesis’ completion.

The only ethical concern identified concerning the thesis is the confidentiality of participants for collecting data. The study’s participants have a right to privacy, confidentiality, safety, and anonymity (O’Gorman & MacIntosh, 2014, p. 203). Participants of the study are, therefore, fully disclosed regarding the procedures of the interview, thereby securing informed consent (Bryman & Bell, 2011, p. 133; Cooper & Schindler, 2014, p. 31). While performing interviews, all who were interviewed have agreed to participate in the study and subsequently informed that their personal and organizational information are confidential and anonymous along with what the research question is and the purpose of the thesis. The participants acknowledged that they could choose to discontinue the interview at any point in time and choose not to answer any question they desire.

Furthermore, the societal issues this thesis might potentially impact is regarded as minimal or non-existent by the author. The study focuses on a specific segment in project management literature, which would have no negative impact on society or its individuals. However, there might be positive benefits from this study in terms of cost and time savings in projects. Such benefits might contribute to the greater good, whether a private project saves time and effort, or public projects use less of public funding by implementing the findings in this thesis. The findings from the collected data are presented in the next chapter.
6. Findings

In this section of the thesis, the results and quotes from the author’s semi-structured interviews are presented. The findings from the data collection are formulated from the answers given by participants to attend to the research questions and objectives. Therefore, the analysis is performed concerning the research purpose and structure of the theoretical frame of reference. All the collected data are highlighted for relevant results and findings in order to identify the different and interrelated of questions to gain new insights from themes which are not previously addressed. The findings are separated into themes and sub-themes in order to categorize different evidence from the interviews. Each theme or category emphasizes a summary of the findings. The author has chosen to use direct quotes from the interview transcripts. The quotes will not contain filler words such as “mhm”, “ah”, “(pause)” to reduce the amount of text and highlight the relevant and meaningful information from the interviews. However, brackets ([]) are used to insert context to inform the reader or skipping passages of less relevant information in the same originating paragraph of the reference.

6.1 Changes During the Project Life Cycle

The participants are coded from P1 to P2. When asked where changes are made in the project life cycle, the purpose was to pinpoint the phase to which scope change usually occurs, as change is the catalyst for scope creep. The participants had different viewpoints on this, perhaps due to the participants working in different sectors and employing different project management methodologies. The purpose behind this was not only to explore where changes to the project scope might originate but to prime the participants for the coming themes and topics of the thesis related to change. Furthermore, awareness of the project life cycle and introducing the keyword change could help facilitating deeper thinking on the subject from the participants.

P1: “It depends on how well-planned the project is. Thing should be laid out in advance to catch changes in advance. Are things discovered late, then it would cost more.”

P2: “The important thing is that changes occur as early as possible. My experience is that changes usually occur in the execution phase. Early on in the initiation phase, the whole project is a change, and you usually don’t know what the project entails.”

P3: “I would say it happens all the time. After about 20% into the project there are a lot of changes. Early. It does not have to be so large changes. It depends on the project.”

P4: “In the initiation phase, change will not be perceived as change minding the scope [...] I would say it happens during the entire life cycle. I would only wish it happened earlier, but I can see that it happens all the time.”

P5: “Usually in the initiation and planning phase. That’s when there is the most changes and liberty to do so [...] It is important to know what has to be done as early as possible before executing. It depends on the sector or industry. It’s a trend that things are changing more in the execution phase.”

The participants have differing views on the exact timing of project change. All participants agree on the fact that changes most frequently happen in the earlier stages of
a project. It is also prevalent across the project life cycle (P3, P4), stressing that changes should be made as early as possible to avoid later implications on a project. Furthermore, the project life cycle question acts as a prelude to questions regarding the project scope statement and change. The project scope is formulated in the very beginning of a project.

6.2 Inadequate or Poorly Defined Project Scope

In the theoretical frame of reference, an inadequate or poorly defined project scope is a common culprit enabling scope creep. The participants were, therefore, asked if changes in the project life cycle are related to shortcomings in the project scope itself, and what could happen to such projects where this occurs. The participants were encouraged to not only use examples from their own experience but draw examples from external events like public projects or experiences from their personal network.

P1: “In most cases, scope changes are related to the contracts or scope formulation. If it is inadequately or badly defined, you have to do damage control as a project manager. It does not help what kind or how much of project management method you have learned. [...] Usually you will end up risking delays and conflicts. Change orders where there are words against words are often ambiguous, and if the scope is poor and you can’t solve it during the project, there will be a delay before the project is closed because you are sitting there and arguing for a long time. I have tried that too. (Laughs)”

P2: “[Projects with a poorly defined scope might experience] cost overruns and perhaps delays. The worse the project scope is, the worse the execution of the project will be. The user often comes in and wants change and other things […] you might find things that are incorrect, or the user comes in and wants to do things differently.”

P3: “I have not experienced that where the project scope has not been properly defined. I have encountered a project where the process itself is lacking, such as the project managers themselves. If you have a customer, then they most likely will not have anchored the project properly within their own organization. We have good control and methodology on this, but it is usually the customer who does not have a proper way of handling this internally.”

P4: “[If the project scope is poor] you aim at a moving target and you do not know what to deliver. Perhaps you think you know what to deliver, but it always ends with disappointment and frustration. Projects can be delivered on time, cost and quality as much as it wants, but, if you do not deliver what the customer thought he wanted or really asked for, then it is not a successful project.”

P5: “It can end well. But there is a danger that you have to re-plan immediately due to other expectations than what you thought. Other owners and stakeholders can also come in with their own requirements which have not been taken into consideration. The project can quickly grind to a halt and there is a lot of noise.”

Regarding poor or inadequate formulation of the project scope, some participants (P2, P3, P5) are quick to point out that this relates to customer, owner and stakeholder requirements and expectations. P2 indicates that there is a correlation between the robustness of the project scope and the execution of a project. There is, however, an indication from P3 and P4 that this is the responsibility of the project manager. Projects that have bad scopes can end well (P5) but might involve the project manager to engage
in damage control and internal conflict (P1).

6.3 Project Scope Changes

Project changes and scope creep can go hand in hand. Therefore, the participants were inquired if changes to the projects were related to the pre-defined project scope itself and explore some of the reasons that cause a scope to change.

P1: “[As to why the scope changes] it could be the fact that you see better solutions. I have also proposed changes where the customer saves money by doing things in a better way. [...] You see underway that the regulations might not be how you thought they would be and the execution would not be what you planned and so on. [...] There are many things that can be connected to changes in a project.”

P3: “Usually it is because you see things during the project which you did not see initially. It can be from both sides, either the project team or the customer who is lacking some requirements in order to implement solutions. Especially with developers, systems might not talk to each other even after pouring a considerate amount of effort into it.”

P4: “For me, it involves to things. Firstly, you change what you need [...] maybe it was not wrong to begin with, but as you go along and get wiser you realize that there might be other needs. The second thing is that you might not have been explicit enough or there have been misunderstandings. There can also be differing opinions on what to deliver in the project. Even though you agreed [with the customer] in the start, you were essentially talking about different technicalities.”

The participant consensus on the topic of project scope change relates to the discovery of needs and requirements or changes that have to be made as the project progresses. Furthermore, these changes appear to be related to the technical and regulatory aspects of a project. P4 adds that misunderstandings and different opinions can cause a scope to change.

6.4 Unauthorized and Uncontrolled Changes

As discussed earlier, scope change and scope creep can go hand in hand. For this transition from scope change to scope creep to take place, the theoretical frame of reference emphasized that unauthorized and uncontrolled changes is the reason for the conversion to take place. To further investigate this phenomenon and how it might relate to the different viewpoints on scope creep, participants were asked if they have experienced such rogue changes to the project scope.

P1: “If you for example as project manager have engineers in the project who gets instruction that no changes are to be made unless it is communicated via the project manager, but still do it. Then they begin a parallel dialogue with the customers technical representative. [...] Then the project manager will be the last person to know there has been a change. A project manager is usually not a specialist on everything technical. If you have engineers who do not understand the [project] mechanisms, they can do stupid things. If you do changes that are not implemented in the project scope, the project manager will be the one ultimately responsible.”
P3: “I have not experienced that too much in Norway. In Finland, on the other hand, it happened almost weekly. The challenge is to nudge them into the right path. They wanted change, but it’s not sure that these changes were followed up. If the project management group is good, then they will put down quality control towards changes towards the budget.”

P4: “[Parallel work] can absolutely happen. Somebody talks to someone else and they start working on this and that. It’s important to handle. I had a project where the customer learnt quickly that they could ask our engineers directly, bypassing the project manager in order to get what they wanted. And that is scary. [...] it ended up with us delivering more than promised by using more time on different elements.”

P5: “What often happens is that you want to use other solutions than what was available at the beginning of the project. Often it can start by somebody who investigates by themselves on stuff they shouldn’t, but they see that it can be worth pursuing. [...] And then you have to be close to the changes so people don’t work under the radar for too long.”

The participants have experienced scope creep either directly or indirectly. However, based on the statements and anecdotes, uncontrolled change is related to the technical aspects of the project as opposed to the management of it (P1, P3 & P4). Furthermore, uncontrolled or unauthorized changes are more or less prevalent depending on the culture to which the project is handled and situated (P3).

6.5 Scope Creep

Starting with uncontrolled and unauthorized changes to the project scope served as the introduction to the essence of the research question. Digging deeper into uncontrolled changes, the participants were introduced to the concept of scope creep in case they had not previously heard the term or definition. The participants were asked if they have experienced scope creep in the projects they had or have been involved in.

P1: “Yes. It rarely occurs in my projects (laughs). I try to keep an eye on it all the time. [...] You can of course do something extra, but for god’s sake, get a change order on it so you can get extra budget and time on it etc. Then you will get credit for doing something extra instead of giving away your margins. If not, you will take the risk in the end.”

P2: “[Managing scope creep] is kind of the project managers most important task, keeping track of all the things that affect a project. The project owner wants change done all the time. It is, therefore, important to know [...] how it will ultimately affect the person who is paying the bill. That he knows what implications this will have towards project cost and progress and in the end decides whether they want it or not.”

P3: “[Scope creep] depends on what it involves. For example, in IoT [Internet of Things] projects, it is a world that moves extremely rapidly and there are new suggestions during a project all the time. [...] Other suppliers came up with brand new solutions in the middle of the project. GPS and so on. Then the scope had to be changed radically, suddenly there was a whole new system. For example, the new solution from the supplier doubled in price.”
P4: “The small stuff, very small stuff is the changes that we don’t discover. Typically, because it is not big enough to be brought up to the project managers but rather the engineers agree that it leads to better product and then implements change without saying so. Maybe they did not realize that these changes were going to cost money. Both in hours and procurement. So, typically the small modifications are where I have experienced scope creep the most. Maybe people don’t think about it consciously because they just want to make the best product possible for the customer. You cannot do that always.”

P5: “It relates to how you define scope creep. I have participated in projects with substantial changes. It depends if you call it scope creep or not. If you measure it against the original plan, you can call it scope creep. As long as you have a controlled process it’s not scope creep, but the project rather takes a new form. Scope creep that involves unauthorized increase in project boundaries have I not experienced.”

The participants were well-versed in what scope creep is and have experienced it to some extent in their projects. Furthermore, some participants indicate that scope creep might stem from suppliers (P3) and customers (P2). However, unauthorized or uncontrolled changes that are later picked up and formalized is not considered scope creep, such as a change order (P1, P3, P5). There are different viewpoints on this topic, as most of the participants in the semi-structured interviews talked extensively about formalizing change when discussing uncontrolled and unauthorized changes. It is also related to the previous question, where the resources responsible for the technical aspects of a project can implement solutions without communicating it due to the seemingly trivial and small changes.

6.5.1 Scope Creep Causes
Progressing further into the subject of scope creep, participants were asked what they thought where the primary causes of scope creep. By doing so, it might be easier to interpret and rationalize as to why the participants have their unique perspectives on scope creep and how they substantiate their view on projects in general.

P1: “Firstly, it is a poorly defined scope. There is room for interpretation and assumptions, leading to arguments and conflicts all the way. The clearer the definition of what is included and excluded, the better you are off. Everything cannot be detailed enough of course, so managing the change underway is also important. [...] The typical culprit is having a bad scope statement, or you have someone in your organization or team who says yes to things and you get to know of this too late.”

P2: “I think it is because the groundwork [scope] and planning is poorly done. You have to know what to construct, a reasonable budget with risk analysis.”

P4: “I think it is because you have not done a good enough job beforehand or executing the project too hastily. It can be from both sides, after the project progresses you see a maturity process where change is needed. Humans are not so clever that we see it immediately which leads to alternative processes of modulations.”

P5: “If you have a weak control management in relation to changes, that you allow changes without a formalized process, then you are rigged for scope creep. There will always be changes, wishes and needs which the project is not necessarily meant to achieve. But, at the same time, you need an apparatus that receives, and treats needs and
changes during the project. The main cause of scope creep is because you expect something in the future that has inherent risk before you start a project. Maybe models and plans cannot involve everything. If you use little time on planning, scenario and risk analysis, then scope creep can be a major factor. I would say it is a combination between bad or little time spent on planning and risk assessments together with weak change management during the project.”

The participants reverberate planning and poorly defined scopes as the usual causes for scope creep (P1, P2, P4 & P5). Furthermore, lack of control management during a project can lead to the conversion of regular changes to scope creep by not formalizing the changes (P5).

6.5.2 Scope Creep Impacts

After collecting data on scope creep causes, further inquiry related to that of scope creep impacts on projects. The participants were asked what impacts they saw, experienced or thought scope creep could induce on projects.

P1: “Well, the implications if you have scope creep is if you don’t manage to catch it and transform it to a change order, then your margin will drop. That’s number 1. Number 2 is that it often relates to time. You will be delayed by doing a lot that you should not have. Lastly, it takes a lot of time to close a project, and it also costs a lot of money to keep a project organization open.”

P2: “Often, there is delays which leads to costs, or a poor basis of starting the project. Sometimes they start the project too early without the appropriate scope.”

P3: “Well it depends on the project manager, how much you want to put up with. My projects have been fine, but you would use a lot of time. You would use a lot of energy on stuff you should not have to use energy on. But at the same time, it is better to discover this during the project than after. It’s often easier. But sometimes it is not always so easy to discover. In Finland for example, we had an engineer who had an idea for a product that was going to be implemented in the system. It sounded easy in the start, but it just became more and more complex. We just saw that the cost started rolling at an astonishing tempo. In the end, we had to stop the whole thing even though we spent a couple of millions because it could end really bad.”

The impacts of scope creep on projects can lead to delays and schedule overruns (P1, P2). Subsequently, a delayed project further instills cost by keeping the project organization open for a longer period of time than planned (P1, P2). Furthermore, participant 3 suggests that the total impacts of scope creep depends on how much effort a project manager is willing to put in to minimize it.

6.6 Perspectives on Scope Creep

The previous questions in the interview guide (Appendix 1) are used to gain context around the participants pre-conceptions of scope creep before asking them directly of their perspective on the phenomenon. The questions on the perspectives on scope creep is cited in verbatim from the research question, deeming this question the most imperative one of all previous questions. The questions on perspectives on scope creep are split in two. First, the participants were introduced to the different perspectives on scope creep
from the theoretical frame of reference. The participants were, therefore, informed that there were three usual perspectives on scope creep. Either it is entirely preventable given proper planning in advance, or that it is inevitable and must subsequently be controlled and minimized.

P1: “The assumption that you can never have the risk of experiencing scope creep is microscopic. No matter how much time you use on a project scope, you will never be able to cover it one hundred percent. [...] I think it is in the theoretical world where you can say there is a possibility to have a zero percent chance of scope creep.”

P2: “You can avoid it entirely, of course. But you can also have a shit project that goes wrong either way. For example, if you do not know what to construct and don’t have a good plan, and not a good enough project, of course it’s hard to control it.”

P3: “Well, I kind of agree on both. It depends on the duration of the project, if it is 1-2 years it can be changes underway that are completely inevitable. But you can also be really tough on the planning phase and on the execution of the project.”

P4: “The projects are so different, it depends on what you want to achieve. For smaller more specific projects you do not have time for scope creep to happen. It should not be there. [...] A scope creep that is handled will ultimately just be a regular change. If you can control scope creep, you can avoid it by transforming it to formal changes. The question is if you welcome changes to the project or not.”

P5: “My viewpoint is that scope creep is an uncontrolled expansion of the scope. You can avoid it. But you cannot take everything into consideration. So, it is not inevitable after all. The changes need to be controlled. I am kind of in the fence about this, in-between both.”

The participants voice varying viewpoints and stances regarding scope creep. P1 argues that it is only in theory scope creep is unavoidable, whereas P2 argues it is avoidable. It is important to note that P1 and P2 practices project management in different sectors. Furthermore, P3, P4, and P5 state that it depends on the project size and timeline.

After the first question on scope creep perspectives, the participants were asked why they think there are different opinions on scope creep, and how others might have an opposite view on the phenomena than themselves.

P1: “I do not know to be honest. [...] I think that sometimes, some people become too academic and get too far away from projects which is actually a practical subject. If you are too much of a researcher, then you put too much faith into theoretical prerequisites.”

P2: “I think it is a defensive attitude (laughs). I think it is because they have received bad projects at hand which leads them to start backwards.”

P4: “I think it lies in the definition of scope creep, what you put into it and what you assume it means. I know several people who would say some changes are not scope creep and that it happens, and you just have to live with it. I would name the same change scope creep for example. It depends on where you set the boundaries of what is and what is not scope creep. [...] [Scope creep definition from theoretical frame of reference] I agree
with that definition. It is a question of definition in my opinion. I would say it will never not happen, and the earlier you handle it the better.”

P5: “I think it is because we don’t have a clear definition of scope creep. It’s not scope creep if all changes are formalized and handled. Other people can mean that because the project looks different know compared to when it began, it is scope creep. It depends on what the perception of the term is which determines how you make up your mind.”

Here, the participants had differing viewpoints as to why people have opposite views of how scope creep is perceived. P1 argues it is because individuals are too absorbed in the idealistic theoretical world, while P2 states that it is an excuse from people who are handed substandard projects. Furthermore, P4 and P5 argue that it relates more to the definition of scope creep itself and how people interpret or rationalize their preconceptions of it. P5 continued to paint a darker picture of the meaningfulness of scope creep. Interestingly, the notion of the definition of scope creep itself intrigued the author of the thesis.

While analyzing the findings, and although not initially included in the interview guide or asked directly, some of the participants had exciting arguments as to why perceptions on scope creep differ relates to the definition of scope creep itself.

P1: “If everybody plays along in their respective team and is aware of scope creep, then it is unlikely it will happen. I have been with great engineers who at the minute they smell something might affect the budget time or cost they contact the project manager at once.”

P4: The more people around you that know what scope creep is, the more people are able to pick it up. A lot of people don’t know what it is and are unable to discover it. If they know and what consequences scope creep can have on a project and its progress, it is easier for them to identify it and consult me if there are any such changes. It depends on how they approach it with me.

P5: “Scope creep is a very derogatory term. You can just stick the term on something you don’t like. If a project has taken a direction or change that you do not want. That is how I experience it, like a curse-word. I think the term can be abused or misused. [...] I have never liked that expression.”

P5: [Why the participant does not like the term] Because it is like saying or calling somebody a negative thing. It can often be meaningless. You often have to ask people what they actually mean when they say scope creep. Often you have to explain why it is not scope creep. You have to defend yourself if someone uses the term. [...] There is no help to get scope creep on the table. [...] It is a dead expression.”

P1 and P4 argue that if people involved in the project are aware of scope creep, it is easier to catch, control and minimize. Awareness of scope creep, in turn, leads to better communications towards the project manager. Delving further into definitional matters, participant 5 argues that the term scope creep carries negative weight, primarily if it is used by someone who is not familiar with the definition but rather labels bad projects as scope creep.
7. Discussion

This study aims to uncover why there are differing perceptions of scope creep in project management by conducting multiple cross-sectional case studies. To do so in this discussion chapter, the participant’s responses from the preceding chapter is discussed concerning previous research from the theoretical frame of reference chapter. The findings are examined in contrast to the literature in order to fill the theoretical gap while giving background for further investigation and substantiate the answers towards the research question.

7.1 Changes During the Project Life Cycle

The author of this thesis chose to begin with changes in the project life cycle, in case following questions regarding change could pinpoint to a specific part of the project life cycle. Doing so was anticipated to give more contextual information leading up to the research question. When asked of opinions on changes in the project life cycle, the participants generally agreed that the earlier change happens, the better. As the project life cycle is regarded as the cornerstone of project management (Larson & Gray, 2014, p. 7), this consensus seems logical at first. Ensuring a robust project cornerstone as early as possible can make the project resistant to change as the project progresses (Martinelli, 2016, p. 118). However, there is an indication in the academic literature on project life cycles that change happens more on one stage than the other. The reason project managers wish that change is made as early in the project life cycle as possible could be related to that of the iron triangle of cost, time and quality.

Change which occurs in the later phases in a project’s life cycle is more likely to incur cost and delays, as other progress made in the project is likely to be infected by late changes elsewhere in the project. Furthermore, there were some discrepancies regarding in which phase of the project life cycle (PMI, 2017, p. 23) change occurs. In general, the participant consensus is that changes are made throughout the entirety of the project life cycle. The same consensus is reached regarding how changes are perceived in the initiation phase. Mistakes or poorly carried-out initiation stage of a project is deemed to have compounding consequences which can infect other parts of the projects that are otherwise well-defined and accounted for. On the other hand, early changes are likely to not be regarded as change at all by the project management organization. New inputs and modifications is the sole purpose of the initiation phase, in line with Kerzner’s (2017, p. 62) argument that the initiation stage is a preliminary assessment and evaluation of an idea. Thereby, the changes here are not regarded as change at all by the participants, in line with Kerzner’s statement.

Even though there were suggestions that change occurs during the whole project life cycle, participants argued that change is made in the early execution phase of the project life cycle after the initiation and planning phase. The lions-share of the project workload is expedited on the execution phase (Pinto & Prescott, 1988, p. 9), which relies on proper planning (Morris & Pinto, 2007, p. 1). Therefore, an inferior project life cycle initiation and planning phase could lead to a compensatory change in the execution phase as stated by the participants. According to the participant’s, the current trend in recent project’s is that change is moving from the planning phase to the execution phase, marking a shift in project management practices. However, this suggested trend made by the participant’s might only apply to the individual participant’s own microcosm, workplace, and specific
projects. On the other hand, the participant’s consensus on the topic is an indicator of these claims to be reliable and valid.

Not only is the physical aspects of the project put in motion during the execution phase (Larson & Gray, 2014, p. 8) such as work effort and materialistic manifestation, but also concerns the intangible assets and resources such as personnel and expertise (Kerzner, 2017, p. 3). According to P3, if the external and internal resources are inadequate or lacking in experience and communicative skills, such resources are changed by replacing project management team members if there such shortcomings surface, contributing to an increased rate of change in the execution phase of the project. Replacing personnel in the project managing organization creates loose ends and a loss of oversight unless the project manager exercises strict control to which extent individuals are informed and understand a project’s requirements and progress in time and cost.

7.2 Inadequate or Poorly Defined Project Scope

If the project life cycle is the cornerstone of projects, the project scope or scope statement can thus be deemed the material of which the cornerstone is made of. For example, Wysocki (2011, p. 11) eloquently formulated that the scope statement is the clarification of the project boundaries concerning the classic iron triangle which involves time, cost and quality. Subsequently, a change to a scope or late compensation for a poorly defined scope will affect the triangle factors in a Pythagorean fashion. When the participants were interviewed about the condition of the project scope and probable consequences in relation to the state of the project scope, they were quick to note that the users, customers, or stakeholders were likely at fault if the project scope was lacking substance. The arguments are similar and relate to that of Mirza et al.’s (2013, p. 722) suggestion that the lack of proper knowledge, comprehension or defining a project scope at the beginning of a project leads to scope creep and is a significant contribution to project failures. By exploring Wysocki’s (2011, p. 11) previous suggestion that the project scope relates to the iron triangle and affects quality, Bubshait (1994, p. 116) states that customers have a high impact on projects, and customer involvement is essential on project quality. Quality will suffer if the customer or related managers are not present or actively influencing the decisions made between both parties. At first glance, Bubshait’s suggestion might ring true. However, after further analysis of the collected data, the proposed discrepancies between the project management organization and customer are not only due to incompetence from one or both of the parties, but a lack of communication. In projects and business alike, communication touches upon every facet of daily and long-term operations. Therefore, the following discussion regarding communication on projects touches upon different elements across the subchapters in this section of the thesis.

If the scope definition or communication is poor, one of the parties involved in the project are likely resort to making assumptions to fill information gaps according to Kerzner (2014, p. 262). The author’s suggestion is in line with some of the participant’s statements. If the project scope is poorly defined, the customer is likely not to get what they want as they discuss different subjects without realizing so. Furthermore, if the scope is in a poor enough shape, it does not matter which project management methodology is utilized. P3 suggests the project manager has to commence damage control later in a project due to miscommunication in order to prevent further cost overruns and delays which are stated as probable consequences of bad project scopes. This participant statement can be supplementary to Shapiro & Lorenz (2000 pp. 3-4) suggestion that
excessive faith in project managerial procedures can lead to panicked responses and not aid in the mitigation of a poor project scope. In P2’s own words, “the worse the project scope is, the worse the execution of the project will be”. However, if involved individuals of a project has to resort to assumptions to fill in the blanks, the likely culprit will be a lack of or poor communication, affecting the project scope and outwards to every element and phase of projects.

However, Kerzner (2014, p. 262) & Turk (2010, p. 54) take on poorly defined project scopes suggests that a poorly defined project scope is the creator of misinterpretations and ill-defined requirements, can be in line with the experiences from the interviewed participants. On the other hand, from a standpoint of root-causes, poor communication before the formulation of the project scope would result in the scope also becoming substandard. Furthermore, customer’s poor formulation and handling of the project scope can lead to scope creep according to Abramovid (2000, p. 44. cited in Inder & Rivera, 2007, p. 2). According to P2 and P3, the project’s customers usually want to change “all the time”, supplying incorrect specifications or failing to anchor the project’s in their respective organization. Meanwhile, Larson & Larson (2009, p. 7) confirms this statement, suggesting that the insufficient integration of a project into the prospecting organization leads irregular communication to sponsors and stakeholders, which, in turn, results in disinterest and a lack of involvement. P3 states: “If you have a customer, then they most likely will not have anchored the project properly within their own organization. […] For example, one engineer told me that changes would have to be decided with the board. So, I asked him, how often do they meet? And he replied “well, once a week”. And that stuff just does not work at all.” P3’s experiences confirm Larson & Larson argument of poorly anchored projects leads to irregular communication, subsequently acting as a proponent of scope creep. This finding further substantiates Bellenger’s (2003, p. 58) argument that inexperienced clients without proper knowledge of the project’s technical processes can result in a poorly and inaccurately formulated scope document. Furthermore, communication is vital in the project initiation phase by evaluating and coming up with solutions for the customer according to Which (2009, p. 2) The quality of the project scope statement is correlated with how much scope creep a project might experience (Greiman, 2013, p. 169; Larson & Gray, 2014, p. 105, 477). Therefore, an inferior project scope and poor communication effort is likely to result in substantial changes to the project scope as the project progresses.

7.3 Project Scope Changes

There were numerous reasons given by the participants as to why a project scope might change during its life cycle. Interestingly, participants did not necessarily hold changes to the project scope in a negative view but instead saw it as seizing opportunities by taking action on the newly discovered solutions, in line with Larson & Gray (2014, p. 475) & Orlando (2013) arguments that scope creep can open new possibilities and features previously unnoticed. According to the P4, seizing such opportunities could lead to the project customer saving money, and modification of the project due to unforeseen events or external changes could benefit both parties. The claims made by P4 substantiates Kerzner’s (2014, p. 258) suggestion that unexpected changes or customers who do not know what they truly want as an end-result can result in an iterative process leading to these positive side effects of project scope changes.
Orlando (2013) suggests that scope changes, as long as they are “defined”, should be embraced. Orlando’s arguments are virtually supported by every participant interviewed. As long as the change to the project is formalized via official processes in the project management organization, the changes would not pose as scope creep but converted into value-adding activities instead, resulting in a better end-product for the customer. Furthermore, such formalized changes would not impact the project itself, as the budget and schedule are proportionally extended or reduced according to the scope change, in line with Shizari et al.’s (2017, p. 397) argument that a change in the project scope will always result in adjustment of the project’s baselines. While Ibbs’ (1997, p. 308) findings indicated that the more change incurred to a project subsequently reduced the productivity of the project managing organization. The participants did not voice any concern or comment in that regard. In fact, the participants instead embraced change as long as it was formalized, official and well-communicated to the project managers.

Kerzner (2017, p. 751) reasoned that scope changes occur due to the human nature of not being able to completely comprehend or define a project at the very start. P4 directly supported this specific argument for why scope change occurs: “Humans are not so clever that we see it immediately which leads to alternative processes of modulations”. On the other hand, causes for scope change are related to that of the previous section of this discussion. Customer requirements, lack of competence and miscommunication were also among the causes of scope change. However, these arguments for scope change related more to the unauthorized and uncontrolled changes to the project scope. For this reason, these findings are discussed in the succeeding section. From the viewpoint of purely regular scope change, the participants did not state other advantages or disadvantages regarding formalized changes.

7.4 Unauthorized and Uncontrolled Changes

Changes to a project which are unauthorized and uncontrolled bear different implications and meanings to the interviewed participants. However, the largest commonality in findings is that this specific type of change is usually related to the technical aspects of the project and the engineers who are responsible in these areas. For example, according to P1, P3, and P4, engineers could change technical aspects without notice or failing to communicate the changes. The participants argued that this happened as a consequence of failing to see the project in a holistic view, confirming Lorenz (2000, pp. 4-5) & Inder & Rivera (2007, p. 2) arguments that managing a project only by its individual parts can lead to a narrow managerial perspective, failing to see how minor changes can affect the project as a whole. The findings from participants statements that the unauthorized and uncontrolled changes to a project were due to miscommunication and disloyal acts of change from engineers came as a surprise for the author of this thesis.

However, after further thought, this finding might not be so surprising after all. As P1 stated: “A project manager is usually not a specialist on everything technical.”. In other words, a change in technical aspects might slip under the radar more easily but still bear the most extensive backlash on a project. The author resonates that the reasons for technical changes to unnoticed are precisely that of P1’s statement. Engineering solutions which are out of a project managers area of expertise might seem as regular change or even procedures related to the initial project scope statement, making them far more probable to go by unnoticed. According to the participants, the catalyst for these sorts of technical changes to happen is miscommunication. Furthermore, leaving out information might not be classified as miscommunication but rather implies that these problems
related to insubordination and disloyalty towards the project management team. The author of this thesis has not previously explored the link between unauthorized changes and technical aspects of projects in the theoretical frame of reference to a broader extent. Therefore, the discussion and identifying commonalities with the theoretical frame of reference concerning unauthorized changes is shorter than anticipated. On the other hand, by discussing such changes without using or explaining the term scope creep explicitly have led to this compelling finding by itself.

7.5 Scope Creep

There was no certainty if the participants were familiar with the term scope creep or its causes and impacts before initiating the collection of empirical data. Therefore, the author deemed it useful to divide this section into two separate subsections. On the topic of scope creep, participants were inquired if they were familiar with the term and what their own experience with the phenomena was, thereby comparing the results with the corresponding material from the theoretical frame of reference.

All participants were familiar with the term. They urged that scope creep should be transformed to change orders in order to mitigate it. Even so, scope creep was even, arguably, stated as a project manager’s most important task by P2. The concerns regarding scope creep’s impact on the project and subsequent consequences to the customer was explored in-depth. As such, scope creep was, surprisingly, linked to the technical aspects of the projects yet again, which seems like a commonality on the topic of scope creep concerning the preceding subchapter 7.3. Examples from P3 related to that of change from suppliers which led projects to extend beyond its initial boundaries. P4, on the other hand, explored the concept of scope creep in relation to microscopic technical changes. These small changes were so miniscule that other project members would choose not to inform the project manager, and that these small changes are where scope creep happened the most according to P4. As discussed in section 7.4, engineers were reluctant to say no to such small changes requested by the customer. Turk (2010, p. 53) & Baker (2006) states that unwillingness to say no to customers is classifiable as a type of misinformation. An inability to say no to changes can facilitate further scope creep. Thereby, the statements made by P4 confirmed Turk (2010, p. 53) & Baker’s (2006) arguments.

The most interesting finding on the initial questions about scope creep was P5’s view that scope creep depends entirely on the definition thereof. The participant had experienced that different team members used the term for different purposes, leading to ambiguity and uncertainty of what to make of scope creep related to the participant’s previous work in the project management field. These findings will, therefore, be discussed later in this section, found in chapter 7.7.

7.5.1 Scope Creep Causes

The theoretical frame of reference explores various and debating views on the exact causes of scope creep. However, the participants generally agreed that the leading cause of scope creep is a poorly defined scope, which is in line with the primary consensus by project management researchers (Carkenord, 2014; Farok & Garcia, 2016, p. 16; Hacker & Doolen, 2007, p. 38; Larson & Larson, 2009, p. 2; Shirazi et al., 2017, p. 398; Teye Amoatey & Anson, 2017, p. 396). Although Greiman (2013, p. 169) & Larson & Gray (2014, p. 105, 477) suggest that the same is applicable to too-widely formulated project
scopes, such a scope statement would be regarded by the author as a poorly defined scope due to the lack of given limitations and clear boundaries of the project.

Furthermore, P1, P3, and P4 suggested that weak control mechanisms can further facilitate scope creep even if the project scope is appropriately defined. The suggestion indicates that the monitor and control phase of the project life cycle is an integral piece to scope creep causes. The monitor and control phase analyze the deviations which impacts the project and ensures the corresponding adjustments to the project (Kerzner, 2017, p. 3). While Hunsberger (2001, p. 48) argued that change management is a necessity depending on the project method used (traditional, waterfall, agile), the participants indicated that this was a crucial element without discussing the dependency of which project management methodology was implemented. The change management of projects acted as a controlling mechanism or “control management” and was used interchangeably by the participants. The overall purpose of monitor and control is to minimize the risk that might occur during a project (Meredith & Mantel, 2011, p. 441) but the participants did not discuss risk explicitly. According to the participants, change management and control functioned as barriers against the uncontrolled and unauthorized changes initiated by project team members as previously discussed in section 7.4. Nielsen (2011) & Salapats (2000) supports the argument that change management functions as a barrier against uncontrolled and unauthorized changes and adds that change control is imperative for preventing scope creep. Besides, the participants focus on the importance of change control confirms the finding of Farok & Garcia (2016, p. 16) who concluded that the most common cause of project failure is a lack of scope change control.

As there will always be changes to a project, change management, and change control is emphasized by participants as crucial efforts if the project scope was properly in place before commencing the project. Furthermore, the human element is underlined by all participants. Humans cannot conceive or predict anything in the future no matter how well thought-out a project scope statement might be. However, P1 elaborated on the subject and claimed that the primary cause of scope creep is due to expectations and assumptions of the future that might involve more risk than anticipated before starting the project. According to Kerzner (2014, p. 262) & Davis & Radford (2014, pp. 99, 184) such assumptions are often a direct result of a poorly defined scope statement, which is in line with the statements made by the participants. While several reasons for the causes of scope creep were given by the participants, their opinions differed of what was the primary cause of scope creep. By further analysis of commonalities from the statements given by the participants, a recurring theme was subsequently identified. The main cause of scope creep was identified to be a combination of a poor scope statement and an absence of change management. Other than the reasons stated above, the participants did not suggest anything new that was not in line with the previous discussion.

### 7.5.2 Scope Creep Impacts

Interestingly, the participants were quite uniform in their assessment of the impacts scope creep can have on a project. Although using different wording and formulations, all participants stated that the impacts of scope creep were substantial cost overruns and delays without much further elaboration. However, Larson & Gray (2014, p. 273) adds that a failed schedule and cost management can lead to project delays and cost overruns. The participant’s uniform feedback confirms that of previous project management literature on the subject of scope creep impacts, where added cost and possible project delays are given as the most likely effects on a project (Greiman, 2013, p. 169; Larson & Larson, 2009, p. 1; Larson & Gray, 2014, p. 105; Moneke & Echeme, 2016, p. 172; Sliger,
Shapiro & Lorenz (2000, p. 4) makes the argument that scope creep enlarge on its own by self-perpetuation, which was neither confirmed nor dismissed by the participants. However, there might be other consequences of scope creep which are hidden and unexplored by the author. On the other hand, P3 weighed in that the impacts of scope creep are dependent on how much a project manager is willing to put up with or spend energy and time minding the correction, mitigation and further prevention of scope creep. This claim confirms that of Burek (2006), who suggested that project managers are likely to devote an unfortunate amount of effort and time into identifying and mitigating the factors causing scope creep if the project boundaries are unclear.

7.7 Perspectives on Scope Creep

The theoretical frame of reference indicates a consensus amongst researchers which inclines towards the notion that scope creep is a natural occurrence in projects, making it an inevitable event (Greiman, 2013, p. 166; Meredith & Mantel, 2011, p. 498; Walker, 2012; Wysocki, 2011, p. 11). The participants had differing opinions if scope creep is inevitable or preventable. Some stated it is inevitable, others preventable and some in-between. Following the notion of preventability, the remark made by researchers that scope creep is inevitable is based on the background that change itself is inevitable, implying a link between the two (Wysocki, 2011, p. 33). However, it is important to note that the participants who had differing views on the matter were working in different industry sectors. For example, the participants working in the IT sector were prone to stating that scope creep is inevitable, albeit depending on the type of project with means on time, budget and other less important factors, supported by Farok & Garcia (2016, p. 16). This finding was not surprising, especially as IT projects are notorious for being profoundly affected by scope creep due to constant changes in technology and newly added customer requirements (P3). The relationship between scope creep and occurrence frequency in the software and IT sector is, however, not investigated by the author as it is not included in the research objectives of this thesis.

P2 worked in the construction business and reasoned that scope creep could be entirely preventable. This statement goes against that of Hussain (2012, p. 74), who found that 97% of construction projects experienced scope creep in some way or another. Furthermore, Dumont et al.’s (1997, p. 59) study in the construction industry found that poor scope definition is one of the leading causes of project failure. There were no further reasons given as to why it could be preventable by the participant. In project management literature, the researchers who advocate a preventative approach towards scope creep always include specific measures that had to be implemented in order to ensure the cure for scope creep. For example, APM (2006, p. 33) suggests that monitoring and controlling scope creep can prevent it from happening, while Bellenger (2003, p. 58) & Madhuri et al. (2018, p. 72) argues that scope creep can be prevented by well-written scope and using agile project management methodologies respectively. The participants did not utter comparable claims. Furthermore, P1 and P4 informed the interviewer of an interesting take on why perspectives on scope creep might differ. The participant suggested that it is only in theory that scope creep cannot take place, implying that researchers are too detached from project management in practice as opposed to methodologies and frameworks. P1 further elaborated that personal acquaintances in academia would refuse to work full-time in universities in order to maintain the connection with practical project management as not to get lost or hung up in literature, but rather exploring what kinds of project management techniques works in practice.
P3 and P5 placed themselves in between the different perspectives on scope creep. The main argument from the participant was that the inevitability or preventability of scope creep is entirely dependent on the project itself. If a project has a duration for more than a year, scope creep is more likely to occur. Such statements are not found in the literature review from the theoretical frame of reference. On the other hand, according to P4, if the project were short on time and limited in resources as well, there would be tiny margins for scope creep to occur as everything in the project is deemed critical in all phases of the project life cycle ensuring extreme project managerial control. This preventative view is supported by Barry et al. (2002, p. 134), that scope creep is preventable by having time limits, tight controlled and a properly defined planning phase. Thereby, strict control and change management transforms changes that would qualify as scope creep to be effectively formalized as an official change.

When asked why the participants thought others could have different opinions on scope creep than themselves, much of the same arguments were re-iterated from the previous questions. P1 and P4 made the argument that if project team members were able to identify which changes are recognizable as scope creep, it is less likely to occur. The main reason for claiming so was that the formalized uncontrolled or unauthorized changes would, in turn, be more likely to be communicated to the project manager and thereby resulting in corrective action in relation to that of subchapter 7.3. If project team members have the ability to discern scope creep from scope changes, scope creep is reduced or prevented throughout a project (P1 & P4). Most interestingly, however, was the arguments of P5 that it could be due to the definition of scope creep itself. The mistake of misusing or interchanging the terms scope creep and scope change to describe the alteration or deviation from the project scope is, understandably, a likely occurrence if there is an inherent lack of knowledge and insufficient ability to detect the uncontrolled and unauthorized changes from regular, formalized change.

Furthermore, P5’s statements discerned greater dismay with the term scope creep, perceiving it as a derogatory slang and heavily prone to misuse. The participant explained that scope creep as a label had to be questioned if it is used to describe a change or the project itself by project team members due to its meaningless nature. The participant’s experience in relationship with the statements of other interviewees can be seen as an example where insufficient knowledge of the phenomena results in poor communication and change management as there is no clarity if the change is appropriate or acceptable according to the project scope and strategic organizational alignment.

On the other hand, project management team individuals could disagree on what changes would qualify as scope creep or not. It will depend on the set boundaries and limitations of the project scope statement. These statements were deemed as the most surprising findings by the author and were subsequently explored further in the interviews. While the author of this thesis set out to explore why there are differing perspectives on scope creep, the inherent assumption was that, perhaps, it is merely due to one of the perspectives to be wrong. However, it turned out to be more nuanced and complex than the initial assumptions and expectations of the author. The perspectives on scope creep can be tracked to the very definition of scope creep itself, with unexpected relevance to the theoretical frame of reference’s subchapters of 2.5.1 and 2.5.2 with particular emphasis on 2.5.1 which discusses scope change and how or why it differs from scope creep.
Based on the findings, scope creep was known by the interviewed project managers, but their experiences unveiled that the perceptions of the phenomena are a matter of definition. The definition of scope creep is an essential piece of information for project managers unaware of the phenomena in order to prevent or mitigate further scope creep. However, no previous studies are linking the extent of project managerial knowledge on scope creep and its consequences on managerial communication as an enabler of scope creep itself.
8. Conclusions

The final chapter of this thesis summarizes and connects the empirical findings to the research questions and objectives. Subsequently, the managerial implications and theoretical contributions are highlighted in order to improve present and future management practices while adding to the project management body of knowledge. Finally, the author explores the limitations of the study and recommendations for further research.

8.1 Conclusion

The purpose of this thesis and research question is to explore the managerial perceptions of scope creep in projects. More specifically, the author of the thesis chose to investigate why there are differing views on scope creep. After an extensive literature study and collection of material found in the theoretical frame of reference, two major viewpoints surfaced. Researchers are in dispute whether scope creep is entirely preventable by excellent project management practices and methodologies, or inevitable and, thus, must subsequently be controlled. The opposing views formed the foundation of the research question, and the author set to investigate why there are opposing views on the phenomena. By using multiple cross-sectional case studies, the author assessed the managerial perspectives, causes, and impacts of scope creep in projects in accordance with the research question and objectives. In order to generate empirical data on the subject, five participants with extensive project management experience from various backgrounds were interviewed to gather empirical findings. Further data analysis identified why project managers have opposing views on the nature of scope creep. The qualitative study has led the author to attain a deeper insight and understanding of actual project management practices with regards to scope creep, and, thereby, succeeded to answer the research question;

**RQ: Why do project managers have opposing perceptions of scope creep in projects?**

While the participants of the study had opposing views on scope creep in projects, the findings indicate that the definition of scope creep itself is the main reason opposing views on scope creep exists. If individuals in the project management team, whether it be technical or managerial have insufficient knowledge of the true meaning of scope creep, the same individuals in project teams and environments are inclined to misusing the term and unable to detect the occurrence of scope creep in projects or discern it from formalized scope change. The ambiguity and uncertainty generated by a lack of understanding of the phenomena is identified to be the reason that project managers have opposing views on scope creep in projects. For a binary comparison of the two battling academic views of scope creep in terms of preventability and inevitability, the discrepancy is due to the dissonance and grounding between the academic project management world and its actual applications and subsequent implications on projects.

Furthermore, the findings indicate that a project's technical aspects and adherent engineers are excessively inclined to commence unauthorized modifications without communicating the changes to the project manager or project team. Besides, this study reveals that scope creep is prevalent across the entire life cycle of a project, and that poorly formulated project scopes are likely due to poorly formulated requirements from the project customer, resulting in an inadequate communication between the project
management organization and customer. The habit of using change management extensively served as the primary tool to transform scope creep into formalized change, thereby eliminating or mitigating the effects scope creep might impose on a project.

8.2 Managerial Implications

The findings of this study are useful for practicing project managers by providing insight to scope creep and what its true meaning is while at the same time highlighting the consequences of ambiguity around the subject. However, as the study is a smaller cross-sectional study employing a single qualitative research strategy and excluding qualitative elements, the collected data and subsequent analysis are highly subjective and dependent on context. The author recommends that the findings, insights, and recommendations should be taken for what it is, insights to be used as suggestions until further research effort on the subject are accomplished.

First and foremost, a robust and clear project scope statement is imperative to ensure that scope creep has as little room as possible to gain traction. The clarity of the project scope is dependent not only by extensively outlining what the project scope includes but also with a great emphasis on what the project does not accomplish or involve during and after the project completion. Secondly, project managers should increase internal awareness and definitional knowledge of scope creep. Doing so could lead to better communication within the project management teams, which in turn would affect the customers and stakeholders by clarification of the project scope before commencing a project. Better communication and recognition of the patterns of scope creep can, thereby, prevent scope creep from becoming self-perpetuating and stopping uncontrolled change at the point of discovery.

The third and last recommendation concerns change and control management. The findings of this study in accordance with existing literature suggests that scope creep results in an accumulation of extended deadlines and cost overruns. The study further demonstrates that these effects are controllable by using extensive change management. Related to the insights previously suggested, the comprehension of scope creep mechanisms and how it arises leads to early detection and better communication. Scope creep knowledge in combination with change management can transform scope creep to formalized change orders which are made official and spread throughout the project management organization. However, project managers ought to include the customer in change management groups in addition to ensuring that the project is properly anchored in the customers own organization to facilitate quick and educated decisions. Such measures reduce the likelihood of project delays due to slow and inaccurate decision-making.

8.3 Theoretical Contributions

The purpose of this study and research is to investigate the managerial perceptions of scope creep and why there are differing viewpoints. By doing so, not only did it lead to new insights of scope creep itself but also to a deeper understanding of the two different perspectives of the same phenomena. The literature review, especially Padalkar & Gopinath’s (2016, p. 1314) research paper highlighted that the amounts of studies regarding scope creep were virtually zero, including the managerial perceptions of it. In order to build a theory around the subject, the qualitative multiple case study approach is
used in order to explore the perceptions of scope creep in real life project management. Therefore, this thesis fills a gap in the project management body of knowledge concerning the perceptions of scope creep and bears fruit by highlighting project scope change and control management. Although scope creep is explored in previous academic literature, it is often an element of another related overarching theme which contains a lesser-relevance to the specificities of scope creep. Even after the contribution of this study, the topic of scope creep remains an under-researched area in the field of project management literature.

However, the literature on scope creep still recognizes the different impacts and causes of scope creep with some commonalities. The literature is scattered, and there is no verbatim consensus on any of the definitions of scope creep. Regardless, the managerial implications and perceptions are absent in present project management literature. That is the reason why the author has attempted to gain new insights and understanding at this specific intersection of the human element of perception in combination with the existing theoretical material on scope creep. The thesis emphasizes the importance of recognizing scope creep and urging further exploration into a phenomenon with such crucial impacts as a determinant of project success. Subsequently, the study aims to serve as a basis for further research into scope creep and increasing theoretical and practical knowledge of scope creep in project management organizations and teams.

8.4 Limitations

This study contains some limitations to which the author was careful to be conscious of during the study. Future researchers on the subject of scope creep should be aware of these limitations. This study is conducted in Norway, a country that scores high on most global statistic composite indexes. Furthermore, Norway displays a small and relatively homogenous population. It is reasonable to assume that these are significant factors affects and shapes the participant’s worldview when taking into account that the study is based on the subjective opinion of the participants. Therefore, the findings of this study might not be generalizable to other parts of the world. The interviews were conducted in Norwegian and translated into English. Some figures of speech and other contextual meanings could be lost during translation to English.

The multiple case study involves a small sample size of five participants, which further diminishes the generalizability of the findings. The participants have experience from varying industry sectors in addition to being of different ages and genders which could affect results. Furthermore, the data analysis led to new and interesting findings but might not be sufficient enough in order to make more substantiated conclusions. Last but not least, as previously mentioned, the perceptions of scope creep are highly subjective and can vary much no matter where such a study would be made, limiting the transferability of the results even if the same sampling criteria are fulfilled.

As for theoretical limitations to the study, several highly relevant academic papers towards the research question was found but were not accessible due to old age or lack of access through Umeå University’s library services. Furthermore, the scientific articles cited throughout this study originates from different journals as scope creep is an under-researched area. Such journals were related to software development and construction. Due to the lack of material on the research subject, gathering a sufficient amount of literature was laborious. Therefore, the theoretical framework supplements academic
research literature with project management literature from project management authors. It is important to note that these authors have extensive experience in project management, where several of the authors have a substantial connection with the Project Management Institute responsible for the publishing Project Management Body of Knowledge. Ethical considerations such as the anonymity of the interviewed participants might limit future researchers to replicate the findings of this study.

8.5 Recommendations for Future Research

Throughout the research for this thesis, the author discovered several areas to which future research could fill more gaps in the project management body of knowledge in order to strengthen knowledge on scope creep. The different areas most ripe of further research are listed below.

- The author’s conclusion that the perceptions of scope creep differ due to the definition of scope creep or knowledge thereof presents itself as an opportunity to study the definition of scope creep in greater detail.
- Academic literature on scope creep generally takes two firm stances on scope creep. It is either preventable or inevitable. A study performed in a controlled project environment with similar project objectives and scopes could result in a comparative study, giving new insights if managers can prevent scope creep or, instead, prepare measures in advance to control scope creep when it arises.
- The findings of this paper indicate that project managers experience and manage scope creep in different ways. However, the most recurring measure against scope creep is that of establishing a change management group within the project management organization. Studying the effects of these change management groups with regards to scope creep could provide valuable lessons for fighting scope creep which is easily transferrable to project managers in practice.
- Scope creep often arises due to a lack of communication or a conscious choice of modifying a project while deliberately withholding information of the change. Future researchers are likely to find interesting data on the relationship between communication and scope creep in projects.
- As a combination of the recommendations mentioned above for future research, a study investigating the link between the combination of a lack of knowledge of scope creep and miscommunication could be a significant factor for providing scope creep the environment it requires to thrive.

Given the lack of focus on scope creep in project’s although it is consistently proven to be a leading cause of failure, the author believes that these recommendations for future research could lead to better project management practices and further close the gap between academic theory and the application of project management in practice.
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Appendices

Appendix 1: Interview Guide

1. Introduction

Before I start the interview, I would like to express my gratitude for you taking part in sharing your experiences and viewpoints with me. For starters, I would like to inform you that this is on a completely voluntary basis – you are free to not answer any question(s) and terminate the interview at any time. I am currently a student writing my Master thesis as part of the MSPME Strategic Project Management program at Umeå University in Sweden. The thesis will revolve around the phenomenon of scope creep in project management which will be explained later in detail.

In projects, projects often end up over budget, over schedule or vice versa. On this background, I am looking further into the causes of these events in project and project management. In academic and professional terms, this phenomenon is called scope creep which lies at the heart of my research question and is the reason for interviewing you today.

In my study, in particular, scope creep is investigated in order to understand the managerial perspectives, experiences, and impacts to which scope creep can have on projects. Furthermore, the perspectives on scope creep as to if it is inevitable or preventable (or anything in between) are of the most important question in the study. I would be very happy if you have the time to answer a set of questions in order to look at scope creep in a new light and hear from your practical project management experience related to this topic. There are no right or wrong answers, your own perspectives and viewpoints on the topics I provide are valued.

You will remain anonymous in this research, and the answers you provide will in no way be of any connection to you, especially regarding personal and company information. This applies to other participants in this thesis, where the participant and company information is anonymized. For your information, the thesis will be available publicly on the Swedish educational database called DIVA. If it is OK with you, for analytical purposes, I would express a request for recording this interview in order to transcribe it to words after the interview has been conducted. The data collected will only be used in connection with this research and confidentiality is assured. The audio-recording will never be publicly available.

The questions asked will be based on an interview guide with pre-formulated questions, and I assume that the interview will take around 40 minutes. Do you have any further questions before we begin?

2. Warm-up: Introduction of participant and organization

2.1 Could you please tell me your name, position and length of employment?

2.2 Do you have a project-management related education or certification?

2.3 What is the name, type of business, operational length, sector and size in employees
of the company you are currently employed?

3. Project Management

3.1 What are the types and number of projects you have managed?

3.2 Can you describe your role and responsibilities as a project manager?

4. Project Life Cycle

*Information: In traditional project management, according to literature, the project life cycle is divided into five phases: Initiation, Planning, Execution, Monitor & Control and Closure.*

4.1 Do you use a specific project life cycle like this for your projects?

4.2 In which stages of the project life cycle does changes usually occur?

4.3 How often are these changes related to the project scope?

5. Project Scope

5.1 Do you formulate a project scope statement before proceeding with the project?

5.2 Are the project scope comprehensively defined before executing work?

5.3 What happens to projects where the project scope is inadequately or poorly defined?

6. Changes to Project Scope

6.1 What are the causes for changes to the project scope?

6.2 Are these changes communicated effectively throughout the organization?

6.3 To which extent does uncontrolled and unauthorized changes occur?

7. Scope creep

*Information: Scope creep could be viewed as any uncontrolled and unexpected changes in project requirements that extend the initial boundaries of the project.*

7.1 Are you familiar with scope creep, even though you use another name for it?

7.2 How often have you experienced scope creep in the projects you have managed?

7.3 What are the causes of scope creep?

7.4 What are the impacts of scope creep during and after the completion of a project?

7.5 In your own opinion, why does scope creep occur at all?
8. Conclusion

Information: It is currently ambiguity in project management literature of the nature of scope creep in projects. Some researchers argue that scope creep can be preventable, while others argue it is inevitable and must subsequently be controlled. Others say that it is both preventable and inevitable.

8.1 What is your personal view on the nature of scope creep?

8.1 Why do you think project managers and researchers have different perspectives on scope creep?

That was all, thank you very much for participating! If there is anything you feel might be of importance to which might not have been mentioned, feel free to get in touch at any time. Furthermore, if you wish, you can read through the word-by-word transcript before the thesis is published.

Appendix 2: Interview Guide, Amended

1. Introduction

Before I start the interview, I would like to express my gratitude for you taking part in sharing your experiences and viewpoints with me. For starters, I would like to inform you that this is on a completely voluntary basis – you are free to not answer any question(s) and terminate the interview at any time. I am currently a student writing my Master thesis as part of the MSPME Strategic Project Management program at Umeå University in Sweden. The thesis will revolve around the phenomenon of scope creep in project management which will be explained later in detail.

In projects, projects often end up over budget, over schedule or vice versa. On this background, I am looking further into the causes of these events in project and project management. In academic and professional terms, this phenomenon is called scope creep which lies at the heart of my research question and is the reason for interviewing you today.

In my study, in particular, scope creep is investigated in order to understand the managerial perspectives, experiences, and impacts to which scope creep can have on projects. Furthermore, the perspectives on scope creep as to if it is inevitable or preventable (or anything in between) are of the most important question in the study. I would be very happy if you have the time to answer a set of questions in order to look at scope creep in a new light and hear from your practical project management experience related to this topic. There are no right or wrong answers, your own perspectives and viewpoints on the topics I provide are valued.

You will remain anonymous in this research, and the answers you provide will in no way be of any connection to you, especially regarding personal and company information. This applies to other participants in this thesis, where the participant and company
information is anonymized. For your information, the thesis will be available publicly on the Swedish educational database called DIVA. If it is OK with you, for analytical purposes, I would express a request for recording this interview in order to transcribe it to words after the interview has been conducted. The data collected will only be used in connection with this research and confidentiality is assured. The audio-recording will never be publicly available.

The questions asked will be based on an interview guide with pre-formulated questions, and I assume that the interview will take around 40 minutes. Do you have any further questions before we begin?

2. **Warm-up: Introduction of participant and organization**

2.1 Could you please tell me your name, position and years you have been involved in projects?

2.2 Do you have a project-management related education or certification?

2.3 What is the type of business, sector and size in employees of the company you are currently employed?

3. **Project Management**

3.1 What are the types and number of projects you have managed?

4. **Project Life Cycle**

*Information: In traditional project management, according to literature, the project life cycle is divided into five phases: Initiation, Planning, Execution, Monitor & Control and Closure.*

4.1 In which stages of the project life cycle does changes usually occur?

4.2 How often are these changes related to the project scope?

5. **Project Scope**

5.1 Do you formulate a project scope statement before proceeding with the project?

5.2 Are the project scope comprehensively defined before executing work?

5.3 What happens to projects where the project scope is inadequately or poorly defined?

6. **Changes to Project Scope**

6.1 What are the causes for changes to the project scope?

6.2 Are these changes communicated effectively throughout the organization?

6.3 To which extent does uncontrolled and unauthorized changes occur?
7. Scope Creep

Information: Scope creep could be viewed as any uncontrolled and unexpected changes in project requirements that extend the initial boundaries of the project.

7.1 Are you familiar with scope creep, even though you use another name for it?

7.2 How often have you experienced scope creep in the projects you have managed?

7.3 What are the causes of scope creep and why does it occur at all?

7.4 What are the impacts of scope creep during and after the completion of a project?

8. Conclusion

Information: It is currently ambiguity in project management literature of the nature of scope creep in projects. Some researchers argue that scope creep can be preventable, while others argue it is inevitable and must subsequently be controlled. Others say that it is both preventable and inevitable.

8.1 What is your personal view on the nature of scope creep?

8.1 Why do you think project managers and researchers have different perspectives on scope creep?

That was all, thank you very much for participating! If there is anything you feel might be of importance to which might not have been mentioned, feel free to get in touch at any time. Furthermore, if you wish, you can read through the word-by-word transcript before the thesis is published.