

The impact of financial benefits on the timeous completion of projects

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ABSTRACT

There is a long history of projects going over budget and exceeding the planned time limits across a wide range of industries.

Due to the nature of the project work environment, contract workers are often only required on a project for a limited amount of time, usually for the time limit of the project. The number of workers required during a project is too many to employ permanently when there are no projects running, and as a result, these workers tend to become unemployed once a project ends, unless they obtain permanent employment, or until such time that a new project starts and they are again employed on the new or different project.

During projects run in the South African Power Generation Industry, workers receive a salary for the duration of a project as well as other fringe benefits apart from their regular salary in the form of daily allowances called 'per diems', or subsistence allowances. These subsistence allowances often take the form of, for example, a Living out Allowance (LOA). Contract workers also get paid overtime during the project, especially when the work that needs to be done is critical, or when the project's allocated time over-runs. Collectively, all of these are referred to as financial benefits.

The purpose of this dissertation is to determine whether the method of payment to contract workers on projects and the receiving of fringe benefits in the form of subsistence allowances and overtime, has an impact on the time a project takes to complete. The idea is to identify whether workers and the payment method, together with fringe benefits, are contributors to delays experienced on projects. The reasoning behind this is that the continuous payment forms can serve as a motivation to be counter-productive and inefficient, with the goal of extending the time limits of the project, to gain more financial advantages in the form of a continuous salary and being employed for longer, as well as fringe benefits in the form of overtime, subsistence allowances and other salary top-ups.

Furthermore, recommendations into whether the approach to the payment system requires reconsideration and possible changes are made, and consider given as to how this can be accomplished.

Key Terms: Financial benefits, project delays, project duration, labour force impact, incentive, motivation, workers efficiency

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CHAPTER 1: NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

There is a long history of projects going over budget and exceeding the planned time limit across a wide range of industries.

Due to the nature of the project work environment, contract workers are often only required on a project for a limited amount of time, usually for the time limit of the project. After a project has been completed, the contract personnel become unemployed, unless they obtain permanent employment, or until such time that a new project starts and they are again employed on the new project.

For the duration of a project, organisations tend to give contract workers a benefit called 'per diem' allowances. 'Per diem' is a Latin term for 'each day'. Per diem allowances refer to allowances paid to workers for costs incurred on a daily basis, which are also known as 'Daily Subsistence Allowances'.

The purpose of this dissertation is to determine whether subsistence allowances to contract labourers impact on the time a project takes to complete by serving as a motivation to be counter-productive and inefficient, with the goal of protracting the time allocated to the project, to gain more financial advantages in the form of subsistence allowances as well as longer employment.

1.2 PROBLEM STATEMENT

Due to the nature of the project work environment, contract workers are often only required on a project for a limited amount of time, usually for the time limit of the project. After a project has been completed, the contract personnel become unemployed, unless they obtain permanent employment, or until such time as a new project starts and they are again employed on the new project.

Projects across industries have their own unique challenges, but incorporate much the same elements, and have often have the tendency to run over the initially planned time. Studies done on causes of delays in the project environment do not include or query the involvement of the labour force, other than the skills of workers.

For the duration of a project, contract workers working on a project receive financial benefits in the form of salaries, overtime, fringe benefits and subsistence allowances/per diems. 'Per diem' is a Latin term for 'each day'. Per diem allowances refer to allowances paid to workers for costs incurred on a daily basis, which are also known as 'Daily Subsistence Allowances'. A daily subsistence allowance is defined by the SARS External guide for employers in respect of allowances for the 2016 tax year (*A Guide for employers in respect of allowances*, 2016 Tax year), as "A subsistence allowance is any allowance given to an employee or a holder of any office for expenses incurred or to be incurred in respect of personal subsistence and incidental costs" (South African Revenue Service, 2016:6).

Unemployment has been repeatedly labelled as a social and economic challenge in South Africa. Interpretation of Statistics SA publication of the Quarterly Labour Force Survey's between 2008 (3rd quarter) and 2015 (3rd quarter) indicates that the unemployment rate in South Africa has been on the rise from 23.2% in 2008 to an unemployment rate of 25,5% in 2015. This translates into an increase of 2.3% over a period of seven years (Statistics South Africa, 2008:3). In a harsh economic environment where employment is a scarcity, contract workers will always have the worrying thought in mind of where work, and consequently financial income, will come from once a project, which the worker is contracted on, finishes. It is understandable that workers would rather consider the survival of their families, who might be wholly dependent on the income from the contract worker, first, before considering the timeous completion of the project which is, to a large extent, dependent on a productive and efficient labour force.

When these factors are considered and combined, it begs the question: Do contract workers have a tendency to purposefully delay critical work activities on projects, be less efficient and generally be less productive with the purpose of increasing the amount of time a project takes to complete? They would be keeping in mind the awareness that the longer a project drags on, the longer financial benefits are paid, and the longer the contract labour force remains employed.

This opens up the option of alternative ways of motivating the labour force to be more efficient and productive on a project. By providing incentives, and thereby rewarding workers when project deadlines are met, good results can be achieved, rather than providing financial benefits throughout the duration of the project, and in essence rewarding workers for being inefficient and unproductive.

1.3 OBJECTIVES OF THE STUDY

1.3.1 Primary objective

The importance and benefits of the proposed study are to highlight a concern that has been experienced by many in the project environment, especially in the Power Generation Maintenance industry, namely that financial benefits serve as a motivation to labour to be less efficient and productive on projects they are involved with.

Currently, there is no indication whether the practices of purposefully extending and protracting project times in the maintenance project environment by contract workers are done, whereby they get rewarded in essence for inefficiency and unproductivity through financial benefits. Whether the results are positive or negative, it will assist in clearing up the suspicion that is held by many who are involved in the project environment.

The study will be able to open additional paths to confirm, or crush this suspicion, and open avenues to address the phenomenon, and produce alternatives to motivate the labour force who are working on projects if the suspicion is confirmed. This in turn would contribute to the general challenge of improving the turnaround time to complete projects.

The study will enable companies that operate in the project environment to rethink ways of motivating workers to reach deadlines, in order to increase their productivity and efficiency, thereby contributing to the turnaround time of major projects and save on costs.

The core objective of the research is to establish whether financial benefits that get paid to workers for the duration of a project, impact on the timeous completion of the project by having an adverse effect on the motivational levels of the workers towards their work,

impacting on their productivity and efficiency – thus, the way that these fringe benefits have the potential to confer an additional financial advantage, even to such an extent that workers become dependent on it.

When these factors are considered and combined, it begs the question: Do contract workers have a tendency to purposefully delay critical work activities on projects, be less efficient and generally be less productive with the purpose of increasing the amount of time a project takes to complete? The underlying concern is that the longer a project is protracted, the longer financial benefits are paid, and the longer the contract labour force workers remain employed.

1.3.2 Secondary objectives

Secondary objectives are intended to establish whether different approaches need to be considered when payments to workers are made in an effort to improve overall efficiency of projects, and eliminate the possibility of loss of time and costs due to the impact of an inefficient labour force on the project.

This opens up the option of alternative ways of motivating the labour force to be more efficient and productive on a project. Providing incentives, and thereby rewarding workers when project deadlines are met, is effective, rather than providing financial benefits throughout the duration of the project, and in essence rewarding workers for being inefficient and unproductive.

1.4 SCOPE OF THE STUDY

The problem being investigated in this study is whether subsistence allowances as well as ‘top-ups’ received by contract labourers during employment on projects serve as a motivation to be counterproductive and inefficient in the execution of their work, in an effort to protract the length of projects in order to obtain more of the financial advantages, as well as the employment on offer for as long as possible.

Due to the nature of the project work environment, contract workers are often only required on a project for a limited amount of time, usually for the time limit of the project. After a project is done, the contract personnel become unemployed, unless they obtain

permanent employment, or until such time that a new project starts and they are again employed on the new project.

The target of the study is the labour force that works during projects, but not permanently located in a specific work location, and often found to be working away from home. The industry that will be used is Power Generation Maintenance. The reason for this is that this industry mainly makes use of projects to conduct maintenance outages on turbo-generator machines, and is accessible to the researcher.

For the intended research, the non-probability sampling method of convenience sampling was utilized as being most applicable. This is because the researcher had to at a power station where a project is being executed, and the fact that the researcher has direct access to a power station and the subsequent target group. This made the use of convenience sampling not only necessary, but also unavoidable.

The sampling was based on non-probability sampling, based on the fact that the sample selection was focussed on a certain group, which mainly targeted contract workers who work on projects in the Power Generation Industry. As such, it is important to note that the sample was representative of workers in the project environment, specifically related to the Power Generation Industry.

The selection of the worker individuals was not made known. This means that the sample selected was required to be done using a random selection method.

The population for the sample unit of analysis consisted of contract workers who worked purely in a project environment. The workers targeted in this study were part of the power generation maintenance environment.

With the research question aiming to probe the possibility of the contract labour force contributing to delays experienced on a project, the target group of the study focused on the workers on the ground where physical labour is done, as these physical workers are the individuals who do benefit and receive subsistence allowances throughout the duration of a project.

The labour force primarily consists of artisans in the form of fitters, as well as supervisors who oversee the activities of the artisans. These workers perform work in the Power Generation Industry relating to maintenance primarily of turbines and

generators, and who are the primary receivers of subsistence allowances and top-ups in the form of overtime.

1.5 RESEARCH METHODOLOGY

The research methodology entailed a literature study, as well as an empirical study. The research methodology included identification of the research topic, defining the research problem and determining a way to approach the problem. The collection of the data was done, and the analysis and interpretation followed. Subsequently, the report on the interpreted data required writing up the conclusions and recommendations of the study.

1.5.1 Literature/theoretical study

The literature study focused on the background of the identified problem, as well as evidence of possible issues that influence it. Projects across different types of industries were looked at, and it was found that the same challenges existed within the project environment, and that delays and cost overruns were common occurrences.

The causes for these delays were thoroughly looked at in a wide variety of papers; however, the impact of the labour force would seem to have on these delays, and whether these delays are caused by a lack of productivity and motivation brought on by the financial benefits gained by the contractor labour force during the progression of such projects, are limited.

The literature study focused on possible reasons why the contracted labour force on a project might want to delay projects, such as the impact of possible unemployment, and motivation, and the impact that financial benefits have thereon.

The main purpose of the literature study has been to identify and grow a base of knowledge relating to projects, the delays they experience, the impact that the contractor labour force has on it, and whether financial benefits impact on it by influencing productivity and motivation to work. From this, rest of the research could follow.

To produce the literature study, accredited journals, articles, websites and other forms of literature were employed to construct it.

1.5.2 Empirical study

The empirical study included the gathering of data by utilizing a research tool in the form of a questionnaire to gather necessary data, and the processing of the gathered data as well as the analysis thereof.

1.5.3 Development of the questionnaire

The questionnaire consisted of two sections:

Section A:

This part of the questionnaire was developed in order to evaluate the demographic information of the labour force on projects, which mainly consists of contract workers in the power generation maintenance industry. Participants' gender, age group, highest educational qualification, marital status, home language and years at the company/industry were determined. The purpose of section A was to establish trends and enable the analysis of different groups in the targeted project industry.

Section B:

This section of the questionnaire was developed to measure certain constructs which are possessed by the labour force, and which could potentially impact on the time a project takes to complete if the construct is found to be present. The questionnaire consisted of a collection of 30 statements that focused on the identified constructs.

The participants were requested to indicate whether they strongly agreed, agreed, disagreed or strongly disagreed with the statements on the constructs. Additionally, the statements on the constructs were not grouped together around the themes that the constructs covered, but were mixed randomly. The statements on the factors were drafted in such a way as to attempt not to raise suspicion with the contract workers that it threatened their financial wellbeing, and to ensure honesty when they indicated agreement or disagreement with the statements.

The target was to receive 100 completed questionnaires; however, due to time and financial constraints, together with the number of projects running at the time to provide access to the target study sample, the number of completed questionnaires was capped at 67.

The constructs that were identified to possibly be possessed by the labour force and that could potentially have an impact on the delays that projects experience were identified as the following:

- Dependency on financial benefit;
- Unemployment awareness;
- Productivity;
- Motivation; and
- Personal impact on project.

1.5.4 Study population

The population for the sample unit of analysis consisted of contract workers who work purely in a project environment. The workers targeted in this study are part of the power generation maintenance environment.

With the research problem identified as the possibility of the contract labour force contributing to delays experienced on a project, the target group of the study focused on the workers on the ground where physical labour is done, as these physical workers are the individuals who are beneficiaries of different forms of financial benefits whilst working on a project.

The labour force primarily consists of artisans as fitters, as well as supervisors who oversee the activities of the artisans. These workers perform work in the Power Generation Industry relating to maintenance primarily of turbines and generators, and who receive financial benefits for the duration of a project and most likely to be affected by the constructs as identified.

1.5.5 Collection of data

Data gathering was done by physically approaching different individuals who fitted the target sample population. Different power stations were visited where projects were running. After gaining permission from the relevant authority figures such as the Project Manager, Engineer and/or Technician in charge of the project, questionnaires were handed out to the individual contract workers on the project, who were requested to fill

them out after explaining that it was anonymous and voluntary. The filled-out questionnaires were collected again once completed.

1.5.6 Analysis of data

After the filled-out questionnaires had been collected, they were handed over to the North-West University Statistical Consultation Services at the Potchefstroom Campus to be statistically analysed. Data were converted into certain useful aspects including frequency tables and correlations between different constructs. These statistics were used to draw conclusions and make recommendations based on the analysed data. These specifically related to contract workers on projects in general, and the power generation maintenance industry in particular.

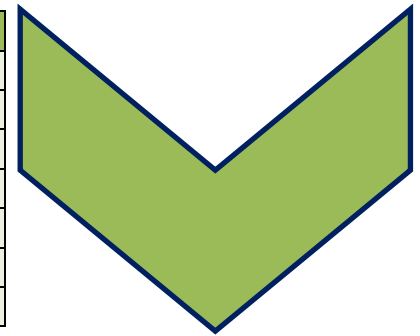
1.6 LIMITATIONS OF THE STUDY

Certain limitations are applicable to the study.

- Only projects that were running at the time could produce the target sample population required. These accessible projects amounted to three projects at three different power stations which were accessible at the time.
- The number of workers available during the time that research was conducted was limited, as the number of power generation maintenance projects running at the time was small.
- Even though conclusions can be drawn and be applied to projects in general, it is important to note that the workers who participated in the study were exclusively part of the power generation maintenance industry, and specifically relating to the maintenance of turbines and generators on power stations across South Africa.
- The available time is a limitation due to the fact that there is a time limit allowable to complete the research. With more time available, a higher number of the target sample and population could have been accessed, enabling a refinement of statistics and results.
- The ability of study group target sampling is a possible limitation in the sense that English is not the first language of many of the respondents, and the ability to interpret and understand the statements as put to them on the questionnaire could be limited to some of the respondents.

1.7 LAYOUT OF THE STUDY

Chapter 1 – Nature and scope
Introduction
Problem statement
Objectives
Scope
Research method
Limitations
Study layout



Chapter 2 – Literature study
Introduction
Unemployment
Delays in the project environment
Impact of money on productivity
Motivation of workers
Impact of fringe benefits

Chapter 3 – Empirical study
Introduction
Data gathering
Demographics
Reliability and validity
Assessment of constructs
Multiple regression analysis
Summary

Chapter 4 – Conclusions and recommendations
Introduction
Data gathering
Demographics
Reliability and validity
Assessment of constructs
Multiple regression analysis
Summary

Figure 1: Layout of the study

1.7.1 Chapter 1 – Nature and scope

Chapter 1 focuses on the nature and scope of the study, drawing attention to the background and development of the problem. The problem statement is provided, objectives of the study stated, and the limitations explained. The research methodology is briefly touched upon, and a general framework of every chapter presented.

1.7.2 Chapter 2 – Literature review

Chapter 2 of the study comprises the literature review. The literature study focused on the background of the identified problem, as well as evidence of possible issues that influence it. The impact of unemployment is looked at, as well as factors that play a role in the delays experienced on projects in general. It further examines the impact that financial benefits such as salaries and other fringe benefits in the form of allowances and overtime have on the mind-set of people in the workplace. Productivity of workers as well as motivation to work is considered.

The main purpose of the literature study was to identify and grow a base of knowledge relating to projects, the delays they experience, the impact that the contractor labour force has on it, and whether financial benefits impact on it by influencing productivity and motivation to work. From this, the rest of the research could follow.

From the literature study, certain constructs were identified that could possibly have an impact on the delays of projects, and which are influenced by the contract labour force who work on projects.

1.7.3 Chapter 3 – Empirical study

Chapter 3 concerns itself with the process, methods, and processing of the questionnaire to be developed based on the identified constructs which could possibly influence the delays experienced on projects, and the impact of the contract workers on it. The data-gathering tool takes the form of a questionnaire consisting of statements designed to probe the constructs. The participants had to indicate their level of agreement with the statements. The analysis and interpretation of data also form part of Chapter 3.

1.7.4 Chapter 4 – Conclusions and recommendations

Chapter 4 concludes the study, and outcomes achieved in the study are assessed. For this purpose, the analysis gained from Chapter 3 was applied. The outcomes of the study as set for the study are re-evaluated to assess whether they have been achieved.

Furthermore, the findings gained from the study will be employed to make useful and practical recommendations for possible future studies.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

There is a long history of projects going over budget and exceeding the planned time limit across a wide range of industries.

Due to the nature of the project work environment, contract workers are often only required on a project for a limited amount of time, usually for the time limit of the project. The number of workers required during a project is too many to employ permanently when there are no projects running, and as a result, these workers tend to become unemployed once a project ends, unless they obtain permanent employment, or until such time that a new project starts and they are again employed on the new or different project.

For the duration of a project, contract workers receive a salary as well as other fringe benefits apart from their regular salary in the form of daily allowances called per diems. A 'per diem' is a Latin term for 'each day'. Per diem allowances refer to allowances paid to workers for costs incurred on a daily basis, which are also known as 'Daily Subsistence Allowances'. The South Africa Revenue Service Guide to Taxpayers of 2016 defines a subsistence allowance as an allowance as any allowance given to an employee or for additional expenses given or that is to be given due to costs incurred in a personal capacity by the individual (SARS, 2016). A subsistence allowance can also be described as any allowance granted to employees for incidental costs that are of necessity incurred, such as meals while the individual is executing his duties in line with his employment, and is obliged to spend time away from his usual place of residence for a minimum of one night (Govender, 2010:16).

During projects conducted in the South African Power Generation Industry, workers receive a salary for the duration of a project. In addition, they receive other subsistence allowances. These subsistence allowances often take the form of, for example, a Living out Allowance (LOA). Contract workers are also paid overtime during the project, especially when the work that needs to be done is critical, or when the project's allocated time lags behind.

The purpose of this dissertation is to determine whether the method of payment to contract workers on projects and the receiving of fringe benefits in the form of subsistence allowances and overtime, has an impact on the time a project takes to complete. It is possible to limit delays in construction projects when the causes have been identified. This links to the purpose of this paper, which attempts to identify whether workers and the payment method, together with fringe benefits, are a contributor to delays experienced on projects (Sunjka & Jacob, 2013:641). The reasoning behind this is that the continuous payment forms can serve as a motivation to be counter-productive and inefficient, with the goal of protracting the time of the project, to gain more financial advantages in the form of a continuous salary and being employed for longer, as well as fringe benefits in the form of overtime, subsistence allowances and other salary top-ups.

Furthermore, recommendations as to whether the approach to the payment system requires reconsideration and possible changing are made, as well as consideration as to how this can be accomplished.

2.2 UNEMPLOYMENT

When considering the causes of delays of projects and their relation to any impact labour might have, it is important to consider whether there are any reasons that labour might be inclined to have an interest in the delay of projects in certain industries. In this regard, the fact that the contract workers in essence become unemployed once a project ends, raises the possibility that unemployment can serve as a deterrent to finish a project on time for contract workers. Contract workers are brought in to make up the core of the labour force. The number of workers required during a project is too high to employ permanently when there are no projects running, and as a result, these workers tend to become unemployed once a project ends, unless they are employed on another or a new project.

Unemployment has often and repeatedly been labelled as a social and economic challenge in South Africa. The threat to social and political stability could emerge from income benefits from increasing labour scarcity, as well as unemployment and underemployment. Currently, the South African economy is unable to absorb the labour force in circulation (Kingdon & Knight, 2007:814). Furthermore, the large numbers of

unemployed people have been cited as remaining a major problem in the macro-economic environment which faces South Africa and the rest of the South African Development Community (SADC) (Schenk & Blaauw, 2008:90).

Unemployment remains very high in South Africa, irrespective of the way it is measured (Banerjee *et al.*, 2008:716). Unemployment has increased substantially since South Africa's democratic elections in 1994. There have been clear indications of the increase of unemployment in South Africa. A survey was done nationally just prior to the transition to democracy. The results showed that unemployment at the time was at 13%, compared to the end of the decade by which time unemployment had risen to almost 30% (Banerjee *et al.*, 2008:716). Clearly, unemployment rose dramatically after the transition to a democratic South Africa. Furthermore, the point is made that the increase in labour supply came as a shock to the labour market with the influx of eligible workers (Banerjee *et al.*, 2008:718). The conclusion is made that changes in the unemployment rate could be viewed as resulting from either a shock or structural change in the labour market (Banerjee *et al.*, 2008:737). It can be concluded that with the major increase in labour supply into the market in a post-democratic South Africa, competition for employment rose dramatically among workers.

A growing divergence between labour supply and demand has been growing across time. The effect thereof is a depressing one when considering market-determined real wages (Kingdon & Knight, 2007:815). The effect on wages and the subsequent lowering thereof, leads to the suspicion that workers would naturally look towards additional means to be financially stable in reaction towards lowered wages if a situation would present itself. The real reason that unemployment has risen is because of the speed with which the labour supply has grown in comparison to the growth of formal sector employment, and the growth relative to each other is very divergent (Kingdon & Knight, 2007:816). The trade-off between wages and unemployment is a very difficult one (Kingdon & Knight, 2007:823). The implication of this can be that workers who are formally employed might feel that whatever they are getting paid can be seen as insufficient. As a result, they might look to other means to be able to increase their basic salaries. There is no real support for the idea that South Africans make a conscious choice to be unemployed (Kingdon & Knight, 2007:828) Furthermore, it is held that the unemployed are substantially worse off in general than the informally employed (Kingdon & Knight, 2007:829).

Contract workers might be inclined to do what is needed to keep their current form of work when contracted on a project. It is concluded in the paper that the increase in unemployment and the fall in earning in the less protected parts of the labour market have dramatically increased the number of households in poverty. From this it can be deduced that contract workers in general would attempt to actively avoid a situation where they cause the households where they are breadwinners to fall into poverty, and cling to the employment they have, instead of risking to lose being employed for a certain period of time.

Due to reductions in the workforce, it is understandable that job security is a priority to employees. The reaction to the lack of job security may cause individuals to experience psychological reactions to the threat of the loss of their job, whether it actually occurs or not. Furthermore, the statement is made that work commitment can suffer as a consequence of the threat of job loss, as well as organizational effectiveness. The conclusion is that job insecurity and the threat to individual's jobs are usually negative forces (Wiley, 1997:277).

More recently, interpretation of Statistics SA publication of the Quarterly Labour Force Surveys between 2008 (3rd quarter) and 2015 (3rd quarter), indicates that the unemployment rate in South Africa has been on the rise from 23.2% in 2008 to an unemployment rate of 25,5% in 2015. This results in an increase of 2.3% over a period of seven years (Statistics South Africa, 2008:3). In a harsh economic environment where employment is a scarcity, contract workers will always have the worrying thought in mind of where work, and consequently financial income, will come from once a project, which the worker is contracted on, finishes. It is understandable that workers would rather consider the survival of their families, who might be wholly dependent on the income from the contract worker, first, before considering the timeous return of the project which is, to a large extent, dependent on a productive and efficient labour force.

2.3 DELAYS IN THE PROJECT ENVIRONMENT

Projects across a wide set of industries contain the same elements, and as a result, a parallel between projects can be drawn in terms of challenges experienced. Projects strive to be achieving success and limit delays. A project's success can be defined as meeting the objectives set out initially by the project, and whether the project reached its

goals and technical performance within schedule and budget (Frimpong *et al.*, 2003:321).

Delays on a project are explained as the time period that is over-run. This happens either beyond the completion date (as is specified in a contract), or when the project goes beyond the date of delivery that the parties agreed upon (Assaf & Al-Hejji, 2006). A delayed project is characterized by the late completion of work in relation to what was planned or contracted (Sunjka & Jacob, 2013:641).

Productivity measures the efficiency of resources and how they are employed. It is defined as the ratio of unit of output, to unit of input, per unit of labour. It is measured in total, and is divided by the number of members per units of labour employed in order to produce the required output (Aiyetan & Olotuah, 2006:240).

The productivity of the labour force is one of the major challenges faced by projects across industries. Project managers and construction professionals define productivity as a ratio between earned work hours and expended work hours, or work hours used. Productivity is a ratio between the total input of resources and total output of product. These resources consist of materials, equipment, overhead and labour (Hanna *et al.*, 2005:735). Furthermore, productivity measurement is indicated by a ratio, percentage, and that others might use schemes use a production rate. The example given for such a scheme is that a certain amount of work is done in a specific period of time (Klanac & Nelson, 2004 & Lee, 2015:223). Productivity and efficiency of the labour force utilized on a project could possibly contribute to the delays experienced.

An industry that attracts a lot of attention when time and cost overruns are considered is the construction industry. The construction industry often makes use of projects, as do the Power Generation Maintenance industry. Projects across different industries often contain the same elements and challenges, and as a result, a parallel in this regard can be drawn between different industries in which projects are utilized, and which often have the tendency to run over the initially planned time and cost. Several studies have been conducted into the delays experienced in construction projects, especially in the construction industry. Past research clearly indicates that a large number of factors influence a project's likelihood to experience time delay and extended durations (Anastasopoulos *et al.*, 2012:390).

Identifying the most compelling factors that influence project delay is vital (Nawi *et al.*, 2016:178). The accurate identification these factors remains a major challenge (Trauner *et al.*, 2009 & Lee, 2015:222). It is possible to limit delays in construction projects when the causes are identified (Sunjka & Jacob, 2013:641).

A broad set of views exists related to the causes of delays on engineering and construction projects. The delays are not based only on a single party, but can also be ascribed to different sections. Many of these relate to systemic faults and deficiencies rather than to a specific group or groups (Alaghbari *et al.*, 2007:193). Some of these delays can possibly be ascribed to workers and their motivation that is influenced by the ways they are paid.

Delays are one of the most common problems affecting the construction industry in the execution of its projects, and indicates that the most important step in developing corrective actions is to determine the causes of the time delays. There is an existential link between the cause of the delay as well as its subsequent impact (Gonzalez *et al.*, 2013: 04013027-1). This supports the possibility that the attitudes of workers towards their work, and the factors affecting their attitude can contribute to the delays, by actually being the cause of the delay. The results showed that planning and sub-contracts contribute most significantly to the time delay causes (Gonzalez *et al.*, 2013: 04013027-8). This fact further gives rise to the suspicion that when contracts are awarded to sub-contractors, the elements that are brought with it, might contribute to delays experienced on the project.

Research data in the groundwater construction projects in Ghana indicate that 75% of projects over-run the project schedule and cost as initially planned, whereas only 25% finished on time and within budget (Frimpong *et al.*, 2003:321).

It has been indicated that in the South African construction project environment of the 2010 FIFA World Cup, when the causes of delays were ranked, that contractors' performance was left wanting. When cost over-runs were considered, it was found that the most significant factors were due to client action in changes to the work, or additional work, time delays as well as the price changes to materials used (Baloyi & Bekker, 2011: 54).

Cost over-runs due to delay are considered disruptive to construction projects (Lee, 2015:222), and is seen as a major problem that can lead to disputes and relationship breakdowns between parties involved in a project (Al-Khalil & Al-Ghafly, 1999:647). Delays are seen as one of the biggest problems faced by the construction industry, and have severe financial impacts to all parties involved in the projects, as well as having negative impacts on projects success (Nawi *et al.*, 2016:178). It can be assumed that this is not unique to the construction industry, but applies to projects in any industry, and where the effects will also be subsequently experienced as negative. Because of the importance to the contractor moneywise, and owners in terms of performance-wise, delays are broadly accepted as the most frequent problem, which brings with it costs, complexity as well as risks (Alaghbari *et al.*, 2007:193). Construction project delays may be caused by a number of reasons, and delay problems are unusually common (Sunjka & Jacob, 2013:641).

It is evident that cost and time over-runs are the order of the day in the construction industry that makes extensive use of projects. This phenomenon is not only common to the construction industry, but occurs across a wide range of industries that make use of projects. Studies done on causes of delays in the construction industry project environment have been done many times. However, it rarely queries the involvement and contribution of the labour force to the causes of delays, other than the levels of skill of the workers. Labour productivity is difficult to distinguish and might result in contention between parties. Furthermore, lost productivity may not be easily detected or realized from the outset, due to it resulting from actions which are essentially the responsibility of other parties (Lee, 2015:223)

The importance of labour productivity has often been cited as being an important factor in the success of projects. Labour productivity can be considered as being paramount to practitioners and researchers, due to it affecting project time and cost (Abdul Kadir *et al.*, 2005:42). The impact of an efficient and productive labour force is therefore paramount, and a key success factor in any project. The possibility of the payment method to workers by receiving a salary for the remainder of the project, together with fringe benefits can negatively impact on workers' efficiency and productivity in such a way that it becomes a contributor to delays experienced on projects.

Management decisions have the potential to influence labour productivity, and because of this fact a substantial amount of funds for a project is allocated to labour expenses (Hanna *et al.*, 2005).

Globally, several arguments have been made relating to labour's contribution towards delays experienced in projects. In Malaysia, the argument has been made that the contractor's responsibility and contribution to delays in construction projects can be ascribed to several factors, most noticeably poor skills and experience of labour, shortage of site labour, and low productivity of labour, among others (Alaghbari *et al.*, 2007:196). Furthermore, construction projects considered in Jordan found that owners agreed that design errors, labour shortages and inadequate labour skills were found to be important delay factors (Al-Momani, 2000:52). In a research paper on reasons that affect labour productivity, it is said that time and cost over-runs occur due to various project delay factors which in turn affect construction labour productivity (Abdul Kadir *et al.*, 2005:53). Productivity has been demonstrated to be a crucial factor to be considered, especially in labour-intensive industries. Moreover, in the mentioned project, Vale Malaysia Minerals Project, it is pointed out that the workmanship standards and level of skills were lacking, and as a result the productivity produced by workers was lacking. As a result of the decline in productivity, the duration to perform day to day tasks required repeating and reworking in attempts to rectify the mistakes made. Workers became inclined to take as much time as possible to execute their given tasks, with the reason given being a lack of supervision (Nawi *et al.*, 2016:181).

It is clear that the view is held across a large section of industries involved in projects that one of the most serious reasons for delays has to do with labour, be it labour productivity, labour skills or labour supply. However, the impact of the payment methods to workers, and the potential impact of financial advantages open to them on their productivity are not queried. The delays might be caused by the motivation of personnel, which in turn might be influenced by the financial benefits gained from working on a project in the form of salary, fringe benefits, per diems/subsistence allowances and overtime, and influencing workers' productivity in such a manner that it contributes to the delays experienced on a project.

2.4 PRODUCTIVITY AND MOTIVATION OF LABOUR: DOES MONEY MATTER?

Work motivation of existing workers can be seen as the degree or willingness of an individual to make and maintain an effort towards their organizational goals or objectives (Chandler *et al.*, 2009). In the work environment, motivation is a way of getting individuals to act in a certain manner, and getting people to work willingly to reach a certain goal or a certain task.

Workers' motivation is related to extrinsic rewards in work-related issues, and have many implications, especially when work-related performances are tied to extrinsic rewards (Ankli & Palliam, 2012:7). It can thus be gathered that worker performance and effectiveness are tied to rewards. Workers are not rewarded for achieving deadlines and set goals on a project in general, and this might take away from them their motivation to reach them. Extension of the project might be desired by the labour force should it hold more advantages for them financially.

There are a wide range of theories and research done on the topic of motivation and subsequent influence on motivation of human beings, and several theories exist. Motivation is induced by a certain need, depending on an individual or a group's priorities (Aiyetan & Olotuah, 2006:240). Motivation is a human engineering approach which is induced by individual needs (Mee-Edoiye & Andawei, 2002). It is also a psychological process that is triggered by needs, and the actions directed towards satisfying a certain desire (Flippo, 1982). A needs-based theory of motivation was developed by Abraham Maslow incorporating five basic needs: Physiology, security, society, esteem and self-actualization. Maslow theorized that these needs dictate behaviour on and off the job (Aiyetan & Olotuah, 2006:240). Frederick Herzberg developed a two-factor theory which is also called the hygiene motivator.

Two factors feature in the theory:

- Hygiene factors: Job-related factors which prevent job dissatisfaction, but do not encourage workers' growth or development, and
- Motivators: Job-related factors that do encourage growth

To expand on this, Herzberg's theory, money (salary, wages and fringe benefits) is considered a hygiene factor. Hygiene factors are related to work environment such as salary, job security, working conditions, status, procedures of the company etc. and dictate whether job satisfaction is adequate or inadequate. Motivators are factors that

are intrinsic, for example achievement, recognition, responsibility, personal growth etc. The theory is that without these factors, the work provides limited satisfaction, but when these factors are present, the work is satisfactory (McLean *et al.*, 1996).

It should, however, be noted that Herzberg's theory has in many cases been countered and refuted. Salary, recognition and responsibility have been proved to act both as motivators and hygiene factors (Maidani, 1991). Furthermore, Herzberg's theory is seen as the most criticized of the motivation theories. In particular, money (salary, wages, and fringe benefits) is a contentious point, as it is the source of meeting the lower needs which are food, clothing and shelter (McLean *et al.*, 1996:292).

There are two categories of motivation, according to Aiyetan and Olotuah: Financial and non-financial. Under financial incentives, they categorize two areas namely managers and operatives. As we are interested in the floor workers physically doing the work in the form of contractors, the operatives' financial motivation applies. Under these financial incentives for operatives (and in this case contractors), extra pay for shift work, profit sharing, allowances and overtime availability, are listed amongst several other financial incentives that operatives/contractors require (Aiyetan & Olotuah, 2006:243). This is one of the most insightful comments made that fully supports this paper's theory, that contractors can be motivated to yearn for financial advantages. If projects provide the means to these financial advantages, it is possible that they would consciously pursue access to these advantages by attempting to extend the time period linked to running time of projects

Salaried employment allows for financial stability, and giving workers income certainty. (Bryson *et al.*, 2011:424). Contract workers might react differently when faced with the possibility of being unemployed at the end of a project in terms of productivity. Contract workers essentially become unemployed once a project they are working on ends. It is reasonable to accept that workers would want the project to be extended for as long as possible if the possibility exists for them not to be hired thereafter.

A low paying salary may affect the performance of workers negatively (Aiyetan & Olotuah, 2006:246). It is likely that it affects the labourer's productivity and may be one of the reasons that delay in delivery of projects is experienced on majority of projects. It also indicates that of all the motivating factors studied in the construction industry,

overtime was the most used to achieve higher performance from workers. It says that an increase in salary made workers more committed, and that it ranked the first among the factors that motivate workers. The most motivating factors according to the study were increases in salary, promotion and overtime pay (Aiyetan & Olotuah, 2006:246). It is clear that workers in the construction industry are motivated by money and financial advantages in general. Financial advantages might then also serve as an incentive to delay work, if there is more financial gain in delays than in quick and effective completion of a project.

Labour is an essential part of production (Simukonda, 2000:212). To improve production behaviour, a significant change in the structure of productive labour time, as well as in the level of supply is required (Simukonda, 2000:213). When projects are considered in general, the reasoning is that the level and supply of productive labour time should be increased if the effectiveness of projects is to be improved, and that labour plays a major role in this regard. The supply of productive labour-time is determined by both physical and psychological terms. This implies that in order for labour time to be productive, the psychology of workers plays a role in determining the effectiveness and productiveness of workers. (Simukonda, 2000:231). Allowances, such as subsistence allowances together with other fringe benefits, such as overtime and financial advantages in general might influence workers psychologically and terms of motivation, as well as their subsequent effectiveness and productiveness when time and deadlines on projects are considered.

When the loyalty and productivity of workers are considered, it is clear that the accessibility of overtime plays a role. In a newspaper article of the *Westchester County Business Journal*, the argument is made that changes to overtime practices by exempting certain workers, might result in a loss of loyalty and productivity of employees (Brody & Wheelin, 2017).

Effort is associated with disutility as explained by the rational economic behavioural model, which form the basis of labour economics. Therefore, it is assumed by economists that monetary rewards motivate employees, and that their effort will increase to do certain tasks if they get rewarded for them through performance-related pay (Bryson *et al.*, 2011:424). Moreover, it is asserted that workers are risk-averse, and do not want to tie their income to their performance at work (Bryson *et al.*, 2011:424).

This leads one to suspect that workers would want to keep the status quo of receiving a salary and other advantages in the form of overtime and allowances, and would not opt for changing to a system where deadlines are achieved. In such a system, workers will be rewarded for achieving set goals and deadlines. However, it is asserted that performance related pay, as in achieving goals and deadlines in the project environment, can improve worker performance. Workers put more effort into achieving the outputs when it is rewarded through pay and financial gains (Bryson *et al.*, 2011:425). There are several case studies that indicate how productivity of workers increasing when the payment method was switched from set salaries to piece-rate payment. The fact that workers on projects receive a salary, together with overtime and allowances might impact on their productivity and their willingness to reach deadlines and set goals. The literature certainly indicates that this might well be the result. If a switch from salaried payment to piece rate had an impact on workers' productivity over such a wide area, it might well be the same for contract workers in general across a wide range of industries.

It is possible for workers to collude to reduce effort in order to gain a long term financial advantage. This can be applied to other industries as well, and can lead one to suspect that workers can collude to reduce effort and productivity if the possibility exists for them to gain more financial advantage from it (Bryson *et al.*, 2011:425).

Scientific models relating to motivation has been done which take into account what incentives can be given to individuals or groups to exert a behavioural change (Ankli & Palliam, 2012:8). Maslow's hierarchy of needs theory suggests that it is people's deficiencies that determine what motivates them (Ankli & Palliam, 2012:8). If it is assumed that contract workers' deficiency is unemployment at the end of a project, their behavioural motivation can thus be seen to be influenced by the fact that they require employment for financial stability. This can lead one to suspect that workers might be inclined to keep their employment status for as long as possible, which means that they might want projects to be extended in order to be employed longer.

It can be argued that anything done to an employee influences their quality of work, whether positive or negative, as well as the speed of the progress on their work, and those workers should be motivated in order to deliver. The building industry's ability to deliver projects timeously, and the subsequent cost over-run of the projects can be attributed to worker's performance (Aiyetan & Olotuah, 2006:1).

Labour productivity is an indication of how effectively labour inputs are converted into output (Eldridge & Price, 2016:1). It is a measure of the efficiency at which available resources are used and converted from a certain measure of input to a certain measure of output per labour (Aiyetan & Olotuah, 2006:240).

The argument is also made that the productivity of individual workers is a very important criterion and one which need to be considered closely, as it affects the productivity of a company and its competitive power. It also measures hard work of individuals and how remuneration is distributed (Aiyetan & Olotuah, 2006:240).

2.5 MOTIVATION OF WORKERS

It has been indicated that of all the motivating factors studied in the construction industry, overtime was the most used to achieve higher performance from workers. Studies done show that an increase in salary made workers more committed and that it ranked first among the factors that motivate workers. The most motivating factors according to the study were increases in salary, promotion and overtime pay (Aiyetan & Olotuah, 2006:246). It is clear that workers in the construction industry are motivated by money and financial advantages in general, and that this trend can be applicable across different industries.

Studies done relating to incentives, organisational behaviour and motivation found that there are positive outcomes regarding motivation, performance, and interest in reward and recognition programmes. Additionally, employees find that the only way their pay can be increased is through promotion (Milne, 2007:28). Workers who find this problematic might be inclined to find other ways of increasing their pay should the opportunity present itself.

Businesses use financial advantages such as pay, promotion bonuses as well as other rewards to encourage performance from employees (Cameron & Pierce, 1997). Is it possible that financial advantages could have an adverse effect, if it serves as a deterrent to reach set goals and deadlines? To link to this thought, Milne makes an important point that there are differing opinions between writers about the success and effectiveness of incentive programmes, and that it can undermine productivity and performance (Milne, 2007:30). It is added that a big project is a good opportunity to

celebrate milestones and set goals, and that incentives should be used to keep people working towards a goal, and keep motivation going (Milne, 2007:31).

To achieve high levels of performance from employees, employers rely on them to perform in a manner that affects the bottom line positively, and hence it must be understood what motivates employees. This is important as it ensures the success of the company by improving productivity. Furthermore, the respondents ranked good wages in their motivation in their jobs (Wiley, 1997:276). Productive behaviours and motivation of employees can be reinforced by reward systems and job redesign strategies. Paying good wages is valued by most in general, and pay is an important reward because it satisfies the needs in the hierarchy of needs theory (Wiley, 1997:277).

Labour productivity is reduced due to several factors including unclear or inadequate instructions, poor tooling and equipment and the supply thereof, working groups that are unbalanced, working methods, delegation of authority and a lack of incentives (Aiyetan & Olotuah, 2006:239; Heap, 1987). A lack of or unwillingness to provide incentives can be a major cause of delays on projects, especially when it can be considered that overtime and subsistence allowances (per diems), and general salaries as a whole can serve as a counterproductive incentive for workers to extend a project in order to gain more financial advantages for longer.

2.6 IMPACT OF FRINGE BENEFITS: SUBSISTENCE ALLOWANCES AND OVERTIME

2.6.1 Subsistence allowance / per diem

For the duration of a project, organisations tend to give contract workers a benefit called 'per diem' allowances. 'Per diem' is a Latin term for 'each day'. A daily subsistence allowance is defined by the SARS External guide for employers in respect of allowances for the 2016 tax year (*A guide for employers in respect of allowances*, 2016 Tax year), as "A subsistence allowance is any allowance given to an employee or a holder of any office for expenses incurred or to be incurred in respect of personal subsistence and incidental costs" (South African Revenue Service, 2016:6).

The practice of subsistence allowances (per diems), the benefits as well as the drawbacks, are questioned by Vian (2009:1). The benefits and drawbacks of per diems are explored, and the question asked whether it distorts good governance in the health sector. The study was done within the health sector and explains that when people travel for work, they are generally allowed to be reimbursed for incidental expenses, including travel, meals and accommodation expenditures due to the fact that employees incur these expenses which are required to enable them to fulfil their work function. Per diem allowances refer to allowances paid to workers for costs incurred on a daily basis, which are also known as 'Daily Subsistence Allowances' (Vian, 2009:29). Based on this explanation, overtime paid for working hours other than normal hours working by workers can be seen as a subsistence allowance, due to it being paid to employees for working additional hours; time which the person could otherwise spend on themselves for personal reasons. These kinds of benefits, such as overtime, are known as top-ups.

Much has not been written on the subject of top-ups, and the topic in itself still remains largely unexplored (Nkamleu & Kamgnia, 2014:4).

The benefits of subsistence allowances as covering work-related expenses are explained, as well as that it functions as providing incentive and encourages professional development. This is in relation to personnel when they are reimbursed for expenses on the employees' side for attending meetings and training sessions. It further explains that it provides incentives, and argues that subsistence allowances serve to motivate personnel to work in attaining the organizational goals. In countries where employees are poorly paid, it is possible that employees may find themselves reliant rely on per diem payments as an income supplement. (Vian, 2009: 29). This view is further enforced that subsistence allowances help employees to make ends meet, and fulfil their financial obligations. Based on this argument, it is reasonable to suspect that people would want to receive as many subsistence allowances as possible, for as long as possible if they do become dependent on it, due to the financial advantages they are able to obtain from it.

Several issues exist with subsistence allowances. They can produce negative incentives and opportunities for abuse start being open to exploitation (Vian 2009: 29). This idea links with the one mentioned previously where the suspicion is raised whether employees are prone to attempt to receive subsistence allowance for as long as possible. Subsistence allowances may have a negative impact, especially in re-directing

employees' time towards less productive activities, as well as the possibility that intrinsic motivation of employees fall, and that people get motivated financially (Vian 2009: 30). This is especially true in tough economic conditions, such as in South Africa. The point it makes is that it can foster dependence on allowances and top-ups as well as to serve as salary support (Vian 2009: 31), which enforces the idea that employees can go to extreme measures to obtain the financial advantages it offers, even if it is to the detriment of the project that they are employed on. The article discusses the requirement of additional empirical research needed to establish the negative impacts of subsistence allowances and top-ups, and that it could serve as motivation to bring changes to current practices (Vian 2009: 32). The conclusion is made that more work is needed to understand the interactions between subsistence allowances and top ups, motivation, governance and program management (Vian 2009: 32). The suggestion is made that qualitative research is required to explore the relationship between recipients and payers of subsistence allowances, and the potential impact it has on the industry or area that it is applied (Vian 2009: 32). This train of thought offered by the article directly links up with the research proposal herein.

The mere way that per diem terminology has developed clearly indicates that it is seen by many to be salary augmentations. It argues that the practice of subsistence allowances being seen as additions to salaries is described as destructive to the ultimate goals that an institution or organization wants to achieve (Ahmadou, 2009).

It has been argued that per diems in the health sector help to motivate workers; however, it can cause discontent and have adverse effects. The opportunity for per diems to lead to neglect of work exists. The reasons given for the abuse of per diems are said to be linked to low pay and weak controls. The point is made that reform of per diem policies is required and one should look at ways to prevent abuse (Vian *et al.*, 2012: 237).

The uses and abuses of subsistence allowances (per diems) in an African context have been considered. There is room to explore the extent to which per diems are used and abused. The possibilities of earning per diems influence projects and programme design and management decisions negatively. Additionally, it impacts on how employees spend their time. Additional options in which the awarding of subsistence allowances system, and attempts to conceptualize the way it affects motivations and behaviours need to be considered (Nkamleu & Kamgnia, 2014:4).

Nkamleu and Kamgnia (2014:4) argue that per diems are an important tool in reimbursing employees, and encouraging participation in work-related activities. It lists the function and advantages of subsistence allowances as:

- Covering expenses related to travel, accommodation, meals etc.
- Encouraging professional development
- Providing financial incentives to increase job satisfaction (Nkamleu & Kamgnia, 2014:6).

The background theory behind subsistence allowances shows how it is drawn from economics and consumer law as being an instrument to serve as a motivation, and that people tend to maximise satisfaction given the resources available to them. As such, the argument is held that subsistence allowances serve as means to lift constraints by reimbursing for expenses, or providing more satisfaction related to work (Nkamleu & Kamgnia, 2014:7).

However, Nkamleu and Kamgnia (2014:7) indicate that subsistence allowances have been shown to have many drawbacks in recent times. Nkamleu and Kamgnia (2014:7) argue that both anecdotal and systematic evidence on projects globally, is pointing to abuse of subsistence allowances. Subsistence allowances are in many cases justified payment. However, the current practices have become part of the problem, instead of being part of the solution (Nkamleu & Kamgnia, 2014:4). The influence of per diems in the African continent setup where economies are fragile does exist. The possibility of subsistence allowances, and by extension top-ups and fringe benefits would be more prone to be abused where countries have high levels of unemployment and scarcity of work is an everyday reality (Nkamleu & Kamgnia, 2014:5). Unemployment has been rising over the past few years. Per diems can produce negative incentives in addition to providing abuse opportunities. It lists some of the possible negative impacts of subsistence allowances as follow (Nkamleu & Kamgnia, 2014:11)

- Determining work plan and strategy based on per diem maximization.
- Going to the field or a meeting, even if there is no need.
- Increasing health risk for staff.
- Sending the wrong people for training.
- Slowing down operations.
- Changing norms and decreasing intrinsic motivations.

- Favouring certain types of work over others.
- Fostering dependence.
- Creating pressure and opportunities for fraud.

Given some of the negative perceptions around subsistence allowances, the opinion is held that the concept of per diems requires revisiting, and the issue of whether it is used and abused, and to what extent the impact is felt. It proposes that solutions be sought and that the subsistence allowance system requires exploring to determine what the probable consequences of the abuse thereof are, as well as possible solutions. The question is raised whether the investment in subsistence allowances offers a good return on investment considering that the number of allowances being paid has risen considerably during the past few years. The central concern around per diems is the abuses, gaming and rent-seeking behaviour as well as associated inefficiency which have been observed around these systems (Nkamleu & Kamgnia, 2014:19).

The per diem allowance system is working against the initial objectives of the existence it set for itself, and has become perverted. Due to the fact that it is open to abuse, the fact that it continues should be re-considered requires that subsistence allowances should be a facilitator and that the allowances should serve the purpose of assisting in completing activities, but has been perverted to change the motivation of performing activities. It seems that the advantages and gains from subsistence allowances have become the goal when activities require performing. This can relate to work activities in any industry where subsistence allowances are paid (Nkamleu, 2016: par. 1).

The lower salary levels are in a country as compared to the regular rates of subsistence allowances, the more these allowances tend to determine whether employees apply fringe benefits as an addition to their salary. From three developing countries where workers generally receive low salaries, it was found that allowances contribute to personal income by a considerable amount (Skage *et al.*, 2015:388). In the three developing countries considered, the salaries were very low, and poverty was a major driving force for the abuse of fringe benefits such as allowances (Skage *et al.*, 2013:200).

Activities, such as training programmes, are often attended for the purpose of being paid a subsistence allowance, instead of actually being interested in the worth of the activity (Skage *et al.*, 2013:196). It has further been found that the misuse of fringe

benefits such as subsistence allowances, is a phenomenon that has the potential to be a major issue of significant magnitude (Skage *et al.*, 2013:200). These can be categorized in three sections:

- Indirect where it is used as an informal performance reward, and fringe benefit is used as a bonus.
- Unintended where the payments are distorted and used as incentives to be less productive.
- Outright abuse for fraud and corruption purposes.

Whether it is worth paying per diems is questioned by Peters (2010: 1). The question is raised whether the benefits of per diems outweigh the drawbacks. The paper states how a literature study done by the author on the topic illustrated how concern had been raised about the incentives that had become perverse, and that they create problems for organizations. The phenomenon is termed in different ways notably 'Salary supplements', and 'per diem syndrome' (Peters, 2010: 2). These terms go a long way toward identifying the core issue of what subsistence allowances have become, and that the possibility for people to exploit it has become a real one. It goes further to say that the literature has shown that it is not only unique to one industry, but rather that it spans countries and sectors.

Examples that are often open to abuse refer in particular to training of personnel, and the subsequent travel, accommodation and meal costs (Peters, 2010: 2). This can easily be related to the industries here in South Africa, such as construction and Power Generation Industry, where personnel who are required to do work on projects get contracted in, and often get allowances for meals, accommodation and travel, as well as an allowance known as LOA – Living Out Allowance. It is not necessarily a bad thing to cover travel, food and accommodation, but it can lead to a number of dysfunctions that are not initially intended. These monetary incentives fail in their goal, and can sometimes lead to a loss of focus that the organization has as priorities. Additionally, a loss of productivity and potential for corruption become possibilities. Subsistence allowances can lead to people being dependent on them, especially in countries where people get paid inadequate wages, and that it can be seen as a supplement to people's salaries. Subsistence allowances should not be used to supplement wages, but

inadequate wages should be addressed at the root cause level, instead of being allowed to be abused in attempting to supplement low wages (Peters, 2010: 2).

It further queries whether the current practices are sustainable, and proposes different solutions, for instance not to pay subsistence allowances, but rather that actual costs should be reimbursed, based on concrete evidence from receipts for example, and that the whole notion of subsistence allowances requires a fresh approach (Peters, 2010:3). The goal in mind should be to deter abuse of these systems.

In the health professionals' industry, the question has been asked whether insufficient and irregularly paid salaries contribute negatively by fuelling corruption through serving as motivation for fringe benefit abuse in the form of per diems. Workers who are underpaid develop certain coping mechanisms to top up their basic income, and low wages and declining purchasing power provide incentives for top-ups. This can take the form of corruption or taking on other activities such as moonlighting (performing additional work during the night) (Chene, 2009:1). It is possible that it might also push workers to abuse fringe benefits in attempts to top up their regular salaries. It is mentioned, however, that the current evidence can be considered inconclusive due to the methodological challenges in determining the link between payment and corruption (Chene, 2009:2). Furthermore, fringe benefits in the form of allowances and per diems are seen to be the most effective way of adding on to workers' salary, and it is the most preferred method in terms of being the most effective, and occurring the most frequently (Chene, 2009:4). These practices provide ample opportunity for abuse, and proof of this was found in an audit report relating to the Global Fund project towards the Aids Control Programme in Uganda (Chene, 2009:7).

An effective strategy for public servants who are underpaid workers to top up incomes consists of focusing on activities that pay per diems and allowances (Chene, 2009:1). Additional to the great potential for abuse, the practices have the potential for undesirable effects. These include things such as distortion of the incentive structure of public servants (Chene, 2009:1). If this argument is applied to projects in general, it can be reasonably deduced that the possibility exists that this type of behaviour and undesirable effects might manifest wherever per diems and top-ups are paid.

It has been found by Tieku (2012:4) that perks for delegates, for example, being paid daily allowances, have had a severe impact on the effectiveness of peace talks in

Africa. Based on the peace talks relating to Burundi in Arusha-Tanzania, as well as the peace talks held in Abuja-Nigeria relating the Inter-Sudanese Peace talks, it has been shown that fringe benefits and financial perks can have an unintentional prolonging impact on peace talks. Tieku (2012:4) specifically states that “For some of the delegates, staying free of charge in five-star hotels and receiving the equivalent of five months’ pay in one week of per diems made continued talks more attractive than achieving peace”. Moreover, the argument is made that the parties involved in the peace talks were seduced by the generous fringe benefits and allowances, that the delegates created procedural barriers where there were none previously and that it influenced their interests in such a way that they were swayed from their initial intention. Delegates even went as far as promoting fragmentation at the negotiation table in order to extend the peace talks. The conclusion is made that perquisites and fringe benefits such as paid daily allowances are a universal feature, but that the impact and significance have rarely been explored fully (Tieku, 2012:4). The assumption can be made that the impact might be significant in terms of affecting the effectiveness of the outcome of the task at hand, in any environment it is applied. Greater accountability is needed to address the perverse effects being experienced relating to these practices (Chene, 2009:1), and that the incentive structure (in the public sector in this case) requires reform. It can be seen that urgent change and ways of going about paying per diems are required.

While allowances and subsistence allowances are in many cases justified practices, they have the potential to become an incentive rather than a reimbursement practice because they are relatively high in relation to the scales of basic salaries (Chene, 2009:4). This is important when also applied to the project environment in the Power Generation Industry where subsistence allowances are paid, in that it has the potential to become an incentive and addition to the personnel member’s basic salary, and one where the personnel become dependent on it. This in turn might hold the potential to influence people’s motivation relating to their work and the project in general.

Undesirable effects are listed, which mainly relate to opportunities for fraud and abuse (Chene, 2009:5):

- Faking required travel;
- Falsifying records;

- Paying exorbitant allowance rates.

The distortion of incentives and project priorities is a real possibility when subsistence allowances are considered. Policies and procedures can be influenced when the idea of access to per diems and allowances can be maximised (U4, 2009:7). Several powerful incentives can be created, but which are not necessarily the most relevant or effective way to contribute to the output of a project and that a culture can start to develop where the goal of personnel changes and not action-orientation is desired (U4, 2009:7). This directly links with the intention of this research proposal, in that the impact of these subsistence allowances needs to be explored and in order to determine whether it impacts on the timeous outcome and results of projects.

Solutions that can be considered which relate to the problem of uses and abuses of subsistence allowances include

- Only paying actual expenses at standard rates;
- Not paying per diems for attendance of events;
- Developing a standard for supplementation payments of salaries; and
- Obtaining compliance to policies/standards.

The fact that additional standards are proposed, points to the idea that there might be serious flaws in the way the current subsistence allowance processes are approached, and that reformative approaches might have to be considered (Chene, 2009:9)

2.6.2 Overtime

Overtime is another contentious point, apart from other allowances and fringe benefits when it comes to motivation, and whether it has the intended impact, instead of adverse impacts. Research previously conducted investigated the impact of continuous overtime periods, and found that overtime can reduce labour productivity extensively. It is also said that overtime is an important project management tool, but that the effects thereof can be negative in terms of labour productivity (Sonmez, 2007:803).

Overtime can serve the purpose of motivating employees to work outside regular working hours due to it containing a major financial benefit when protracted amounts of overtime are worked. When the loyalty and productivity of workers are considered, it is clear that the accessibility of overtime plays a role. Changes to overtime practices by

exempting certain workers might result in a loss of loyalty and productivity of employees (Brody & Wheelin, 2017).

Overtime introduces unwanted issues in the construction industry including issues such as low morale, high costs per unit, high accident rates as well as fatigue of employees. Most significantly, labour productivity goes down as a result of workers working more slowly due to these issues. This can either be because workers pace themselves, or for other alternative reasons. Either way, these issues all affect labour productivity which goes hand in hand with increased costs (Hanna *et al.*, 2005:735). Overtime has become part of the planned schedule, due to the fact that the best labour skills are attracted by it (Hanna *et al.*, 2005:734). Therefore, it can be deduced that labour and workers in general are attracted to these types of payments, and are motivated either positively or negatively in terms of their productivity through overtime. The efficiency and work level of labour is affected by overtime policy. The contribution thereof is not necessarily positive (Chen & Wang, 2011:75). There are circles arguing that scheduled overtime does not have to go hand in hand with loss of labour efficiency. Others say that labour efficiency automatically suffers when overtime is applied (Thomas & Raynar, 1997:181).

There is clearly a debate on whether overtime schedules affect labour productivity, and that it has not been settled as to the extent thereof, and the cause for the inefficiencies experienced. There is a clear risk for overtime to result in a loss of labour productivity as a result of fatigue (Thomas & Raynar, 1997:181). However, it might be possible that excessive overtime is a desired feature for workers on projects – by those who feel that they can benefit financially as gaining the as much as possible from a project.

2.7 LITERATURE STUDY CONCLUSION

Projects across a wide range of industries experience many challenges. Delays in projects are one of the major challenges, as it goes hand in hand with cost over-runs. The construction industry and related projects were explored. Projects across industries and international borders contain similar challenges, and allow for a parallel to be drawn with projects undertaken in the South African Power Generation Industry.

Causes for contract workers' motivation are explored. Unemployment and its relation to workers in the South African context indicate that job scarcity can contribute to workers'

motivation to have work. Furthermore, it is indicated that financial stability is a need that needs to be fulfilled by workers, and that this can contribute to their motivation to work.

It is clear that labour productivity is seen as a major contributor to projects' critical success. The effectiveness and motivation of workers are influenced by a number of factors. One of the important factors is financial advantage. In the South African Power Generation and Maintenance Industry, contract workers make up the bulk of the labour force on maintenance projects. Financial advantages to contract workers on a project include a continuously paid salary, fringe benefits in the form of per diems, and overtime.

The literature study points us to a very specific conclusion: Even though the subject of subsistence allowances and top-ups remains largely unexplored, it can clearly be seen from the literature study that fringe benefits such as subsistence allowances have been identified as a problem with the syndrome and culture that have developed around it. The potential for use and abuse of subsistence allowances (per diems) are apparent throughout a wide section of industries and circumstances.

If financial advantages (salary, overtime, subsistence allowances etc.) serve the purpose of motivating employees, especially in countries where people are poorly paid, then the question is raised as to whether it becomes so important to employees that they become wholly dependent on the fringe benefits, subsistence allowances and top-ups start to be an addition to employees' salaries. Would workers be inclined to attempt means to obtain these advantages? This would especially apply if the allowances are paid on a continuous basis, and could leave one with the suspicion that employees might be motivated to be in a position to look for opportunities to get paid fringe benefits more often and for longer.

The intention of this dissertation is the answering of the question whether financial benefits such as continuously paid salaries, excessive amounts of overtime, together with fringe benefits in the form of subsistence allowances, impact on the timeous outcome of projects specifically, and whether it has any effect on the motivational levels of the personnel involved in projects which are the receivers of financial benefits. Additionally, ways of improving the system in which contract workers are paid are to be considered, and alternatives offered in an effort to improve the challenges experienced on projects in the form of delays and the impact that labour productivity and efficiency

might have on it, brought on by financial advantages and any negative effects it might have.

CHAPTER 3: EMPIRICAL STUDY

3.1 INTRODUCTION

The purpose of this chapter is to produce, discuss and describe and interpret the data and the results obtained from the empirical study.

An empirical study is the gathering of primary data based on direct observations and experiences. In the project environment across different industries, it has been observed that projects often run over time and over budget. Furthermore, the suspicion exists that the labour force present on projects often contribute to the delays experienced on a project, due to the financial benefits gained if a project continues for longer. As a result, the contribution of the labour force towards the delays experienced on projects is probed with the empirical study.

The empirical study was conducted by handing out drafted questionnaires to the identified target sample, which took the form of contract workers on projects doing maintenance work on power generation units in South Africa. The questionnaire consisted of two sections: A demographics section capturing the specific demographics of the participants, as well as a section containing statements drafted in order to probe certain constructs. The participants indicated whether they strongly agreed, agreed, disagreed or strongly disagreed with the selected statements. A sample of the questionnaire used is available in Appendix A.

The purpose of the empirical study was to provide data and a means to measure the status quo of what is suspected in the project environment, and whether labour inadvertently contributes to delays by being incentivized to be unproductive through receiving financial benefits the longer a project continues, but which has not been probed or proven as yet.

The empirical studies applied to the Project Environment and the delays thereof, and the contribution that the labour force that works on these projects has on it, aimed to highlight statistical associations between constructs, and focused on establishing the prevalence or the extent to which certain constructs have an impact on such a phenomenon. In the present case, the purpose was to determine whether the identified

constructs exerted by the labour force impact on the delays experienced by projects in general, particularly in the Power Generation Maintenance Industry.

The mean values, Cronbach Alpha coefficients were calculated, as well as inter-item correlation and regression analysis, which were all done by the Statistical Consultations Service of the North-West University, Potchefstroom Campus.

If the status quo is determined in the suspected phenomenon, it can provide a consideration of a change in the current system in an effort to remove the delays caused by the labour force's motivation to extend projects, and to discover whether it is even prevalent at all. The empirical study can provide data on what is going on in the focus area, as well as stress any features the specific phenomenon or condition, and the current status thereof. Additionally, it can emphasise associations between the constructs, and allow for the suggestion of hypotheses to test further.

This chapter provides clarity on the methods employed and strategies followed to determine the target study population, the methods used in sampling, the compilation of the described questionnaire, the submission of the results and discussion thereof.

3.2 DATA GATHERING

3.2.1 Development of questionnaire

Section A:

This part of the questionnaire was developed in order to evaluate the demographic information of the labour force on projects, which mainly consists of contract workers in the power generation maintenance industry. Participants' gender, age group, highest educational qualification, marital status, home language and years at the company/industry were determined. The purpose of section A was to establish trends and make possible the analysis of different groups in the targeted project industry.

Section B:

This section of the questionnaire was developed to measure certain constructs which are possessed by the labour force, and which could potentially impact on the time a project takes to complete if the construct is found to be present. The questionnaire consisted of a collection of 30 statements that focused on the identified constructs. The

participants were requested to indicate whether they strongly agreed, agreed, disagreed or strongly disagreed with the statements on the constructs. Additionally, the statements on the constructs were not grouped together around the themes that the constructs covered, but were mixed randomly. The statements on the factors were drafted in such a way as to attempt not to raise suspicion with the contract workers that it threatened their financial wellbeing, and to ensure honesty when they indicated agreement or disagreement with the statements.

The constructs that were identified to possibly be possessed by the labour force and could potentially have an impact on the delays that projects experience were identified as the following:

- ***Dependency on financial benefits:*** The idea that workers become dependent on the financial benefits to make ends meet, has the potential to influence some of the workers on a project to want to be in a position where the project takes longer to complete, so that they can continue receiving these financial benefits. The financial benefits relate to salary received, subsistence allowances, overtime and others. This fact that the workforce might rely on financial benefits that they receive for the duration of a project might incentivize them to attempt to delay a project by being unproductive and inefficient.
- ***Unemployment awareness:*** The general unemployment rate experienced in a country, and the effect that it has on the mind-set of the workforce on a project, are important factors, keeping in mind that contract workers become unemployed once a project ends. This construct is considered to have a higher impact in under-developed countries, as the threat of unemployment and the subsequent loss of livelihood of workers will be higher.
- ***Productivity:*** Labour productivity is indicated by the efficient rate at which the input by the labour force is converted into output. The attempt to measure the productivity and efficiency output by workers with regards to their specific job and whether it is influenced when a project nears its end, or indeed by any other constructs mentioned.

- **Motivation:** Workers' motivation to be at work, and execute their mandate, as well as contribute to the success of a project they work on is explored here. Work motivation of existing workers can be defined as 'an individual's degree of willingness to exert and maintain an effort towards organisational goals' (Chandler *et al.*, 2009). In the work environment, motivation is a way of getting individuals to act in a certain manner, and getting people to work willingly to reach a certain goal or complete a certain task. The question whether workers are motivated to reach deadlines or set goals if they are not rewarded when they do reach them is also probed. Additionally, the fact that they receive financial benefits the longer a project continues is probed, and whether it serves as motivation to purposefully extend a project in order to attain these advantages for longer.
- **Personal impact on project:** Awareness of the labour force and individual workers of the fact that they have the potential to personally have an impact on a project whether positively or negatively, and the extent to which they can impact on delays specifically.

3.2.2 Data collection

The questionnaires were distributed by hand to contract workers at power stations whilst working on projects at the time, in order to ensure that they were in the work environment in which the interest of the study lies.

The possibility of sending out the questionnaires via email was not possible, as the target sample of contract workers usually do not have access to email at work. This resulted in the researcher having to visit different projects which were active in the power generation maintenance industry at the time.

The researcher personally handed out the questionnaires to all available contract workers. The project manager was approached to gain permission and explain the purpose of the study to them as well.

A total of 67 questionnaires were handed out to the workforce on three different maintenance projects on different power stations, together with a document explaining the purpose of the research, as well as the anonymity and voluntary nature of the study.

3.2.3 Sample size

The target sample population size consisted of contract workers who were active on projects in the power generation maintenance industry. The workers were not permanently employed, but contracted to work on power generation maintenance projects when required.

At the time, there were only three maintenance projects running on three different power stations. This somewhat limited the target sample to 67 participants.

3.2.4 Statistical analysis

The Statistical Consultation Services of the NWU, Potchefstroom Campus conducted the statistical analysis of the data.

The frequency distributions that were evaluated were presented in tables, and followed up with graphs to provide a visual presentation. To evaluate the combined central outcome and tendency of the study, the mean values were calculated.

Additionally, the Cronbach Alpha coefficients were used to measure the identified themes around Construct consistency. The Correlation coefficients were done to determine whether there was any relationship between any normally distributed interval variables, in this case the identified Constructs. One Sample T-test was done to test whether the sample mean of a variable with a normally distributed interval differed significantly from a hypothesized value. ("Statistical analyses using SPSS - IDRE Stats", 2017)

These results will be presented and discussed in this chapter.

3.3 DEMOGRAPHICS

Section A of the distributed questionnaire probed the demographic information of the participants. A draft copy of the questionnaire can be found in Appendix B. This part of the questionnaire was developed in order to evaluate the demographical information of the target sample in the form of the labour force on power generation maintenance projects, which mainly consist of contracts. Participants' gender, age group, highest educational qualification, marital status, home language and years at the

company/industry were determined. The purpose of section A was to establish trends and enable the analysis of different groups in the targeted project industry.

3.3.1 Gender

- **Purpose**

The purpose of this question in the questionnaire was to determine the gender of participants / respondents.

- **Results**

Table 1: Gender distribution

Gender	Frequency	Percentage
Male	55	82.1%
Female	9	13.4%
Missing / Not indicated	3	4.5%
Total	67	100%

- **Analysis**

The table summarizes the gender distribution of respondents. It shows that a significantly lower number of females (13.4%) formed part of the study sample as compared to males (82.1%). On three out of the 67 of the questionnaires the gender was not indicated (4.5%).

3.3.2 Age group

- **Purpose**

The purpose of this question was to determine the age group distribution of the target sample respondents in order to be able to make comparisons with the age group of contract workers in the power generation projects industry.

- **Results**

Table 2: Age group distribution

Age	Frequency	Percentage
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20 – 29	17	25.4%
30 – 39	34	50.7%
40 – 49	12	17.9%
50 – 59	3	4.5%
>60	1	1.5%
Total	67	100%

- **Analysis**

The table summarizes the age group distribution of the participants/respondents. The majority of the target sample fell within the 30 – 39 age group at 50.7%, followed by 25.4% which fell within the 20-29 age group, and then 17.9% of respondents that formed part of the 40-49 age group. Only 4.5% of respondents fell within the 50-59 age group, and only 1.5% of the 60-plus age group.

3.3.3 Highest educational qualification

- **Purpose**

The purpose of this question was to determine the highest educational qualification levels of the target sample respondents, and to be able to make comparisons with the qualification levels of the contract workers in the power generation projects industry in South Africa.

- **Results**

Table 3: Highest educational qualification distribution

Highest academic qualification	Frequency	Percentage
PHD	0	0%
Master's degree	0	0%
Honour degree	0	0%
BCOM, BSc, B.Eng, BA Degree	0	0%
Diploma	17	25.4%
Matric	20	19.9%
Other	29	43.3%
Missing / Not indicated	1	1.5%
Total	67	100%

- **Analysis**

From the table, it can be seen that the 43.3% of the participants had other forms of education, different from traditional tertiary education or matric. 25.4% indicated that their highest form of education was a diploma. 19.9% had matric as their highest educational level. 1.5% of participants did not indicate what their highest level of education was.

3.3.4 Marital status

- **Purpose**

The purpose of this question was to determine the marital status of the respondents, and to be able to make comparisons between the marital statuses of the contract workers in the power generation maintenance industry in South-Africa.

- **Results**

Table 4: Marital status distribution

Marital status	Frequency	Percentage
Married	21	31.3%
Not married	34	50.7%
Engaged	9	13.4%
Divorced	2	3%
Widow/er	0	0%
Missing / Not indicated	1	1.5%
Total	67	100%

- **Analysis**

The majority of the respondents of the target sample was not married at a percentage of 50.7%, followed by 31.3% of the respondents that were married. 13.4% were engaged, whilst 3% were divorced. 1.5% of the respondents did not indicate their marital status.

3.3.5 Home language

- **Purpose**

The purpose of this question was to determine the home language distribution of the target sample respondents in order to be able to make comparisons with the language spoken by the contract workers in the power generation projects industry in South Africa.

- **Results**

Table 5: Home language distribution

Home language	Frequency	Percentage
Setswana	1	1.5%
English	6	9%
Sesotho	13	19.4%
Ndebele	1	1.5%
Tshivenda	1	1.5%
siSwati	3	4.5%
IsiZulu	28	41.8%
isiXhosa	3	4.5%
Afrikaans	1	1.5%
Xitsonga	1	1.5%
Other	4	6%
Missing / Not indicated	5	7.5%
Total		100%

- **Analysis**

Out of the respondents in the target sample, 41.8% indicated that their home language was isiZulu. This was followed by 19.4% whose home language was indicated to be Sesotho. Furthermore, 9% had English as their home language. An additional 6% indicated that their home language was something other than the options provided. 4.5% turned out to be siSwati, whilst the rest was made up

of Setswana, Ndebele, Tshivenda, Afrikaans and Xitsonga at 1.5% each. Out of the respondents, 7.5% did not indicate what their home language was.

3.3.6 Years at company/industry

- **Purpose**

The purpose of this question was to determine the years worked at the company/industry distribution of the target sample respondents in order to be able to make comparisons with the years worked in the company/industry of contract workers in the power generation projects industry generally.

- **Results**

Table 6: Years at company/industry distribution

Years at the company / industry	Frequency	Percentage
0 - 3	25	37.3%
4 - 10	34	50.7%
11 - 15	5	7.5%
16 - 20	1	1.5%
20 +	1	100%
Missing / Not indicated	1	1.5
Total	67	100%

- **Analysis**

The years at the company or industry spent for the participants were at a majority in the 4 – 10 years category at 50.7%. This was followed by the 0 – 3 years group at 37.3%. Some of the participants had already spent 11-15 years at the company at 7.5%, while only one of the respondents had spent 16-20 years in the industry at 1.5%. One respondent did not indicate the number of years spent at the company / in the industry, which made up 1.5% of the total.

3.4 RELIABILITY AND VALIDITY

Reliability of statistics is indicated by Cronbach alpha. This alpha was developed by Lee Cronbach in order to indicate the internal consistency of a study, test or scale. The alpha is varying between zero and one theoretically. Internal consistency can be described as the degree to which the items in a survey, test or scale measure the same constructs, and as a result is associated with the inter-relatedness of the items within the survey (Tavakol & Dennick, 2011:53).

This means that the average correlation between constructs of the questionnaire is indicated by the Cronbach alpha (Santos, 1999). In addition, for the guideline values for the data on statements to be reliable, the Cronbach Alpha value should ideally be equal or above 0.7. Above 0.5 can also be used but interpretation should be done with caution. The internal consistency is required to be determined prior to a survey, test or scale can be used. This is to ensure validity is present. The amount of errors in a survey, test or scale is also indicated by reliability estimates (Tavakol & Dennick, 2011:53).

The Cronbach Alpha is illustrated in the table below for the identified constructs:

Table 7: Cronbach Alpha for constructs

Construct	Cronbach Alpha Coefficient
Dependency on financial benefits	0.762
Unemployment awareness	0.622
Productivity	0.764
Motivation	0.520
Personal impact on project	0.605

3.5 ASSESSMENT OF THE LABOUR CONSTRUCTS IMPACTING ON TIME OF PROJECTS

Section B of the questionnaire consisted of 30 statements. The statements probed certain identified constructs considered important and which could potentially impact on the phenomenon of time delays on projects, and the impact that the labour force that

work on these projects, in the form of contract workers, might have on the delays experienced.

The statements on the constructs were not grouped together around the themes that the constructs covered, but were mixed randomly.

3.5.1 Construct 1 - Dependency on financial benefits

- **Purpose**

Questions 1, 3, 4, 8, 12, 13, 16, 17, 19 and 20 focused on the construct “Dependency on financial benefits”. The purpose of these statements was to determine whether contract workers were dependent on the financial benefits received during the time they worked on projects. These financial benefits take the form of overtime, allowances and salary and other fringe benefits. Agreement with these statements indicated dependency on the financial benefits, whereas disagreement with the statement indicated non-dependency on the financial benefits.

- **Results**

Table 8: Construct 1 Results - Dependency on financial benefits

Q#	Question / Statement	N	Mean ($\bar{x}$)	Std. Deviation (s)
Q20	My salary as a contract worker is my only source of income	67	3.6	0.524
Q16	Overtime is necessary for me to make ends meet	67	3.3	0.835
Q8	I am the sole breadwinner for my household	67	3.27	0.809
Q3	The salary I receive is part of my motivation to work continue working on projects.	66	3.24	0.583
Q17	I often find that I often want to work more overtime	67	3.18	0.833
Q13	Subsistence allowances, such as Living Out Allowance is necessary for me to make ends meet	65	3.09	0.843
Q1	I work far from home when working on projects	65	3.09	0.785

Q4	The fact that I receive subsistence allowances, such as Living Out Allowance, influence my motivation to work on projects	65	2.82	0.882
Q19	If I do not get overtime or LOA on top of my salary, I do not want to work on a project.	67	2.79	1.038
Q12	I often find myself wanting to work less overtime	65	2.02	0.78
Average		66	3.04	0.79

- **Analysis**

The construct “Dependency on financial benefits” was probed by the statements as indicated. The means on the answers were calculated as indicated in Table 6. The means of questions 4 and 19 were between 2 and 3, indicating that the respondents agreed to a certain extent. Question 12 was a negative statement, and had a mean of 2.02. This indicates agreement if the statement had been a positive statement. Questions 1, 3, 8, 13, 16, 17 and 20 all had means between 3 and 4, indicating agreement to strong agreement with the statements. The average mean was calculated as 3.04, indicating agreement with the construct “Dependency on financial benefits”, which overall indicate that contract workers working on projects are dependent on the financial benefits they gain whilst working on projects.

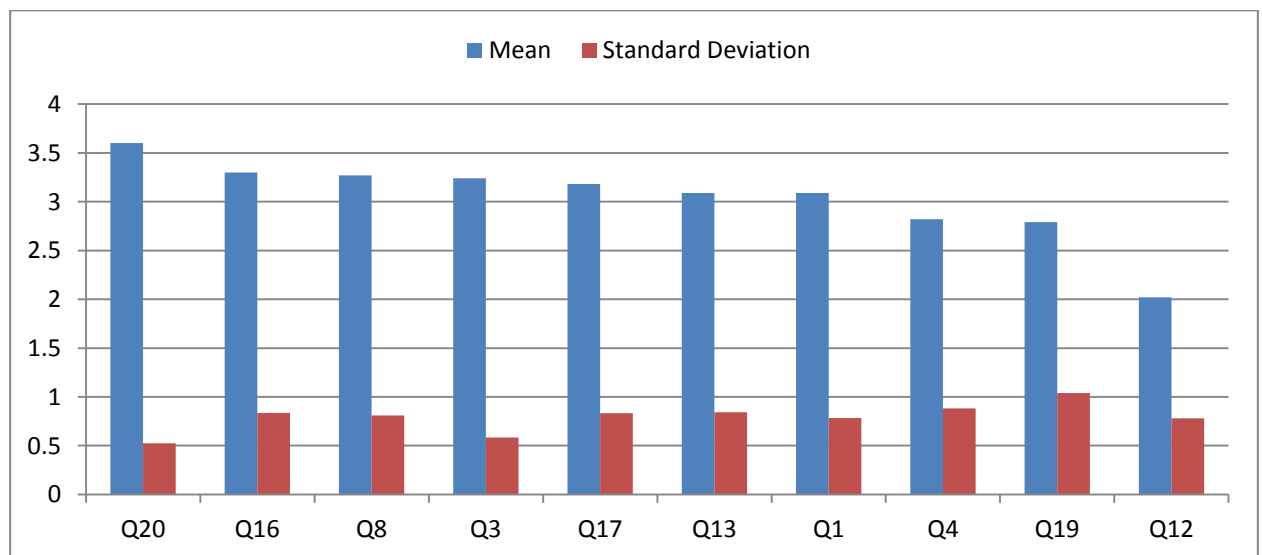


Figure 2: Construct 1 – Dependency on financial benefits - Mean and Std. Deviation

3.5.2 Construct 2 – Unemployment awareness

- **Purpose**

Questions 5, 9, 11, 14, 22, 26 and 30 focused on the construct “Unemployment”, and had the purpose of probing awareness of unemployment in the country, and whether this awareness translated into an impact on their working ability, whereas disagreement with the statement indicated that unemployment consideration did not influence their working ability.

- **Results**

Table 9: Construct 2 results - Unemployment awareness

Q#	Question / Statement	N	Mean ($\bar{x}$)	Std. Deviation (s)
Q22	I feel that there is a job shortage countrywide	67	3.28	0.833
Q26	I feel anxious if a project nears its end, because I might not get the opportunity to work on another	65	3.09	0.843
Q5	When I work on a project, I fear that I won't get hired on another project when the current project ends.	67	2.98	0.524
Q11	I often go a long time without getting employment on projects	67	2.94	0.809
Q14	When one project ends, I readily get hired to work on another project	66	2.36	0.583
Q9	I get employed on projects easily and often	67	2.31	0.835
Q30	I have found myself purposefully working slower if I am not guaranteed getting work on another project	65	2.18	0.785
Average		66	2.73	0.74

- **Analysis**

The construct “Unemployment awareness” was probed by the statements as indicated. The means on the answers were calculated as indicated in Table 7. Questions 5, 9, 11, 14 and 30, had means between 2 and 3. The means of

questions 5 and 11 were closer to 3, indicating more agreement with the statements. Questions 9, 14 and 30 had means closer to 2, indicating more disagreement in general with the statements. Questions 22 and 26 had means between 3 and 4, indicating agreement with the statements. The average mean was found to be 2.73, indicating agreement to a certain extent with the construct “Unemployment awareness”, but not convincingly. This overall indicates that contract workers working on projects are aware to a certain extent that they become unemployed once a project finishes.

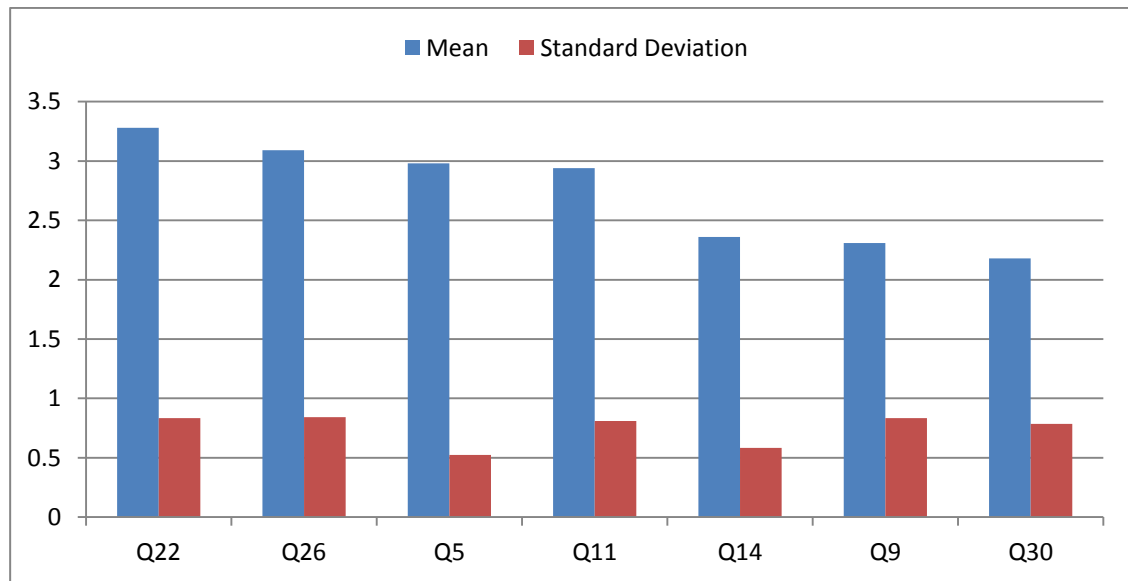


Figure 3: Construct 2 - Unemployment awareness - Mean and Std. Deviation

3.5.3 Construct 3 - Productivity

- **Purpose**

Questions 7, 10, 18, 23, 24, 27 and 28 focused on the construct “Productivity”. Agreement with the statement indicated that there was an impact on productivity and efficiency in the execution of their work as a result of the other constructs having an impact such as the time a project takes to complete, financial advantages and unemployment.

- **Results**

Table 10: Construct 3 Results - Productivity

Q#	Question / Statement	N	Mean ($\bar{x}$)	Std. Deviation (s)
Q23	If the project is extended, it is financially advantageous for me.	67	3.49	0.561
Q24	I often find myself wanting the projects to take longer on which I work.	67	3.25	0.859
Q27	I am consistently motivated to finish a project on time.	65	3.2	0.733
Q28	When a project takes longer to complete, I feel like I personally benefit.	66	3.12	0.869
Q18	I find that I want to extend critical work activities to work over weekends.	66	2.53	0.98
Q7	I have found myself in the past to work slower when the project nears its end.	67	2.25	1.005
Q10	I have found myself in the past becoming less productive towards the end of a project.	64	2.09	0.886
Average		66	2.85	0.84

- **Analysis**

The construct “Productivity” was probed by the statements as indicated. The means on the answers were calculated as indicated in Table 8. Questions 7, 10, had means between 2 and 3, but leaning more towards 2, indicating more disagreement with the statements. Question 18 also had a mean between 2 and 3, but leaned more towards 3, indicating more agreement with the statement. Questions 23, 24, 27 and 28 had means between 3 and 4, indicating agreement with the statements. The average mean was found to be 2.84, indicating agreement to a certain extent with the construct “Productivity”, but not convincingly. This overall indicates that contract workers working on projects are

having their productivity affected to a certain extent when other constructs are taken into account such as financial advantages and unemployment.

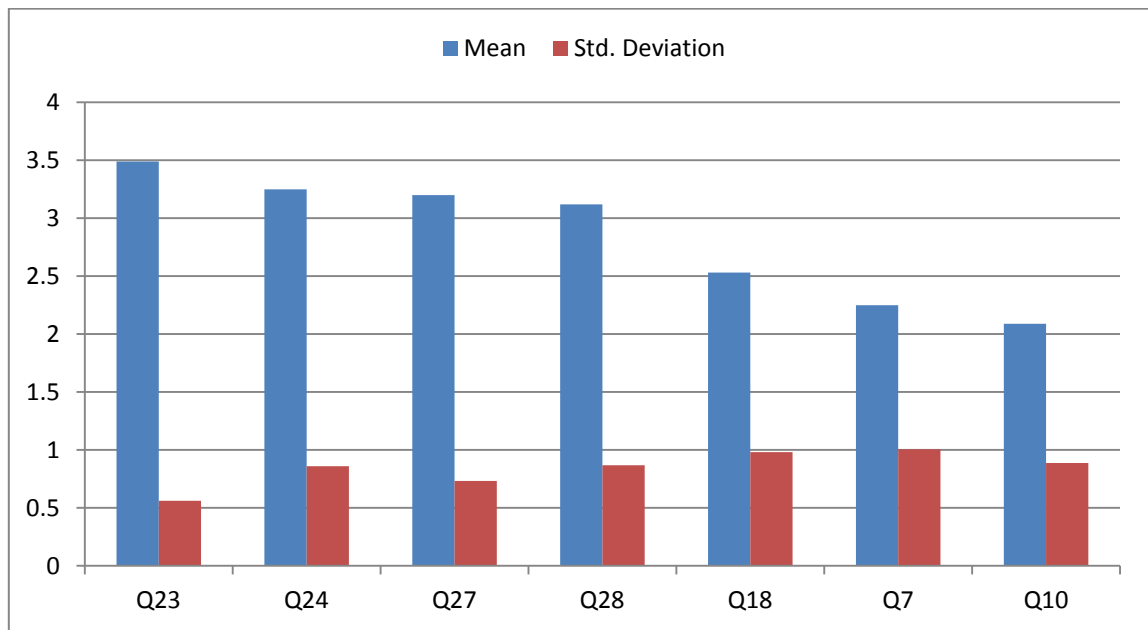


Figure 4: Construct 3 - Productivity - Mean and Std. Deviation

3.5.4 Construct 4 - Motivation

- **Purpose**

Questions 1, 2, 15, 29 focused on the construct “Motivation”. Agreement with these statements indicated that there was an impact on the workers’ motivation to work, whereas disagreement with the statement indicated that there was no impact on the workers’ motivation.

- **Results**

Table 11: Construct 4 Results – Motivation

Q#	Question / Statement	N	Mean ($\bar{x}$)	Std. Deviation (s)
Q29	Overtime is necessary for me to make ends meet	65	3.63	0.547
Q2	I am the sole breadwinner for my household	66	3.27	0.735
Q5	The salary I receive is part of my motivation to work continue working on projects.	65	2.98	0.927
Average		65.33	3.29	0.74

- **Analysis**

The construct “Motivation” was probed by the statements as indicated. The means on the answers were calculated as indicated in Table 9. Question 5 had a mean between 2 and 3, but leaning more towards 2, indicating more disagreement with the statement. Question 2 had a mean between 3 and 4, indicating agreement with the statements, whilst question 29 had a mean between 3 and 4, but leaning much more towards 4, indicating strong agreement with the statement. The average mean was found to be 3.29, indicating agreement with the construct “Motivation”. This overall indicates that contract workers working on projects do have their motivation to work on projects influenced by other constructs such as financial advantages and unemployment.

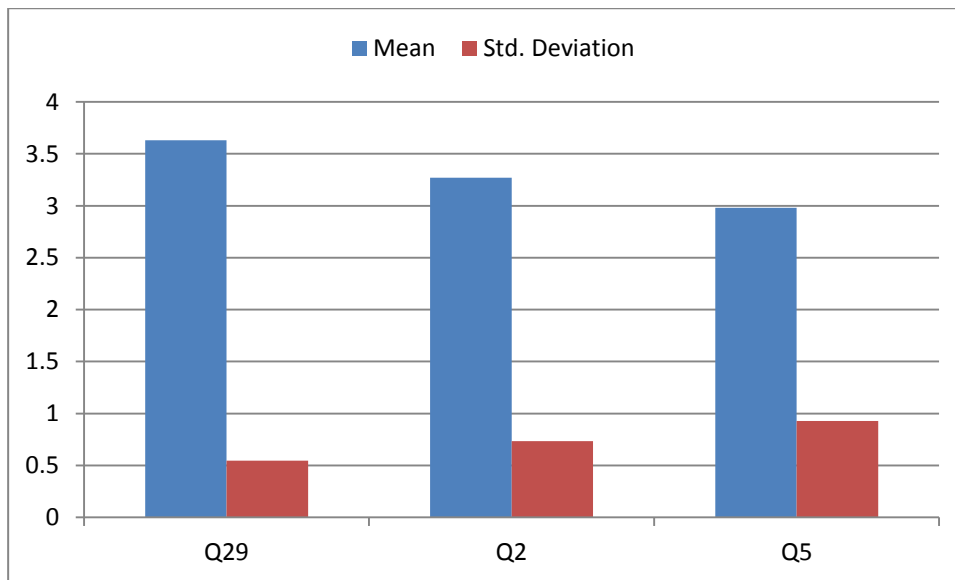


Figure 5: Construct 4 - Motivation - Mean and Std. Deviation

3.5.5 Construct 5 - Personal impact on project

- Purpose**

Questions 6, 21, 25 focused on the construct “Personal impact on project”. Agreement with this statement indicated that individuals were aware that they had the potential to impact on the project and the time it took to complete it.

- Results**

Table 12: Construct 5 Results - Personal impact on project

Q#	Question / Statement	N	Mean ($\bar{x}$)	Std. Deviation (s)
Q6	I feel that my work contributes to the success of a project	66	3.61	0.523
Q25	I feel like I personally contribute to the success of a project	67	3.52	0.682
Q21	I feel like my actions contribute to the success or the failure of a project	62	2.87	0.896
Average		65	3.33	0.70

- **Analysis**

The construct “Personal impact on project” was probed by the statements as indicated. The means of the answers were calculated as indicated in Table 10. Question 21 had a mean between 2 and 3, but leaning more towards 3, indicating more agreement with the statement. Questions 6 and 25 had means between 3 and 4, but leaning more towards 4, indicating strong agreement with the statement. The average mean was found to be 3.33, indicating agreement with the construct “Personal impact on project”. This overall indicates that contract workers working on projects are aware of the effect and impact they have on projects and the duration thereof.

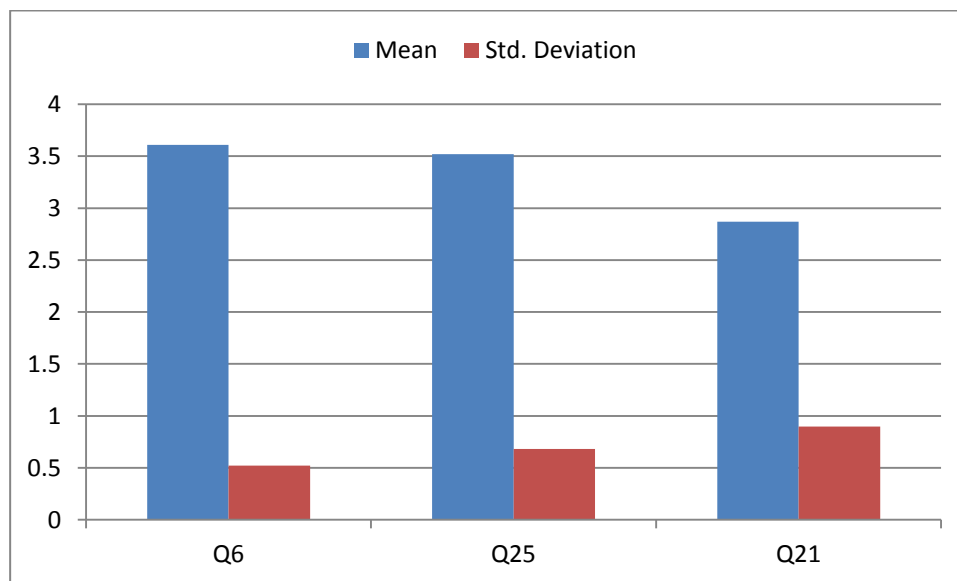


Figure 6: Construct 5 - Personal impact on project - Mean and Std. Deviation

3.5.6 Assessment of combined results

The combined results of the constructs are shown in the figure below:

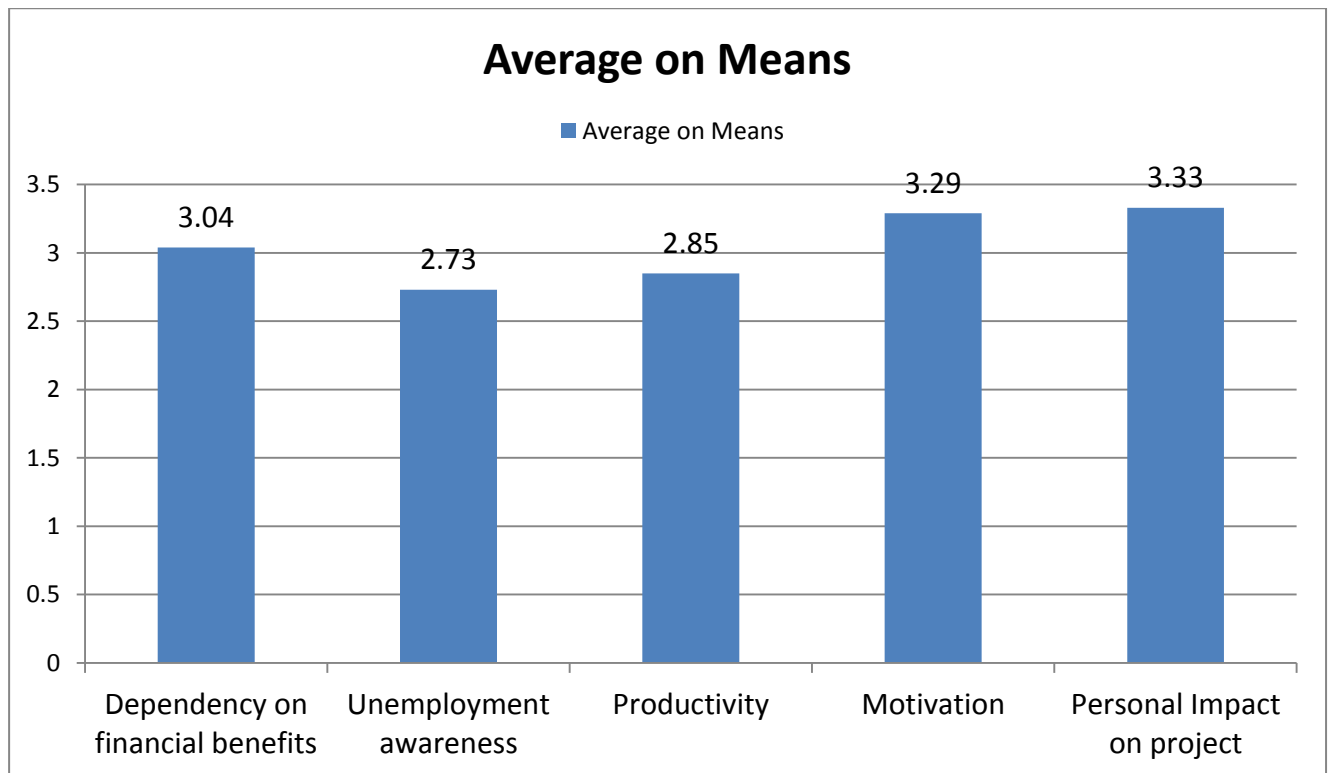


Figure 7: Average on means of constructs

The average mean of all construct themes resulted in an average mean of $\bar{x} = 3.048$.

3.6 MULTIPLE REGRESSION ANALYSIS

Multiple regression is used when the prediction of a dependent variable is required based on the value of one or more other independent variables (Laerd Statistics, 2017). Multiple regression analysis was done to establish whether the identified constructs have an impact on each other.

The correlation coefficients were done to determine whether there was any relationship between any normally distributed interval variables, in this case the identified constructs. One Sample T-test was done to test whether the sample mean of a variable with a normally distributed interval differed significantly from a hypothesized value ("Statistical analyses using SPSS - IDRE Stats", 2017).

3.6.1 Correlation coefficient

- **Purpose**

The correlation coefficient indicates whether there is a practical significance of relationship or effect sizes. Essentially, it is a measure of the linear correlation between different variables or constructs. In this case, the correlation coefficient was calculated between the different identified constructs of the study namely “Dependence on financial benefits”, “Unemployment awareness”, “Productivity”, “Motivation” and “Personal impact on project”.

The guideline values for the correlation efficient are indicated as:

- 0.1, small, no practically significant relationship
- 0.3, medium, practically visible relationship
- 0.5, large, practically significant relationship

• Results

Table 13: Correlation coefficient between constructs

	Dependency on financial benefits	Unemployment awareness	Productivity	Motivation	Personal impact on projects
Dependency on financial benefits	1	0.463	0.367	0.645	0.619
Unemployment awareness	0.463	1	0.622	0.388	0.423
Productivity	0.367	0.622	1	0.404	0.183
Motivation	0.645	0.388	0.404	1	0.348
Personal impact on projects	0.619	0.423	0.183	0.348	1

N = 67

- **Analysis**

The table indicates that there are large and practically significant relationships between the following constructs:

- “Dependency on financial benefits” and “Motivation” with a correlation coefficient of 0.645
- “Dependency on Financial Benefits” and “Personal impact on projects” with a correlation coefficient of 0.619.
- “Productivity” and “Unemployment awareness” with a correlation coefficient of 0.622

The table further indicates that there is a medium and practically visible relationship between the following constructs:

- “Dependency on financial benefits” and” Unemployment awareness” with a correlation coefficient of 0.463
- “Personal impact on projects” and” Unemployment awareness” with a correlation coefficient of 0.423
- “Motivation” and” Productivity” with a correlation coefficient of 0.404
- “Motivation” and “Unemployment awareness” with a correlation coefficient of 0.388
- “Personal impact on projects” and “Motivation” with a correlation coefficient of 0.348

The constructs that showed the smallest correlation coefficient were between “Personal impact on projects” and “Productivity” with a correlation coefficient of 0.183.

3.6.2 One sample T-test; Sig (2 tailed) – p value

- **Purpose**

The One Sample T-test (Sig(2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean is any different statistically from a hypothesized or known population mean. Essentially, it indicates whether there is statistically significant relationship between the constructs as identified. If the p-value is small, it indicates that there is a significant relationship between the constructs.

The guideline values for the One Sample T-test (Sig(2-tailed)) or p-value, are indicated as:

- $p < 0.05$, statistically significant relationship.

• Results

Table 14: One sample T-test; Sig (2 tailed) – p value

	Dependency on financial benefits	Unemployment awareness	Productivity	Motivation	Personal impact on projects
Dependency on financial benefits		0	0.002	0	0
Unemployment awareness	0		0	0.001	0
Productivity	0.002	0		0.001	0.138
Motivation	0	0.001	0.001		0.004
Personal impact on projects	0	0	0.138	0.004	

For N = 67.

• Analysis

The One sample or T-test; Sig (2 tailed) – p value was calculated and is illustrated in the table above. It was found that the p-values between the constructs that have a statistically significant relationship were the following:

- “Productivity” and “Dependency on financial benefits” had a p-value of 0.002
- “Motivation” and “Unemployment awareness” had a p-value of 0.001.

- “Motivation” and “Productivity” had a p-value of 0.001.
- “Personal impact on projects” and “Motivation” had a p-value of 0.004.

The constructs that had the least statistically significant relationship lay between the constructs “Personal impact on projects” and “Productivity”, with a p-value of 0.138.

3.7 SUMMARY

The purpose of this chapter was to produce, discuss and describe and interpret the data and the results obtained from the empirical study.

The empirical study was conducted by handing out drafted questionnaires to the identified target sample. The questionnaire consisted of two sections: A demographics section capturing the specific demographics of the participants, as well as a section containing statements, which was drafted in order to probe certain constructs. The participants indicated whether they strongly agreed, agreed, disagreed or strongly disagreed with the selected statements. A sample of the questionnaire used is available in Appendix A.

The purpose of the empirical study was to provide data and a means to measure the status quo of what is suspected in the project environment, and whether labour inadvertently contributes to delays by being incentivized to be unproductive through receiving financial benefits the longer a project continues, but which has not been probed or proven as of yet.

The identified constructs were probed to establish whether the labour force on projects impacts on the delays experienced by projects in general, particularly in the Power Generation Maintenance Industry.

The mean values, Cronbach Alpha coefficient were calculated, as well as inter-item Correlation and Regression analysis, which were all done by the Statistical Consultations Service of the North-West University, Potchefstroom Campus.

This chapter provides clarity on the methods employed and strategies followed to determine the target study population, the methods used in sampling, the compilation of the described questionnaire, the submission of the results and discussion thereof.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

Chapter 4 of the study has the purpose of concluding the findings based on the empirical study, which specifically related to the delays that are experienced on projects in general, specifically relating to the power generation maintenance industry in South-Africa and the impact and influence that the contract labour force has on it, if any. In addition, the chapter aims to suggest practical recommendations and how to look into additional ways of changing the current system in the way that contract workers who work on projects get paid, whether the possibility exists that delays are caused by the labour force, or the factors that influence them.

Chapter 4 consists of the following sections:

- Conclusions drawn from the empirical study in Chapter 3.
- Recommendations based upon the conclusions drawn.
- Evaluation of the achievements of the study's objectives.
- Suggestions for future research.
- Summary to conclude.

4.2 CONCLUSIONS

The conclusions drawn from the study are based upon the empirical study done in Chapter 3. The demographic details utilized were obtained from the participants in the study, together with the results obtained from the information as provided around the identified construct themes probed by the statements in the questionnaire.

Furthermore, the Cronbach alpha coefficient was assessed to determine the reliability and validity of the questionnaire as measuring tool, and to assess the efficiency of the questionnaire in serving the purpose of probing the identified construct themes possessed by the contract labour force working on projects, and the potential impact it has on the timeous completion of projects.

4.2.1 Demographics

Gender

The majority of respondents were found to be males (82.1%) as compared to the number of females (13.4%). This clearly indicates that the overall majority of contract workers in the power generation maintenance industry in South Africa are males.

Age group: Out of the 67 participants in the study, it was found that the majority of the contract workers fall within the 30 – 39 age group at 50.7%, followed by 25.4% which fall within the 20-29 age group, and then 17.9% of respondents that form part of the 40-49 age group. Only 4.5% of respondents fell within the 50-59 age group. From this it can be concluded that the highest concentration of contract workers that work on power generation maintenance projects are in their 30s, with the other quarter of the total contract workers being in their 20s. Less than 20% of the total number of workers are older than 40. From this it can be concluded that the workers consist of people who are relatively young, and might not yet be in a comfortable financial position. As a result, these people might be more prone to be dependent on financial benefits gained during a project, and contribute to the problem that was hypothesised.

Highest educational qualification: From all the participants, 43.3% of the respondents had other forms of education, different from traditional tertiary education or matric. 25.4% indicated that their highest form of education was a diploma. 19.9% had matric as their highest educational level. It can be concluded that the overall number of people working as contract workers in the power generation maintenance industry have educational levels that consist of not more than a diploma. This indicates that the educational levels might prohibit them from gaining higher earning jobs, and as a result, might be in a position where they are dependent on the job they have, as well as the income they receive on the projects.

Marital Status: The majority of the respondents of the target sample were not married at a percentage of 50.7%, followed by 31.3% of the respondents who were married. 13.4% were engaged, whilst 3% were divorced. From this it is clear that the majority of the respondents were not married (at more than 50%). This might be due to the fact that these contract workers often work far from home, and cannot make time or have the finances available for it.

Home language: Out of the respondents in the target sample, 41.8% indicated that their home language was isiZulu. This was followed by 19.4% whose home language was indicated to be Sesotho. Furthermore, 9% had English as their home language. An additional 6% indicated that their home language was something other than the options provided. 4.5% turned out to be siSwati, whilst the rest was made up of Setswana, Ndebele, Tshivenda, Afrikaans and Xitsonga at 1.5% each. It is clear that the majority of the contract workers spoke African languages at almost 90%, and were thus black.

Years at company: The years at the company or industry spent for the participants came in at a majority in the 4 – 10 years category at 50.7%. This was followed by the 0 – 3 years group at 37.3%. Some of the participants had already spent 11-15 years at the company at 7.5%, while only one of the respondents had spent 16-20 years in the industry at 1.5%. It can be concluded that the majority have not spent more than 10 years at the company at more than 80%, and as a result still find themselves in lower positions in the company. This can reflect on their salaries and benefits within the company, which means they receive relatively low salaries, and might find them in a position where they actively require more money to make ends meet.

4.2.2 Measuring tool reliability

Reliability of statistics is indicated by Cronbach alpha. The alpha varies between zero and one theoretically. Internal consistency can be described as the degree to which the items in a survey, test or scale measure the same constructs, and as a result is associated with the inter-relatedness of the items within the survey (Tavakol & Dennick, 2011:53).

This means that the average correlation between constructs of the questionnaire is indicated by the Cronbach alpha (Santos, 1999). In addition, the guideline values for the data on statements to be reliable, the Cronbach Alpha value should ideally be equal or above 0.7. This is to ensure that validity is present. Above 0.5 can also be used but interpretation should be done with caution.

The Cronbach alpha of the identified Constructs was measured to establish the reliability of the measuring tool in the form a questionnaire. From Table 7, the following has been found:

Two of the constructs measured had Cronbach Alpha above 0.7 namely ***“Dependency on financial benefits”*** at 0.762 and ***“Productivity”*** at 0.764.

Two of the other Constructs had a Cronbach Alpha between 0.6 and 0.7, namely ***“Unemployment awareness”*** at 0.622 and ***“Personal impact on project”*** at 0.605.

The Construct ***“Motivation”*** had a Cronbach Alpha of 0.520. As indicated, a Cronbach Alpha value above 0.5 can also be used, but interpretation should be done with caution.

The results of the Cronbach Alpha indicate that the measuring instrument that was used to assess the Constructs that are possessed by the labour force, and the impact that it has in the timeous return of projects, had an acceptable reliability overall.

4.2.3 Conclusions on constructs

The purpose of the study was to measure certain constructs which are possessed by the labour force, and which could potentially impact on the time a project takes to be completed if the construct is found to be present in the contract workers.

The questionnaire consisted out of a collection of 30 statements that focused on the identified constructs. The participants were requested to indicate whether they strongly agreed, agreed, disagreed or strongly disagreed with the statements on the constructs.

The constructs that were identified to possibly be possessed by the labour force and could potentially have an impact on the delays that projects experience follow below.

4.2.3.1 Dependency on financial benefits

The construct “Dependency on financial benefits” was probed by the statements in the questionnaire which served as measuring tool. The idea that workers become dependent on the financial benefits to make ends meet, has the potential to influence some of the workers on a project to want to be in a position where the project takes longer to complete, so that they can continue receiving these financial benefits. The financial benefits relate to salary received, subsistence allowances, overtime and others. The fact that the workforce might rely on financial benefits that they receive for

the duration of a project might incentivize them to attempt to delay a project by being unproductive and inefficient.

The mean average on the construct theme of “Dependency on financial benefits” was found to be $\bar{x} = 3.04$, which overall ranked third in the Construct themes probed in the study. This equals the average mean on the Construct themes overall, which are also at $\bar{x} = 3.04$. Statements such as “My salary as a contract worker is my only source of income”, “Overtime is necessary for me to make ends meet” and “Subsistence allowances, such as Living Out Allowance is necessary for me to make ends meet” all indicated clear agreement to strong agreement overall with mean averages at $\bar{x} = 3.6$, $\bar{x} = 3.3$ and $\bar{x} = 3.09$ respectively.

The average mean on the statements “If I do not get overtime or LOA on top of my salary, I do not want to work on a project”, and “I often find myself wanting to work less overtime” was the smallest at $\bar{x} = 2.79$ and $\bar{x} = 2.02$ respectively.

The results clearly indicate that the contract workers working on projects do find themselves in a position where they are thoroughly dependent on the financial benefits they receive whilst working on projects. These financial benefits take the form of salaries, allowances and overtime. They rely on these financial benefits to make ends meet, and in general are the only breadwinners in their households, with project work being their only source of income.

The correlation coefficients were tested in order to indicate whether there was practical significance of relationships or linear correlation between the constructs.

It was found that there is a large practically significant relationship between “Dependency on financial benefits” and “Motivation” with a correlation coefficient of 0.645, which indicates that contract workers on projects motivation are influenced by their dependency on financial benefits, and that if these benefits do not form part of what they receive whilst working on projects, their motivational levels were affected.

The fact that the correlation coefficient between the constructs “Dependency on Financial Benefits” and “Personal impact on projects” was found to be 0.619, might indicate that contract workers on projects are aware that they can influence the success of projects in terms of time and cost with their personal impact. Furthermore, they might

be incentivized to do so due to their dependency on financial benefits received during the project.

“Dependency on financial benefits” and “Unemployment awareness” correlation coefficient of 0.463, indicating a medium to large practical significant relationship. This indicates that contract workers working on projects have an awareness of becoming unemployed once a project ends, and that it further enhances their dependence on the financial benefits received, and might be incentivized to receive it for longer.

The One Sample T-test (Sig(2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean is any different statistically from a hypothesized or known population mean. “Productivity” and “Dependency on financial benefits” had a p-value of 0.002, which indicates that there was a significant relationship between these constructs.

4.2.3.2 Unemployment awareness

The construct “Unemployment awareness” was probed by the statements in the questionnaire that functioned as measuring tool. The general unemployment rate experienced in a country, and the effect that it has on the mind-set of the workforce on a project was probed, keeping in mind that contract workers become unemployed once a project ends. This construct is considered to have a higher impact in under-developed countries, as the threat of unemployment and loss of livelihood of workers will be higher, such as in South Africa.

The mean average on the construct theme of “Unemployment awareness” was found to be $\bar{x} = 2.73$, which overall ranked fifth and lowest in the Construct themes probed in the study. This is below the average mean on the Construct themes overall, which are at $\bar{x} = 3.04$. Statements such as “My salary as a contract worker is my only source of income”, “I feel that there is a job shortage countrywide ” and “I feel anxious if a project nears its end, because I might not get the opportunity to work on another ” all indicated clear agreement to strong agreement overall with mean averages at $\bar{x} = 3.28$, $\bar{x} = 3.09$ respectively.

The average mean on the statements “I get employed on projects easily and often”, and “I have found myself purposefully working slower if I am not guaranteed getting work on another project” was the smallest at $\bar{x} = 2.31$ and $\bar{x} = 2.18$ respectively.

The results indicate that the contract workers working on projects are influenced by the fact that unemployment exists, that they are thoroughly aware that they might become unemployed once the project ends. Employment for these contract workers is shown to influence their mind-set, and creates an anxious feeling in them, because they do not get employed on projects easily and often. However, it does not seem as if it influences their work in such a way for them to be working slower on purpose to extend the length of the project.

The correlation coefficients were tested in order to indicate whether there was practical significance of relationships or linear correlations between the constructs.

It was found that there was a large practically significant relationship between “Unemployment awareness” and “Productivity” with a correlation coefficient of 0.622, indicating the contract workers’ awareness of becoming unemployed once a project ends, and their levels of productivity being impacted upon.

“Unemployment awareness” and “Personal impact on projects” had a correlation coefficient of 0.423, indicating a medium to large correlation between the constructs. This indicates that contract workers’ awareness of becoming unemployed once the project they are working on ends, allows for them to become more aware that they have the ability to influence and impact on the outcome and time of the outage.

“Unemployment awareness” and “Motivation” also had a medium to large correlation coefficient between the constructs of 0.388, indicating that the level of awareness that contract workers have relating to becoming unemployed when the project they are working on ends, correlates with their levels of motivation to work further on the project.

It must be noted that the findings on the average means on statements such as “I have found myself purposefully working slower if I am not guaranteed getting work on another project” with an average mean of $\bar{x} = 2.31$, and the correlation coefficients between the Constructs “Productivity” and “Unemployment awareness” with a correlation coefficient of 0.622, differ in the findings. The average mean indicates a tendency to disagree with

the statement, whereas the correlation coefficient indicates that there is indeed a correlation between workers' awareness of becoming unemployed once the projects ends, and their levels of productivity. This difference might be attributed to the fact that workers participating in the study might have been suspicious of the statement, and did not want to answer it honestly, out of fear that they might be exposed or that it might influence their wellbeing.

The One Sample T-test (Sig (2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean was any different statistically from a hypothesized or known population mean.

"Motivation" and "Unemployment awareness" had a p-value of 0.001., which indicates that there was a significant relationship between these constructs.

4.2.3.3 Productivity

Labour productivity is indicated by the efficiency rate at which the input by the labour force is converted into output. The attempt to measure the productivity and efficiency output by workers with regards to their specific job and whether it is influenced when they receive financial benefits was probed.

The mean average on the construct "Productivity" was found to be $\bar{x} = 2.85$, which overall ranked fourth in the Construct themes probed in the study. This is below the average mean on the Construct themes overall of $\bar{x} = 3.04$. Statements such as "If the project is extended, it is financially advantageous for me", " I often find myself wanting the projects to take longer on which I work" and " When a project takes longer to complete, I feel like I personally benefit" all indicated clear agreement to strong agreement overall with mean averages at $\bar{x} = 3.49$, $\bar{x} = 3.25$ and $\bar{x} = 3.12$ respectively.

The average mean on the statements "I find that I want to extend critical work activities to work over weekends", "I have found myself in the past to work slower when the project nears its end" and "I have found myself in the past becoming less productive towards the end of a project" was the smallest at $\bar{x} = 2.53$, $\bar{x} = 2.25$ and $\bar{x} = 2.09$ respectively.

The results indicate that the contract workers on projects do want the project to take longer, and that they feel that they financially benefit from it if it occurs. There is some indication that the workers tend to work more slowly when the project starts nearing its end; however, it is not convincing.

The correlation coefficients were tested in order to indicate whether there was practical significance of relationship or linear correlation between the constructs.

“Productivity” and “Unemployment awareness” had a correlation coefficient of 0.622, indicating a large practical significance between the two constructs, indicating that the contract workers’ awareness of becoming unemployed once a project ends, and their levels of productivity would be impacted upon.

A medium practically significant relationship between the constructs “Productivity” and “Motivation” was found with a correlation coefficient of 0.404, indicating a certain level of impact between the levels of motivation and productivity of workers, i.e., as the one increases or decreases, so does the other.

The One Sample T-test (Sig (2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean is any different statistically from a hypothesized or known population mean.

“Motivation” and “Productivity” had a p-value of 0.001, which indicates that there was a significant relationship between these constructs, as well as “Productivity” and “Dependency on financial benefits” with a p-value of 0.002.

4.2.3.4 Motivation

The construct “Motivation” was probed by the statements in the questionnaire that served as measuring tool for the study. Workers’ motivation to be at work and execute their mandate, as well as contribute to the success of a project they worked on was probed. In the working environment, motivation is a way of getting individuals to act in a certain manner, and getting people to work willingly to reach a certain goal or a certain task.

The mean average on the construct “Motivation” was found to be $\bar{x} = 3.29$, which overall ranked second in the Construct themes probed in the study. This is above the average

mean on the Construct themes overall of $\bar{x} = 3.04$. Statements such as "Overtime is necessary for me to make ends meet" and "I am the sole breadwinner for my household" all indicated clear agreement to strong agreement overall with mean averages at $\bar{x} = 3.63$, $\bar{x} = 3.27$ respectively. The average mean on the statement "The salary I receive is part of my motivation to work continue working on projects" was found to be $\bar{x} = 2.98$, indicating agreement to a certain extent with the statement.

It can be concluded that contract workers generally indicated agreement with the "Motivation" construct statements, and are strongly motivated by the financial benefits they receive to do work on a project, especially relating to fringe benefits such allowances and overtime. Furthermore, contract workers choose to do work on projects, as they are the sole breadwinners in their households.

The correlation coefficients were tested in order to indicate whether there was practical significance of relationships or linear correlations between the constructs.

A medium practically significant relationship between the constructs "Motivation" and "Productivity" was found with a correlation coefficient of 0.404, indicating a certain level of impact between the levels of motivation and productivity of workers, i.e., as the one increases or decreases, so does the other.

"Motivation" and "Unemployment awareness" also had a medium to large correlation coefficient between the constructs of 0.388, indicating that the level of awareness that contract workers have relating to becoming unemployed when the project they are working on ends, correlates with their levels of motivation to work further on the project.

"Motivation" and "Personal impact on projects" had a medium correlation coefficient of 0.348, indicating that contract workers motivational levels influence their consciousness of their ability to personally impact on the project, and the duration thereof.

The One Sample T-test (Sig (2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean is any different statistically from a hypothesized or known population mean.

"Motivation" and "Productivity" had a p-value of 0.001, which indicates that there was a significant relationship between these constructs, as well as "Motivation" and "Productivity" had a p-value of 0.001.

4.2.3.5 Personal impact on project

The construct “Personal impact on project” was probed by the statements on the questionnaire, which served as a measuring tool. Awareness of the labour force and individual workers of the fact that they have the potential to personally impact on a project positively or negatively is looked into, and the extent to which they can impact on delays experienced by the projects specifically.

The mean average on the construct “Personal impact on project” was found to be $\bar{x} = 3.33$, which overall ranked first in the Construct themes probed in the study. This is above the average mean on the Construct themes overall of $\bar{x} = 3.04$. Statements such as “I feel that my work contributes to the success of a project” and “I feel like I personally contribute to the success of a project” all indicated clear agreement to strong agreement overall with mean averages at $\bar{x} = 3.61$, $\bar{x} = 3.52$ respectively. Other statements such as “I feel like my actions contribute to the success or the failure of a project” had a mean average of $\bar{x} = 2.87$. It can be concluded that a strong general feeling of contribution to the success or failure of a project by contract workers exists, and that contract workers are aware that they have the potential to impact on and contribute to the time a project takes to complete.

The correlation coefficient indicates whether there is practical significance of relationship or effect sizes. Essentially, it is a measure of the linear correlation between different variables or constructs.

The fact that a large correlation between the constructs “Dependency on Financial Benefits” and “Personal impact on projects” was found to be 0.619, might indicate that contract workers on projects are aware that they can influence the success of projects in terms of time and costs with their personal impact.

“Personal impact on projects” and “Unemployment awareness” had a correlation coefficient of 0.423, indicating a medium to large correlation between the constructs. This indicates that contract workers awareness of becoming employed once the project they are working on ends, allows for them to become more aware that they have the ability to influence and impact on the outcome and time of the outage.

“Personal impact on projects” and “Motivation” had a medium correlation coefficient of 0.348, indicating that contract workers’ motivational levels influence their consciousness of their ability to personally impact on the project, and the duration thereof.

The One Sample T-test (Sig(2-tailed)) item in the output is the two-tailed p-value, and indicates whether or not the sample mean is any different statistically from a hypothesized or known population mean. However, no significant findings were made in relation to the construct “Personal impact on projects”

4.2.4 General conclusion on measured constructs

The combined results of the constructs are shown in the figure below:

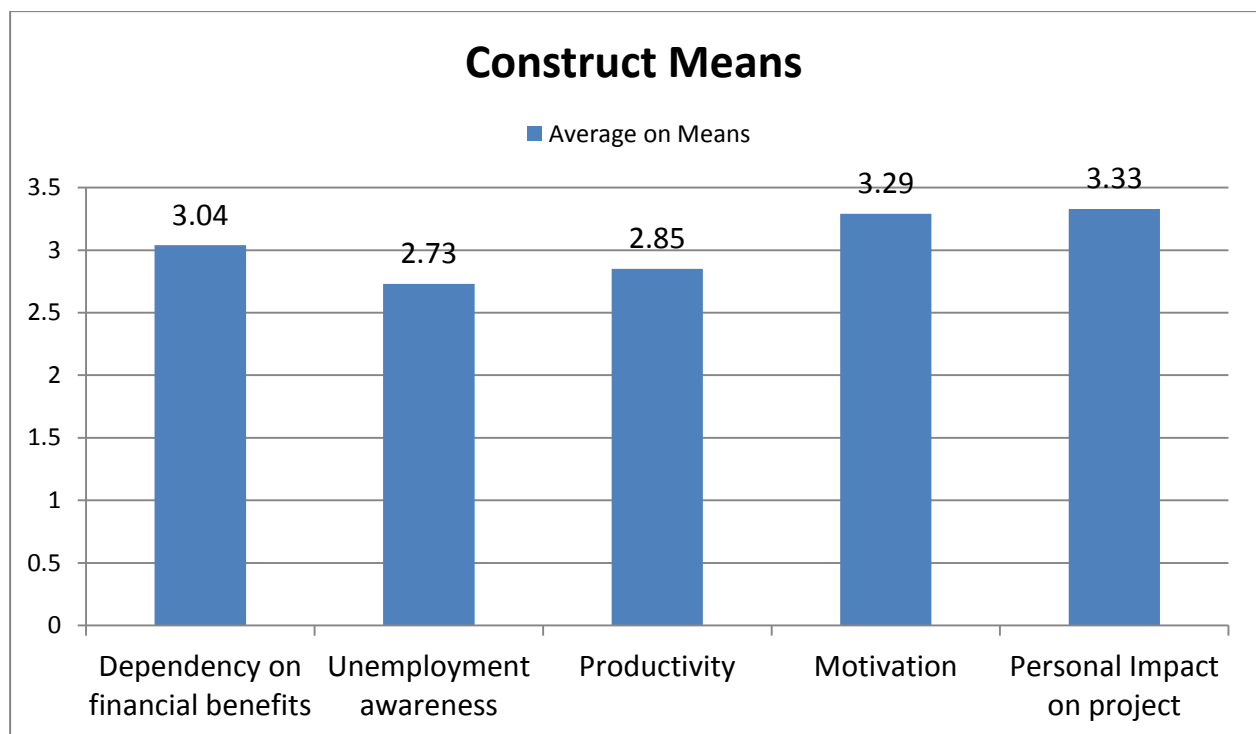


Figure 8: Construct means

The results clearly indicate that the contract workers working on projects do find themselves in a position where they are thoroughly dependent on the financial benefits they receive while working on projects. These financial benefits take the form of salaries, allowances and overtime. They rely on these financial benefits to make ends meet, and in general are the only breadwinners in their household, and project work is their only source of income.

The results indicate that the contract workers working on projects are influenced by the fact that unemployment exists and that they are thoroughly aware that they might become unemployed once the project ends. Employment for these contract workers is shown to influence their mind-set, and create an anxious feeling in them, because they do not get employed on projects easily and often. However, it does not seem to influence their work in such a way for them to be working slower on purpose to extend the length of the project.

It was found that the contract workers on projects do want the project to take longer, and that they feel that they financially benefit from it if this occurs. There is some indication that the workers tend to work more slowly when the project starts nearing its end; however, the results were not convincing enough to conclude that contract workers purposefully work slower and become less productive due to any of the constructs examined.

It can be concluded that a strong general feeling of contribution to the success or failure of a project by contract workers exists, and that contract workers are aware that they have the potential to impact on and contribute to the time a project takes to complete.

Several correlations were found between the Construct themes. It was found that the motivation of workers on projects is influenced by their dependency on financial benefits, and that if these benefits do not form part of what they receive whilst working on projects, their motivational levels are affected. Additionally, it was found that workers on projects are aware that they can influence successes of projects in terms of time and cost with their personal impact.

The fact is that the contract workers do become aware of becoming unemployed once a project ends, and their levels of productivity are impacted upon, and it further enhances their dependence on the financial benefits received, and they might be incentivized to receive it for longer. This also allows them to become more aware that they have the ability to influence and impact on the outcome and time of the project. It further correlates with their levels of motivation as well as productivity relating to work on the project.

Motivation and productivity were found to be closely correlated, i.e. as the motivation of contract workers changes, so do their levels of productivity.

Contract workers on projects are aware that they can influence successes of projects in terms of time and cost with their personal impact, as well as the levels of success that the project achieves. Additionally, they become more aware of the impact they have as the project nears its end, and their ability to influence the timeous return of the outage.

4.3 RECOMMENDATIONS

The empirical study looked into the identified constructs, identified in Chapter 2 by the literature study, that are possessed by the contract labour force, and the potential impact that they might have on the timeous completion of a project. Some of the identified constructs were found to be more present in the contract labour force than others.

Dependency on financial benefits:

The mean average on the construct theme of “Dependency on financial benefits” was found to be $\bar{x} = 3.04$, which overall ranked third in the Construct themes probed in the study.

It was shown beyond reasonable doubt that contract workers working on projects in the South African power generation maintenance industry find themselves wholly dependent on the financial benefits that they receive while working on these projects to make ends meet. These take the form of salaries received and other fringe benefits such as overtime and subsistence allowances.

Even though there was evidence of a tendency to want projects extended by general contract workers, conclusive evidence of purposefully extending critical work activities, or working inefficiently as a project nears its end could not be found.

Nevertheless, due to the tendency of the labour force that want projects extended, it is recommended that different ways of paying contract workers be looked into, and the system of paying contract workers that is currently in place be re-evaluated. This can take the form of rewarding workers when reaching set goals, instead of continuously paying financial benefits regardless of whether targets were achieved or not. This will

remove the overall risk of wanting projects to take longer, and incentivize them to rather want shortened project times.

Additionally, the labour brokers' system in place, that essentially rents out contract workers to projects, should be re-evaluated in an attempt to curb the amount of funds that go to third parties, and allow for funds to be available when set goals and targets are met by the labour force. In addition, this will give the industry more control of the quality of labour they make use of on projects, in an attempt to reduce costs and time of projects, and the impact of labour on it.

Unemployment awareness

The mean average on the construct theme of "Unemployment awareness" was found to be $\bar{x} = 2.73$, which overall ranked fifth and lowest in the Construct themes probed in the study, but still indicates agreement overall with the construct theme.

From the results obtained, it is clear that Contract workers carry awareness of the unemployment situation in the country, and that they might find themselves in an unemployed position once the project they are working on ends, or if they do not get hired on projects regularly. It was found that this makes contract workers anxious, and affects their mind-set relating to the project. Although, again, it could not be conclusively determined whether workers intentionally deliver inefficient work in an effort to extend the project, even though they overwhelmingly indicated that it is what they want, and that they will benefit from extended projects.

Awareness of ever-threatening unemployment will never cease as long as the country's unemployment rates keep on rising. From a project point of view, it is recommended to not make use of contract workers on projects, but rather make use of permanently employed people.

Productivity and motivation

The mean average on the construct "Productivity" was found to be $\bar{x} = 2.85$, which overall ranked fourth in the Construct themes probed in the study, and the mean average on the construct "Personal impact on project" was found to be $\bar{x} = 3.33$, which overall ranked first in the Construct themes probed in the study.

The workers' productivity is influenced by their motivational levels. There is some indication that it is not influenced by other constructs such as their dependency on financial benefits and unemployment awareness; however, this was not convincing enough to conclude that the labour force loses productivity on purpose or with intent.

The motivation of contract workers was found to be influenced by the financial benefits they receive. The level of awareness that contract workers have relating to becoming unemployed when the project they are working on ends, correlates with their levels of motivation to work further on the project.

As a result, it is recommended that workers' motivational levels be raised in order to raise their productivity. It must be noted that this must go hand-in-hand with an alternative approach to payment methods, as it has been seen that motivation is linked with financial benefits received, but that the current system might not be yielding the desired results. Therefore, again, the payment method must be re-evaluated, or incentivize productivity, and allow for funds to be allocated if set goals and targets are reached on target by the labour force.

Personal impact on projects

The mean average on the construct "Personal impact on project" was found to be $\bar{x} = 3.33$, which overall ranked first in the Construct themes probed in the study.

There is a clear indication that contract workers are thoroughly aware of their ability to influence the outcome of projects and have an impact on the time. The recommendation made is that this consciousness be harnessed, and workers be made more responsible for the outcomes of the project. Again, this can be done when incentivized by alternative payment methods, where the workers feel that they are in control of the rewards that they receive for making targets and reaching set goals.

4.4 ACHIEVEMENT OF THE STUDY'S OBJECTIVES

It is important to evaluate whether the set objectives have been met for the study. To do this, the objectives as set out in Chapter 1 are re-visited.

4.4.1 Primary objective

The core objective of the research was to establish whether financial benefits that get paid to workers for the duration of a project impact on the timeous return of the project by having an adverse effect on the motivational levels of the workers towards their work, impacting on their productivity and efficiency, in the way that these fringe benefits have the potential to grant an additional financial advantage, even to such an extent that those workers become dependent on it. The importance of the study was to highlight a concern that has been held by many in the project environment, especially in the Power Generation Maintenance industry, namely that financial benefits serve as an incentive to the contract labour force to be less efficient and productive on projects they are involved with.

The study intended to reveal avenues to address the phenomenon if found present, and produce alternatives to motivate the labour force working on projects if it is confirmed. This in turn would contribute to the general challenge of improving the turnaround time to complete projects.

This concern was shown to possibly exist, and that the tendency exists with contract workers to want to extend projects, and that it is something they benefit from. However, findings to indicate that the turnaround time of projects gets delayed intentionally by the contract labour force could not be proven convincingly.

In this, the study was highly successful, as it was found that workers are wholly dependent on financial benefits, and are aware of unemployment conditions and how these affect them. Also, it revealed how the current system impacts on motivation and subsequent productivity, and the fact that workers know they are able to have an impact on the turnaround time of projects. This allows for consideration of alternate payment systems as set out by the study.

4.4.2 Secondary objectives

Secondary objectives were to establish whether different approaches need to be considered when payment of workers is done in an effort to improve overall efficiency of projects, and eliminate the possibility of loss of time and costs due to the impact of an inefficient labour force on the project. This was cleared by the study, as it was found that the workers prefer to be paid when set targets, objectives and goals are met, and

that they do prefer extended projects, and that the current system impacts on their motivational levels, and subsequently on their productivity.

Alternative ways of motivating the labour force to be more efficient and productive on a project can be considered for example by providing incentives, and thereby rewarding workers when project deadlines, targets, goals or objectives are met, rather than providing financial benefits throughout the duration of the project.

4.5 SUGGESTIONS FOR FUTURE RESEARCH

Suggestions for future research can branch out from the study done here.

The scope was limited to a small target sample group which was available at the time the study was conducted. Additional research can be conducted to look into a wider range of participants.

The scope of the study was limited to projects done in the power generation industry. Because projects across industries experience the same challenges, such as project turnaround times and timeous return of projects, the same study can be done in other industries that make use of projects.

Research can also be done relating to the benefits for companies and/or industries to make use of workers who are employed on a permanent basis, instead of contract workers, to evaluate and weigh the benefits against each other.

A study of the Power Generation Maintenance Industry in South-Africa has not been done up to date. Research into this field relating to other factors that might potentially impact on the time projects take to complete, can also be considered.

4.6 SUMMARY

Chapter 4 of the study had the purpose of drawing conclusions based on the empirical study done in Chapter 3. Chapter 4 consisted of the following:

- Conclusions drawn from the empirical study in Chapter 3.
- Recommendations based upon the conclusions drawn.
- Evaluation of the achievements of the study's objectives.

- Suggestions for future research.
- Summary to conclude.

Conclusions were drawn from the demographic study, as well as the identified constructs namely:

- Dependency on financial benefits;
- Unemployment awareness;
- Productivity;
- Motivation;
- Personal impact on the project.

These Construct themes were discussed and analysed in detail, based on the empirical study done in Chapter 3. The reliability was derived from the measuring tool and was presented by means of the Cronbach alpha. It was found that all constructs to be measured had acceptable Cronbach alphas of more than 0.6 and 0.7. Only motivation had a Cronbach alpha of between 0.5 and 0.6, but could still be used. However, analysis had to be done with care.

Additionally, the mean averages for the constructs were done. It was found that all constructs were relevant in the context of the problem of project delays. However, even though the tendency was prevalent that contract workers wanted projects to be delayed as they gained benefit from it, it could not be indicated convincingly that they intentionally worked towards extending projects, even though they were aware that they had an impact on the project.

Correlation coefficients were also calculated, and it was found that the constructs did influence each other.

Based upon these conclusions, more analysis could be done which specifically related to the delays that are experienced on projects in general, specifically relating to the power generation maintenance industry in South Africa and the impact and influence that the contract labour force has on it.

The chapter also had the aim to suggest recommendations based on the findings, and look into additional ways to confront the problem, and come up with solutions.

Furthermore, future research suggestions were made to branch out on the study done, and provide clarity on some issues that still elude academics.

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ANNEXURES

APPENDIX A: Questionnaire

North-West University

Data-collection Instrument: Research Questionnaire for Interview

Instructions: Mark whether you strongly agree, agree, disagree, or strongly disagree with the statement given.

Examples:

Ex 1: I like playing sport

a. Strongly Disagree	b. Disagree	~~c. Agree~~	d. Strongly Agree
----------------------	-------------	---------------------	-------------------

Ex 2: I like shopping with my wife

~~a. Strongly Disagree~~	b. Disagree	c. Agree	d. Strongly Agree
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Questionnaire

1) I work far from home when working on projects.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

2) I am the sole breadwinner in my household.

1) Strongly Disagree	2) Disagree	3) Agree	4) Strongly Agree
----------------------	-------------	----------	-------------------

3) The salary I receive is part of my motivation to continue working on projects.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

4) The fact that I receive subsistence allowances, such as a Living-out Allowance, influences my motivation to work on projects

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

5) When I work on a project, I fear that I won't get hired on another project when the current project ends.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

6) I feel that my work contributes to the success of a project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

7) I have found myself in the past working slower when the project nears its end

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

8) I am the sole breadwinner for my household

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

9) I get employed on projects easily and often

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

10) I have found myself in the past becoming less productive towards the end of a project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

11) I often go a long time without getting employment on projects

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

12) I often find myself wanting to work less overtime

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

13) Subsistence allowances, such as the Living-out Allowance is necessary for me to make ends meet

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

14) When one project ends, I readily get hired to work on another project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

15) My motivation levels on a project are affected by the money I get for working on a project.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

16) Overtime is necessary for me to make ends meet

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

17) I often find that I often want to work more overtime

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

18) I find that I want to extend critical work activities to work over weekends

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

19) If I do not get overtime or LOA on top of my salary, I do not want to work on a project.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

20) My salary as a contract worker is my only source of income

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

21) I feel like my actions contribute to the success or the failure of a project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

22) I feel that there is a job shortage countrywide

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

23) If the project is extended, it is financially advantageous for me

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

24) I often find myself wanting the projects to take longer on which I work

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

25) I feel like I personally contribute to the success of a project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

26) I feel anxious if a project nears its end, because I might not get the opportunity to work on another

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

27) I am consistently motivated to finish a project on time

e. Strongly Disagree	f. Disagree	g. Agree	h. Strongly Agree
----------------------	-------------	----------	-------------------

28) When a project takes longer to complete, I feel like I personally benefit.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

29) I prefer to be rewarded for achieving set goals on a project.

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

30) I have found myself purposefully working slower if I am not guaranteed getting work on another project

a. Strongly Disagree	b. Disagree	c. Agree	d. Strongly Agree
----------------------	-------------	----------	-------------------

END

Thank you for your participation

APPENDIX B: Statistical analysis

Frequency Table					
GENDER					
		Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	1	55	82,1	85,9	85,9
	2	9	13,4	14,1	100,0
	Total	64	95,5	100,0	
Missing	System	3	4,5		
Total		67	100,0		
AGE					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	17	25,4	25,4	25,4
	2	34	50,7	50,7	76,1
	3	12	17,9	17,9	94,0
	4	3	4,5	4,5	98,5
	5	1	1,5	1,5	100,0
	Total	67	100,0	100,0	
EDUCATION					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	5	17	25,4	25,8	25,8
	6	20	29,9	30,3	56,1
	7	29	43,3	43,9	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
MARITALSTATUS					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	21	31,3	31,8	31,8
	2	34	50,7	51,5	83,3
	3	9	13,4	13,6	97,0
	4	2	3,0	3,0	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
LANGUAGE					

		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	1	1,5	1,6	1,6
	2	6	9,0	9,7	11,3
	3	13	19,4	21,0	32,3
	4	1	1,5	1,6	33,9
	5	1	1,5	1,6	35,5
	6	3	4,5	4,8	40,3
	7	28	41,8	45,2	85,5
	8	3	4,5	4,8	90,3
	9	1	1,5	1,6	91,9
	10	1	1,5	1,6	93,5
	11	4	6,0	6,5	100,0
	Total	62	92,5	100,0	
Missing	System	5	7,5		
Total		67	100,0		
Years at company					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	25	37,3	37,9	37,9
	2	34	50,7	51,5	89,4
	3	5	7,5	7,6	97,0
	4	1	1,5	1,5	98,5
	5	1	1,5	1,5	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q1					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	3	4,5	4,6	4,6
	2	8	11,9	12,3	16,9
	3	34	50,7	52,3	69,2
	4	20	29,9	30,8	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q2					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	2	11	16,4	16,7	16,7
	3	26	38,8	39,4	56,1
	4	29	43,3	43,9	100,0
	Total	66	98,5	100,0	

Missing	System	1	1,5		
Total		67	100,0		
Q3					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	1	1,5	1,5	1,5
	2	2	3,0	3,0	4,5
	3	43	64,2	65,2	69,7
	4	20	29,9	30,3	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q4					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	4	6,0	6,2	6,2
	2	20	29,9	30,8	36,9
	3	25	37,3	38,5	75,4
	4	16	23,9	24,6	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q5					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	3	4,5	4,6	4,6
	2	19	28,4	29,2	33,8
	3	19	28,4	29,2	63,1
	4	24	35,8	36,9	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q6					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	2	1	1,5	1,5	1,5
	3	24	35,8	36,4	37,9
	4	41	61,2	62,1	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		

Q7					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	16	23,9	23,9	23,9
	2	29	43,3	43,3	67,2
	3	11	16,4	16,4	83,6
	4	11	16,4	16,4	100,0
	Total	67	100,0	100,0	
Q8					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	1	1,5	1,5	1,5
	2	12	17,9	17,9	19,4
	3	22	32,8	32,8	52,2
	4	32	47,8	47,8	100,0
	Total	67	100,0	100,0	
Q9					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	9	13,4	13,8	13,8
	2	30	44,8	46,2	60,0
	3	23	34,3	35,4	95,4
	4	3	4,5	4,6	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q10					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	17	25,4	26,6	26,6
	2	29	43,3	45,3	71,9
	3	13	19,4	20,3	92,2
	4	5	7,5	7,8	100,0
	Total	64	95,5	100,0	
Missing	System	3	4,5		
Total		67	100,0		
Q11					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	2	3,0	3,0	3,0
	2	18	26,9	26,9	29,9
	3	29	43,3	43,3	73,1
	4	18	26,9	26,9	100,0

	Total	67	100,0	100,0	
Q12					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	16	23,9	24,6	24,6
	2	35	52,2	53,8	78,5
	3	11	16,4	16,9	95,4
	4	3	4,5	4,6	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q13					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	2	3,0	3,1	3,1
	2	14	20,9	21,5	24,6
	3	25	37,3	38,5	63,1
	4	24	35,8	36,9	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q14					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	12	17,9	17,9	17,9
	2	25	37,3	37,3	55,2
	3	24	35,8	35,8	91,0
	4	6	9,0	9,0	100,0
	Total	67	100,0	100,0	
Q15					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	3	4,5	4,5	4,5
	2	22	32,8	33,3	37,9
	3	28	41,8	42,4	80,3
	4	13	19,4	19,7	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q16					
		Frequency	Per cent	Valid per cent	Cumulative per cent

Valid	1	2	3,0	3,0	3,0
	2	10	14,9	14,9	17,9
	3	21	31,3	31,3	49,3
	4	34	50,7	50,7	100,0
	Total	67	100,0	100,0	
Q17					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	1	1,5	1,5	1,5
	2	15	22,4	22,4	23,9
	3	22	32,8	32,8	56,7
	4	29	43,3	43,3	100,0
	Total	67	100,0	100,0	
Q18					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	11	16,4	16,7	16,7
	2	21	31,3	31,8	48,5
	3	22	32,8	33,3	81,8
	4	12	17,9	18,2	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q19					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	8	11,9	11,9	11,9
	2	20	29,9	29,9	41,8
	3	17	25,4	25,4	67,2
	4	22	32,8	32,8	100,0
	Total	67	100,0	100,0	
Q20					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	2	1	1,5	1,5	1,5
	3	25	37,3	37,3	38,8
	4	41	61,2	61,2	100,0
	Total	67	100,0	100,0	
Q21					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	6	9,0	9,7	9,7

	2	11	16,4	17,7	27,4
	3	30	44,8	48,4	75,8
	4	15	22,4	24,2	100,0
	Total	62	92,5	100,0	
Missing	System	5	7,5		
Total		67	100,0		
Q22					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	7	10,4	10,4	10,4
	2	2	3,0	3,0	13,4
	3	23	34,3	34,3	47,8
	4	35	52,2	52,2	100,0
	Total	67	100,0	100,0	
Q23					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	2	2	3,0	3,0	3,0
	3	30	44,8	44,8	47,8
	4	35	52,2	52,2	100,0
	Total	67	100,0	100,0	
Q24					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	3	4,5	4,5	4,5
	2	9	13,4	13,4	17,9
	3	23	34,3	34,3	52,2
	4	32	47,8	47,8	100,0
	Total	67	100,0	100,0	
Q25					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	2	3,0	3,0	3,0
	2	1	1,5	1,5	4,5
	3	24	35,8	35,8	40,3
	4	40	59,7	59,7	100,0
	Total	67	100,0	100,0	
Q26					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	5	7,5	7,6	7,6
	2	10	14,9	15,2	22,7

	3	25	37,3	37,9	60,6
	4	26	38,8	39,4	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q27					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	3	4,5	4,6	4,6
	2	3	4,5	4,6	9,2
	3	37	55,2	56,9	66,2
	4	22	32,8	33,8	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q28					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	1	5	7,5	7,6	7,6
	2	6	9,0	9,1	16,7
	3	31	46,3	47,0	63,6
	4	24	35,8	36,4	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		
Total		67	100,0		
Q29					
		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	2	2	3,0	3,1	3,1
	3	20	29,9	30,8	33,8
	4	43	64,2	66,2	100,0
	Total	65	97,0	100,0	
Missing	System	2	3,0		
Total		67	100,0		
Q30					
		Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	1	18	26,9	27,3	27,3
	2	29	43,3	43,9	71,2
	3	8	11,9	12,1	83,3
	4	11	16,4	16,7	100,0
	Total	66	98,5	100,0	
Missing	System	1	1,5		

Total	67	100,0		
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Nonparametric Correlations

Correlations							
			DFB	Unemployment	Productivity	Motivation	PloP
Spearman's rho	DFB	Correlation Coefficient	1,000	0,463	0,367	0,645	0,619
		Sig. (2-tailed)		0,000	0,002	0,000	0,000
		N	67	67	67	67	67
	Unemployment	Correlation Coefficient	0,463	1,000	0,622	0,388	0,423
		Sig. (2-tailed)	0,000		0,000	0,001	0,000
		N	67	67	67	67	67
	Productivity	Correlation Coefficient	0,367	0,622	1,000	0,404	0,183
		Sig. (2-tailed)	0,002	0,000		0,001	0,138
		N	67	67	67	67	67
	Motivation	Correlation Coefficient	0,645	0,388	0,404	1,000	0,348
		Sig. (2-tailed)	0,000	0,001	0,001		0,004
		N	67	67	67	67	67
	PloP	Correlation Coefficient	0,619	0,423	0,183	0,348	1,000
		Sig. (2-tailed)	0,000	0,000	0,138	0,004	
		N	67	67	67	67	67

Group Statistics						
Marital_grouped		N	Mean	Std. Deviation	Std. Error Mean	Effect size
DFB	Married & Engaged	30	3,2178	0,51804	0,09458	0,25
	Not married & divorced	36	3,0880	0,40063	0,06677	
Unemployment	Married & engaged	30	2,9024	0,55976	0,10220	0,21
	Not married & divorced	36	2,7827	0,42161	0,07027	
Productivity	Married & engaged	30	2,5619	0,68050	0,12424	0,28
	Not married & divorced	36	2,7532	0,46459	0,07743	
Motivation	Married & engaged	30	3,3056	0,53621	0,09790	0,25
	Not married & divorced	36	3,1713	0,50629	0,08438	
PloP	Married & engaged	30	3,5000	0,53784	0,09820	0,48
	Not married & divorced	36	3,2407	0,53814	0,08969	

T-Test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
DFB	Equal variances assumed	3,380	0,071	1,147	64	0,256	0,12977	0,11312	- 0,09621	0,35575
	Equal variances not assumed			1,121	53,997	0,267	0,12977	0,11578	- 0,10235	0,36189
Unemployment	Equal variances assumed	1,242	0,269	0,990	64	0,326	0,11971	0,12090	- 0,12182	0,36124
	Equal variances not assumed			0,965	53,073	0,339	0,11971	0,12402	- 0,12904	0,36846
Productivity	Equal variances assumed	3,608	0,062	-1,351	64	0,181	-0,19127	0,14155	- 0,47405	0,09151
	Equal variances not assumed			-1,307	49,692	0,197	-0,19127	0,14640	- 0,48536	0,10282
Motivation	Equal variances assumed	0,034	0,854	1,044	64	0,300	0,13426	0,12856	- 0,12257	0,39109
	Equal variances not assumed			1,039	60,451	0,303	0,13426	0,12924	- 0,12423	0,39275
PloP	Equal variances assumed	0,523	0,472	1,949	64	0,056	0,25926	0,13300	- 0,00644	0,52495
	Equal variances not assumed			1,949	61,884	0,056	0,25926	0,13299	- 0,00660	0,52512

Group statistics						
YearComp_grouped		N	Mean	Std. Deviation	Std. Error Mean	Effect size
DFB	0 - 3	25	3,1943	0,45694	0,09139	0,20
	4+	40	3,1017	0,45654	0,07219	
Unemployment	0 - 3	25	2,8676	0,32385	0,06477	0,10
	4+	40	2,8104	0,57921	0,09158	
Productivity	0 - 3	25	2,6752	0,53252	0,10650	0,08
	4+	40	2,6231	0,62744	0,09921	
Motivation	0 - 3	25	3,2400	0,44638	0,08928	0,06
	4+	40	3,2083	0,55949	0,08846	
PloP	0 - 3	25	3,4800	0,45216	0,09043	0,30
	4+	40	3,3000	0,59819	0,09458	

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
DFB	Equal variances assumed	0,192	0,662	0,795	63	0,429	0,09262	0,11643	- 0,14006	0,32529
	Equal variances not assumed			0,795	51,059	0,430	0,09262	0,11646	- 0,14117	0,32641
Unemployment	Equal variances assumed	11,722	0,001	0,451	63	0,653	0,05726	0,12687	- 0,19627	0,31079
	Equal variances not assumed			0,510	62,402	0,612	0,05726	0,11217	- 0,16694	0,28146
Productivity	Equal variances assumed	1,992	0,163	0,345	63	0,731	0,05214	0,15120	- 0,25002	0,35430
	Equal variances not assumed			0,358	57,211	0,721	0,05214	0,14555	- 0,23930	0,34358
Motivation	Equal variances assumed	2,330	0,132	0,239	63	0,812	0,03167	0,13240	- 0,23291	0,29625
	Equal variances not assumed			0,252	59,166	0,802	0,03167	0,12568	- 0,21981	0,28314
PloP	Equal variances assumed	0,749	0,390	1,290	63	0,202	0,18000	0,13950	- 0,09877	0,45877

	Equal variances not assumed			1,376	60,601	0,174	0,18000	0,13086	- 0,08170	0,44170
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Reliability - DFB

Case processing summary			
		N	%
Cases	Valid	60	89,6
	Excluded ^a	7	10,4
	Total	67	100,0

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0,762	0,756	10

Inter-Item Correlation Matrix										
	Q1	Q3	Q4	Q8	Q12_r	Q13	Q16	Q17	Q19	Q20
Q1	1,000	-0,012	0,094	0,462	0,041	0,283	- 0,049	0,082	0,231	0,276
Q3	-0,012	1,000	0,285	0,085	0,107	0,148	0,178	0,099	- 0,085	0,187
Q4	0,094	0,285	1,000	0,365	0,049	0,365	0,256	0,159	0,257	0,272
Q8	0,462	0,085	0,365	1,000	0,101	0,471	0,284	0,200	0,404	0,273
Q12_r	0,041	0,107	0,049	0,101	1,000	0,261	0,137	0,176	0,044	0,096
Q13	0,283	0,148	0,365	0,471	0,261	1,000	0,578	0,373	0,425	0,347
Q16	-0,049	0,178	0,256	0,284	0,137	0,578	1,000	0,667	0,528	0,289
Q17	0,082	0,099	0,159	0,200	0,176	0,373	0,667	1,000	0,370	0,161
Q19	0,231	-0,085	0,257	0,404	0,044	0,425	0,528	0,370	1,000	0,320
Q20	0,276	0,187	0,272	0,273	0,096	0,347	0,289	0,161	0,320	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	27,9500	17,879	0,268	0,373	0,762
Q3	27,8333	18,921	0,174	0,179	0,769
Q4	28,3167	16,593	0,401	0,268	0,746
Q8	27,8500	15,960	0,538	0,412	0,726
Q12_r	28,1167	18,308	0,186	0,099	0,773
Q13	28,0000	14,983	0,673	0,520	0,704
Q16	27,7500	15,547	0,599	0,684	0,716
Q17	27,8833	16,342	0,467	0,478	0,736
Q19	28,2833	15,088	0,512	0,428	0,729
Q20	27,4667	17,914	0,436	0,235	0,745

Reliability – Unemployment

Case processing summary			
		N	%
Cases	Valid	62	92,5
	Excluded ^a	5	7,5
	Total	67	100,0

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0,622	0,626	7

Inter-Item Correlation Matrix							
	Q5	Q9_r	Q11	Q14_r	Q22	Q26	Q30
Q5	1,000	0,257	0,345	0,244	0,146	0,283	0,187
Q9_r	0,257	1,000	0,290	0,493	-0,047	0,031	-0,083
Q11	0,345	0,290	1,000	0,357	-0,067	0,350	0,286
Q14_r	0,244	0,493	0,357	1,000	-0,026	0,274	0,128
Q22	0,146	-0,047	-0,067	-0,026	1,000	0,067	0,101
Q26	0,283	0,031	0,350	0,274	0,067	1,000	0,436
Q30	0,187	-0,083	0,286	0,128	0,101	0,436	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q5	16,8548	8,913	0,431	0,208	0,551
Q9_r	17,1452	10,323	0,254	0,320	0,608
Q11	16,9194	9,190	0,468	0,292	0,545
Q14_r	17,2419	9,137	0,417	0,332	0,557
Q22	16,5806	10,969	0,056	0,051	0,672
Q26	16,7903	8,857	0,445	0,294	0,546
Q30	17,6935	9,200	0,316	0,242	0,593

Reliability – Productivity

Case processing summary			
		N	%
Cases	Valid	61	91,0
	Excluded ^a	6	9,0
	Total	67	100,0

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0,764	0,766	7

Inter-Item Correlation Matrix							
	Q7	Q10	Q18	Q23	Q24	Q27_R	Q28
Q7	1,000	0,522	0,394	0,264	0,354	0,341	0,418
Q10	0,522	1,000	0,372	0,089	0,082	0,364	0,290
Q18	0,394	0,372	1,000	0,300	0,367	0,238	0,397
Q23	0,264	0,089	0,300	1,000	0,698	0,130	0,401
Q24	0,354	0,082	0,367	0,698	1,000	0,219	0,273
Q27_R	0,341	0,364	0,238	0,130	0,219	1,000	0,191
Q28	0,418	0,290	0,397	0,401	0,273	0,191	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q7	16,4590	9,052	0,608	0,426	0,705
Q10	16,6557	10,330	0,462	0,370	0,739
Q18	16,2295	9,546	0,533	0,306	0,724
Q23	15,2295	11,646	0,464	0,541	0,745
Q24	15,3934	10,676	0,467	0,560	0,738
Q27_R	16,9016	11,223	0,379	0,185	0,754
Q28	15,5574	10,384	0,499	0,319	0,731

Reliability – Motivation

Case processing summary			
		N	%
Cases	Valid	63	94,0
	Excluded ^a	4	6,0
	Total	67	100,0

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0,520	0,541	3

Inter-Item Correlation Matrix			
	Q2	Q15	Q29
Q2	1,000	0,224	0,333
Q15	0,224	1,000	0,288
Q29	0,333	0,288	1,000

Item-Total Statistics					
	Scale Mean if Item deleted	Scale Variance if Item deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q2	6,37	1,203	0,331	0,129	0,424
Q15	6,89	1,133	0,306	0,102	0,483
Q29	6,02	1,467	0,395	0,159	0,366

Reliability – Personal Impact on Project

Case-processing summary			
		N	%
Cases	Valid	62	92,5
	Excluded ^a	5	7,5
	Total	67	100,0

Reliability statistics		
Cronbach's Alpha	Cronbach's Alpha based on Standardized Items	N of Items
0,605	0,647	3

Inter-Item Correlation Matrix

	Q6	Q21	Q25
Q6	1,000	0,235	0,560
Q21	0,235	1,000	0,342
Q25	0,560	0,342	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q6	6,37	1,713	0,458	0,315	0,498
Q21	7,10	1,171	0,334	0,120	0,700
Q25	6,47	1,302	0,527	0,360	0,341

APPENDIX C: Language editing certificate

Declaration

This is to declare that I, Annette L Combrink, accredited language editor and translator of the South African Translators' Institute, have language-edited the mini-dissertation by

G Moolman (12976806)

with the title

The impact of financial benefits on the timeous completion of projects



Prof Annette L Combrink

Accredited translator and language editor

South African Translators' Institute

Membership No. 1000356

Date: 6 November 2017