The Impact of Working Hours on Employee Productivity: Case Study of Sabertek

By

Nerissa Vallo

207500635

A Dissertation/research project submitted to the School of business in partial fulfilment of the requirement for the award of the degree of Master of Business Administration.

Graduate School of Business & Leadership

College of Law and Management Studies

Supervisor: Pfano Mashau

Year of Submission

2018

SUPERVISORS PERMISSON TO SUBMIT DISSERTAION FOR EXAMINATION

Name: Nerissa Vallo	No: 207500635	
Title: The Impact of Working Hours on Employee Productivity: Case Study of Sabertek		
Qualification: Master of Business Administration	School: Graduate School of Business and Leadership	
	Yes	No
To the best of my knowledge, the dissertation is primarily the student's own work and the student has acknowledged all reference sources	X	
The English language is of a suitable standard for examination without going for professional editing. - This report has been professionally edited.	X	
Turnitin Report %		
Comment if % is over 10%:		
I agree to the submission of this dissertation for examination	X	
Supervisors Name: Pfano Mashau		
Supervisors Signature: [redacted]		
Date: 10/12/2018		
Co- Supervisors Name:		
Co- Supervisors Signature:		
Date:		

DECLARATION

I ……Nerissa Vallo……declare that:

(i) The research reported in this dissertation/thesis, except where otherwise indicated, and is my original research.

(ii) This dissertation/thesis has not been submitted for any degree or examination at any other university.

(iii) This dissertation/thesis does not contain other persons' data, pictures, graphs, or other information, unless specifically acknowledged as being sourced from other persons.

(iv) This dissertation/thesis does not contain other persons' writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, then:

a) their words have been re-written, but the general information attributed to them has been referenced; and

b) where their exact words have been used, their writing has been placed inside quotation marks, and referenced.

(v) Where I have reproduced a publication of which I am an author, co-author, or editor, I have indicated in detail which part of the publication was actually written by myself alone and have fully referenced such publications.

(vi) This dissertation/thesis does not contain text, graphics or tables copied and pasted from the Internet, unless specifically acknowledged, and the source being detailed in the dissertation/thesis and in the References sections.

Signature: **Date: 10 December 2018**

ACKNOWLEDGEMENTS

- I firstly would like to thank God for answering all of my prayers and guiding and directing me towards the path of success.
- I appreciate my parents, Mona and Doray Vallo, for their support, encouragement and unconditional love and tolerating me for as long as they did. I would especially like to thank my dad for making my dreams come true by funding my studies in his retirement. I know you both had to pause your life for a moment and make many financial sacrifices, but I promise it would be worth it.
- My deepest thanks and appreciation is towards the most amazing fiancé, Laven Govender. Your patience was admirable, your support was an anchor that kept me grounded and the many sacrifices that were made would forever be remembered.
- To my brother and sister, Nigel Vallo and Krisantha Vallo, thank you both for your encouragement and lending an ear to my painful complaints, but mostly for showing me love and compassion which motivated my success.
- To my in laws, sister in laws and nieces your love and affection kept my light burning.
- My sincere appreciation to Autotronix, Mr Collin Chetty and Mr Haroon Bassa for your support.
- To the staff and director of Sabertek, Mr Derek Smalberger, and Mrs Vinessa Naidoo thank you for being both kind and accommodating without you this would not have been possible.
- To all of my family and friends and others that helped me along the way, I am absolutely in awe of your immense support. You all were my beacon that navigated me through this long journey, filled with many breakdowns but also many blissful moments. Your push and encouragement will never be forgotten but always appreciated.
- Lastly to my supervisor, Dr Pfano Mashau, you played such a pivotal role in supporting me as an individual, refining my thought processes and most of all believing in me. It is with this belief and encouragement that enabled me to strive towards successfully achieving my goals. Your motivation, devotion and leadership encouraged me to keep writing, keep doing my best and keep moving forward. I also appreciate the opportunities that you opened to me and through this journey you have not only been my true inspiration but above all a dear friend for life.

ABSTRACT

Productivity is important in the workplace and as the elements of productivity come together to deliver goods and services, organisations can be faced with many challenges. Improving and sustaining employee productivity has become a growing concern and challenging for organisations. Organisations overcome these challenges by not only focusing on employee productivity but by harnessing a rich employee relationship with a conducive and happy working environment. This ensures employee commitment and effective benefits such as a healthy bottom line and facilitating innovation at the organisation. The aim of this study was to examine how the number of hours worked impacts employee productivity.

A census consisting of 61 blue-collar employees was used from an electronic manufacturing organisation, Sabertek, based in Centurion. Data were collected using a manually distributed questionnaire newly developed specifically for this study by the researcher.

Statistical analysis revealed that there were several significant relationships, the main relationship was between productivity and working hours (standard and long hours). The results revealed that there is a positive and significant relationship between hours worked by an employee and their productivity. In addition to making significant contributions, the study also found that there was room to improve and maximise the productivity at the organisation through the development of practical recommendations.

It is recommended that companies increase their employee engagement and focus on rewarding employees. In addition, efficiently improving overall employee engagement with management will be effective in the organisation since it seeks to expand its operations globally. This study would also provide insight into factors that affect productivity during working hours which will provide management with useful information to create effective solutions and provide a conducive working environment for employees, therefore, enhancing productivity at Sabertek.

Key words: Working hours; productivity; health, stress; well-being; job satisfaction; working conditions; wages

CONTENTS

List of Figures

List of Tables

CHAPTER 1 OVERVIEW OF THE STUDY

1.1 Introduction

This chapter presents the background, the research problem, motivation, and focus of the study. The chapter further presents the aim, specific objectives, expected outcomes and research objectives, and significance of the study. In addition, the chapter outlines the method used to conduct this study and concludes with the overview of the study contents.

1.2 Research context: Background

The economic crises that has experienced recently in South Africa have left companies vulnerable and with the attempt to reduce operational costs might affect levels of productivity. Organisations will strive to ensure that they can maintain productivity levels to ensure they keep their level of competitiveness. Companies realise that to keep their competitive edge and ensure productivity they would need to invest in their human capital. According to Dolton (2017) in some country's employees work on average 70% more hours per year than in other countries. Achieving these goals include reaching production targets and ensuring that customers are satisfied as this can directly affect the organisation's bottom line.

Organisations expect employees to work longer hours to ensure that production targets can be achieved and that customers are satisfied with the quality of output. However, reaching those targets might not always be possible within the stipulated timeframe as there are many factors that can deviate this goal. Therefore, this study would like to understand how working hours would impact productivity and the extent to which it affects productivity. To achieve this, the researcher examined the relationship between working hours and productivity and further reviewed the factors that could affect this relationship. However, Golden (2012) shows that a mutual problem recognised in all the existing research literature is that there is no lucid theory of precisely how the different working time arrangements influences employee productivity, directly or indirectly. Therefore, this study would like to seek clarity on this relationship using electronics manufacturing organisation Sabertek as the understudy.

Sabertek is an electronic design company that provides complete solutions for the electronics industry (Sabertek, 2018). Sabertek is situated in Centurion, Gauteng, and houses 74 employees, with 61 blue-collar employees at the time of the study. The terms "blue-collar" and "white-collar" are occupational classifications that distinguish workers who perform manual labour from workers who perform professional jobs respectively (Scott, 2018). In

addition, over the years blue-collar workers were categorised by wearing uniforms, which are blue, and worked in trade professions, white-collar workers typically wore white, button-down shirts and worked in office locations (Scott, 2018). Characteristics that differentiate blue-collar and white-collar workers also includes remuneration and education level. This study will focus on only the blue-collar workers at the organisation since they make up the bulk of the staff and therefore directly impacts the firm's overall bottom line through their production efforts. The employees of Sabertek work the standard 40 hours per week and overtime up to 56 hours per week.

According to the basics conditions act, an employee should not work more than 45 hours a week of standard hours and nine hours in any day, if the member of staff works for five days or fewer in a week (Labour Department, 2012). However, there has been little research done in South Africa about the relationship between the number of hours an individual works and the impact it can have on employees and their performance ability. This relationship can vary from sector to sector.

Noticeably there has been an increase in the interest and studies generated on productivity in the workplace (Bröchner, 2017). However, there is very little research on the direct impact of working hours on productivity in South Africa, specifically in the electronic manufacturing industry. Manufacturing organisations such as Sabertek has placed greater emphasis on their production as this is the central context of the organisation and has a direct contribution to their bottom line. In addition, this affects the retention of current customers and attracting of new customers.

The challenge is that not only does the quality of the product need to be of a high standard but there is emphasis placed on ensuring that customers receive their orders within the stipulated time frame agreement. This places pressure on the staff to perform at a certain efficiency level to produce the scheduled components within a planned time frame. Workers have eight hours per day and 40 hours per week, as per the standard agreement at Sabertek, to ensure they meet production targets. This is not always achievable and sometimes the workload volume might increase beyond the capacity of Sabertek. Hence, the workers at Sabertek would then need to work more hours per week to meet customer demand and production targets. However, working these long hours might affect the productivity of the staff and this is what this study aims to examine.

Examining the existence and nature of this relationship concerning working hours and employee productivity can help management understand the impacts working hours, both standard and long working hours might have on the employee's productivity. This can assist the management at Sabertek to not only enhance the productivity of the organisation but better manage and engage with their workforce and provide a conducive working environment.

However, working hours alone does not affect productivity, investigating working hours ceteris paribus (in isolation), is not possible since there are various factors that might affect employees' productivity. Therefore, the study looks at the common factors that might affect this relationship. The factors were grouped, and they include: health and stress levels, well-being, and job satisfaction, working conditions and environment, and wages. The performance of employees was considered an important factor although not further investigated, performance has been discussed to provide for a richer and comprehensive study and contribution towards narrowing the knowledge gap. These factors were investigated to show its own impact or influence on the working hours and productivity relationship. Naharuddin and Sadegi (2013) explain that worker performance directly affects the profit made by the organisation, hence when the environment is not conducive, workers will not be as productive, and this could also impact Sabertek's bottom line. The challenge is that not only does the quality of the product needs to be of a high standard but there is emphasis placed on ensuring that customers receive their orders within the stipulated time frame agreement.

Employee productivity and higher overall worker performance are benefits to an organisation. Having the knowledge and understanding of how the number of working hours affects the productivity of employees can create inferences in how directors manage an organisation or controls working schedules (Collewet and Sauermann, 2017). There is still a considerable amount of uncertainty of how the number of hours worked impacts labour productivity (Collewet and Sauermann, 2017). This study aims to attain an adept understanding of how working hour's impacts on employee productivity while also considering the other factors that could be potential influencers on this relation.

1.3 The Research Problem

In the manufacturing industry, it is imperative that workers work productively and efficiently to meet production targets. Every project has different specifications, quality, and quantity

requirements. This is all based on the consumer specifications, level of consumer demand and time constraints. When production targets are not achieved by employees during the standard working hours, employees will need to work longer hours, to ensure they meet production targets. This can affect employees' levels of efficiency and productivity.

To enhance and sustain high levels of productivity within the organisation, management would require an understanding of how the number of hours worked and other indirect influences impacts the employee's productivity. The problem is the extent and intensity of which these different working hours' impacts productivity is unknown. Hence management at Sabertek, needs to understand this relationship to improve employee productivity and overall performance

To successfully expand their operations abroad, management needs to take cognisance of this relationship as it can affect cause production interferences. Hence the research gap is to identify if there is an association between the number of hours worked and the productivity of the worker. Employees work eight hours a day or 40 hours per week, but the length of their day can increase when working overtime. Post-work activities include waiting in peak traffic, getting home later or attending to personal or family care. When an employee's day is increased by working overtime, this leaves less time for their resting period. Eventually, this routine starts to leave workers tired, more stressed, and less healthy as they have less family time or exercise time and leads to potential problems such increased health and stress problems or an unbalanced life and frustration. According to Pencavel (2016a) employees require down time from their jobs to restore their physical, mental, and emotional capacities and, if there inadequate time to repair due to a long week, their work performance suffers. Choi (2012) cites studies which have shown that long hours of work cause people to be more stressed adversely affecting their mental health. Further reporting that extending working hours, causes poor lifestyle behaviours and has an adverse influence on physical health outcomes, further arguing that working long hours can be a fundamental cause of diverse social problems (Choi, 2012). In addition, Pencavel (2016a: 1) states "a case, during which workers were required to work all seven days yielded about ten per cent less output than weeks in which the same number of hours were allocated over six days; in short, seven days labor produces only six days' output."

However, working longer hours does not only affect employees, but employees experience challenges that affect their productivity during normal working hours. These challenges can

arise from potential external factors that affect employees. The problem is that management does not understand the extent to which these factors are influential and hence they cannot maximise productivity effectively.

1.4 Motivation for the Study

This study would benefit both the management and employees of Sabertek. Management views this as an opportunity to maximise their productivity. In addition, this would lead to employers recognising methods of improvements based on the outcomes of this study. This would ensure Sabertek generates a sustainable productivity model that benefits the bottom line, improves customer service, and facilitates innovation at the organisation. The study would provide management with the knowledge of how and the extent to which the different factors impacts their employee's productivity. This would form the basis of their plans to mitigate or work on the factors that would have the most significant impacts on their staff. Hence this would enhance the overall organisation's production process and contribute towards creating a better working environment and improved well-being of employees and improved employee engagement.

Sabertek employees would have a more fulfilling work experience and secure employee engagement. Employees will obtain a better insight, engagement, and understanding of the decisions made by management of Sabertek and therefore be keener to oblige. Maximising employee productivity would suit both management and create an environment conducive for employees. This would also allow for management to easily expand their operations globally as their productivity would be at a maximum and sustainable level.

1.5 Focus of the Study

This study focuses on examining the relationship that exists between working hours (long and standard) and productivity at Sabertek. In addition, the study investigates the influence of selected factors on this relationship. Recommendations to maximise the organisation's productivity will be included in this study.

1.6 Aim of the Study

To examine the relationship between working hours and employee productivity at Sabertek**.**

1.7 Objectives of the Study

The subsequent objectives were established to address the study:

1. To examine the relationship between standard working hours (40 hours per week) and employee productivity at Sabertek.

2. To examine the relationship between long working hours (more than 40 hours per week) and employee productivity at Sabertek.

3. To examine factors influencing the relationship between working hours (standard & long) and productivity at Sabertek.

4. To provide ways in which Sabertek can maximise productivity out of working hours.

1.8 Research Questions

1. What is the relationship between standard working hours (40 hours per week) and employee productivity at Sabertek?

2. What is the relationship between long working hours (more than 40 hours per week) and employee productivity at Sabertek?

3. What are the factors influencing the relationship between working hours (standard & long) and productivity at Sabertek?

4. How can Sabertek maximise productivity out of working hours?

1.9 Significance of the Study

This study provides detailed insight into how long working hours affects productivity. With regards to the employer, by identifying the problems around long working hours, productivity can be improved. Additionally, this study will provide insight on other factors that affects employee's productivity.

The production process of the organisation can be improved upon, including developing a healthy work environment for all employees. A core aspect of increasing productivity which is employee well-being will be discussed with regards to long working hours. The reverse is plausible as well, the employees will gain understanding on managements decisions that will have a positive effect on all parties involved. This will create harmony within the organisation and provide a clearer grasp on where the organisation is headed. The main significance of this study is to maximize employee productivity in a safe, healthy, and stable way. This brings on less consequence and negative impacts on the employee's well-being and rest period. This study will provide greater insight to management to make appropriate decisions for the overall organisation as well as to achieve their goal of global operations.

1.10 Methodology

According to Sekaran and Bougie (2013), a cross sectional study when data is collected one time only. The researcher conducted a cross-sectional study among 61 blue-collar workers at Sabertek, using a self-administered questionnaire. The blue-collar employees were the unit of analysis of the study, which also included the drivers and cleaners to eliminate any element of bias. The participants were directly approached with permission from the director and operations manager, requesting them to complete the survey. The researcher fully explained the survey and the confidentiality element to the workers. The collection of data was over a two-day period and upon completion of the questionnaire, a confectionary was given to the employees. The study received a 97.2% response rate with two employees being absent on both days of data collection. The researcher analysed the results from the survey using statistical techniques. Findings of the study were presented, interpreted and discussed.

1.11 Format of the Study

Chapter one of this study provides the background of the company, provides the context of the study, outlines the research problem, highlights the focus, aim, and motivation of the study. The chapter also presents the objectives, significance, and methodology used to conduct the study.

Chapter two is the literature review. This section critically reviews and evaluates literature with reference to the topic of the study, working hours and employee productivity. Further identifying key themes that identify the knowledge gap.

Chapter three presents the research methodology. In this section methodology that is appropriate to the research study is articulated. This chapter further provides the research methodology and design, study population, instrument design, data collection methods and data analysis used in the study.

Chapter four will illustrate the results, interpret, and discuss the findings using relevant literature in Chapter two to support or argue against the findings. Statistical techniques will be used in this section to analyse the results.

Chapter five presents the conclusions and recommendations' inferences of this research, recommendations, limitations, and future research will be deliberated.

1.12 Summary of the Chapter

The chapter provides an overview of the study which includes the motivation as to why the study has been conducted together with a description of the problem statement. The focus of the study is presented including the objectives and various research questions. The following chapter is the literature review on various objectives covered on the subjects of the study.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This literature review examines the relationship between the employee's working hours and productivity within an organisation in the manufacturing sector. This chapter provides the context for the research problem, research questions, and research objectives, by presenting an overview of productivity in terms of its broad operating factors that impact working hours. The literature further presents common factors that indirectly link the working hours to employee productivity, which underpins the research objectives. This paper presents a broad range of relevant literature from published management journal articles, economic journals, and other relevant reports and journals. The literature highlights research studies conducted on this relationship, presenting reviews from various countries to inform the discussion and create a holistic and broader understanding of the relationship between these variables.

The literature entails describing productivity, the various types and the various measures of productivity. Thereafter conceptualising the various forms of working hours and defining concepts throughout the literature. This is followed by a detailed discussion on the different working hours and its impacts on productivity. Lastly, a detailed discussion of the direct impacts of other factors on each of the main variables. In addition, the conceptual framework of the study will be highlighted. The literature concludes with the research gap, discussing the gap for this study and closes with the conclusion of the chapter.

2.2 Discussion of Productivity

Productivity can be described in various ways that suits the context and nature of the discussion. The simplest and common definition is the output per unit of input, which is production output per labour hours or input divided by output (Beaton et al., 2009; Koopmans et al., 2014; Choi, 2012). Similarly, Böckerman and Ilmakunnas (2012) describes labour productivity within the context of the manufacturing sector as valued added per hours worked, adding that the index of total factor productivity is also used as an index in manufacturing.

There are various forms and levels of productivity which have different applications. The forms include the following: total factor productivity and labour productivity, industry-level productivity, firm-level productivity and individual productivity (Bröchner, 2017). Total factor productivity entails the function of productivity which demonstrates various amalgamations of inputs which can lead to the various levels of output. The most common

and frequently used type of productivity is labour productivity and can be measured at industry level (Bröchner, 2017).

Productivity at the workplace has gained much interest and insight, with many studies over the years (Bröchner, 2017). Subsequently, Bröchner (2017) adds that productivity at firms is now becoming both a great concern and a challenge for management within the various industries. Productivity not only influences the organisation, but it affects the overall economy at large, which leads to productivity growth in South Africa. This shows that labour productivity has consequential implications for economic growth and welfare. This is because productivity is the measure of economic performance which utilises resources such as workers and labour hours to produce goods and services (Ali et al., 2013). The total output for an economy is measured by productivity per hour multiplied by the number of hours worked per employee multiplied by the number of employees (Fadda, 2016).

There are various forms of productivity, therefore it is imperative to understand the context in which in this study conceptualises productivity. Labour productivity is the key element of this study and is described as the total output produced or sales per employee at the firm level (Heshmati and Rashidghalam, 2018). This study will acknowledge labour productivity as the volume of output produced per unit of labour input. Labour productivity is a key driver of changes in living standards but and it is also an important measurement of economic performance (OECD, 2018a). Due to the vastness of the productivity definition there can be various ways in which it can be measured, therefore the following section highlights the measures of productivity.

2.2.1 Productivity Measures

The Organisation for Economic Co-operation and Development (OECD), discusses that productivity is most appropriately measured as the volume of output generated per number of hours worked (OECD, 2018a). Organisations calculate labour productivity as the ratio between each sector value added and the total number of hours worked (OECD, 2018a). Productivity encompasses various dimensions which makes it difficult to characterise it in any specific way or measure all of its dimensions.

Measuring worker productivity should depend on the setting for which management collects the data (Sauermann, 2016). Performance measures can be a determinant of productivity Due to a lack of reliable methods to determine the productivity of employees, organisations often use specific performance measures, such as how different incentives affect employees'

behaviour (Sauermann, 2016). Employees can have different working hours therefore it can be suggested that employers consider measuring employee productivity on their observed levels of performance. Performance measures can provide detailed information about worker productivity and with reliable performance measures the organisation can enhance their productivity (Sauermann, 2016). In addition, reliable performance measures are needed to design appropriate contracts and improve productivity (Sauermann, 2016)

The drawback of measuring productivity is the use of an incorrect measure which can lead to distorted results and negatively affects worker productivity (Sauermann, 2016; Berniell and Bietenbeck, 2017). Therefore, it is important to understand the key productivity measures to plan for productivity improvements correctly and appropriately. This study will not measure productivity based on employee outputs but by using the working hours and influencing factors as determinants that influence level the of output. Working hours is an independent variable in this study and will be discussed in the next section.

2.3 Working Hours

The concept of labour contribution is the total hours actually worked by every person engaged in production. Hours worked is defined as the hours actually spent on productive activities (OECD, 2018a). According to Bannai and Tamakoshi (2014), the definition of working hours is time spent on work. This discussion includes a key concept namely overtime hours. Overtime hours refers to hours worked in excess of standard hours and overtime hours which can be paid (typically at an overtime premium) or unpaid (Schank, 2015). Overtime hours in this study is regarded as long working hours. Actual hours worked includes both standard hours and overtime worked so actual hours worked on average can surpass standard hours (Schank, 2015). This paper considers standard working hours (40 hours per week), short hours (less than 40 hours per week) and long hours (over 40 hours per week).

2.3.1 Standard Working Hours

According to Schank (2015), standard hours refers to the specified weekly working time, determined by law, collective bargaining agreement, or individual contracts. Common terminology used besides working hours includes normal working hours, standard working hours, and the standard workweek. The general standard workweek should comprise 40 hours per week, since the International Labour Organisation (ILO) established this in 1930 (Angrave and Charlwood, 2015). However, it is important to keep in mind that this standard

time is not consistent throughout the world. Bannai and Tamakoshi (2014) explain that the definition of long working hours can be affected by a variation in standard working hours. An example would be the Koreans, who reportedly had the longest standard working hours (more than 40 hours per week) which was eventually reduced (Choi, 2012). Standard working hours varies both between and within countries around the world.

Figure 2:1 below illustrates the variants of standard working times throughout Europe.

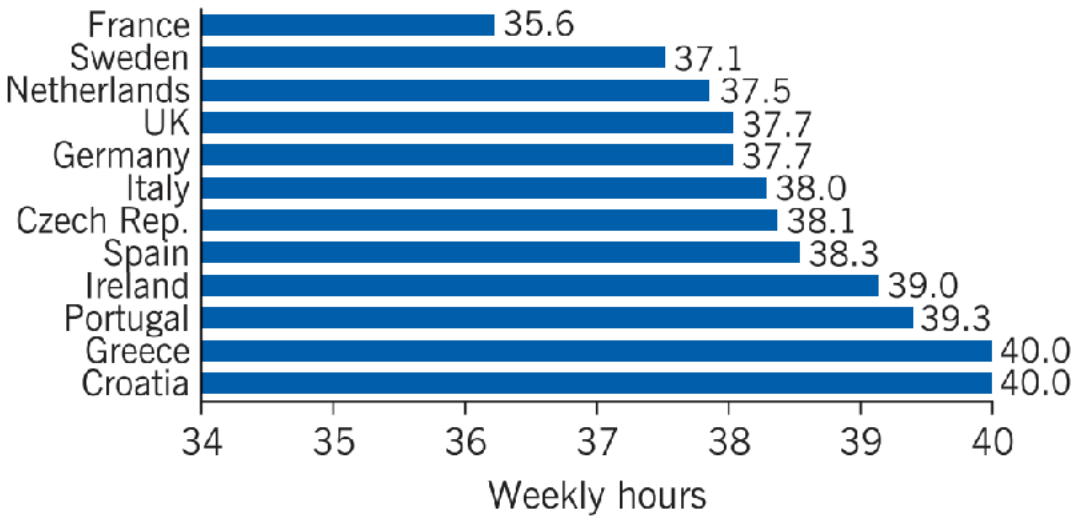

Figure 2:1. Weekly hours per country

Source: Schank (2015)

Figure 2:1 has been recently posted in the World Labour Journal and illustrates the working hours of selected working times as of 2013 in selected European countries (Schank, 2015). The standard hours in Figure 2:1 is visibly different across European countries. The discussion of long standard working hours will overlap in this section, since counties like Japan and Korea refer to long hours not as overtime but actual standard hours worked which is thought to be excessive.

In recent years, many countries have implemented compulsory reductions in the standard number of hours that employees work. Portugal's average number of working hours is higher compared to other European countries. Portugal reduced their standard working hours from 44 hours to 40 hours per week, while France had reduced their standard hours from 39 hours to 35 hours per week (Lepinteur, 2018). Similarly, Koreas' annual working hours have reduced but are still considered to be working longer hours than their counterparts (Choi, 2012).

Due to the excessive standard working hours in Korea, the Korean government has implemented a strict ruling to reduce the number of working hours. The Labour Standard Act of South Korea allows Korean employees a maximum of 12 hours of overtime per week if agreed by both employers and employees, an infringement of this law would mean up to two years of imprisonment and a fine of approximately 10 million Won (Choi, 2012). This is R 123 782.29 in South African currency. The hours reduced from the standard 48 hours per week in 1953 to 44 hours in 1989 and finally in 2003 the mandatory standard hours are 40 hours per week (Choi, 2012). These new mandatory hours only applied to firms with 1000 employees, but this changed in 2011 to firms with 5 or more employees (Choi, 2012).

Similarly, in Japan, working hours have been reduced partially in retort to apprehensions regarding the excessive number of hours of work between the 1980s and 1990s (Hamermesh et al., 2017). Japan decreased their standard hours of work per week from 48 hours down to 40 hours, intending to diminish employers' inducements to request longer workweeks (Hamermesh et al., 2017). The literature discussed considers standard working hours between 35 - 40 hours and long working hours as greater than 40 hours per week. This paper will discuss the parameter of long hours in the next section.

2.3.2 Long Working Hours

Conceptualising long working hours is important since many countries consider long working hours to be different as previously mentioned. Literature suggests that there are three ways to describe long working hours: firstly the hours that exceed statutory standard hours, secondly hours surpassing the maximum hours of work beyond which there are undesirable consequences on workers and thirdly hours surpassing those which workers prefer to work (Park et al., 2012). This study defines long working hours as employees working greater than 40 hours per week or 8 hours per day. Some countries define long working hours as working 50 hours a week or more, such as in Japan and South Korea, the USA (United States of America), Australia, New Zealand and the United Kingdom (OECD, 2013).

Table 2:1 below illustrates the percentage of population from selected countries showing employees who work long hours.

Table 2:1. The Country's Population of Employees Working Long Hours

Country	Population (%)
Korea	49.5
New Zealand	23.6
Australia	20.4
US America	18.1
France	14.7

Source: Bannai and Tamakoshi (2014)

Table 2:1 shows the percentage of the working population from different countries whose employees work over 49 or 50 hours per week between the years 2004 to 2005. The statistics show that close to 50% of the Korean population works long hours while New Zealand and Australia follows with 23.6% and 20% of their population respectively working excessive hours. Lastly, France shows 14.7% of their population who work long hours, while an estimated 22.0% of workers worldwide are working greater than 48 hours/week (Bannai and Tamakoshi, 2014). Americans are known for their excessive working hours, with Latin Americans working 50.4 hours per week and the U.S. Americans work an average of 49.3 hours per week (Valente and Berry, 2016). It is clear from the statistics that individuals in the USA work longer hours than those in most of the European countries. Figure 2:2 below will illustrate the average annual working hours in countries across the world.

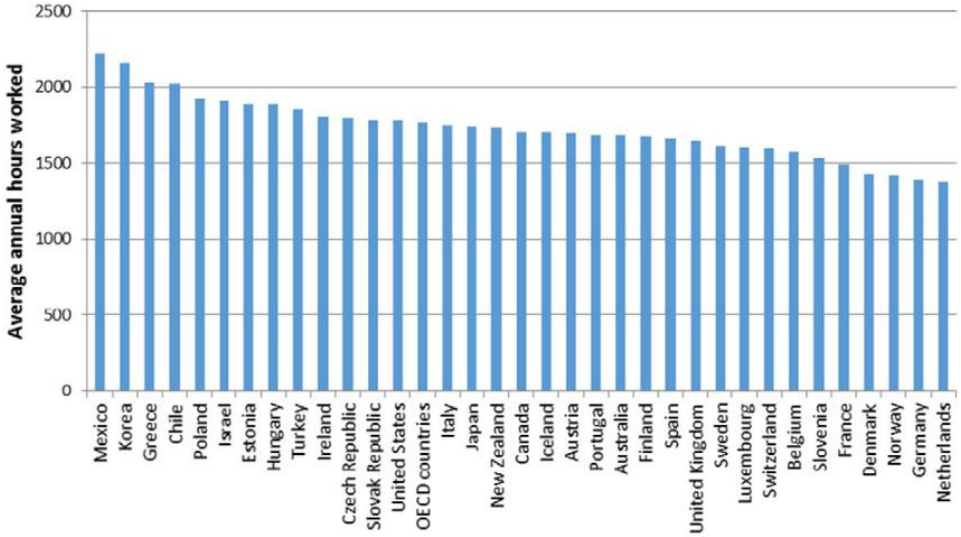

Figure 2:2. Average annual hours worked

Source: King and van den Bergh (2017)

Figure 2:2 illustrates the comparison of the average number of annual hours worked in OECD countries in 2013. The graph shows that Mexico has the longest annual working hours followed by Korea while the Netherlands has the lowest annual working hours. In 1980-2007, Korea was known to have the longest working hours, however, in 2008, Mexico became the country with the longest working hours therefore Korea moving to second place (Bannai and Tamakoshi, 2014). The study focus is on weekly hours worked by employees. Figure 2:3 below shows the various hours worked per week in different countries.

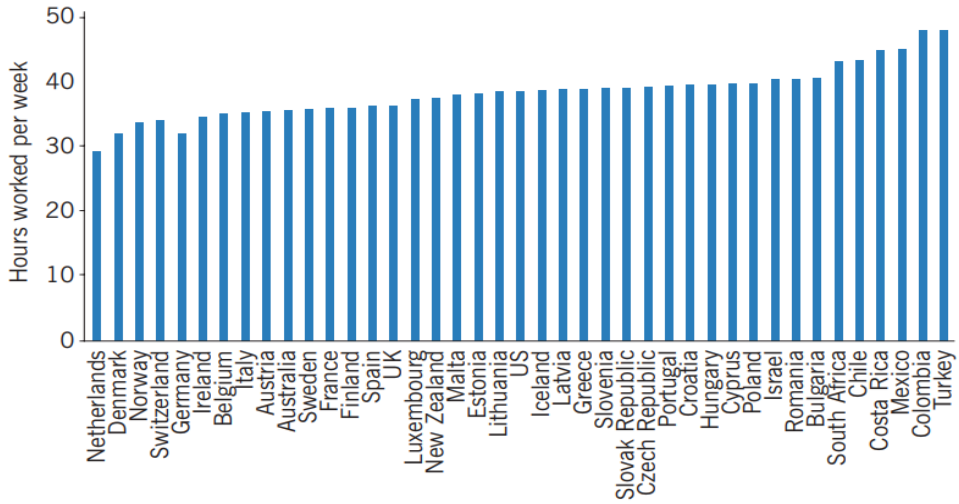

Figure 2:3. Average weekly hours

Source : Dolton (2017)

Figure 2:3 shows the average hours worked per week across the world in 2016. The maximum number of hours worked per week shows 50 hours in both Columbia and Turkey followed by Mexico just below 50 hours per week. It remains clear that Mexico has one of the longest working hours in the world. According to Dolton (2017), working hours have gradually been decreasing in most countries, however, fewer working hours does not mean inferior total output or lesser productivity.

The sections to follow will provide more insight and place into perspective the relationship between working hours and its impacts on productivity. Later in the chapter the discussion of external factors will contribute to the body of knowledge and provide an informed discussion.

2.4 Synthesising the Relationship of Productivity and Working Hours

This section discusses the various dimensions of working hours in relation to employee productivity. According to Sauermann (2016), working hours is a direct measure of worker

productivity. This direct measure of worker productivity enhances the evaluation of how the number of working hours could also affect employee performance. Golden (2012) points out a concern recognised in literature, in which there is no lucid theory of precisely how the different working times influences employee productivity, either directly or indirectly.

2.4.1 Long Working Hours

The influence of working hours on productivity is important to consider and understand, as this can have serious repercussions for regulating working time and managing the overall organisation (Collewet and Sauermann, 2017). Organisations can consider fluctuating workloads, due to customer demands, as a determinant of the level of output produced by employees. When the level of demand increases, work intensity will increase, therefore employees need to work longer hours to achieve production targets. This section seeks to determine the impact that long working hours would have on employee productivity and to further understand this relationship.

Genda et al. (2015) highlights the correlation between the number of hours worked per employee and productivity output is synchronised with output fluctuations in several countries. In the manufacturing industry, the number of hours worked between blue-collar and white-collar employees can differ. As previously discussed, the terms “blue- collar” and “white-collar” are occupational classifications that distinguish workers who perform manual labour from workers who perform professional jobs, respectively (Scott, 2018). According to Genda et al. (2015), in 1988 white-collar employees worked a greater number of hours as opposed to blue-collar workers, but this has since changed.

It is common knowledge between employers and employees that working longer hours can improve levels of employee performance. Employees working long hours are motivated by the appraisal of the organisation to notice their individual productivity (Genda et al., 2015). Typically, white-collar workers work longer hours to prove to their managers they are hardworking (Genda et al., 2015). However, blue-collar workers work on a schedule, therefore leaving little room to control their work hours. This means fixed work schedules restricts blue-collar workers to set working hours with no affordability of flexible working hours.

There is a growing assumption that working long hours demonstrates perceived individual success and status. Americans, for example, perceive working longer hours as an indicator of individual success, therefore perceiving longer working hours to be both rewarding and

satisfying (Valente and Berry, 2016). Working longer hours than necessary eludes to showing one's employer their work ethic and job commitment, hoping to attain higher earnings and recognition. Excessive working hours at some point becomes risky and creates a conflict which can disrupt the quality of one's life and overall performance and productivity (Golden, 2012).

Theoretically, there are two opposing effects of long working hours on employee productivity. First, longer hours lead to greater productivity as more hours means producing more and second longer hours lead to fatigue which can have a marginal effect on productivity (Collewet and Sauermann, 2017). Similarly, Golden (2012) states that extended working hours for full-time workers often yield less output, known as diminishing marginal productivity. This means that an extra hour of work per worker could lead to a decrease in productivity.

This phenomenon is depicted in the study by academics who explores the dependent nature of productivity on working hours, describing it as a non-linear relationship (Pencavel, 2016a). A non-linear relationship means that a change in one variable does not correspond with a constant change in the other variable. Figure 2:4 below shows the relationship between weekly output and weekly hours of work is nonlinear, the output should rise with hours, however productivity decreases as the number of hours increases (Pencavel, 2016a).

This study demonstrates that long working hours would diminish employee productivity and therefore reduce output. The drawback of this study is that these observations were done under the circumstances of war with munition workers.

Figure 2:4. Weekly working hours and productivity

Source: Park and Park (2017)

Figure 2:4 illustrates the weekly working hours and productivity of the British women munitions' workers during the world war. Figure 2:4 shows weekly working hours and productivity of both the 100 and 40 women who worked the same labour for 56 and 26 weeks, respectively. In this study, productivity is being measured by output and the number of hours is being measured by the number of hours worked. The study further recorded that the weekly working hours had changed due to the change in product demand, illnesses, injuries and even material shortages (Park and Park, 2017). This shows that productivity is being influenced by other factors regardless of the number of hours worked.

Pencavel (2016a) claims when employees work overtime or longer hours during the week it damages their output levels in the weeks to follow. Employees working overtime show a decrease in their overall productivity due to fatigue and stress. A seven-day working week reduces weekly output even when hours are constant (Pencavel, 2016a). Workers who worked seven days a week and over 53 hours per week in the previous week, showed a decrease in the level of output in the following week (Pencavel, 2016a). This leads the researcher to analogise that workers need to be rejuvenated, as one would repair and maintain their machines for better levels of output and long-term efficiency. Similarly, they would need to maintain their workers.

Longer hours can be linked with improved output but is also linked with reduced output per hour (Golden, 2012). Golden (2012) found that in manufacturing, productivity does not

increase when the number of working hours are increased. Golden (2012) further iterates that in other industries shorter hours are related with greater output rates per hour. An empirical study of 18 manufacturing industries within America, have shown that overtime hours lower average productivity for most of the industries in the sample (Golden, 2012). More precisely, a 10% increase in overtime resulted, on average, in a 2.4% decrease in productivity measured by hourly output (Golden, 2012). This indicates that in the United States, they associate shorter working hours with higher rates of output per hour.

Several other authors have found that productivity was invariant to working hours and documented a relationship between productivity and working hours (Garnero et al., 2014; Eden, 2016; Lee and Lim, 2017; Lee and Lim, 2014). Theoretical studies, Garnero et al. (2014) found a non-linear relationship through estimations of the different effects for the short part-time, long part-time and full-time workers. Similarly, empirical studies by scholars showed that this nonlinear relationship existed by suggesting that there are two contrasting effects known as the "learning effect" and "fatigue effect" (Lee and Lim, 2017; Lee and Lim, 2014). These effects are seen in Figure 2:5 below.

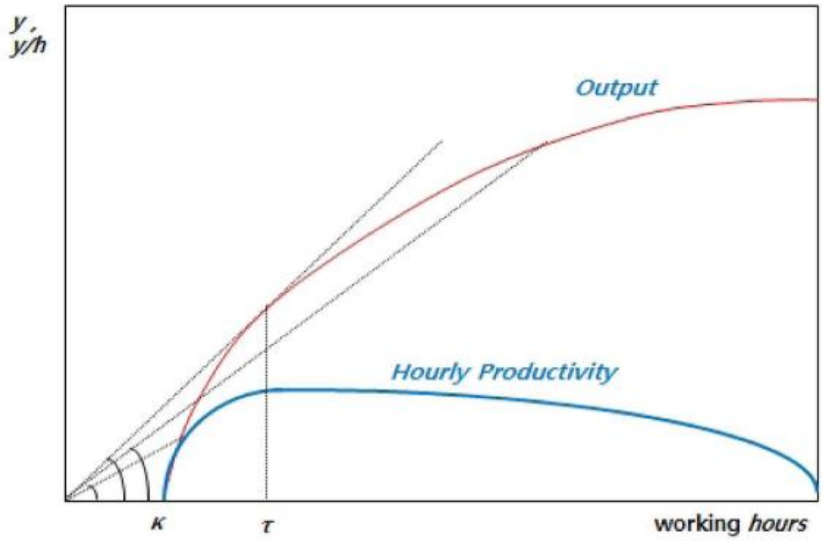

Figure 2:5. Relationship between working hours and outputs

Source: Lee and Lim (2014)

The relationship between working hours and output in Figure 2:5 depicts that productivity has positive values at k but due to fixed cost, turns to a declining trend from τ which can be attributed to the fatigue effect (Lee and Lim, 2014). A reduction of work hours can increase productivity by reducing fatigue and permitting more leisure. However, it can also restrict learners from having enough time to be proficient or learn a skill, therefore, leading to a

reduction in productivity (Lee and Lim, 2014). This study is similar to the analysis by Eden (2016), who derived the basis of their study using week time structure, by assessing the literature on the relationship of working hours and productivity which focused on finding an efficient way to reduce worker fatigue. Eden (2016) has focused their study on which days of the week the workers were most productive.

This fatigue effect arises as a major factor that affects most employees who work long hours. Collewet and Sauermann (2017) recently studied call centre agents and found that as the hours increased the agents handling of average calls also increased. This showed that agents became less productive due to fatigue. The skill effect is similar to the learning effect which improves a worker's performance (Lee and Lim, 2017). Skills improve overall output where employees work sufficiently long hours and become effective at their job (Lee and Lim, 2017). They are mentally and physically inclined towards their jobs which leads to making fewer mistakes when operating machines, making them more proficient at their job. Here, long working hours have a positive relation to productivity. Full-time workers are more productive on an hourly basis than part-time workers which suggests that productivity is developed through practice (Lee and Lim, 2017). However, full-time workers are also more prone to losing productive time from stress and fatigue than part-time employees.

Lee and Lim (2017) recognised that a reduction in long working hours can lead to an increase in productivity, however, there is really no resolve in how the changes in working hours influence productivity. Huang et al. (2002) cite empirical studies which date back to 1988 and 1997, that showed the relationship between working hours and employee productivity was used to determine the influence of short working hours on employment. The following section discusses the impacts of standard working hours on employee productivity.

2.4.2 Standard Working Hours

The section discusses different studies to establish the relation that exists between standard working hours and employee productivity. Studies by Park and Park (2017: 2), estimated a "causal effect of standard working hours on productivity, indicating that there is an increase of 1.5% of output per worker based on the standard 40-hour workweek at a manufacturing establishment of the study."

Suggestive evidence indicated that the output per worker increased due to the improved efficiency in the production process rather than to the growth in capital input, further implying that working hours were inefficiently long before the reduction of output (Park and

Park, 2017). Furthermore, long working hours impact workers by causing dangers to their health and safety and upsetting the work-life balance (Park and Park, 2017). However, since Korea's is known to have longer standard hours, a reduction in working hours for Koreans can induce a decrease in productivity, which could impact the welfare of their economy. In Figure 2:6 below one can see the relationship between labour productivity and hours worked, Korea is highlighted in orange.

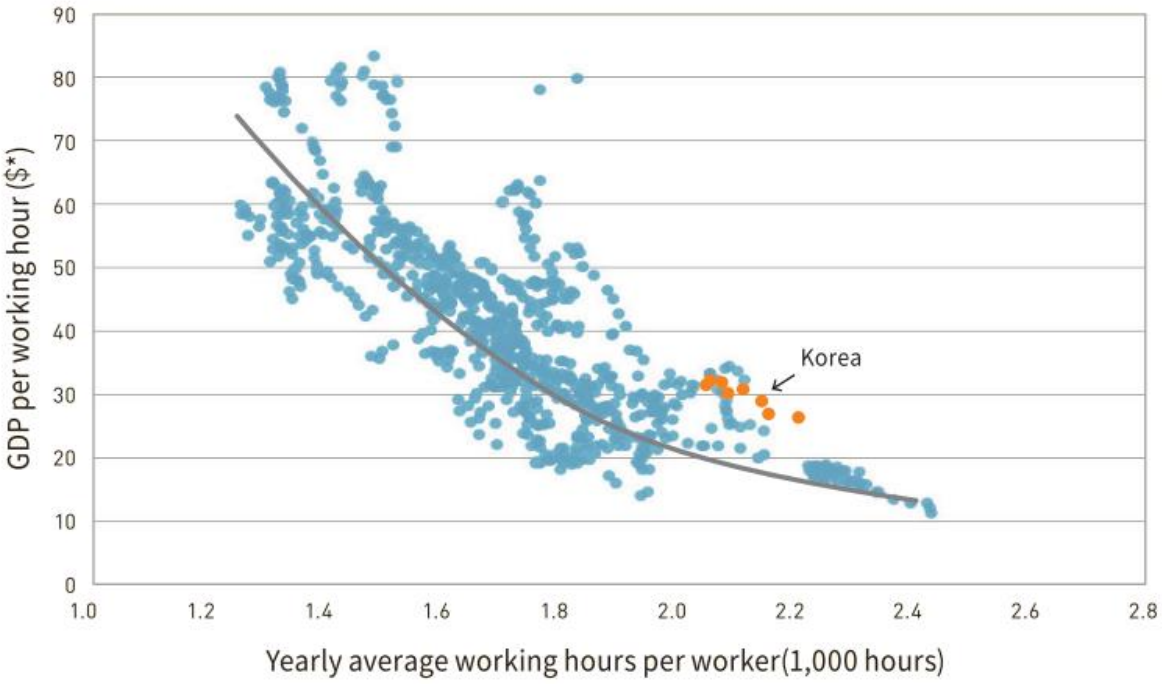

Figure 2:6. Relationship between hours worked and labour productivity

Source: Park and Park (2017)

Figure 2:6 shows the relationship between hours worked and labour productivity in OECD countries between 1990-2016. Park and Park (2017) indicates that Figure 2:6 shows a distinct negative correlation between the average working hours per employee and the value added (GDP) per hour worked (labour productivity) in 35 OECD countries during 1990-2016 (refer to Appendix 1 for list of OECD countries). This implies that global countries whose standard working hours have decreased are more likely to have higher labour productivity, but this still remains an assumption.

Figure 2:6, however, does not present adequate evidence to conclude that shorter standard working hours would enhance productivity as the effort to reduce working hours and increase productivity can be due to other external factors (Park and Park, 2017). However, the concern of the employer is that the profitability of their business can be affected by a

reduction in working hours. According to Choi (2012), the impact of reduced working time means labour cost remains high and also results in a cut in working time on actual labour productivity. More studies would need to be conducted to improve the understanding of the impact of standard working hours on labour productivity.

Park and Park (2017) further analysed this relationship of working hours and productivity. Park and Park (2017) used data from Korea's mining and manufacturing survey on 11692 establishments with more than ten employees, resulting in a positive impact of the 40 hours workweek on productivity. The results showed a labour productivity increase of 1.6% for establishments with 20, 50, 100, 300 employees (Park and Park, 2017). Lastly, this standard had no impact on sectors whose average regular working hours was less than 40 hours a week (Park and Park, 2017). The graph which represents these results can be seen below in Figure 2:7.

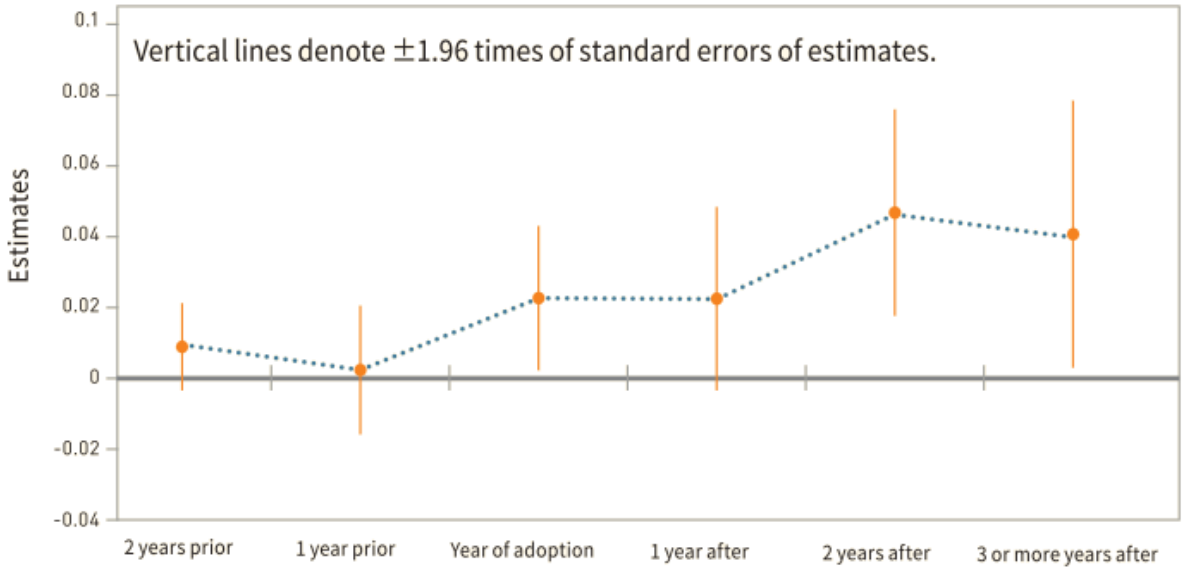

Figure 2:7. The impact of the standard 40-hour workweek

Source: Park and Park (2017)

Figure 2:7 shows the impact of the standard 40-hour workweek (2004-2011) on the value added per employee in the manufacturing industry. The improvements in labour productivity were not clear before implementing the 40-hour workweek but became apparent after the implementation of the 40-hour workweek (Park and Park, 2017). The improvements in productivity after implementing reduced standard hours indicates that the 40-hour workweek does, in fact, increase labour productivity according to Figure 2:7 (Park and Park, 2017).

Figure 2:8 below depicts low productivity and employment when longer working hours are imposed on employees.

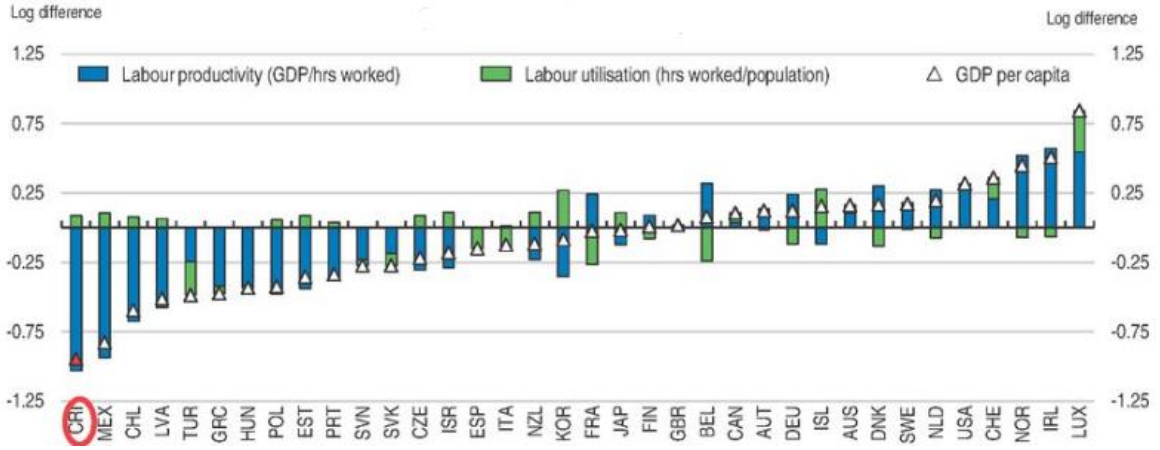

Figure 2:8. Reflection of low productivity and employment

Source: OECD (2018b)

Figure 2:8 shows GDP per capita gap and reflects low productivity and employment, but long working hours. The figure has been adapted from the OECD 2018, encircled is Costa Rica (refer to Appendix 3 for actual values of the graph). Costa Rica hours worked per capita is above the OECD average, this reflects that the working hours of employees in Costa Rica are longer than all OECD countries (OECD, 2018b). A similar study, by Korean scholar, focused on how long hours reduces labour productivity but was not conclusive about the actual relationship of working hours and labour productivity as this was due to the limitations in this study (Choi, 2012). These two studies have shown to have contrasting perceptions of long working hours and productivity. The researcher holds the view that long working hours should potentially increase the amount of output produced however with factors such as fatigue setting in this would eventually decrease productivity at some given point in time.

However, Choi (2012) cited from previous research that labour productivity is low despite long actual/standard hours worked. Research showed that labour productivity in Korea per hours worked (average hours worked) is 61.9% and places Korea 28th amongst the other Organisation for Economic Co-operation and Development (OECD) countries (Choi, 2012). However, these findings lead the researcher to question whether a reduction of hours worked will improve productivity sizeably, also since labour work time reduced from six days to five days there needed to be more motivation for employees to be productive (Choi, 2012).

Based on the information evidenced in this chapter, it seems when working hours are reduced the productivity does not seem to improve as with Korea. A point to note is that if five working hours were added to 35 standard hours, the impact of productivity outputs would greatly differ from an extra five hours being added to a standard workweek of 48 hours (Pencavel, 2014). There is a popular and a growing belief that working shorter hours will increase productivity, but it can only influence the quality of life of individuals. This leads the researcher to the understanding that multiple thresholds exist between the linkage of working hours and productivity. There are opposing thoughts on work hour reductions of standard hours, however, the common conclusion that working hour reductions will not significantly impact productivity. These studies reveal that the initial level of work hours plays a critical role in the extent to which the firm would see an increase in productivity (Lee and Lim, 2014).

Organisations in some countries like Hong Kong and Japan, they believe working long hours enables a competitive edge. Man and Ling (2014) argue that longer standard hours can affect Hong Kong's business competitiveness in the world. Thus, empirical research based on the relationship between working hours and productivity has grown, since there are increased concerns over the impacts of working long hours on workers' health and productivity (Man and Ling, 2014). This indicates that Hong Kong has a preconceived notion that regular working hours might not be suitable for all business organisations and can affect both the efficiency and productivity of workers.

Shorter workweeks attribute to solving the working hours issues, however, that is not applicable in all cases especially with blue-collar workers. In manufacturing, blue-collar workers are paid hourly. In contrast, there is a greater possibility for white-collar employees to have flexible working hours and be able to reschedule their working hours than for blue-collar workers (Genda et al., 2015). Blue-collar employees who work in factories environments have a greater restriction on their time schedules, and neither the firms nor employees have the liberty to change the work hours in this setting.

The relationship between the two variables can be biased, as there are various influencing factors that could affect both working time and productivity (Collewet and Sauermann, 2017). This suggests that for a realistic outcome of the stud working hours and productivity should not be considered in isolation. The following section will provide a detailed discussion of the various factors included in the study.

2.5 Factors Linking Productivity and Working Hours

This section will illustrate how common or mediating factors impacts both variables (working hours and productivity) independently and can create a parallel relationship between working hours and productivity. According to Golden (2012), the direct measurement of the relationship between labour productivity and hours is intermittent. Therefore, this study shows that working hours and productivity can independently affect and be affected by other factors. The factors can affect each other however this will not be addressed in this literature or in the study's analysis.

A recent study by Man and Ling (2014) used other factors to describe the relationship between working hours and productivity. Similarly, this study would link productivity to working hours via the influences of common factors (Figure 2:9).

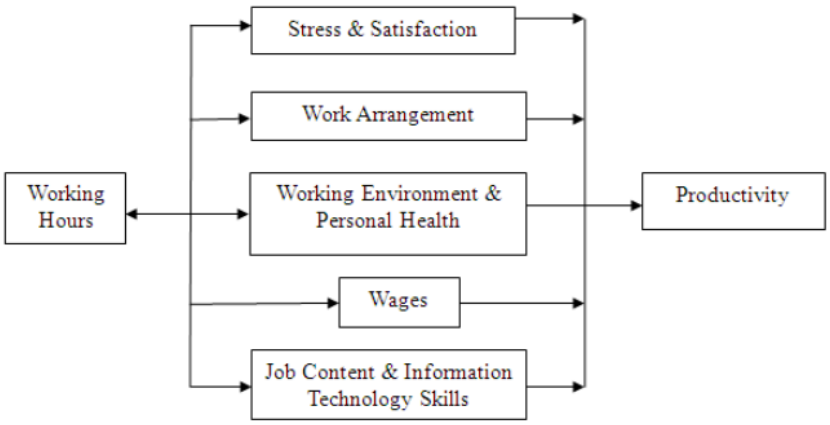

Figure 2:9. Conceptual model of working hours and productivity

Source: Man and Ling (2014)

Figure 2:9 shows the conceptual model of the relationships that exist between working hours and productivity and the influence of external factors. The researcher of this study used a similar framework. The framework in Figure 2:9 shows there are several factors that influence the relationship but Figure 2:10 below shows the selected common factors which influences working hours and productivity of this study. This framework is illustrated below showing all of the variables of the study and their relation to the study, with the main independent and dependent variables being working hours (standard and long) and employee productivity.

Figure 2:10. Conceptual Framework

Source: Author's own

Figure 2:10 shows the conceptual framework of the study relating working hours to productivity. These commonly noted factors in Figure 2:10 include health and stress levels, well-being and job satisfaction, working conditions and environment, wages. Performance is also addressed as it contributes to levels of productivity. The extent to which each of these factors affects the working hour and productivity relation is not known. The literature would provide a deeper insight as to how these factors impact the relationship between working hours and productivity.

2.5.1 Health and Stress Levels

This section discusses the impact of working hours on the health and stress levels of employees and provides a perception of the consequential effects on working productivity. Various studies will be discussed which includes health issues such as fatigue, absenteeism, and presenteeism that affect both working hours and productivity. This is followed by a discussion based on the effects of increased stress levels and addresses behaviors such as smoking and alcohol consumption that could potentially be impactful.

2.5.1.1 Health

Numerous studies have investigated the relationship between long working hours and health of the employee (Bannai and Tamakoshi, 2014). Working long hours are shown to have significant negative impacts on most health outcomes such as a depressive state, anxiety, sleep disorder, and coronary heart disease (Bannai and Tamakoshi, 2014). According to Bannai and Tamakoshi (2014) working long hours is problematic for worker's health and is a common issue in many countries, such as Japan and Korea. Consequently, in Japan, it was found that there were many cases of suicide and heart attacks due to working excessively

long hours (Bannai and Tamakoshi, 2014). This has been evident in the death of as many as 10,000 Japanese workers a year due to overwork (Hamermesh et al., 2017). Scholar, Choi (2012) further substantiates that working hours can deteriorate a worker's health to the extent where it can lead to depression and later lead to suicide.

Longer working hours can cause fatigue and work stress and therefore keeps labour productivity below its potential. Golden (2012) expresses that overwork can increase the risk of the worker experiencing symptoms of fatigue and work stress, therefore affecting the productivity rate of workers or firms. Similarly, when workers are fatigued and highly stressed this potentially leads to decreased levels of performance (Pencavel, 2016a; Shagvaliyeva and Yazdanifard, 2014).

Pencavel (2016a) studies explain that long hours and days of work damages worker's health and creates an impairment in the employee's productivity because employees would not have enough regenerative or recuperation time to be productive for the following week of work. This leads the researcher to assume the importance for employees to use the end of the working day or week to recuperate and regenerate themselves for the following week of work. Hence Pencavel (2016a) states that for workers to be productive in subsequent weeks of work, it is imperative they restore their mental, physical and emotional reserves.

This link between productivity, working hours and health can broadly be established through discussions of absenteeism and presenteeism. Absenteeism can be described as not being at work due to time off work because of being ill, while presenteeism is described as employees being at work but having decreased levels of productivity (Beaton et al., 2009). This suggests that when a worker is ill and not at work, they are unable to be productive at work consequently reducing levels of productivity. More importantly, this can impact the individual's overall performance, since being absent would mean working less and therefore producing less. The researcher assumes that can create a strain on other employees since it can lead to working overtime to ensure that productivity targets are met.

Angrave and Charlwood (2015), noted that long working hours are detrimental to the well-being of workers and increase absenteeism. Similarly, Ali et al. (2013) have identified that most people who experience fatigue from working can lead to illness, accidents, decreased productivity and emotional exhaustion. The risk of occupational injury can go up by 40% when employees work over 10 hours per day or can be doubled when employees work more than 12 hours a day on any day (Golden, 2012).

As previously discussed, the "fatigue effect" can be induced by long hours however the researcher deduces that fatigue can also be experienced due to workload volumes, working schedules and even the nature of work performed by the workers. According to Kim et al. (2013), employees working schedules has an impact on the length and quality of sleep which can lead to low productivity, be hazardous at the workplace and can create mood disorders and general discomfort.

Workers being absent from work due to their own health issues or being at work and not being entirely productive can impact the organisations level of productivity. Workers experiencing fatigue could potentially lead to a loss of output and diminish the bottom line of the organisation. More importantly, this could affect employees and the overall production schedule. The loss in productivity is highlighted by Golden (2012), whereby nine percent of US workers suffering from fatigue reported losing an average of 4.1 productive working hours per week, although this resulted in a reduced performance at work rather than absenteeism (presenteeism rather than absenteeism), this impacted the overall organisation.

2.5.1.2 Stress Levels

High-stress levels could potentially affect the employee's ability to perform well and affect their overall productivity as organisational stress is strongly linked with decreasing productivity and performance (Briem and Ólafsson, 2015). According to Shagvaliyeva and Yazdanifard (2014), high levels of stress might lead to mental and physical health problems, which can include headaches, depression, heart attacks, and even cancer. In addition, a study by Park et al. (2010), has found that skilled workers and machine workers were at a higher risk for complaints about stress than clerical workers. They have also found a correlation between working long hours (60 hours per week) and a significant increase in the level of stress complaints (Park et al., 2010). In addition, their study had also shown that males complained of stress more than females and stress levels were highest in people between the ages of 30-49 years (Park et al., 2010).

Every individual has a different reaction to stress and trigger point, for example, some people concede that stress occurs from working long hours while others become stressed due to personal issues (Shagvaliyeva and Yazdanifard, 2014; Bassanini and Caroli, 2015). Overall work-related stress levels, in general, can negatively influence employees behaviours, mental impacts, performance, job satisfaction and organisational commitment (Hoboubi et al., 2017).

Berniell and Bietenbeck (2017), performed research that relates medical literature on the health impacts of working time and have focused principally on overtime hours and have found undesirable effects on health behaviours and health in general. Berniell and Bietenbeck (2017) note that results consistently indicate that working time has negative effects on workers' health behaviours and health. (Berniell and Bietenbeck, 2017). The researcher is led to think that due to the variance of working times, this could potentially lead to high amounts of stress which can enable workers to either start or intensify certain habits such as smoking or alcohol consumption.

Berniell and Bietenbeck (2017: 3) state that "regression results indicate that one additional hour of work increases smoking by 1.5-2.5 percentage points and reduces self-reported health by 0.04-0.08 points on a scale from 0 to 10." Further adding that the impact of health by working hours differs between blue and white-collar workers, thus affecting their productivity levels differently (Berniell and Bietenbeck, 2017). The researcher cannot substantiate if smoking is increased due to work-related stress or taken up as a habit due to work-related problems as the previously discussed paper is vague. If this is true, then increased levels of smoking would be a factor that would affect an employee's health long term.

According to scholar Virtanen et al. (2015), working long hours has been associated with several negative health issues which are connected to the use of alcohol, this includes cardiovascular diseases and anxiety injuries. Further adding that based on a systematic review and meta-analysis of 63 studies there is evidence of an association between long working hours and alcohol use (Virtanen et al., 2015). Subsequently, the use of alcohol that is 14 drinks/week among women and more than 21 drinks/week among men can lead to a reduction of work productivity (Virtanen et al., 2015). Virtanen et al. (2015) highlighted that compared with the standard (35-40) weekly hours of work, working 49 to 54 hours was associated with an odds ratio of 1.13 and working ≥55 hours a week was related with an odds ratio of 1.12 for new on-set risky alcohol use. Here again, there is no conclusive evidence that such habits are because of working hours exclusively, but this paper provides a different perspective.

Fatigue, health-related issues, and work-related stress are important factors to consider as they negatively influence individuals and create organisational issues. Golden (2012) associates long working hours with stress, meanwhile, the connection between stress and

productivity has been widely acknowledged. Briem and Ólafsson (2015) cite studies that took random samples from 425 individuals from a study conducted in Greece and identified which variables impacted productivity. The findings had indicated that increased levels of stress lead to decreased levels of productivity and increased levels of job satisfaction lead to increased productivity. According to Hoboubi et al. (2017), job stress and job satisfaction are significant factors that affect employee productivity, therefore, the literature to follow would provide a deeper insight and discussion of well-being and job satisfaction of individuals and its relation to working hours and productivity.

2.5.2 Well-being and Job Satisfaction

This section discusses how the employee's well-being and job satisfaction can influence their levels of productivity when working various hours. This discussion will also address the levels of happiness of employees and its contribution to increased levels of productivity.

Shagvaliyeva and Yazdanifard (2014) associates well-being with health and indicates that employee well-being directly impacts productivity and performance. Additionally, Angrave and Charlwood (2015) hypothesise that the length of the working week also affects job well-being, citing that job satisfaction, lower life satisfaction, and psychological well-being are all factors of well-being. More importantly, Lepinteur (2018) notes that a reduction of workweek can possibly improve the well-being of workers. However, it is assumed that the shorter standard workweek limits the impact of working long hours on the employee's quality of life. Contrary to this, the researcher of this study believes that shorter working can have negative impacts on the quality of output produced by employees. This is because work intensity or volume of work remains the same but would need to be completed within a shorter space of time. Briem and Ólafsson (2015) argue that short working hours in the long term would lead to improved happiness and therefore increased job satisfaction, emphasising that there is a significant relationship between job satisfaction and productivity. Lepinteur (2018) highlights that a high work intensity or capacity might offset the positive effect of the shorter workweek on employee well-being.

Well-being does not only affect employees' level of job satisfaction but is also influential on the level of output produced by employees. Oswald et al. (2015) discusses evidence which indicates that job satisfaction is positively correlated with measures of worker productivity. Job satisfaction is described as an effective orientation that an employee has towards their work (Hoboubi et al., 2017). Work-related stress can stimulate job satisfaction both

positively and negatively. Hoboubi et al. (2017) explain that stress can trigger creativity and consequently removes boredom, but stress can also create aggression and low job satisfaction. High amounts of job stress and dissatisfaction can affect the employee's productivity negatively (Hoboubi et al., 2017). Studies by scholars Hoboubi et al. (2017) have shown that the relationship between productivity and job stress was not significant however the relationship between job satisfaction and productivity are both significant and positively related. In addition, the regression analysis of the study had indicated that productivity was significantly related to a shift schedule among other mentioned factors (Hoboubi et al., 2017).

In another study, academics Angrave and Charlwood (2015) have found that men who worked 35–40 hours a week experienced a lower job satisfaction, poor life satisfaction, and inferior psychological well-being, similarly those who worked less than 35 hours a week experienced lower life satisfaction. This reveals that working hours doesn't extensively impact job satisfaction. Decreased levels of job satisfaction can decrease an employee's productivity while high levels of job satisfaction would increase output. Böckerman and Ilmakunnas (2012) have disagreed about the connection between job satisfaction and productivity, as they express that job satisfaction is only one factor of productivity hence it might be difficult to establish a clear connection. Based on the different arguments, both are true, however, the researcher agrees that job satisfaction impacts productivity but is uncertain of the extent to which there would be an influence.

Job satisfaction is an important factor, but one needs to also consider the nature of the job, for example, is the job physically intensive or repetitive floor jobs that are boring or perhaps the leadership is destructive, this can affect the quality of life that employees experience. Pencavel (2016a) cites a previous study that indicates long hours of has not only adverse effects on employee productivity but can also affect the quality of home life. An individual that works long hours and experiences dissatisfaction at work can display a decrease in their ability to be productive and even reduce their overall performance. Earlier studies by Pencavel (2014) shows that when workers work long hours but enjoy their work, they are more likely to be productive. Thus, the researcher acknowledges the association of working hours impacting an employee's quality of life.

Job satisfaction issues can also be attributed to well-being and working conditions not being taken seriously by the employer. In contrast to long hours, standard workweek hours that are

less than 35 hours, has generated escalations in job satisfaction of the workers both in Portugal and France (Lepinteur, 2018). Americans, however, perceive working long hours i.e. more than 50 hours per week as a key to individual success and in other cases working long hours can be considered a token of status and ambition by the individual (Valente and Berry, 2016; Briem and Ólafsson, 2015).

The link between well-being and productivity has interested scholars (Oswald et al., 2015). Oswald et al. (2015) cite that there is a significant and sizeable effect of happiness on productivity and that there is a striking statistical link that is found between well-being and productivity. Oswald et al. (2015) indicates that human happiness has strong underlying effects on labour productivity and that a rise in happiness leads to enhanced productivity. Further stating, that happier workers' effort levels go up while their precision is unaltered (Oswald et al., 2015). There is now an understanding of how happiness and job satisfaction is linked to productivity and have seen previous links of working hours to job satisfaction.

The link between happiness and productivity has been established, next is finding the link between happiness and working hours. Valente and Berry (2016) have found that the most objectionable effects on the well-being were employees being given excessive amounts of work, as it hinders their ability to find a balance between family responsibilities and the responsibility of work. Further adding that work schedule flexibility is associated with greater happiness with US Americans (Valente and Berry, 2016). Valente and Berry (2016) have found that in Latin America workers face financial inequality and most workers are therefore pressured into working longer hours to meet basic needs, this is the reason longer working hours are related to greater unhappiness. Consistent with this, the graph in Figure 2:11, will illustrate the happiness levels of workers versus their average working hours.

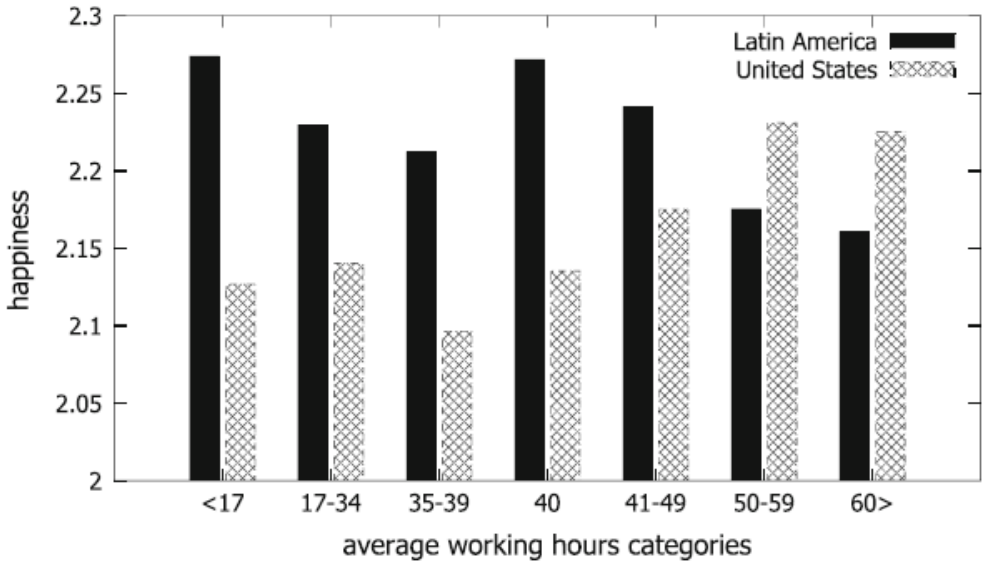

Figure 2:11. Happiness by average working hour

Source: Valente and Berry (2016)

The graph in Figure 2:11 of hours worked and happiness, shows Latin Americans to be happier than U.S. Americans at all working hours less than 50, with increased unhappiness seen only beyond the point of normal hours.

Hence the researcher's presumption is that when job satisfaction is enhanced, and workers are happy, workers will be productive at a given working time. However, this does not always hold true if there are changing schedules. In addition, to increase job satisfaction, the workers need to be satisfied with their working hours and working environments. It was found that satisfaction of working hours and working conditions are more important than earnings satisfaction (Lepinteur, 2018). More importantly for well-being to be promoted and increase productivity, the employer would need to create a conducive working environment (Shagvaliyeva and Yazdanifard, 2014). Thus, the literature follows this discussion with further elaboration on working conditions and the environment in the next section.

2.5.3 Working Conditions and Environment

In general, it can be assumed that employees who work in a manufacturing environment, spend most of their time indoors. Hence this environment can affect their mental functions, productive abilities, and overall performance. Thus, leading to the assumption that a better workplace environment would lead to improved outcomes and increased productivity level. This section will broadly outline the impacts of working conditions on worker productivity and its relation to working hours.

Ali et al. (2013: 3) cites the business dictionary definition of a working condition as: "Working conditions refers to the working environment and all existing circumstance affecting labour in the workplace, including: job hours, physical aspects, legal rights and responsibility organisational culture workload and training." A study by Ali et al. (2013), found that there is a positive relationship between working conditions and worker productivity. Furthermore, Park et al. (2012) notes that working hours is actually a key feature of working conditions. This indicates that the working environment and conditions are factors that can impact employee productivity.

A conducive working environment enables the well-being of an individual which translates into them exerting themselves in their role of work, therefore, increasing productivity (Ali et al., 2013). Ali et al. (2013) suggest that in buildings, factories and office space, the physical environment such as lighting plays a role in the loss of employees' productivity. This is further substantiated by Leblebici (2012) who cites that when an environment is considered unhealthy, inconvenient, has improper lighting and inadequate ventilation, then it can cause occupational health diseases that can lead to absenteeism and high employee turnover.

In contrast, scholars suggest that it is important to deal with working conditions as employees can be negatively impacted by their working condition which could lead to chronic stress (Ali et al., 2013). Further adding that working conditions are related to productivity as high amounts of stress can lead to absenteeism which affects productivity levels of workers (Ali et al., 2013). The conceptual model in Figure 2:12 below links working hours and productivity indirectly through the working environment and job satisfaction.

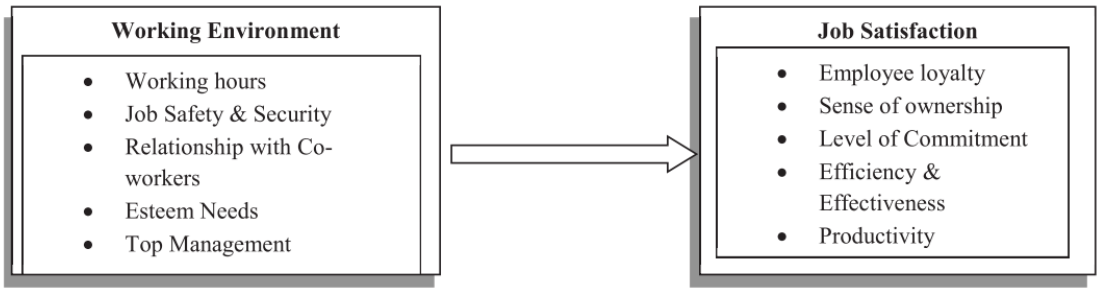

Figure 2:12. Conceptual model linking working hours and productivity indirectly

Source: Raziq and Maulabakhsh (2015)

The model in Figure 2:12 by Raziq and Maulabakhsh (2015), provides an illustrative view of relationships that exists between working hours, working conditions, job satisfaction, and

productivity. The conceptual model links working hours and productivity indirectly through the working environment and job satisfaction. Raziq and Maulabakhsh (2015) have proved through their study that there is a positive link between working conditions and job satisfaction. In earlier discussions, it was mentioned that working hours was an important factor in working conditions while productivity was an important factor in job satisfaction.

Working conditions not only enhance productivity or employee performance but contributes to increasing an organisations profit (Naharuddin and Sadegi, 2013). Angrave and Charlwood (2015) mention that working time is a distinctive characteristic of working conditions and is important to workers. This substantiates that the working condition is a factor that affects productivity and work hours. In a different study, Ali et al. (2013) based in the sub-Saharan region, found that working conditions and employee productivity are positively related, using work hours as a measure of working conditions. The study concluded that working hours had a positive relationship with employee productivity, mentioning in their discussions that working hours can lead to high levels of employee productivity (Ali et al., 2013).

The design of the work environment plays a vital role in how the employee feels about their surroundings and has physiological and psychological reactions that are direct or indirect (Naharuddin and Sadegi, 2013). Working longer hours in a workplace environment that is perceived negatively by the employee, would lead to employees to being absent due to stressed related illnesses, therefore reducing their overall commitment to the organisation. Leblebici (2012) points out that management thinks compensation packages would ensure performance, however, this is not completely true, in fact, compensation has a restricted and short-term significance on employees. The physical environment should be used as a point of leverage to facilitate and encourage greater productivity (Leblebici, 2012). This is possible by using better lighting, innovative layouts, and better workplace design, seeing as working conditions has a greater effect on employees than salaries (Leblebici, 2012).

The working environment also considers climatic factors as showed by the working conditions definition. A study by scholar Somanathan et al. (2015) has found that a relationship between productivity and temperature exists and has showed that raised temperatures can decrease manufacturing production by reducing worker productivity via heat stress. This recent study was done at a manufacturing firm in India and provides

evidence which shows elevated temperatures decrease industrial output, and that heat stress on the job is a vital source of debilities in worker productivity (Somanathan et al., 2015).

Similarly, Heshmati and Rashidghalam (2018) noted from a previous study that high temperatures affects labour productivity, when the atmosphere is hot it can impose a heat stress on the human body and this decreases labour productivity. Working indoors during the summer in Johannesburg can get very hot and this can create some discomfort, even during the winters the weather can get very cold. According to reports by Climate to travel (2018), the winter during June and July are the coldest months, with low temperatures near freezing (0°C), while in the summer from November to March, with hot days reaching 30°C. The cold winters and hot summers can create discomfort for workers and therefore affect productivity.

Leblebici (2012) states that the internal environment has the highest effect on labour productivity regarding job stress and job displeasure. The workplace environment is meant to motivate and encourage high performance and productivity, but can also impact changes in employees lifestyle and work-life balance (Naharuddin and Sadegi, 2013). Based on the research by Leblebici (2012), the listed the components of the physical environment includes: heating, natural and synthetic lighting, cleanliness and overall comfort, while the behavioural components of the environment included: social interaction, work interaction, creative physical environment, overall atmosphere, position relative to colleagues, position relative to equipment. The study concluded that while the physical environment affected employee performance, the behavioural working environment had far greater effects on performance.

The researcher interprets this as the behavioural environment having a greater effect on productivity. Employees working in a conducive environment might have higher levels of performance, leading to greater job satisfaction, reduced absenteeism, and overall increased employee productivity. The following section will discuss employee performance in greater detail.

2.5.4 Firm and Employee Performance

The concepts performance and productivity are used interchangeably. However, the concepts are different and should be distinguished. Work productivity is defined as input divided by yield, work productivity is a narrower conception than work performance (Koopmans et al., 2014). Employee performance is described as the technique for

performing job tasks according to the prescribed job (Saeed et al., 2013). Several factors affect performance of employees in the workplace which can improve or lower the employees' performance such as job satisfaction. In addition, it is imperative to acknowledge the difference between causal variables and indicators of work performance as causal variables regulate or forecast one's level of work performance, whereas indicators are reflections of work performance (Koopmans et al., 2014).

A study by Bandiera et al. (2018), has revealed that there is a significant positive correlation between the number of hours worked and performance. Subsequently, adding that the differences in hours worked can account for a fifth of the productivity difference between CEOs (professional and family). This evidence postulates that the number of working hours not only affects the productivity of the firm but also the overall performance of the organisation. However, the drawback of this study is the cross-sectional nature thus hindering their capacity to make causal statements about the relationship between hours worked and firm performance (Bandiera et al., 2018).

Previously mentioned in some countries, the trend of working long hours indicates individual success or high-performance etiquette. Working long hours is perceived by Americans as the key to individual success and to some extent a token of status and ambition of the individual (Valente and Berry, 2016). There seems to be a discrepancy about productivity or performance level between employers and employees. Employers and employees both understand that long working hours can increase the workers' observed performance levels and therefore workers are encouraged to work more hours to enhance the organisation's assessment of their individual productivity (Genda et al., 2015). This can be true for white-collar workers, who work long hours to demonstrate to their employers they are hardworking (Genda et al., 2015). While on the other hand, blue-collar workers are restricted and confined to a strict working schedule. Accordingly, it can be argued that long working hours can be a determinant of an individual's ability to work hard and can further be used an indicator of individual performance and overall productivity (Sauermann, 2016).

Working long hours at some point not only affects the excellence of work but also employee performance. High-stress levels could typically affect the employee's ability to perform well and affect their overall productivity as organisational stress is strongly linked to decreasing productivity and performance (Briem and Ólafsson, 2015). However, findings from a study by scholars Saeed et al. (2013), suggest that monetary factors are vital to enhancing

employee performance and this would also improve worker productivity. Wages are an important factor that is assumed to have a definite influence on the ability of the worker to be more productive or perform at high levels (Sauermann, 2016). Furthermore, minimum wage workers would want to work longer to improve their quality of life and supplement their low incomes, this will be discussed in the next section.

2.5.5 Wages

This section discusses wage in relation to motivating employee productivity. Within the manufacturing, context wage is a sensitive variable, especially for blue-collar workers. Wage is definitely an influence of a worker's satisfaction levels, productivity level, and overall performance influencer**.** According to Man and Ling (2014), wages are both theoretically and practically observed as the most critical factor influencing the productivity of employees. Sauermann (2016) states that there have been studies which measure labour productivity using wage as an input measure, further adding that although there is a positive correlation between wages and productivity, wages are not a true reflector of an employee's actual productivity.

Heshmati and Rashidghalam (2018: 1), cites from a World Bank enterprise survey in 2013, that "wages significantly and positively affect labour productivity." This can be regarded as one way suggested overcoming the inefficient longer working hours was through revising the wage structures. This would encourage employees to work more efficiently, in a shorter time. Specifically, worker compensation should be based on the output (e.g. performance) rather than input (e.g. working hours) and the current high level of the overtime premium should be adjusted (Park and Park, 2017).

Wages are affected by working hours, but this depends on the wage structure. With overtime, this necessitates further payment, and it is likely that firms might hesitate to escalate working hours for blue-collar employees (Genda et al., 2015). However, it is more relevant that the wage structure should be reformed to provide more workers' compensation for quicker, more efficient work practices. Therefore, support should be provided to achieve lower overtime premiums and the increased standard time wages through labour-management negotiations (Park and Park, 2017). Employee wages should be based on the output (production) rather than input (working hours).

In general, employees are keen on earning as much as they can to improve their living standards. In addition, wages can be a motivating and satisfaction enhancement factor for

employees. It can possibly have a positive and boosting effect on productivity, especially if there is a fair and acceptable incentive. The start of a performance-based pay system can also elucidate the positive relationship between working hours and wages. Employees work longer hours to achieve a better production performance and hence individual productivity will increase. In contrast, Pencavel (2014) suggests that if workers' wages are tied to their hours of work, and if workers are paid completely by results and not by time worked, there are other expenditure implications tied to working long hours which include the costs of running machinery, providing light, heat, aeration, and supervisory labour.

The earnings inequality induces workers to work longer because the additional working hours would suggest better wages if there is a great inequality in earnings among workers (Genda et al., 2015). Genda et al. (2015) note that original concept based on the vast differences in working hours between the United States and Germany which can be described by earnings inequality. This is because inequality is much greater in the United States since the US workers are more probable to work longer hours to pursue higher wages. The reason is that better effort is shown by working longer hours, therefore a positive relationship appears between wage inequality and working hours (Genda et al., 2015).

There are wage and skills differentials based on the observed hours-wage pattern, a reduction in hours will affect the lower wage earners and those that are unskilled more than the higher wage earners (Pencavel, 2016b). This gap can enable organisations to find ways of reducing working hours for blue-collar workers but without decreasing wages and to ensure that productivity and efficiency increases.

2.6 Research Gap

This section discusses the gaps in the literature that warranted the basis of this study. Working hours and employee productivity are broad concepts. They can be viewed exclusively and in relation to other factors, however, this study focused on its relation to each other. This literature examines not only the nature of the relationship between working hours and productivity but considers influential factors that influence the relationship.

The studies discussed in this chapter were cited from various parts of the world, therefore, providing an informed discussion. The gap of this study is to understand the nature of the relationship between the variables, working hours and productivity, within the South African context. This study examined a combination of variables which have been found to be common in literature and important for this study. The researcher found that this was a

second gap, looking at how these specific variables relate to or impact the relationship of working hours and productivity.

Various studies focused shorter working hours, that is working less than 40 hours, and flexible working hours. This study exclusively looked at 40 hours per week and more than 40 hours per week, within a medium-sized electronic manufacturing organisation in South Africa. The study also focused on a smaller group of individuals specifically the blue-collar workers of the organisation.

Based on the literature, working more than 40 hours per week had warranted issues with health and stress levels, job satisfaction, well-being and levels of happiness while impacting on the overall productivity. Proposed solutions to some problems mentioned in the literature such as job stress and job dissatisfaction, included enough supervisory support and a supportive culture. In addition; it is not known the extent to which these factors would influence the relationship between the study variables. Importantly each industry and organisation are impacted differently. Therefore, it is important to understand the impact of the factors that influence working hours and productivity to ensure that overall that productivity levels are not damaged.

2.7 Conclusion

This section discusses the key findings from this chapter. The key findings included countries that work long hours such as Japan and Korea, had to reduce their standard working hours per week to 40 hours a week, while other European countries enjoy working only 35 hours per week such as France. The chapter informed this discussion between normal working hours, which were considered long, and normal hours that were considered shorter than others. The study considered standard working hours as 40 hours per week while long working hours was considered working over 40 hours per week. The literature has mentioned that productivity has various dimensions of measurements and if not measured using the correct measurement, it could cause inaccurate findings.

The discussion found that long working hours had two effects, one is that long hours would increase the output and while the other was the diminishing marginal productivity. This means that an extra hour worked productivity would decrease. Long working hours had mostly dominated discussions as there were more concerning effects.

The chapter also discussed factors which were found to be common in literature such as health and stress, well-being, and job satisfaction, working conditions and working environment, wages, and employee performance. Health and stress most affect employees who work long hours, not only affecting their productivity but their performance levels. High-stress levels affect the employee's ability to perform well and reduce their overall productivity. It suggested that organisational stress is strongly linked to decreasing productivity and performance. Similarly, scholars have shown that the relationship between productivity and job stress was not significant however the relationship between job satisfaction and productivity are both significant and positively related. In addition, the studies showed that productivity was significantly associated with a shift schedule among other mentioned factors.

Findings on well-being and job satisfaction show that increased levels of job satisfaction lead to increased productivity. Employee happiness leads to high levels of productivity. In addition, when employees work long hours, they become unhappy due to decreased amounts of time with their family. Studies associated well-being with health and showed that employee well-being directly impacts productivity and performance. However, the nature between the link of working hours and employee effort is likely to vary across industries and individuals.

Scholars have shown a positive link between working conditions and job satisfaction. This links working hours and productivity indirectly to each other. Studies have found that wages are both theoretically and practically observed as the greatest critical factor affecting the productivity of employees there is a positive and significant correlation between wages and productivity.

There is no actual or direct observation or consensus of how working hours impacts worker productivity. The chapter adds value and will contribute to the informed body of existing knowledge and literature available on this topic. This study is performed within the context of South Africa. The outcomes of this study will provide clarity of the relationship that exists between working hours and employee productivity. The following chapter will conceptualise the method used to conduct the study, followed by data analysis and discussions.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails a discussion and presentation of the research methodology that was applied to achieve the objectives of this study. This chapter provides a framework and rationale which seeks to discuss the research design and methods, research paradigm, study locations, sampling plan, and instrument selection. Pre-testing and construction, data collection techniques and analysis, the validity and reliability of the results and biases will also be presented. The instrument selection and construction are discussed in detail and the chapter concludes with a review of ethical considerations which have been adopted into the study. The steps that have been followed and discussed to ensure that this study provides high quality and impactful results.

3.2 Research Design and Methods

Research can be classified into two broad categories of applied and pure research (Sekaran and Bougie, 2013). According to Sekaran and Bougie (2013: 5), an applied study can be described as "a study that is aimed at solving a currently experienced problem within a specific organisation, whilst pure research is aimed at broadening knowledge at a fundamental level and reshapes our understanding of theories and models." This is an applied study as it is conducted within the context of the organisation and driven by the practical objectives of enhancing its productivity.

Research methodology entails the manner, approach, techniques, and tools and the rationale during the research process (Kothari, 2004). The research design deals with the exact inquiry from qualitative to quantitative or mixed method approaches with the "purpose of giving procedural direction" (Creswell, 2014: 247). A research design forms a blueprint of ways in which data is collectively measured and analysed based on research questions related to the area of study (Sekaran and Bougie, 2013).

A quantitative study involves systematic empirical investigations of phenomena using statistical, mathematical and computational techniques (Sekaran and Bougie, 2013). According to Saunders et al. (2016: 166), a "quantitative research is usually associated with a deductive approach," where the attention is focused on using data to test theory, however, it also includes an inductive method where data is used to cultivate a theory as with this research study.

According to Sekaran and Bougie (2013), a cross-sectional study is a study in which data is gathered only once. This was a cross-sectional study that was conducted among 61 blue-collar workers at Sabertek, using a self-administered questionnaire. The blue-collar workers were the unit of analysis of the study and included the drivers and cleaners of the organisation to eliminate any element of biases. The participants were approached directly, with permission from the director and operations manager, requesting them to complete the survey. The survey and confidentiality element were explained to the workers, ensuring a full understanding of the value their input would have towards this study. The benefits of the study were explained which were, enhancing their overall working standards, conditions and improving productivity. The results from the survey were analysed and then used to conclude on the findings.

According to Sekaran and Bougie (2013), a correlational research describes relationships between variables. The aim of the study is to examine the relationship between working hours and productivity, hence this study is correlational. It is important to note that although the study is correlational it does not mean that one variable will cause a change in the other (Sekaran and Bougie, 2013).

According to Sekaran and Bougie (2013: 102), a "survey strategy is a system which is used to collect information from or about people, compare or explain their knowledge, attitudes, and behaviour." Sekaran and Bougie (2013) further elaborate, that this strategy entails setting objectives for data collection, designing the study, preparing a reliable and valid survey instrument to collect data, and analysing and reporting the results of the data. This process has been followed throughout this study to ensure value-added results. In addition, Sekaran and Bougie (2013) mention that this method is popular in business research and allows the researcher to collect quantitative data, hence the researcher used this method.

A Quantitative research design is useful when a researcher aims to identify factors that influence an outcome, studies an intervention, or attempts to uncover the best predictor of outcomes (Creswell, 2014). A quantitative measuring instrument must be utilised to measure the various variables. The variables of this study were measured using a Likert scale. This is due to the Likert being most appropriate scale, as the Likert scale is one of four scales designed to examine how strongly respondents agree with a statement on a five-point scale (Sekaran and Bougie, 2013).

3.3 Research Paradigm

According to Saunders et al. (2016: 726), a research philosophy can be described as a "term which relates to a system of beliefs and assumptions regarding the development of knowledge and nature of knowledge in relation to research." Research philosophy is also referred to as "worldviews or research paradigms" (Creswell, 2014: 6). The research philosophy can be classified into four categories: "Positivism, Constructionism, Critical realism and Pragmatism" (Sekaran and Bougie, 2013: 29).

A positivist research philosophy is associated with quantitative research design when using predetermined or highly structured data collection techniques (Saunders et al., 2016). It adopts the view of the world, science and scientific research to reach the truth (Sekaran and Bougie, 2013). Positivism uses scientific research and is concerned with rigour, reliability, and replicability. In addition, the positivist uses deductive reasoning to test theories through a research design and objective measures, with the goal to effectively describe a phenomenon through direct observations and measures (Sekaran and Bougie, 2013).

A constructivism worldview, also known as interpretivism takes on a qualitative design and aims to understand the world through the eyes of the subjects under study. It generates rich information, often with multiple meanings, and focuses on theory generation (Creswell, 2014). Critical realism worldview holds the view it is important to understand the world with uncertainty and will always be subjected to interpretation (Sekaran and Bougie, 2013: 29). It engenders measuring emotions, feeling and attitudes and while a positivist goal of the research is to reach the truth, the critical realist goal of the research is to progress towards this goal of reaching the truth (Sekaran and Bougie, 2013). Finally, the pragmatic worldview adopts a practical approach to problem solving, emphasising that methods are required to find a solution and often adopts a mixed methods approach, merging qualitative and quantitative research methods (Creswell, 2014).

"Quantitative research can also be used within realist and pragmatist philosophies" (Saunders et al., 2016: 166). Hence this study, follows that of a pragmatic worldview, intending to enhance the working nature of the firm and soliciting managers' engagements with their staff. This is to improve the overall productivity of the organisation and enable future global expansions. This research approach is useful, practical, and objective and therefore used to achieve the objectives of the study.

3.4 Study Location

The study was conducted at Sabertek which situated in Centurion, Gauteng. Sabertek is an electronic design company that provides complete solutions for the electronics industry (Sabertek, 2018). This organisation designs, develops, and creates a PC board layout for clients, which means working with intricate and delicate electronic components and advanced technology systems. Workers are required to build these PC boards to a specific specification and they are manufactured from one component to thousands in quantity. In addition, all designs are different ranging from simple to complex in nature. The organisation currently has a huge and growing clientele base and were considering entering into global markets. Therefore, improving the overall production processes, working standards and productivity was important to Sabertek. Having a broader understanding of the factors which affect their employees working hours and productivity, will be beneficial in the enhancement of current working practices. This would enable their growth into broader markets but also encourage better working engagements between blue-collar employees and management.

3.5 Target Population and Selection of Participants

According to Sekaran and Bougie (2013), a population is described as an entire group of people, events or things that the researcher desires to investigate. The population of this study includes 61 blue-collar workers at Sabertek, using a self-administered questionnaire. Blue-collar workers from all departments of the organisation were enlisted in the study population. The choice of using this organisation was due to open access to participants, and the director was interested in improving the organisation. The blue-collar workers included the cleaners and drivers at the organisation to eliminate any element of biasness. The selection of the blue-collar workers versus the white-collar workers was due to the blue-collar workers having the greatest financial impact on the organisation and on the production line. The entire population was tested hence there was no sampling or any relevance to a sample size. Therefore, sampling techniques are irrelevant in this study.

According to the Australian Bureau of Statistics (2013), the population is studied by one of two approaches: conducting a census or deciding on a sample. A census is a study of every unit, everyone or everything in a population while a sample is a subset of units in a population, selected to represent all units in a population of interest (Australian Bureau of Statistics, 2013). Based on this description, this study used a census method by using the entire population of 61 blue-collar workers. However, this study had collected data from 59

out of the 61 total population due to the two workers being absent on both days of the data collection process.

3.6 Construction of Research Instrumentation

A research instrument is a tool used to gather primary data (Kothari, 2004). It is used in quantitative studies in the form of surveys, questionnaires, tests, and experiments and qualitative studies in the form of interview logs, diaries and recording instruments (Kothari, 2004). This study was conducted using a survey method. A survey method allows for the collection of standardised data from large sample sizes and is highly feasible to collect and analyse the data (Saunders, 2016). The questionnaire was the main tool utilised in this study to collect data and was designed and completed by the researcher. The selection of a questionnaire is due to its ability to yield data that is valid, reliable, and practical in its application (Kothari, 2004). A structured process was adopted to effectively design this instrument which included a review of the relevant literature and identifying relevant ways of measuring productivity. The design of the questionnaire needed to address all the objectives pertaining to the research study.

The main scale used was a Five-point Likert scale with a few "yes" and "no" statements. The research questions were in the form of a Likert-type scale (respondents' either in agreement or disagreement) by constructing questions with a five-point scale where the lowest scale represented 'strongly agree' and the highest scale represented 'strongly disagree'(Sekaran and Bougie, 2013). The scoring legend was: 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree.

The qualifying process and instrument selection have been described, the following section discusses the development and design of the questionnaire and the rationale for adaptations.

3.6.1 Questionnaire Development and Description

The questionnaire had three distinct parts with each seeking to solicit pertinent information to support the study's objectives. Section one covered the participants' demographic details and included personal and working information, section two covered the relationship between working hours and productivity including both normal working hours and long working hours, in addition integrating the factors that affect productivity. Lastly, section three evaluated workers perceptions of the extent to which these factors affected them regarding their productivity and performance levels during the stipulated hours.

Section 1 – demographic information, this section of the questionnaire solicited information on the participants' demographic and working details to solicit responses from the target population. Demographic variables included age, gender, race, whilst the personal and work details included: the participants' shift work, travel time to work, years worked at the organisation, hours of normal work and the number of hours of overtime per week, the number of times of overtime per month, smoking, and drinking patterns we included.

Section 2 – Working hours (40 hours per week and more than 40 hours per week) and employee productivity. Research construct one needed to establish if there was a relationship between employees working 40 hours per week and productivity while research constructs two needed to establish if there was a relationship between employees working more than 40 hours per week and productivity.

In addition, this second part of the questionnaire integrated the influencing factors and was broken down into five sub-themes with questions directly related to each main theme i.e. working 40 hours and more than 40 hours per week and productivity. The sub-themes included: productivity, health and stress levels, well-being, and job satisfaction, working conditions and environment and wages.

Section 3 – Focused on the effects of the influencing factors, construct three and the final part of the questionnaire intended to establish the extent to which the identified factors have affected the employees regarding their productivity and performance levels. Two questions related to productivity were covered while the third related to performance levels. These questions would point to a trend as well as the depth of influence of each factor on working hours and productivity.

In summary, the overall design of the Questionnaire (appears in Appendix 4) and its link to the study's objectives is depicted in Figure 3:1 below.

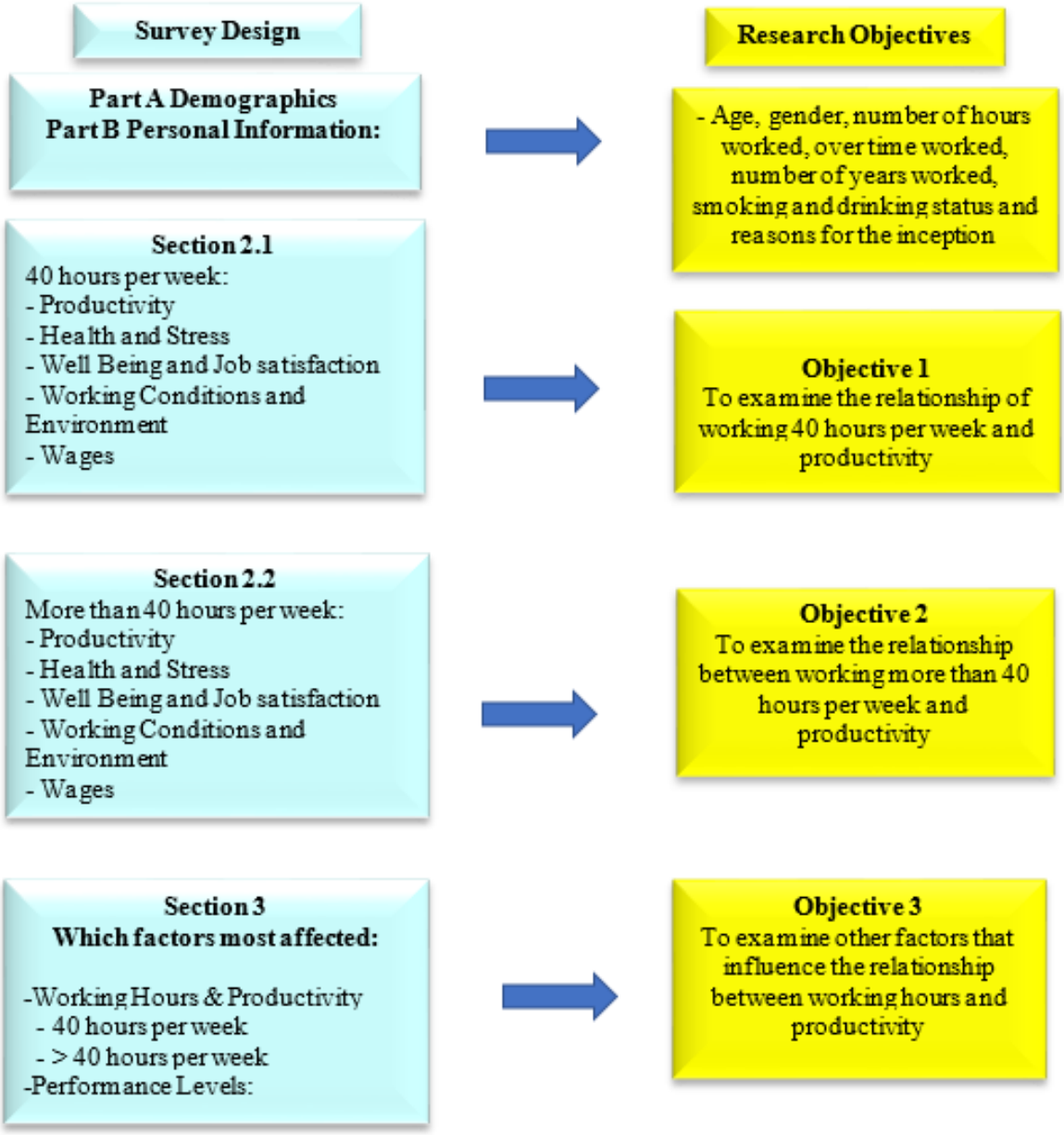

Figure 3:1. Questionnaire design and link to research objectives

Source: Author's own

Figure 3:1 depicts the design of the questionnaire.

Section 1: Part A and B of the questionnaire extracted demographic, personal and working information which was correlated with the working hours and productivity. Section 2 satisfied objectives one and two as well as three. Section 3 solicited employee perceptions with regards to the extent to the identified factors influenced the relationship of the number of working hours and productivity.

3.6.2 Instrument Test

According to Saunders et al. (2016), prior to using the questionnaire, it will need to be tested with respondents similar to those that will complete it. The number of people that are chosen should be enough to include any major variations on the population that is most likely to affect the responses (Saunders et al., 2016). The statistician suggested 10% of the total population is appropriate for the pilot study. Hence the researcher administered the questionnaire to seven blue-collar workers in a different manufacturing organisation to determine the appropriateness, reliability, and relevance of the questionnaire. There were only minor changes to the questionnaire after they were piloted such as the rephrasing of questions for simplicity purposes. The pilot study questionnaire would take 10-15 minutes.

3.7 Data Collection Methods

The technique used to collect data was a specific selection of individuals for this study. Sabertek houses 74 employees in total (including the management team), and 61 of which are blue-collar workers. The blue-collar individuals were selected as they have the greatest impact on the organisation regarding the production output and organisational bottom line since they make up the bulk of the staff at the organisation. The blue-collar workers further contribute to answering the identified research questions. This is the reason for the selection of the blue-collar workers and Sabertek.

According to Sekaran and Bougie (2013), the survey design is popular in business research and can be used to collect quantitative data. According to Sekaran and Bougie (2013: 102) "questions of a survey instrument are arranged into self- administered questionnaires in which the respondents complete on his/her own on paper or via the computer." The other types of survey instruments include interviews and structured observations. Data can be collected in various ways such as structured and unstructured interviews, observations and questionnaires among techniques (Sekaran and Bougie, 2013).

The data collection technique used was a self-constructed questionnaire, which was personally administered to the participants of the study. According to Sekaran and Bougie (2013), the main advantage of this data collection method is that one can collect all the completed responses within a shorter space of time, also it is cost effective and i.e. less expensive. The only disadvantage is that there is a chance that the researcher can introduce bias by explaining the questions differently, this would be addressed the section of biasness. Due to there being a small number of participants and less time, personally administering

the questionnaires were the best option and most effective in ensuring that all were completed.

Data were collected over two consecutive days. The researcher together with assistance from the operations manager and production supervisor approached the participants per department as per a schedule. The questionnaire was explained in full and the workers were informed of the aim, contents, identification, and confidentiality aspect of the study. The questionnaires were completed during working hours and not over the lunch breaks (permission from management was granted). All interested participants provided their written informed agreement to participate in the study. Participants had the choice to not be a part of the study. Upon completion of the questionnaire, a confectionary was given as a compensation for employees completing the questionnaire. This compensation ensured that all in the population had participated in the study, two could not fill the questionnaire due to being absent on both days of data collection. The only difficulty experienced was that a few of the participants being older and not fluent in English (written), the researcher had to use the assistance of those who could help translate the questionnaire into a language that was understood. Some had requested to take them home and return them the next day.

In summary, the overall collection process was as follows: Day one: -

- The study was explained to participants per department,
- Participants signed up for the study,
- those who completed the study were given a confectionery, and
- those who did not could take the questionnaire home.

Day two after completion of all questionnaires by the employees, the researcher captured the data into an excel spreadsheet for analysis.

3.8 Data Analysis

The data were analysed using descriptive and inferential statistical techniques. Data was presented in the form of graphs and tables followed by an interpretation and discussion of the findings. The discussion linked the findings to the literature to support or argue against the findings from the results.

The process of analysing the data commenced with transferring the raw data collected from questionnaires onto an Excel spreadsheet. The raw data was analysed using a computer software package Statistical Package for the Social Science (SPSS) version 25.0. Before

collection of the questionnaire, the researcher ensured that all questions were answered. This increased the likelihood of collecting complete questionnaires and ensured that the results would be of high quality and value-added.

The demographic, personal and work data was analysed using descriptive statistical techniques. Secondly, a sectional analysis was performed using descriptive statistical techniques. The various descriptive analyses were conducted to describe the study population and the responses to the questions. Frequencies indicated the number of times various subcategories of a certain phenomenon have occurred (Sekaran and Bougie, 2013). After the preliminary analysis of the data, a detailed analysis was undertaken to establish the goodness of the data. Lastly, inferential statistics consisting of correlations and regression analysis was performed.

In greater detail, the analysis included finding, the nature, direction, and significance of the bivariate relationships of the study. According to Sekaran and Bougie (2013: 288), "a research study includes several variables beyond knowing the descriptive statistics of the variables one would like to know how the variables relate to each other." This means finding the relationship between any two variables among the variables in the study. Statistical techniques used to analyse the data and find the nature and direction of the relationships and statistical significance included: Chi-square (χ^2) test, Pearson correlation co-efficient, and simple linear regression model.

Chi-square test (χ^2) indicates whether the observed patterns were due to chance and compares the anticipated frequency and the detected frequency (Sekaran and Bougie, 2013). In this way, differences in relationships among nominally scaled variables are tested. This test denotes whether a significant relationship occurs between two nominal variables, besides this test the Fisher exact probability test can also show whether a relationship exists between variables (Sekaran and Bougie, 2013). The traditional approach to reporting a result necessitates a statement of statistical significance. A p-value is generated from this statistics test and the significant result is indicated with "$p < 0.05$," therefore a p-value less than 0.05 is considered statistically significant.

The Pearson correlation co-efficient indicates the direction, strength, and significance of the bivariate relationships among all the variables that are measured at an interval or ratio level and a simple regression analysis is used where one independent variable is hypothesised to affect one dependent variable.

Appropriate descriptive and inferential statistics were used in the analysis of the data of this study. The output of the statistical data analysis was peer reviewed by an independent statistician, to ensure the credibility and quality of the data set. The information was constructed into graphs and then interpreted and discussed under Chapter Four.

3.9 Reliability and Validity

Reliability and validity tests ensure that the measure used is good. According to Sekaran and Bougie (2013), a measure should not only be valid it should be reliable. Validity in quantitative research refers to whether one can draw meaningful and valuable inferences from the survey instrument, while reliability refers to whether all the constructs are consistent with item responses and whether there was consistency with test administration and scoring (Cresswell, 2014). Reliability indicates that a measure is reliable if their consistency across the numerous items in the instrument. Validity consists of internal and external validity, internal refers to the test and external refers to the ability to generalise findings to the targeted population (Sekaran and Bougie, 2013).

To ensure the reliability of this research, the process has been documented in detail as well as a database of participants and all information has been established. In the life sciences field, to test a score of reliability, statistics uses the coefficient alpha or Cronbach alpha hence this study also used this to test reliability. According to Morera and Stokes (2016), the Cronbach alpha is used to ascertain the internal uniformity or average correlation of items in a survey instrument to measure its reliability. In general, the popular rule of thumb suggests that a coefficient with values exceeding 0.70 indicate adequate internal reliability (Morera and Stokes, 2016). The reliability of the study ranged from 0.6 to more than 0.7 as seen in Chapter 4, except for wages which were 0.5, the statistician had advised that this was acceptable as the questionnaire was newly constructed. The overall reliability of the questionnaire is 0.72, which indicated that the questionnaire was acceptable and reliable for the study.

3.10 Elimination of Bias

Quantitative studies are vulnerable to researcher bias and this is apparent in many forms. Bias can occur in the preparation, data collection, analysis, and publication stages of research and can distort the results and affect the outcome of the study (Penwarden, 2013). To guarantee the exclusion of bias and constant objectivity during the study, the researcher retained a focus on the following:

3.10.1 Researcher Bias

The researcher can be biased by asking the wrong questions, which could consequently result in a mismatch between the research objectives and results. In addition, the researcher can be asked to explain a statement or question and could coerce the respondent to respond a certain way. To overcome this, the researcher should ask questions within the broader context of the research topic. The researcher has also asked staff to assist those who had problems and to explain the statements in simpler terms. The questions in this study are newly constructed but have been pre-tested to reduce the likelihood of researcher bias in the questionnaire.

3.10.2 Response Bias

Response bias refers to the effect of non-responses on the results of the survey (Creswell, 2014). This response bias is overcome by the researcher showing that the non-responses are not significantly impactful on the results. In this study, there were zero non-responses and only two participants were absent during the data collection process. The employees were fully aware that the completed questionnaires were for research purposes and confidential which might have reduced the response bias.

3.11 Ethical Considerations

Ethical consideration was undertaken at every stage of the study. This is inclusive of the commencement of the study throughout the writeup of the study, during the collection of data, analysis, reporting and the storing of data to sharing of results with management.

In addition, prior to the collection of data the director of Sabertek was emailed a full break down of the process and study objectives. The email assured the director that management and staff were protected by the ethics committee of the University of KwaZulu-Natal (UKZN) and that disposal of data was performed through a process at GSB. It was agreed that if the director had questions or queries, he was at liberty to contact the researcher at any point of the study.

The initial process included visiting Sabertek, meeting with all the staff members and office staff and then attaining an approval letter from the director. The director had issued a letter of approval which was used in the process of attaining ethical clearance from the research committee at UKZN. The ethics approval required supporting documentation to which the researcher then received full ethical approval from the ethics committee (refer to Appendix 4 for ethical clearance letter). In addition, the study fully abided by the UKZN plagiarism policy which also included using the Turn it in software to confirm the percentage of the

used source material. There were no ethical issues that were encountered as all suitable measures were taken or considered to avoid ethical issues.

3.12 Conclusion

This chapter described the overall research methodology process that was used by the researcher to conduct this study. The research method process employed in obtaining the results has been described in this chapter. The research strategy, sampling methods and data collection together with statistical techniques used for the analysis of results have been explained. The discussion of the methods used during this study would ensure that the study yields the most accurate and high-quality data. This quantitative study attempted to establish and understand the various factors that impact the productivity of the blue-collar workers at Sabertek. The questionnaire was tested for reliability and validity and biasness was reduced by using the entire population of blue-collar workers, including the cleaning staff and drivers. The following chapter presents the results of the data analysis, followed by an interpretation and discussion of the findings with links to literature.

CHAPTER 4 RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results and discusses the findings obtained from the questionnaires in this study. Linking literature to support or argue against the findings of the results. The questionnaire was the key tool which was used to collect data and was given to employees at Sabertek. The data collected from the responses were analysed with SPSS version 25.0. The analysis took the form of univariate (descriptive), bivariate (correlations) and multivariate (regression analyses). Following descriptive statistics is the bivariate statistics using Pearson correlation, where two or more factors are correlated to determine if they are linked, and the direction in which they are associated. Simple regression analysis is conducted. This chapter begins with a broad description of the population and response rate, starting with demographic information in terms of age, gender, race, followed by work and personal information. The primary data were analysed descriptively and subjected to Cronbach alpha's tests for confirmation of reliability. The results will present the descriptive statistics in the form of a table, graphs, cross-tabulations, and other figures for the quantitative data that was collected. The data is further examined using Chi-squared tests and regression analysis to determine levels of association between selected variables. The results relating to the research objectives are then presented together with a detailed discussion of their implications and consistency with previous studies covered in the literature review.

4.2 Response Rate

According to Walston et al. (2017), the response rate represents a suitable percentage of participants in the sample who completed the survey and can also indicate the quality of the study. Response rates that are low can hinder the usefulness of the survey results (Walston et al., 2017). Fifty-nine (59) out of the sixty-one (61) distributed questionnaires were successfully returned, producing a response rate of 96.7%. The remaining 3.3% accounted for respondents who were absent during the collection of data for the study. Below are the validity and reliability results of the study based on the highly achieved response rate.

4.2.1 Reliability and Validity

The two imperative aspects of exactness are reliability and validity. According to Sekaran and Bougie (2013), in general reliabilities, less than 0.6 are considered poor, those in the 0.70 range are acceptable and those over 0.80 are good. However, a reliability coefficient of

0.60 or higher is considered “acceptable” for a newly developed construct. Table 4:1 below reflects the Cronbach’s alpha score for all the items that constituted the questionnaire.

Table 4:1. Reliability Scoring

No	Sub-themes	No of Items	Cronbach's Alpha
2.1.1	Working standard hours & productivity	4	0,605
2.1.2	Health & stress levels	4	0,607
2.1.3	Well-being & job satisfaction	6	0,834
2.1.4	Working conditions & environment	7	0,813
2.1.5	Wages	2	0,765
2.2.1	Working long hours & productivity	6	0,724
2.2.2	Health & stress levels	7	0,732
2.2.3	Well-being & job satisfaction	6	0,750
2.2.4	Working conditions & environment	7	0,850
2.2.5	Wages	2	0,539
3.1	Factors that affect productivity when working a normal 40-hour week	4	0,660
3.2	Factors that affect productivity when working overtime or more than 40-hours in a week	4	0,787
3.3	Factors that affect the level of performance	4	0,697
Overall			**0.72**

Based on the scoring in Table 4:1, the questionnaire can be regarded as good with its overall reliability co-efficient of 0.72. The reliability scores for all sections exceed the recommended Cronbach’s alpha value of acceptability for a newly developed questionnaire. According to Sekaran and Bougie (2013), the closer the Cronbach’s alpha is to one, the higher the internal consistency. This indicates that the research study has achieved a degree of acceptable and consistent scoring for all sections.

4.3 Data Presentation

This study would like to determine the relationship that exist between productivity and number of working hours. According to Sekaran and Bougie (2013), a research study can include several variables beyond knowing the descriptive statistics of the variables one would like to know how the variables relate to each other. To determine if a relationship exists, a Chi-square (χ^2) test was performed.The Chi-square (χ^2) tests whether a significant relationship exists between two nominal variables and besides this test, the Fisher exact probability test can be used to show whether a relationship exists between variables (Sekaran and Bougie, 2013).

Sekaran and Bougie (2013: 288) convey that the “Chi-square test indicates whether or not the observed patterns were due to chance and compares the expected frequency and the

observed frequency." Thus, testing for differences in relationships among nominally scaled variables. The null hypothesis states that there is no significant relationship or association between the two variables and the alternate hypothesis indicates that there is a significant relationship or an association between the variables of the study (Sekaran and Bougie, 2013).

The traditional approach to reporting a result requires a statement of statistical significance. Statistical significance refers to whether any differences observed between groups being studied are "real" or whether they are simply due to chance. Significance refers to the level of certainty in the results of a study. This study is set at a 95% confidence interval in our results, hence the significance level is set at 0.05 (or 5%). It can be stated that there is a difference in the population means at the 95% significance level or at the 99% significance level if the statistics support this statement. The significance level will be referenced within certain findings throughout this section. A p-value is generated from this statics test and will indicate variables that are statistically significant and those that are not significant will not be discussed. A significant result is indicated with "$p < 0.05$," therefore a p-value less than 0.05 would be considered as statistically significant. The Chi-square values appear in Appendices Five, Six and Seven.

4.4 Descriptive Statistics

According to Sekaran and Bougie (2013), descriptive statistics for a single variable can be provided by frequencies, measures of central tendency, and dispersion. The following data has been analysed using frequencies. Frequencies merely refer to the number of times various subcategories of the certain phenomenon had occurred from which a percentage and cumulative percentage can be calculated (Sekaran and Bougie, 2013). The research instrument consisted of 86 items, with a level of measurement at a nominal or an ordinal level. The questionnaire was divided into three sections which measured various themes as illustrated below:

1. Biographical data and work and personal data
2. Working hours
3. Factors that influence the relationship between productivity and working hours

4.4.1 Respondents' Demographic Characteristics

The first part of section one of the questionnaire captures the respondent's demographic information. The results below show the demographic characteristics of the blue-collar workers of Sabertek. A table of summarised results can be seen in Appendix 5.

- ***Age versus Gender:***

Table: 4:2 below describes the overall gender distribution by age.

Table 4:2. Age Group * Gender Cross-tabulation

			Gender		Total
			Male	Female	
Age Group	21-30	Count	9	2	11
		% within Age Group	81.8%	18.2%	100.0%
		% within Gender	31.0%	6.7%	18.6%
		% of Total	15.3%	3.4%	18.6%
	31-40	Count	13	7	20
		% within Age Group	65.0%	35.0%	100.0%
		% within Gender	44.8%	23.3%	33.9%
		% of Total	22.0%	11.9%	33.9%
	41-50	Count	5	12	17
		% within Age Group	29.4%	70.6%	100.0%
		% within Gender	17.2%	40.0%	28.8%
		% of Total	8.5%	22.0%	28.8%
	51-60	Count	1	8	9
		% within Age Group	11.1%	88.9%	100.0%
		% within Gender	3.4%	26.7%	15.3%
		% of Total	1.7%	13.6%	15.3%
	61+	Count	1	1	2
		% within Age Group	50.0%	50.0%	100.0%
		% within Gender	3.4%	3.3%	3.4%
		% of Total	1.7%	1.7%	3.4%
Total		Count	29	30	59
		% within Age Group	49.2%	50.8%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	49.2%	50.8%	100.0%

Table 4:2 has cross-tabulated age with gender which represents the population that answered the survey. Overall, the ratio of males to females is approximately 1:1 (49.2%: 50.8%). This result is a reflection of the target population pertaining to the study. The results show that there are as many males as there are females which is in alignment with this study being gender neutral.

Within the age category of 31 to 40 years, 65.0% were male. Within the category of males (only), 44.8% were between the ages of 31 to 40 years. This category of males between the ages of 31 to 40 years formed 22.0% of the total sample. Most females from the sample can be seen in the category between the ages of 41 to 50 years and formed 22.0% of the total sample. This indicates that there is more middle-aged staff at Sabertek i.e. 31 -50 years.

There is only 3.4% of the total sample, at the age of 60 years and above which will decrease due to retirement. In addition, in the 51-60 age category, there 15.3% of the total respondents, which indicates that these respondents are within the South African age of retirement. Hence

technical skills and experience at Sabertek will diminish. Sabertek stipulates that the age of retirement is 55 years. The Chi-test confirms that there was no significant difference by gender ($p = 0.896$), but there was by age ($p = 0.002$) which means that age is statistically significant at Sabertek with most employees within the age group of 31-40 years of age (33.9%).

- ***Racial Composition***

The racial composition indicated that the total population comprising 44% Coloured, 49% of African and fewer than 10% comprised White and Indian respondents. This indicated that there were similar numbers of African and Coloured respondents, but significantly more than the other race groups, as confirmed by the statistical value $p = 0.001$. This significance conveys that a larger population of the organisation is African based, however, this reflection of the target population only contributes to a generalised observation and has no bearing on the study. Due to this being a South African study, one can observe a compliance with BEE equity policy.

4.4.2 Night Shift versus Day Shift

Significantly more respondents worked the day shift only (88.1%) ($p = 0.001$), while there were 11.9% of employees who worked both day and night shift rotationally. The reason for this significant difference is due to running operations only on demand. In addition, the employees who work a double shift are the machine operators. Their efficiency and productivity depend on the maximum output capacity of the machine and jigs. The machine is only designed to produce output at a certain capacity and if there are increased volumes of work, the worker would need to work shifts to ensure demand is satisfied. This depends on the type and volume of work. There might not be enough quantity produced during the eight hours of working time to meet demand, therefore a night shift rotation takes place.

The reason for the high number of day shift workers is due to the type of work that is required. The work can be completed during normal hours and if demand is high for a component, overtime is required. However, two full shifts are not required as it can be very costly for the organisation to be operating two full shifts.

4.4.3 Travel Time to work (hours)

This section discusses the findings pertaining to the average travel time to work, by the employees of Sabertek. Figure 4:1 below shows the number of hours it takes for employees to travel to work.

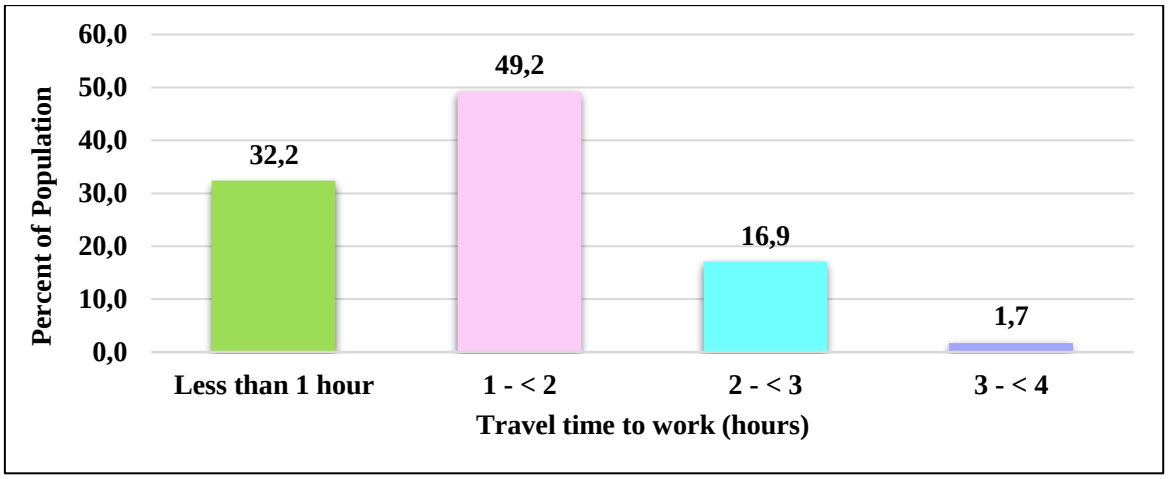

Figure 4:1. Average time travel to work

Figure 4:1 shows the average time it takes employees to travel to work. A third (32.2%) of the respondents travelled for at most an hour with close to half (49.2%) of the respondents spending one to two hours on the road, which is significantly more than the 18% that travels more than two hours. There were significantly more employees who spend one to about two hours travelling both to and from work. The significance value for "Average time travel to work" is $p = 0.000$.

The reason for attaining this information was to establish the full length of an employee's working day. The workers begin work at 07h00 and finish at 16h30. Workers that travel for two hours and more are likely to leave home at 05h00 and would, therefore, need to rise in the morning between 03h00-04h00, depending on their personal routine. This means the length of their day and the week would increase if they work overtime after work. It can, therefore, be assumed that their fatigue levels might be higher than those employees who travel for less than an hour to work. This fatigue could potentially affect their productivity and lower their overall efficiency.

4.4.4 Years of Service

Figure 4:2 below demonstrates the years of service that the staff has given to the organisation. This indicates the years of experience and the worker's ability and level of skill. This finding can indicate the degree of technical experience at the organisation.

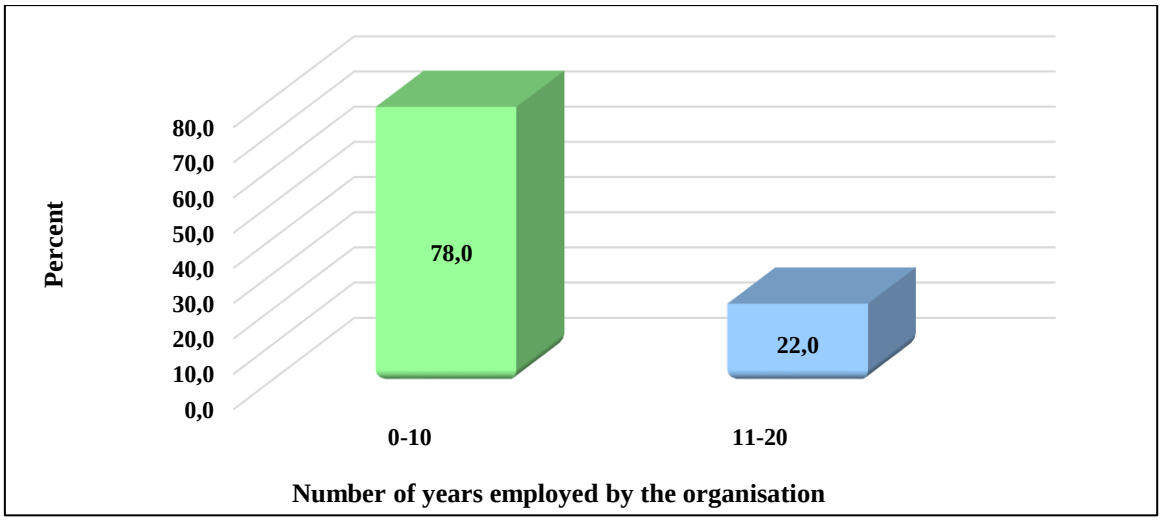

Figure 4:2. Years of service to the company

Figure 4:2 shows that a little more than a fifth (78%) of employees were in the company's employment for less than ten years. While only 22% have been in the company for more than 10 years. The statistical test shows a significance of p = 0.001 which confirms a significant difference of workers service to the organisation. The reason for such a difference in results is due to the retirement of older staff and the recruitment of new staff. The retirement age at Sabertek is 55 years when employees retire there is a loss of technical expertise which can create a technical gap. The older employees had the ability to troubleshoot problems effectively, knowledgeable in the field and were highly capable of handling various complex configurations. However, the newer staff are energetic, they work faster and are eager to learn, therefore, this could potentially contribute to increased levels of productivity. This indicates that there is an association of years of employment with employee productivity.

4.4.5 Overtime

- ***Overtime per week***

Figure 4:3 below illustrates the number of hours of overtime that is worked by employees at Sabertek.

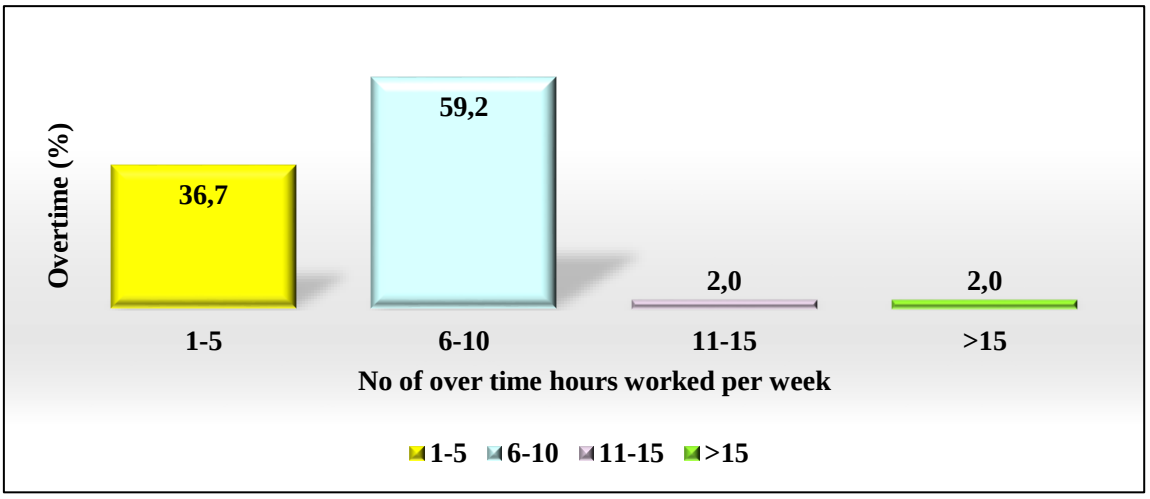

Figure 4:3. Overtime worked during the week

Figure 4:3 conveys the results of the 83% of employees who work overtime at Sabertek from the entire population, while 17% of the employees do not work overtime and were not included in these results. This illustrates a significant difference between employees who work overtime and those that don't. Employees have attributed this to transportation reasons and family obligation.

The results in Figure 4:3 have indicated that from the population who works overtime, there were significantly more respondents that worked up to 10 hours per week (95.9%) with a statically significance value of p = 0.000 (appendix five) than those who worked 11 or more hours. This is a major difference and implies that on average at least 95.9% of the 83% that work overtime is working up to 50 hours per week, which is regarded as long working hours. The respondents who worked the night shift, worked long hours as their working times are from 06h00 to 18h00. In some countries, long working hours is defined as working 50 hours a week or more such as in Japan and South Korea and to a minor extent in the USA (United States of America), Australia, New Zealand and the United Kingdom (OECD, 2013).

- ***How often do you work overtime in a month?***

This section addresses the amount of overtime employees work per month. Ranging from once a month to four-five times a month as the pie chart below illustrated in Figure 4:4.

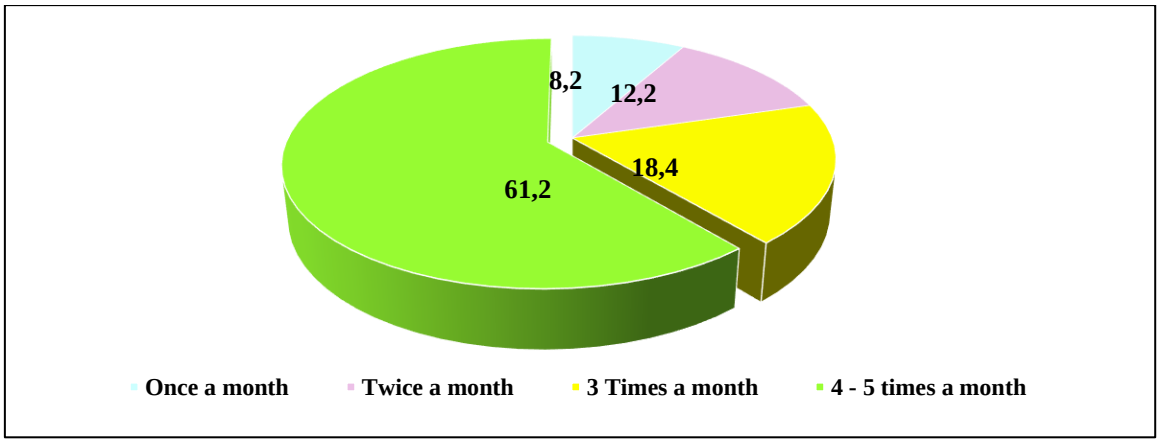

Figure 4:4. The number of times employees work overtime

Figure 4:4 shows that 61.2% of the respondents indicated they worked four–five times a month which was significantly more than those who worked less than this. The Chi-test confirmed the statistical significance with value $p < 0.001$. This implies that more than half of the employees work overtime, multiple times, or every week in the month. This also means that the workers are exposed to long weeks and therefore long working hours every month. Importantly to note, the overtime that is scheduled is dependent on the volume of customer orders and the complexity of work required. Not all of the overtime scheduled is enforced by management and employees have a choice to work overtime at the end of their normal working day and during the weekends or opt not to work. This further means that 61.2% of the employees are working up to 50 hours per week, which could potentially affect their levels of productivity after a certain point in time.

4.4.6 Personal Data

The second section of the questionnaire presents the personal data which includes habits that can intensify or be initiated due to extensive amounts of working hours. The researcher wanted to determine if there was a connection between working hours and intensifying personal habits that could affect the health levels of employees. Table 4.3 below summarises these findings.

Table 4:3. Personal Data

Characteristics (n= 59)		Frequency	Percent %	Chi- Square
Do you smoke?	Yes	23	39,0	
	No	36	61,0	
				0,091
If yes, when did you start?	Before working at Sabertek	22	95,7	
	After working at Sabertek	1	4,3	
				0,000
Reason for smoking	Work Related	0	0,0	
	Personal	14	60,9	
	Hobby	6	26,1	
	Other	3	13,0	
				0,015
Do you drink?	Yes	34	57,6	
	No	25	42,4	
				0,241
If yes, when did you start?	Before working at Sabertek	31	93,9	
	After working at Sabertek	2	6,1	
				0,000
Reason for drinking	Work Related			
	Personal	10	30,3	
	Hobby	12	36,4	
	Other	11	33,3	0,913

More than a third of the staff which is 39%, smoke while 57.6% indicated that they drink alcohol according to Figure 4:3. The literature has found that working long hours can lead to employees drinking and smoking more. Berniell and Bietenbeck (2017: 3) stated that "regression results indicate that one additional hour of work increases smoking by 1.5-2.5 percentage points and reduces self-reported health by 0.04- 0.08 points on a scale from 0 to 10." Further adding that the impact working hours has on health differs between blue and white-collar workers, thus affecting their productivity levels differently (Berniell and Bietenbeck, 2017).

However, this data had found no relation between smoking and drinking habits due to working at Sabertek. There were 60.9% of the respondents who had attributed the reason for smoking was personal while the 36.4% of employees responded that they drank mostly as a

hobby. In conclusion, neither drinking nor smoking is attributed to work-related reasons and therefore has no relation to the variables of this study i.e. productivity or working hours.

4.5 Sectional Analysis

In this section, the scoring patterns of the statements from the questionnaire in section two were analysed. There were two assumptions made. The first assumption asserts that similar numbers of respondents scored across each selection for each statement (one statement at a time). The counter assumption is that there is a significant difference between the levels of agreement and disagreement. The tabulated results for standard and long working hours are shown in the tables in Appendix Six and Seven.

In addition, a Chi-square (χ^2) test was performed to further determine if the scoring patterns per statement were significantly different. This further tested whether or not a significant relationship existed between the variables. The differences between the way respondents scored (Disagree, Strongly Disagree, Neutral, Strongly Agree, Agree) were significant. The general trends will be described, and statements of value will be discussed linking the literature to support of the findings or to counter argue the findings.

Please note that some of the figures reflected in the explanations are a combination of figures added. The combinations included agree and strongly agree or disagree and strongly disagree when referring to a total agreement and total disagreement in some cases.

4.5.1 Standard Working Hours (SWH) & Productivity

This section analyses the scoring patterns and the significance of the differences that are tested between working standard hours per week and productivity. Trends that are important to the study will be further discussed. Figure 4:5 below displays the results of the scoring patterns that is according to the importance of the statements as perceived by the blue-collar employees at Sabertek.

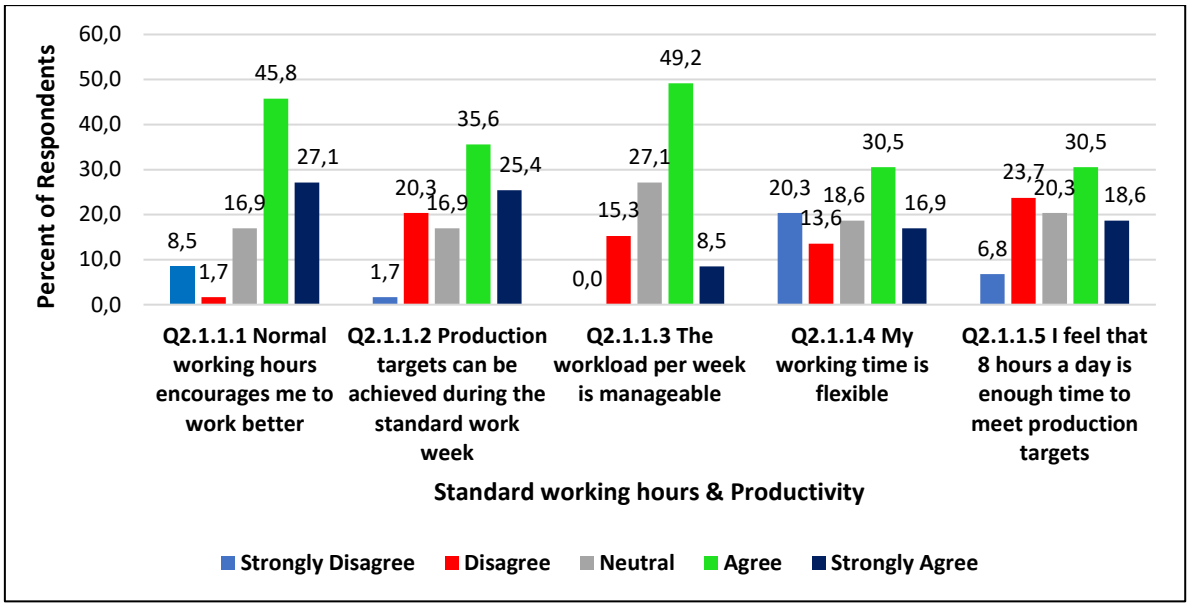

Figure 4:5. Standard working hours & productivity

Figure 4:5 displays trends and patterns in employee responses to statements that depict the variables, standard working hours, and productivity at Sabertek. This analysis is based on the observed trends from the employee's responses to the statements. This is in the form of agreement versus disagreement and neutral responses. Due to simplicity purposes, the question numbers will be used in some instances instead of the statement itself.

Patterns observed was that of: Q2.1.1.1 "Normal working hours encourages me to work better" has total higher levels of agreement (72.9%) compared to that of statements in Q2.1.1.2 "Production targets can be achieved during the standard workweek (60.1%)" and Q2.1.1.3 "The workload per week is manageable (57.7%)". There was a considerable difference of 12.8% between responses of agreement towards statements Q2.1.1.1 and Q2.1.1.2 and 15.2% between statements Q2.1.1.1 and Q2.1.1.3. This means that employees have agreed that working hours encourages them to work better and therefore be more productive. However, not as many respondents have agreed to meet production targets within the week or that weekly workload is manageable. The reasons for such response rates could be due to the nature of the production schedules at Sabertek and the constant change of customer demands and scope of work that is required to be manufactured. There is an indication in literature that there is a positive relationship between standard working hours and productivity (Ali et al., 2013). However, production targets are not always met during the standard workweek. Work can be regarded by employees as intense, demanding and stressful when total work hours remains the same (Chesley, 2014). Yu (2014) supports that

regardless of constant working hours, the intensification of work is a significant contributor to increased time pressure.

The highest percentage of total disagreement is 33.9% for statement Q2.1.1.4 “My working time is flexible” which means that their working time is fixed. Further, the second highest level of disagreement, 30.5% was towards the statement Q2.1.1.5 “I feel that 8 hours a day is enough time to meet production targets” which means that 8 hours per day is not enough for the employees to meet all their production targets set by Sabertek. This could potentially be due to the 78% of the workforce working at Sabertek for 0-10 years, this implies that they are new and since they are learning, this could potentially slow down their productivity. The older staff can troubleshoot problems more effectively if and when they arise or work faster and more efficiently due to their years of experience at Sabertek. Therefore, it should be suggested that they should transfer their skills to newer employees so that production targets are better met during the standard working time. The skill effect is similar to the learning effect which improves a worker’s performance (Lee and Lim, 2017). Skills improve overall output where employees work sufficiently long hours and become effective at their job (Lee and Lim, 2017). They are mentally and physically inclined towards their jobs which leads to making fewer mistakes when operating machines, making them more proficient at their job.

The statements: Q2.1.1.1 “Normal working hours encourages me to work better”, Q2.1.1.2 “Production targets can be achieved during the standard workweek” and Q2.1.1.3 “The workload per week is manageable” (p values = 0.000, 0.001 and 0.000 respectively), have found to be significantly associated with productivity during standard working hours. The results have shown that all three statements are strongly significant. This means that the responses are not happening by chance but there is a likelihood of occurrence. This illustrates a high level of confidence, showing that employees are more likely to be encouraged to work better during their normal working hours. Thus, making them productive during normal working hours. Similarly, employees can achieve their scheduled production targets during the week and that the workload which is given can be managed during their normal working hours. It is clear that if the production schedule for the week is efficiently planned, it can enable employees to be productive. Encouraging and motivating employees would reduce levels of presenteeism. Presenteeism refers to when employees are at work but not being productive (Beaton et al., 2009). The level of significance for statements Q2.1.1.4 and Q2.1.1.5 was not within the range of $p < 0.05$ and were not significant.

The results imply that normal working hours encourages employees to work better and meet production targets since the workload per week is manageable. This further implies that workers concentrate more during standard working hours, hence higher chances of increased productivity. However, production targets are not always met due to the intensity of work that might be scheduled.

4.5.2 Long Working Hours (LWH) & Productivity

This section analyses the scoring patterns and the significance of the differences that is tested between working longer hours per week and productivity. Trends that are important to the study will be further discussed. Figure 4:6 below displays the results of the scoring patterns, which is according to the importance of the statements as perceived by the employees at Sabertek. These results indicated that 83% of total population of employees worked overtime.

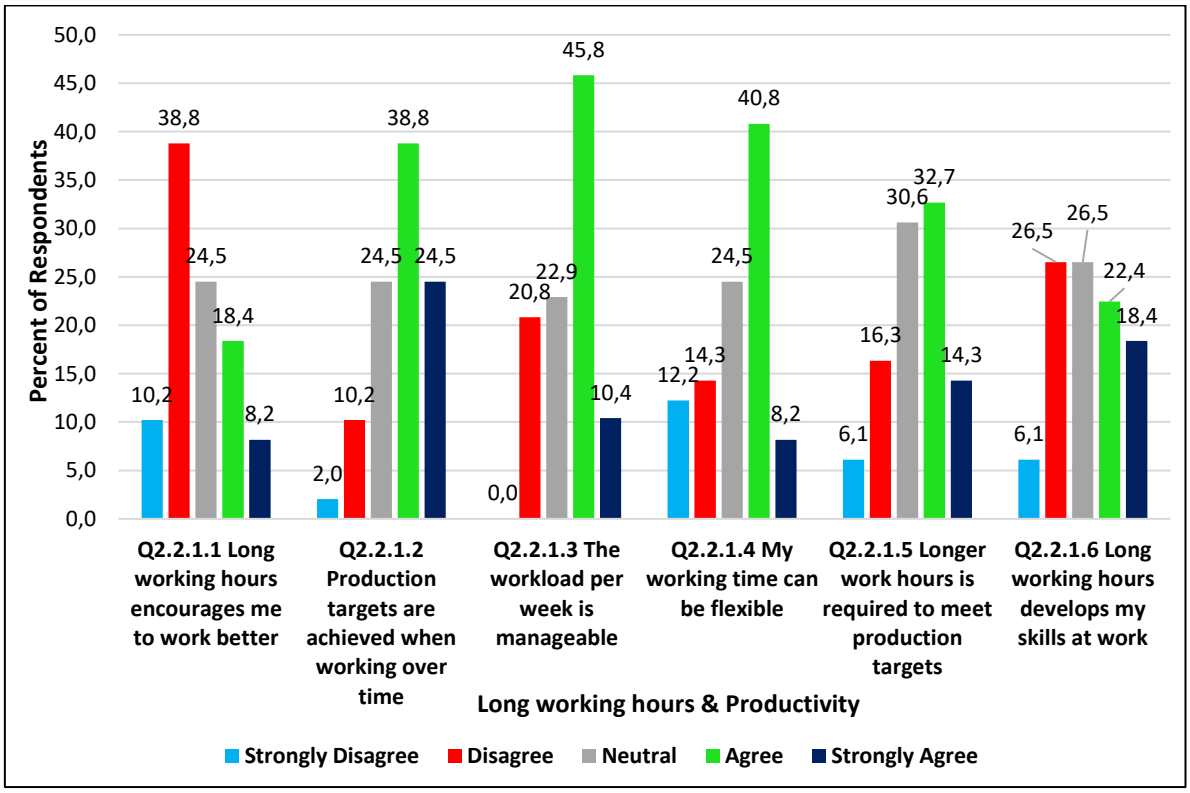

Figure 4:6. Long working hours & productivity

Figure 4.6 displays trends and patterns in employee responses to statements that depict the variables long working hours and productivity at Sabertek.

The results indicate the highest rate of disagreement of responses (38.8%) were for Q 2.2.1.1 "the workers do not agree that long working hours makes them want to work better." This

implies that working longer hours does not encourage employees to work any better or different. Typically, it has been established that in manufacturing productivity does not necessarily improve when hours are lengthened (Golden, 2012). Collewet and Sauermann (2017) explain that workers experience fatigue after several hours worked so that the marginal effect on the productivity of an extra hour per worker decreases. In addition, working longer hours per day or per week can eventually weaken an employee's job performance, including productivity per hour (Golden, 2012).

This is followed by the second highest disagreeable response from employees (26.5%) to Q 2.2.1.6 "Long working hours develops my skills at work," found that working the extra hours have not improved employee skills. This is in contrast to literature findings which suggest that working long hours could potentially develop employees' skills. Skills improve overall output where employees work sufficiently long hours and become effective at their job (Lee and Lim, 2017). Workers are more productive hourly which suggests that productivity is acquired through practice (Lee and Lim, 2017). This could be attributed to the fact that 78% of the employees are employed for ten years or less, hence they are new and still learning.

There is, however, a greater total agreement of respondents (63.3%) to Q2.2.1.2 which indicates that workers can to complete the scheduled production targets. This implies that long working hours is required for employees to meet the demands of the customers. This is followed by Q 2.2.1.3 (56.2%) and Q 2.2.1.4 (49%) in total agreement, that the extra workload is manageable.

The high response rate towards flexible time is due to workers not being forced by management to work overtime even though there is scheduled overtime. However, it should be noted that flexible workplace practices can significantly reduce or weaken productivity in the workplace (Golden, 2012). Employees can decline to work overtime and choose when they would like to work overtime. This could be the possible reason for the high rate of overtime workers 83% versus the 17% who do not work overtime.

In addition, the Chi -test performed on these statements Q2.2.2.1 to Q2.2.2.5 are statistically significant, with all the p values less than 0.05. This implies that LWH is strongly associated with productivity. Workers who work overtime can meet production targets and improve their working experience. Long working hours are necessary for any manufacturing environment to ensure that all productivity targets are met. In the case of the 11.9% of the night shift workers, their productivity is hindered by the efficiency of the machine's capacity

of output. An example is if the machine can only produce x amount of circuit boards per day and more than x amount is required, workers are then required to work the overtime to ensure demand is met. There are many factors of a work place environment that can affect an employee's productivity (Naharuddin and Sadegi, 2013). Factors of work environment that affects employees includes information technology and the flexible ways of organizing work processes (Naharuddin and Sadegi, 2013).Clearly when plant technology is not upgraded or introduced this can have an effect on the worker performance and their productivity. Realistically, working hours alone does not impact productivity, this relationship is impacted by other common factors in the manufacturing environment. These will be discussed in the sections to follow.

4.5.3 Working Hours & Influencing Factors

This section discusses the influence selected factors have on employee productivity when working standard and long hours per week. The factors include health & stress levels, well-being & job satisfaction, working conditions & environment and wages. The analyses included the scoring patterns and trends of each of the variables. The findings are depicted in tables and can be viewed in Appendices 5 and 6. This section explains and compares the graphs for standard working hours (SWH) and long working hours (LWH) using literature to draw deeper insight into each variable in relation to productivity.

- ***Health & Stress levels***: Figure 4:7 illustrates the responses from employees at Sabertek towards productivity for SWH and LWH, respectively.

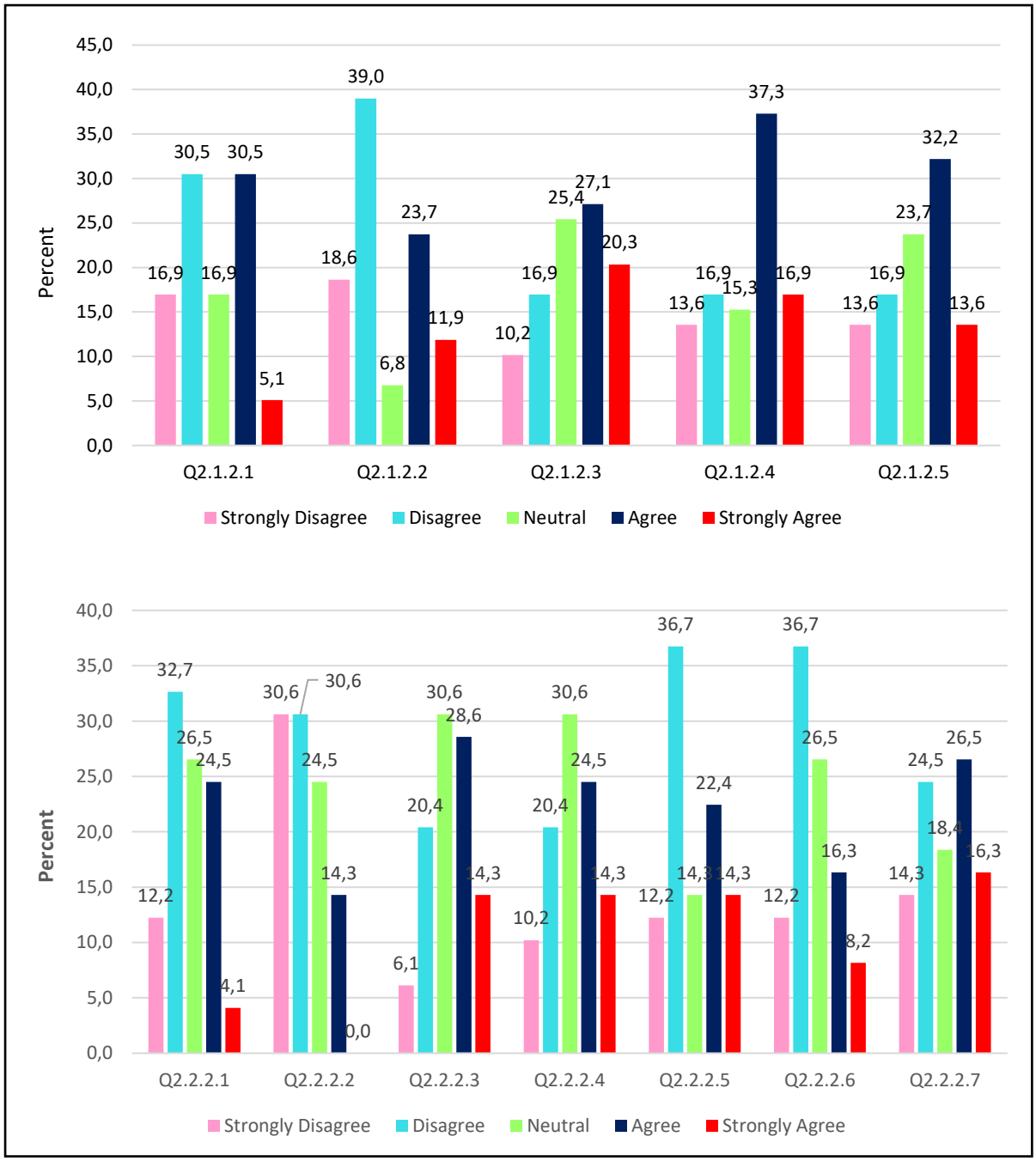

Figure 4:7. Health & stress levels

Figure 4:7 exhibits two graphs, standard working hours and long working hours is shown below. There are 39.0% of the respondents who have disagreed to the statement Q2.1.2.2 "I can manage different workload volumes without feeling tired" during normal working hours. This is in alignment with the previous section which provided feedback that workers are not always able to meet production targets during standard hours as they can become tired.

However, workers take up extended working hours to boost their wages but can burnout which affects their productivity. This means that workers are finding the changing workload

tiresome and this can potentially affect their ability to be productive. However, the statement Q2.1.2.4 “I am focused on my job even when I am tired” received the highest total agreement response of 54.2% i.e. is more than half of the respondents agreed that although they are tired, they stay focused and continue to perform their given tasks without compromising their productivity. This also implies that workers efficiency is compromised but they ensure that they continue to be productive. Further, this is an indication that the staff is dedicated to their jobs and committed to the organisation.

The highest total disagreement of 61.2% for statement Q2.2.2.2 “Working long hours does not make me tired” indicates that workers are tired when they work long hours. The results for long working hours have shown that the highest level of disagreement was for Q2.2.2.5 “Working long hours does not cause me stress and anxiety” and Q2.2.2.6 “When I work overtime this week, I am energetic the following week at work” with equal weights of 36.7%. This implies that working long hours can cause stress and anxiety, and induce levels of tiredness, therefore reducing the employee’s ability to be productive. Further, this affects workers in the following week of work, also inducing increased levels of fatigue. Long working hours or long days at work can damage employees health and impair employee productivity (Pencavel, 2016a). Workers need to recover from fatigue and stress at work. However, working long hours might not allow for enough regenerative time, and insufficient regenerative time can affect employee performance (Pencavel, 2016a).

Sometimes stress can be viewed as positive, as seen in the earlier section that production targets are always met when working long hours, in some regard stress drives workers to ensure they meet targets. However, long working hours are associated with increased stress levels and fatigue which can also reduce or slow productivity levels. This is followed by 32.7% of disagreement towards Q2.2.2.1 “Working long hours to meet production targets is not stressful,” which means that staff feels pressured to meet production targets which can get stressful. Literature supports these results with Golden (2012) explaining that working long hours can adversely affect employees’ health due to stress and fatigue that is experienced and therefore reduces labour productivity below its potential.

According to Shagvaliyeva and Yazdanifard (2014), stress can cause some serious mental and physical concerns and can negatively influence employees productivity, therefore it is the responsibility of the employer to create wellness in the workplace. In addition, a study by Park et al. (2010), has found that skilled workers and machine workers were at a higher

risk for complaints about stress than clerical workers. They have also found a correlation between working long hours and a significant increase in the level of stress complaints (Park et al., 2010). Their study had also shown that males complained of stress more than females and stress levels were highest in people between the ages of 30-49 years (Park et al., 2010).

Here in this study, the highest age group of respondents were between the ages of 30 – 40 years, thus the results are consistent with the literature. Q2.2.2.7 "My health is not affected by working long hours" has received highest strongly agreed response of 16.3% which indicates that employee's health is not affected by working hours, however, their stress levels are most impacted.

The results further show that health and stress levels are associated with productivity as they also affect employee wellness which affects the production ability of the employees. Besides physical health enhancements, other improvements such as reduced stress, improved mental health and fewer depressive symptoms have been linked to long working hours (Bassanini and Caroli, 2015). The element of burnout might influence when employees become tired. The presence of burnout has implications for both the individual and the organisation. Burnout has been associated with job performance and health-related issues for the individual. The exhaustion component relates to the individual's feeling stressed due to burnout (Ismail, 2015). Burnouts refer to feelings of being overextended and depleted of one's emotional and physical resources, which can lead to job withdrawal, such as absenteeism, turnover, and intention to quit (Ismail, 2015). Absenteeism, according to Bannai and Tamakoshi (2014), can decrease levels of productivity, and disrupt the production schedules. The next section would address well-being and its impacts on productivity and working hours.

- ***Well-being and Job Satisfaction***

Figure 4:8 shows the employees responses to well-being and job satisfaction and its impacts on productivity when working standard and long hours.

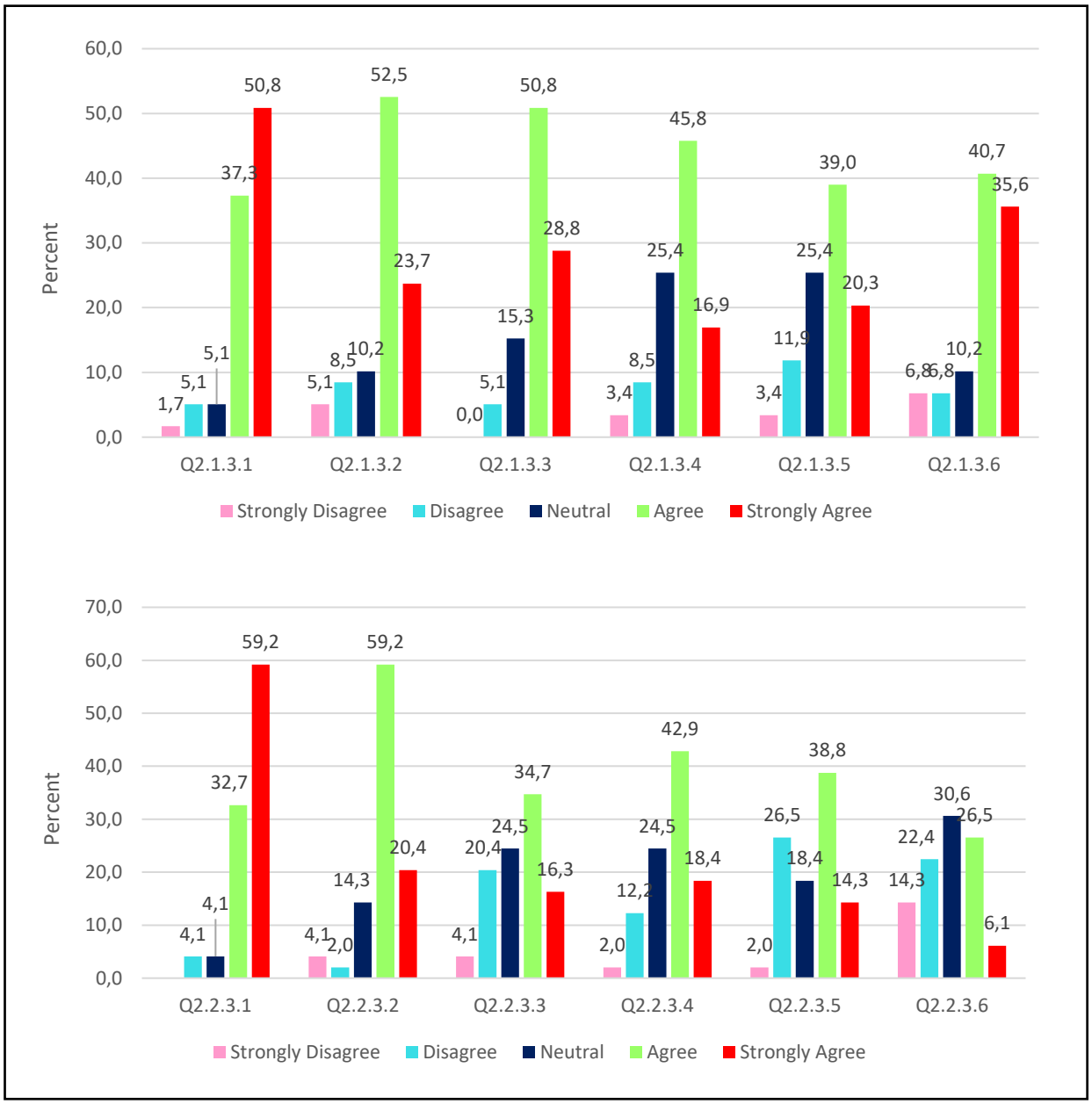

Figure 4:8. Well-being and Job satisfaction and productivity

Figure 4:8 exhibits two graphs standard working hours and long working hours is shown below. The figures show the results for both working hours and compare well-being and satisfaction in relation to productivity levels at Sabertek. There are consistent levels of agreements for standard working hours with employees showing their levels of satisfaction towards their jobs.

Q2.1.3.1 & Q2.2.3.1 “I am most productive when I am happy” – 50.8% and 59.2% strongly agreed for both working times, respectively. Employees were most productive when they are happy. The Chi - test has indicated that for both long and standard hours the p-value was

$p = 0.000$ ($p < 0.05$) which indicated a strong significance of the association between levels of happiness and productivity.

Consistent with this finding, Oswald et al. (2015) cite that there is a significant and sizeable effect of happiness on productivity and a striking statistical link that is found between well-being and productivity. Oswald et al. (2015) studies indicated that human happiness has strong causal effects on labour productivity and that a rise in happiness leads to enhanced productivity. Not only does well being affect employees but the level of job satisfaction is also influential on the level of output produced by employees. Oswald et al. (2015) cite evidence which indicates that job satisfaction is positively correlated with measures of worker productivity.

Literature has mentioned that long working hours have been damaging to workers well-being (Angrave and Charlwood, 2015), which is in contrast to the findings of this study. This could be due to the light nature of the job by employees of Sabertek. The workers are happy with their jobs and are fine with working for longer periods of time. Majority of the 61 employees (83%) work overtime and 95% of those employees work up to ten hours which indicates that they do enjoy working at Sabertek. Employees also find that their jobs are easy to perform and not complicated or strenuous. However, employees responded with the lowest agreed response of 6.1% to Q2.2.3.6 "There is sufficient work-life balance when working long hours," which is indicative that long hours restricts their work life-balance. Sabertek should address this through implementing wellness programmes for their employees.

Q2.1.3.2 and Q2.2.3.2- "I am satisfied with the work that I do" - This was the second highest response of 52.5% and 59.2% for SWH and LWH, respectively. Employees enjoy their jobs and therefore this can potentially increase their productivity. This is confirmed by the significance values of $p= 0.000$ for both working times. This implies that employees' job satisfaction is associated with productivity. In addition, 78% of the staff members have 0-10 years of experience which indicates that with more experience they can become familiar with the nature of work and therefore more efficient.

Job Satisfaction is an essential component for employee motivation and encouragement towards better performance (Raziq and Maulabakhsh, 2015). This increase in motivational levels of employees will increase the internal happiness of employees and internal happiness will lead to satisfaction and therefore enhanced productivity (Raziq and Maulabakhsh, 2015).

The study found a significant interaction between job satisfaction and employee productivity for both long and standard working hours (refer to appendix six and seven). Employees were satisfied with their jobs and working at Sabertek. Employees found their job easy and manageable and therefore had no difficulty in being productive. There is a high statistical significance between well-being and job satisfaction and productivity for both working hours. This shows that well-being and job satisfaction is associated with levels of productivity for both working hours.

- ***Working Conditions and Environment***

Figure 4:9 below shows the employees responses to working conditions and environment and its impacts on productivity when working standard and long hours.

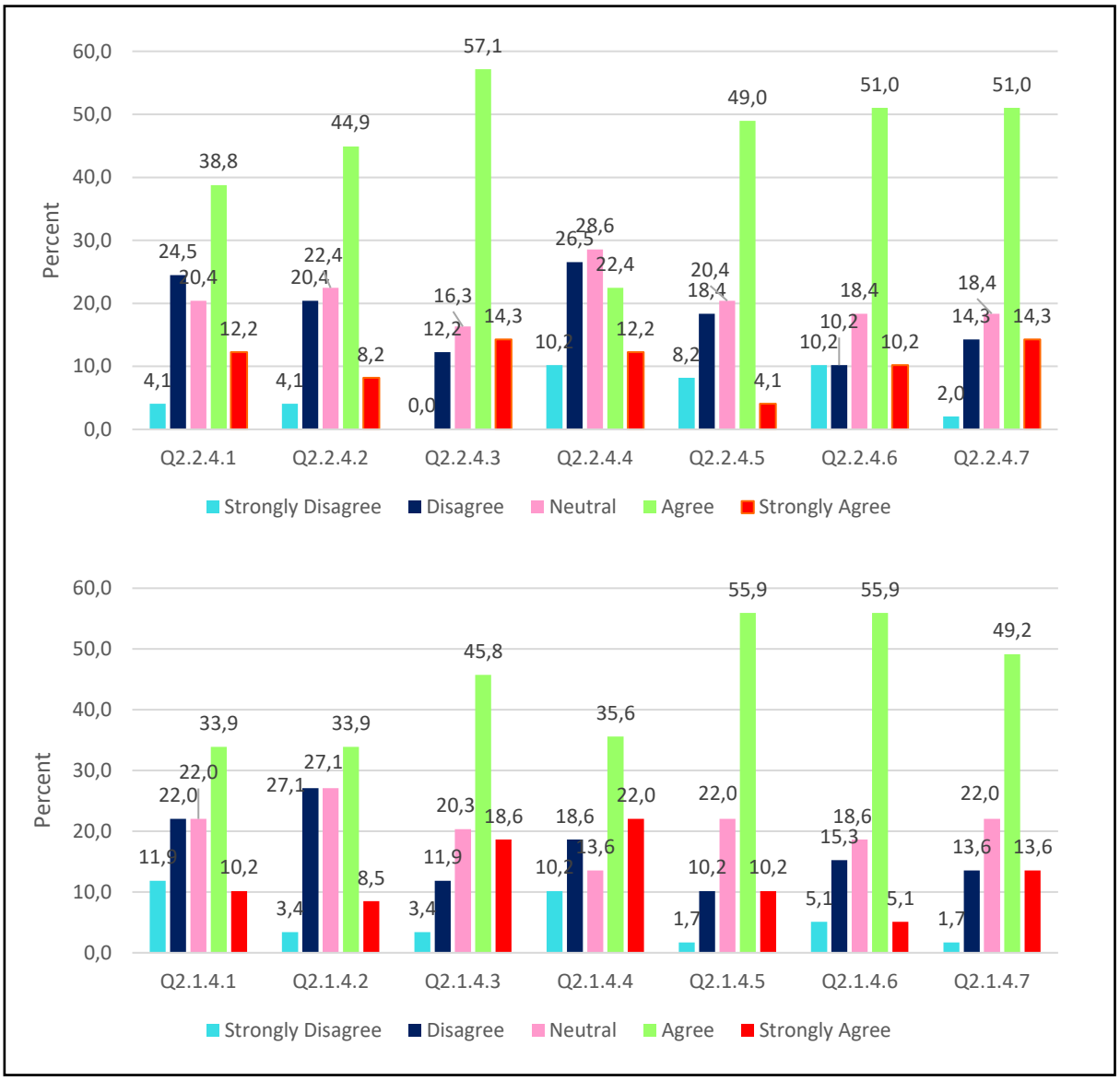

Figure 4:9. Employee responses to working conditions and environment

Figure 4:9 exhibits two graphs, standard working hours and long working hours is shown below. The figures above illustrate the levels of agreement versus disagreement for each of the working hours and its impacts on productivity.

The highest levels of agreement are towards statements Q2.1.4.5 “The design of the workplace allows me to be productive at my work (55.9%)”; “I am satisfied with the physical workplace (55.9%)”; “I am comfortable with my workstation (49.2%),” respectively. This implies that during normal working hours more than 50% of the employees are satisfied with the working conditions at Sabertek. The employees at Sabertek agree, that the workplace is designed in a way that makes employees feel comfortable and therefore they can be productive. According to Leblebici (2012), the workplace environment plays a critical role for employees and can influence an employee’s productivity. The findings of a Danish study suggest that a firm can increase its productivity through the improvement of physical dimensions of the work environment and can have a positive impact on firms’ productivity (Raziq and Maulabakhsh, 2015). Similarly, Naharuddin and Sadegi (2013) suggest that a proper working environment can reduce absenteeism and increase employees levels of performance thus increasing productivity at the working place. Naharuddin and Sadegi (2013) further add that it is the responsibility of the companies to provide safe, healthy, and friendly working conditions.

Long working hours have yielded similar results with more than half of the workforce showing satisfaction with their working environment. The results were: 2.2.4.3 “There is sufficient lighting for me to do my work” received the highest agreement result of 57.1%. The staff acknowledges that the lighting was sufficient, especially when working overtime in the evening. This makes a difference as these workers work with small circuit board components, having good lighting is imperative for them to do their work effectively.

This is followed by the next highest agreement to statements Q2.2.4.6 “I am satisfied with the physical workplace” and Q2.2.4.7 “I am comfortable with my work station” both with the same scoring of 51.0%. Based on these results, one can deduce that employees are satisfied with their working conditions and their workstations. However, there is always room for improvement. Finally, survey results show that employees have remarkable satisfaction with the workplace design. According to a study by Leblebici (2012), 90% of their respondents have revealed that effective workplace design is important to enhance employee productivity.

The workplace environment is meant to motivate and encourage high performance and productivity, but can also impact changes in employees lifestyle and work-life balance (Naharuddin and Sadegi, 2013). The findings are aligned with the literature, factors of the workplace environment such as lighting and workplace design plays an important role in employee performance (Naharuddin and Sadegi, 2013).

All the statements of working conditions have resulted in being significant, with p values that are less than 0.05. These findings suggest that working conditions are significant and therefore strongly associated with employee productivity during both working hours.

- **Wages**

Figure 4:10 shows the employees responses to statements about wages and its impacts on productivity when working standard and long hours.

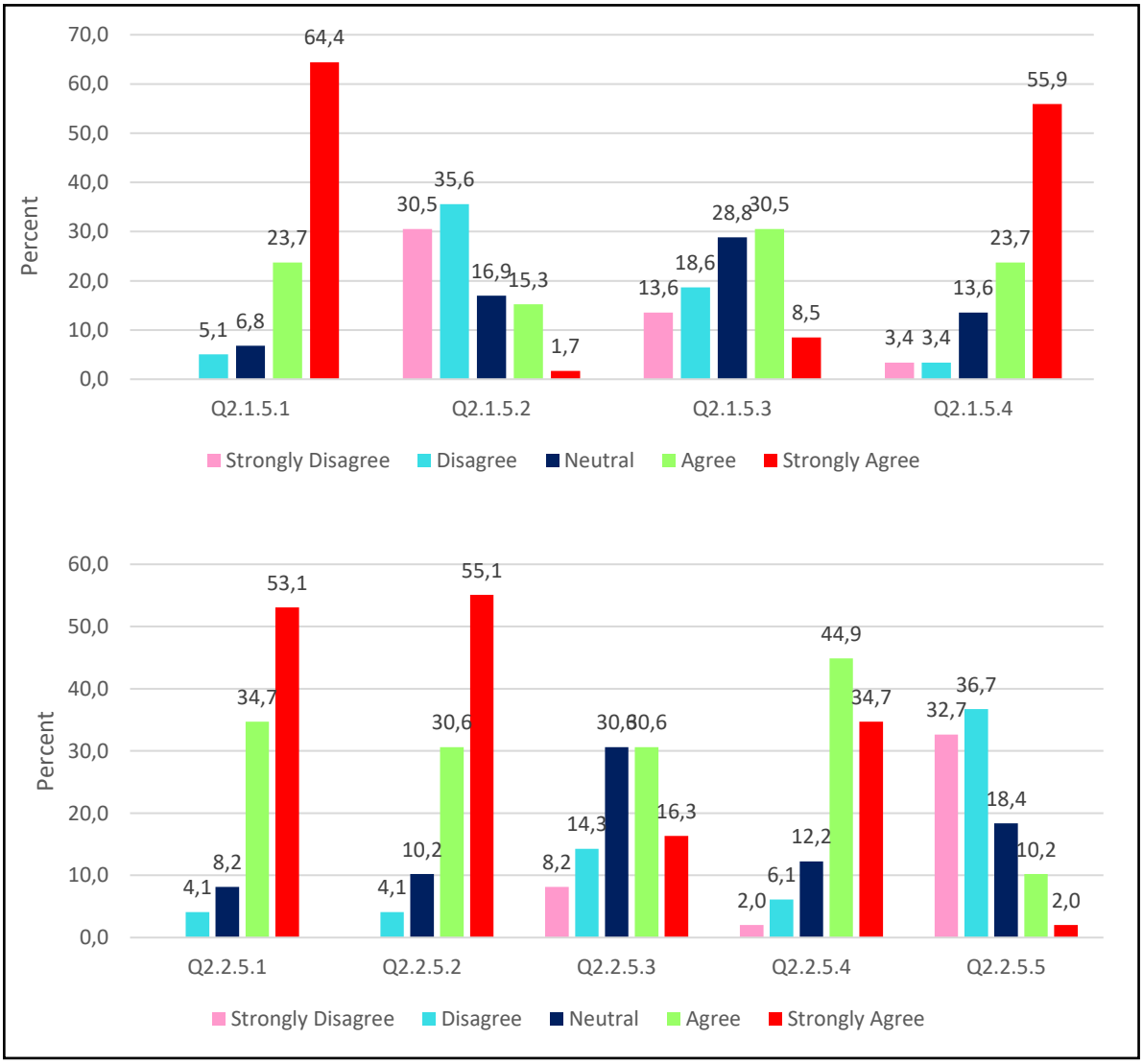

Figure 4:10. Employee responses to wages and productivity

Figure 4:10 exhibits two graphs, standard working hours and long working hours is shown below. Figure 4:10 shows trends for SWH and LWH for which there were very high levels of agreement for "I feel I will be more productive if I was rewarded more" with 64.4% and 53.1% respectively. Clearly the staff feels they would like to be more rewarded.

The questionnaire did not specify monetary rewards but there are rewards such as recognition, which might also be something that employees' desire. According to Heshmati and Rashidghalam (2018) wage significantly and positively affected labour productivity. Which supports the findings of this study if workers were paid more their productivity levels will be increased.

The trend patterns are:

- Q2.15.4 "My quality of life will improve with a better wage" – 55.9% strongly agreed which is more than half of the employees.
- Q 2.1.5.2 "While I am satisfied with my income."-30.5% of strongly disagree
- Q 2.2.5.2 I work the long hours to improve my salary – 55.1% strongly agreed that they work the long hours to improve their salaries.
- Q2.2.5.5 Management motivates me to work longer hours by rewarding me the highest level of throng disagreement of 32.7%.

These results show that workers only work longer hours to increase their salaries so that their quality of life can improve. The results further indicate that management does not motivate employees with any other rewards. All the statements in long working hours and standard working are statistically significant with p values that are less than 0.05. This shows that they strongly associate wages with productivity at all working times. Man and Ling (2014) found that employees who obtained satisfying wages felt safe could directly enhance productivity, and their experiences, knowledge and skills would benefit the organisation,

The employees at Sabertek receive a minimum wage, hence 83% of the staff choose to work overtime. Workers are satisfied with their working environment, they enjoy the nature of their work and can manage their workload and meet productivity targets at most times. However, employees do not feel they are being rewarded sufficiently and this could impact their productivity. The results show a significant difference of responses of wages against all other factors which indicates that wages are definitely a factor that concerns the staff.

Wage is definitely an influence of a worker's satisfaction levels, productivity level, and overall performance influencer**.** According to Man and Ling (2014), wages are both theoretically and practically regarded as the most critical factor affecting the productivity of employees. Sauermann (2016) states that there have been studies which measure labour productivity using wage as an input measure, further adding that although there is a positive correlation between wages and productivity, wages do not truly reflect an employee's actual productivity.

Wages was found to be the most impactful influencer on the working hour versus productivity relationship and this will be further discussed in the next section. These factors have shown impact the relationship between working hours and employees' productivity in almost a similar manner. However, the next section will further look at which factors most affect this relationship and the extent of its impact affecting productivity at Sabertek during working hours.

4.5.4 Factors Influencing Working hours and Productivity

This was the third section of the questionnaire and provides an overall comparison of all the factors. The results showcase the staff's perception of which factors most impacts their productivity during standard and long working hours at Sabertek. Figures 4:11 and 4:12 below will illustrate the factors which most influence the levels of employee productivity.

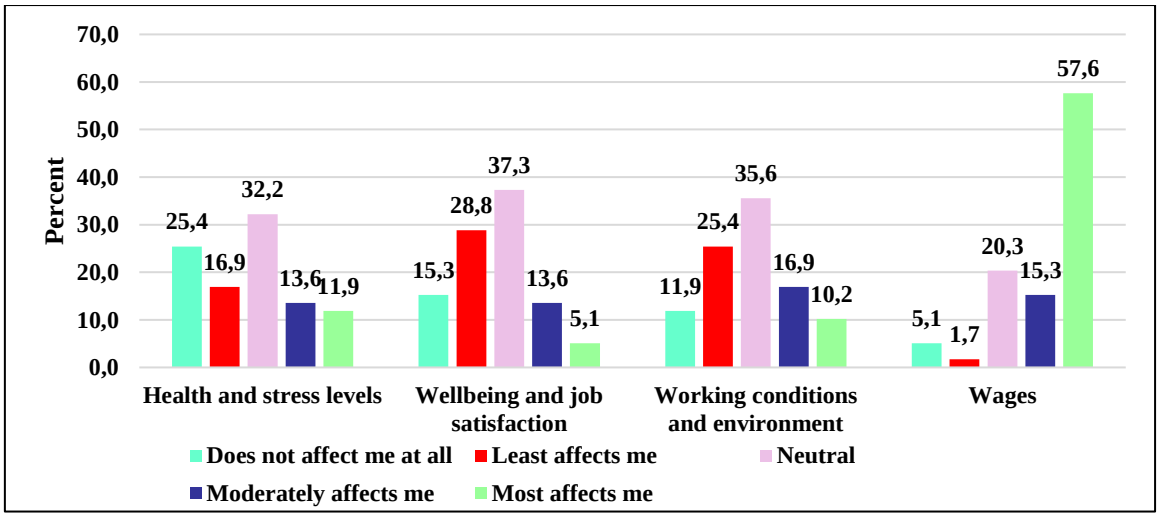

Figure 4:11. Influencing factors affecting Standard Working Hours & Productivity

The pattern recognised here is that wages is the factor which most affected the staff followed by health and stress levels. Based on Figure 4:11 above, there is a 46% difference in response to wages followed by that of health and stress levels. There was no significant difference in health and stress levels ($p = 0.069$), but there was a strongly significant difference by wage

(p = 0.001). This indicates that the employees who work the standard hours have indicated that they were not satisfied with their wages and their wages was a contributing factor to their level of productivity.

In addition, Heshmati and Rashidghalam (2018: 1), note from a world bank enterprise survey in 2013, that wages significantly and positively affect labour productivity. Health and stress levels are shown to not affect the employee's levels of productivity at Sabertek. This means when employees are not exposed to high levels of stress during their standard hours then they can be more productive.

In the study, when assessing perceptions of employees on work-life balance, it was found that employees strongly believe that employee wellness is important for work-life balance. However, wages seem to matter most on the hour's workers are prepared to commit in their jobs. Oswald et al. (2015) have suggested that increases in the size of monetary compensation can raise performance levels and therefore employee productivity. However, they also suggest that sometimes non-monetary compensation can also be a motivation for some, such as recognition (Oswald et al., 2015).

Figure 4:12 below will illustrate which factor most affects the employee productivity when working long hours.

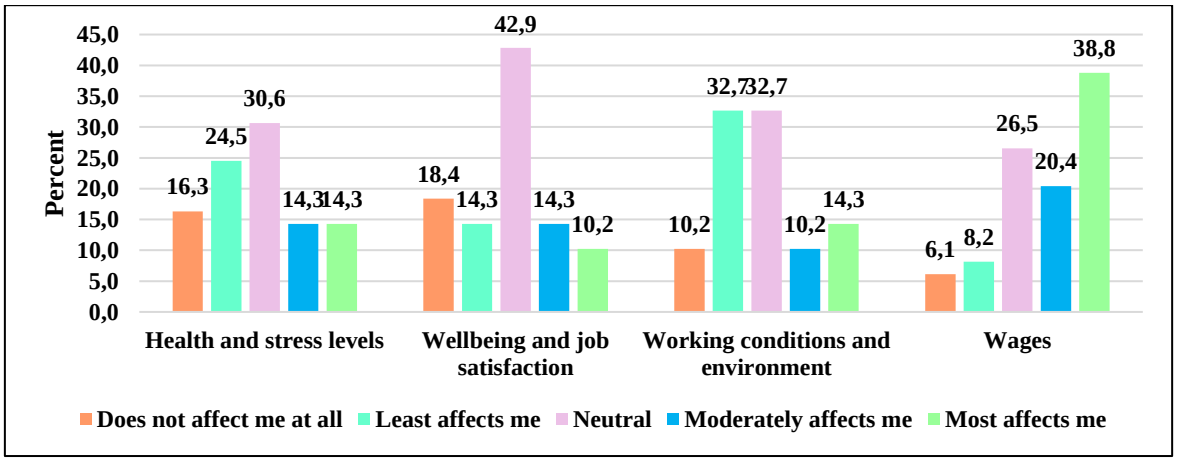

Figure 4:12. Influencing factors affecting Long Working Hours & Productivity

Figure 4:12 illustrates that the respondents had the most disagreement of 32.7% towards the working conditions factor that affects them during their long working hours. The data shows that workers are more motivated by better wages and work longer hours to increase their wages. Collectively 42.9% of the respondents have indicated that well-being and job

satisfaction only moderately impacts employees and most of them are happy with their environment. This is consistent with findings in the previous sections.

Wages was found to be the most statistically significant and that productivity during working time is reliant on a better wage. This is also potentially because employees only receive the minimum wage. The solutions to working hours are to either work fewer hours for the same pay or have flexible hours, however, this would not work with the blue-collar workers. Employees should be given the choice of going home early during the week or work the standard hours for increased pay. King and van den Bergh (2017) have suggested that workers are not given the choice to work fewer hours or receive a higher pay as this could reduce this issue of working overtime or just working normal hours with a higher pay.

The results reflected in this section are aligned with the responses from employees for the previous sections. This shows that workers are not happy with their salaries and only work longer hours to increase their salaries and improve their quality of life. Rewarding employees would definitely increase levels of productivity as previously established this factor is significant to the study.

4.6 Inferential Statistics

A Bivariate correlation was executed on the (ordinal) data by using the Pearson correlation. The Pearson's Correlation is a measurement of the strength of a linear or straight line relationship between two variables (Ali et al., 2013). The Correlation Coefficients indicates both the direction of the relationship and its magnitude. Pearson correlation analysis was used to understand the relationship between quantitative variables and to assess how working hours impacts productivity. Thereafter a linear regression analysis was applied. In all tests, the significance level was set at $p < 0.05$.

4.6.1 Correlations

All significant relationships are indicated by a * or **. All values without an * or p-values more than 0.05, do not have a significant relationship. Negative values imply an inverse relationship of variable i.e. the variables have an opposite effect on each other as one increases, the other decreases. A positive correlation is a relationship between two variables, if one variable increases the other one also increases. A positive correlation also exists if one decreases then the other variable also decreases. The correlation begins with SWH and is followed by LWH, literature will be discussed concurrently. Table 4:4 below will illustrate all of the correlations for SWH and productivity.

Table 4:4. Correlations of SHW & Productivity

		Standard Working Hours	Productivity	Health & Stress Levels	Well-being & Job Satisfaction	Working Conditions & Environment	Wages
Standard Working Hours	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	59					
Productivity	Pearson Correlation	**.449****	1				
	Sig. (2-tailed)	.000					
	N	59	59				
Health & Stress Levels	Pearson Correlation	-.004	.152	1			
	Sig. (2-tailed)	.976	.251				
	N	59	59	59			
Well-being & Job Satisfaction	Pearson Correlation	**.340****	**.405****	.296*	1		
	Sig. (2-tailed)	.008	.001	.023			
	N	59	59	59	59		
Working Conditions & Environment	Pearson Correlation	.073	.086	.118	.592**	1	
	Sig. (2-tailed)	.585	.517	.374	.000		
	N	59	59	59	59	59	
Wages	Pearson Correlation	.007	.131	.210	.468**	.332*	1
	Sig. (2-tailed)	.956	.323	.111	.000	.010	
	N	59	59	59	59	59	59

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

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

Table 4:4 shows the relationship between each variable. There is a moderate relationship between standard working hours and productivity with a correlation of 0.449. This is followed by a relationship between standard working hours and well-being and job satisfaction 0.340 and lastly a moderate relationship between productivity and well-being and job satisfaction with a correlation of 0.405.

Meanwhile, the other factors have been found to have no relationships with working hours or productivity. There are relationships that exist between the other variables such working conditions and well-being and job satisfaction and so forth, but this will not be discussed. This study is only interested in the relationship between working hours and productivity.

The correlations of interest are positive with $p < 0.05$, therefore they were positive and significant. These correlations will be discussed in detail.

- ***Standard Working hours & Productivity***

The analysis of the results shows a positive correlation between standard working hours and productivity ($r = 0.449$) and is significant at 0.000. This means one unit of increase in standard hours will increase productivity. This is a direct proportion relation. Previously respondents have indicated that their normal working hours encourages them to work better. This means that during eight hours per day, there are greater levels of productivity achieved and vice versa. Similar studies by scholars found results that indicate a positive correlation between working hours and productivity ($r = 0.699$) and is significant at 0.10 (Ali et al., 2013). This shows that when working hours is not appropriate and according to the ability of the employees, their productivity is affected in manufacturing organisations (Ali et al., 2013).

- ***Standard Working hours & Productivity - Well-being & Job satisfaction***

The analysis of the results indicates a positive correlation between standard working hours and well-being & job satisfaction ($r = 0.340$) and significant at .008. There is also a positive correlation between productivity and well-being & job satisfaction ($r = 0.405$) and significant at 0.01. These correlations indicate that well-being and job satisfaction is positively and significantly related to both standard working hours and productivity. This implies that for every unit of increase of well-being and job satisfaction there is an increase in productivity during standard hours.

Respondents indicated that the greater the level of job satisfaction during normal working hours the better the results that would be achieved. These correlations are all in alignment with the literature that indicates a relationship between working hours, productivity, and job satisfaction exist. According to Oswald et al. (2015), job satisfaction exhibits modestly positive correlations with measures of worker productivity. Böckerman and Ilmakunnas (2012) cite a study which found a correlation between productivity and job satisfaction, with

a correlation value of 0.30, however, this study has a higher correlation value of 0.449. This iterates a stronger relationship. Hoboubi et al. (2017) believe that there is a cause and effect relationship between satisfaction and productivity and any negative impact on employee productivity can be an added cost of expense to an organisation.

The next section looks at long working hours and the Table 4:5 below represents the correlations for long working hours and productivity in relation to other variables of the study.

Table 4:5. Correlations of LHW & Productivity

		Long Working Hours	Productivity	Health & Stress Levels	Well-being & Job Satisfaction	Working Conditions & Environment	Wages
Long Working Hours	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	49					
Productivity	Pearson Correlation	**.525****	1				
	Sig. (2-tailed)	.000					
	N	49	49				
Health & Stress Levels	Pearson Correlation	**.587****	**.549****	1			
	Sig. (2-tailed)	.000	.000				
	N	49	49	49			
Well-being & Job Satisfaction	Pearson Correlation	**.506****	**.618****	.737**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	49	49	49	49		
Working Conditions & Environment	Pearson Correlation	**.548****	**.459****	.670**	.750**	1	
	Sig. (2-tailed)	.000	.001	.000	.000		
	N	49	49	49	49	49	
Wages	Pearson Correlation	.134	.231	.276	.439**	.289*	1
	Sig. (2-tailed)	.357	.110	.055	.002	.044	
	N	49	49	49	49	49	49

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

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

Table 4:5 shows that LWH and productivity are positively related. In addition, the following factors: Health and stress levels, well-being and job satisfaction and working conditions and environment all have positive and significant relationships with LWH and productivity. These relationships will be discussed in detail.

- ***Long Working Hours & Productivity***

The analysis of the results shows a positive relationship between LWH and productivity (r = 0.5425) and significant at 0.000. This means one unit of increase in long working hours will increase productivity and vice versa. Respondents have indicated that their overtime affects levels of productivity. A decrease in the number of hours worked will reduce productivity while an increase in working hours will increase productivity at the same rate. Considering productivity increases with longer working hours, it is possible that diminishing marginal returns can occur. Collewet and Sauermann (2017) has found in their study that productivity increases with increased hours, but at some point, it starts decreasing due to fatigue of workers.

Sauermann (2016) have shown that by increasing working time by 1% this leads to an increase in output. While Collewet and Sauermann (2017) found that output is proportional to hours worked, Pencavel (2015) and Dolton et al. (2016) found evidence of decreasing returns to increasing hours. The reasons for this deviation from the study results is due to the different measures of productivity being used, also the nature of the job is different and constantly changing.

- ***Long Working Hours & Productivity – Health & Stress Levels***

The analysis of the results shows a positive relationship between LWH and productivity and health & stress levels (r = 0.587 and 0.549 respectively) and significant at 0.000 for both variables. The analysis of the results indicates there is a strong positive relationship between long hours, productivity, and health and stress levels. This means that as long working as hours increases so does employee productivity, but the level of stress and health issues experienced by employees can also increase. Employees will work longer hours to produce increased outputs, but this can also raise stress levels and lead to health problems. In addition, this increases fatigue and could lead to high levels of absenteeism. Long working hours, as previously mentioned, has adverse effects on workers' health as a result of fatigue this can reduce the level of employee productivity (Golden, 2012). Similarly, when workers are highly stressed this potentially leads to decreased levels of performance and productivity (Pencavel, 2016a; Shagvaliyeva and Yazdanifard, 2014).

There were 61.2% of the workers that responded to working 4 to 5 times a month, this could lead to exhaustion and a potential burnout. Pencavel (2016a) has stated that insufficient recovery time can lead to decreased levels of performance and therefore lower productivity.

According to King and van den Bergh (2017), literature has largely concentrated on the negative effects of long working hours on employees psychological well-being and stress.

Several studies by the Finnish Institute of Occupational Health and additional studies have found that excessive working hours, results in high amounts of stress and can lead to many health problems, consisting of impaired sleep, depression, heavy drinking, diabetes, impaired memory, and heart disease (Carmichael, 2015). In theory, working longer hours affects health due to working strenuously which leads to exhaustion and also having reduced time for regular physical exercise (Berniell and Bietenbeck, 2017). Further analysis reveals that these impacts of working hours on health differ considerably between blue-collar and white-collar workers (Berniell and Bietenbeck, 2017). Jang et al. (2013) further note that long work hours might lead to gaining weight, through lack of exercise, undesirable eating habits, and insufficient hours of sleep. This lack of exercise can eventually cause obesity, it was found that obese workers are less productive at work and are prone to high absenteeism and occupational injuries (Jang et al., 2013).

- ***Long Working Hours & Productivity - Well-being & Job Satisfaction***

The analysis of the results shows a positive relationship between LWH and productivity and well-being and job satisfaction (r = 0.506 and 0.618 respectively) and significant at 0.000 for both variables. Based on the results the correlation between productivity and well-being & job satisfaction is very strong. This implies that when employees experience high levels of job satisfaction, they become more productive. Consistent with the findings, Hoboubi et al. (2017) have implied that job satisfaction is an important factor in affecting workforce productivity.

In addition, when workers are happy and enjoy their work, working long hours does not become a problem. Valente and Berry (2016) have found that in Latin America workers face financial inequality and therefore workers are forced to work increased hours to afford basic needs, hence the association of long hours with unhappiness. These findings are in relation to the study by Hoboubi et al. (2017), who states that job dissatisfaction can negatively impact employees productivity. Hence, as long as employees are happy and satisfied and their well-being is being taken care of by organisation, they will continue to be productive and not mind working long hours. In addition, the findings of this section are in relation to the findings from previous sections of this study, which found that employees are happy with their work and enjoy working the long hours.

- ***Long Working Hours & Productivity - Working Conditions & Environment***

The analysis of the results shows a positive relationship between LWH and productivity and working conditions and the environment (r = 0.548 and 0.459 respectively) and significant at 0.000 and 0.001 for both variables, respectively. This outcome indicates that if the working conditions and the working environment are favourable, long working hours can lead to increased productivity, and vice versa. Consistent with the findings a study by Ali et al. (2013) in the sub-Saharan region, found that working conditions and employee productivity are positively related, using work hours as a measure of working conditions. The study revealed that employees are more productive if their working conditions are good. According to Ali et al. (2013), employees need good working conditions so that their productivity increases when working appropriately long hours. The study concluded that working hours had a positive relationship with employee productivity, stating in their discussions that working hours can lead to high levels of employee productivity (Ali et al., 2013).

Park et al. (2012) suggest that working hours is a key feature of working conditions. To increase efficiency, effectiveness, productivity and job commitment of employees, the business must satisfy the needs of its employees by providing good working conditions (Raziq and Maulabakhsh, 2015). Regarding working conditions and environment, this study shows that workers have mixed perceptions of the given assertions. This shows that when working hours are not suitable and according to the ability of the employees their productivity is affected in manufacturing companies (Ali et al., 2013).

This section has discussed all correlations relevant to this study and the next section will iterate the relationships of the main variables of the study, working hours and employee productivity.

4.6.2 Regression Analysis

A linear regression analysis provides the correlative coefficient and is used to measure the relationship between the independent and dependent variable. Regression helps by making a statement on how well the independent variables predict the value to the dependent variable (Naharuddin and Sadegi, 2013). The reason for using a regression analysis is to This study uses a simple regression analysis to illustrate the relationship that exists between the number of working hours and employee productivity. According to Sekaran and Bougie (2013), a simple regression analysis is used in a situation where one independent variable is

hypothesised to effect the dependent variable. In this case, the independent variable is working hours (Standard working hours (SWH) and long working hours (LWH)) and the dependent variable is productivity.

R-Squared is a statistical measure of how close the data is to the fitted regression line i.e. R-Squared evaluates the scatter of the data points around the fitted regression line (Frost, 2018). It is also known as the coefficient of determination and in statistics, the coefficient of determination is denoted R^2. The R-Squared is a goodness of fit measure for linear regression models and measures the strength of the relationship between your model and the dependent variable (Frost, 2018). The higher R-squared values represent smaller differences between the observed data and the fitted values so that a larger the R^2, the better the regression model fits your observations (Frost, 2018). Below are the figures which show the regression models for each of the independent variables (SWH and LWH) and productivity, as seen in Figures 4:13 and 4:14 respectively.

Figure 4:13. Regression model of SHW & Productivity

A simple linear is represented by a straight line. There is linear a relationship between standard working hours and employee productivity as seen in Figure 4:13. The regression tables can be seen in Appendix 8. The R^2 in this regression is 0.202 which is close to 20% and indicates that the fit is not so close to the regression line. According to Frost (2018), if the R^2 value is low and the independent variables are statistically significant, the researcher can still draw important conclusions about the relationships between the variables. The

statistically significant coefficients continue to represent the mean change in the dependent variable given a one-unit shift in the independent variable.

The observation is a positive correlation between the independent and dependent variables in (Figure 4:13). This implies that as one variable increases, so does the other. In addition, the significance value is less than 0.05 ($p < 0.001$) and on the regression coefficients table, that the coefficients in the equation are zero. Since $p < 0.001$, it indicates that the coefficient for the dependent variable is not zero, and it does significantly impact the model. This implies that the predictors do accurately predict that the dependent variable is associated with the independent variable.

The correlation in this section shows that when working hours increases so does the productivity, however standard working hours, according to the basic conditions employment act can increase to 45 hours in South Africa (Labour Department, 2012). This is dependent on the organisation's policy of standard hours for their workers.

Hours which exceed the standard hours can be regarded as long working hours depending on the standard set hours. In addition, in some countries, 45 hours are seen as long standard working hours such as in France whose standard working hours are 35 hours (Lepinteur, 2018). Figure 4:14 below will show the regression for LWH and employee productivity.

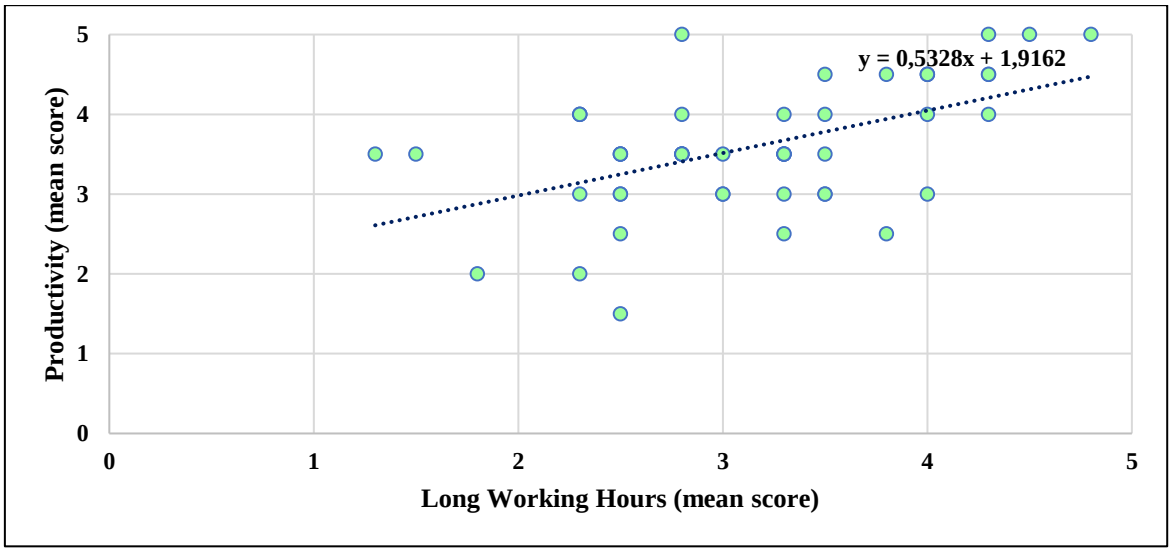

Figure 4:14. Regression model of LHW & Productivity

Figure 4:14 depicts the correlation matrix with the best fitting curve. The results show that an increase in working hours results in an increase in productivity. The slope for the hours greater than 40 is slightly greater than the one for standard 40 hours. This means that the

greater than 40 hours slope is showing slightly higher productivity. This implies that working long hours will increase output.

There is a linear relationship between LWH and employee productivity as seen in Figure 4:14. The regression tables can be seen in Appendix 10. The R^2 this regression is 0.275 which 27.5% and indicates that the fit is not so close to the regression line. However, there is a positive correlation between the dependent and independent variables. This implies that as one variable increases, so does the other. In addition, the significance value is less than 0.05 ($p < 0.001$) and on the regression coefficients table, that the coefficients in the equation are zero. Since $p < 0.001$, it indicates that the coefficient for the dependent variable is not zero, and it does significantly impact the model. This implies that the predictors do accurately predict the dependent variable and there is an association between long working hours and employee productivity.

There is a positive correlation between working long hours and productivity. There are 60.2% of employees that work overtime more than 4 times per month from the 83% of the total staff who work overtime which indicates that workers will work overtime and produce more output. Previous findings of this study have shown that happiness and job satisfaction levels are high at Sabertek, besides employees being satisfied with their working conditions. This all contributes to the reason employees are productive even when working long hours several times a month.

The study findings oppose the findings of the literature which indicated that long working hours leads to decreased employee productivity. This could be due to the complexity and intensity of work might which could be different from the studies in the literature.

In addition, seeing as there are 83% of the staff that works overtime naturally this will raise output levels. However, output levels are increased there is a chance of this decreasing at some given point in time. Longer hours lead to fatigue which can have a marginal effect on productivity, which is known as diminishing marginal productivity (Collewet and Sauermann, 2017; Golden, 2012). This means that at some point an extra hour of work per worker could lead to a decrease in productivity.

4.7 Conclusion

The study was conducted at Sabertek, to examine how working hours impacts employee productivity. Several other variables were considered understanding how they would

influence this relationship. There were 59 out of 61 blue-collar respondents to a manually distributed a questionnaire with a 0.72 reliability factor. There were 83% of the respondents who worked overtime and 61.2% indicated their overtime worked was 4-5 times per month. Smoking and drinking behaviours were found to have no impact on employee productivity and were therefore not considered in the study. Findings also indicated that 78% have been employed for 0 to10 years while 22% have been with the organisation for over ten years.

The 97% response rate has yielded the following results:

- The relationship between standard working hours and productivity were both statistically significant and positively correlated. There was a statistical significance between wages and standard working hours and employee productivity but no correlation. Standard working hours and productivity showed positive correlations were statically significant with well-being and job satisfaction.
- The relationship between long working hours and productivity were both statistically significant and positively correlated. There was a statistical significance between wages and long working hours and employee productivity. Long working hours and productivity were positively correlated and statically significant with health and stress levels, well-being and job satisfaction and working conditions and environment, however, there were no correlations with wages.

Based on the findings of this study which has been illustrated in this chapter, inferences have been drawn from which recommendations are suggested. The next chapter reflects on these conclusions and recommendations.

CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In manufacturing, achieving production targets are important as this directly affects the bottom line and well-being of the organisation. The workplace is where the elements of productivity integrate to deliver goods and services. Businesses need to manage and organise their workforce and workflow as this has a major influence on delivering productivity improvements and enhancing the performance of the organisation. Productivity in manufacturing organisations contributes to the economic welfare of the country. The researcher conducted this study at Sabertek, an electronics manufacturing organisation in Gauteng, focusing on their blue-collar employees. The study focused on finding the relationship between working hours and employee productivity. The study divided working hours into standard working hours and long working hours (more than 40 hours per week). The study further examined the influences of external factors on this relationship. These factors included health and stress levels, well-being, and job satisfaction, working conditions and environment and wages.

This chapter concludes this study by providing practical recommendations to Sabertek, to improve and enhance their productivity, highlights the limitations of this study, and provides a framework for future studies.

5.2 Inferences of the Study

Regarding the factors influencing productivity, most Sabertek employees agree that employee wellness and job satisfaction, working conditions and environment and recognition and wages are the most important factors. Taking care of these factors would ensure that working hours would not impact employee productivity negatively since overtime comes with an extra reward. Based on the research conducted at Sabertek, by analysing employees' attitudes towards the hours worked and productivity, the author has come to the following conclusions:

- ***Productivity and Working hours***

Employees productivity and the hours worked are both positively and significantly related. Employees will be productive during standard working hours and long working hours, but more productive when working over 40 hours per week. However, to enhance employee productivity-influencing factors needs to be addressed, for example ensuring a conducive working environment.

- ***Health and stress levels***

The employees of Sabertek have conveyed long working hours is not a problem and can meet production targets. However, workers felt the fatigue and strain of having to work excessive hours. Sabertek should hire more staff to reduce the strain on the current employees. Employees have indicated that their health remains unaffected by the longer hours worked. However, employees' levels of stress increase with excessive overtime schedules. Therefore, scheduling would need to be addressed especially with increased work intensity in the future.

- ***Well-being and job satisfaction***

The study has shown that employees enjoy the nature of their work. Employees at Sabertek are both happy and satisfied which leads to commitment and loyalty towards Sabertek. It is so important to create and support an environment that promotes employee well-being and satisfaction. This would also reduce stress levels and keep employees happy, therefore encouraging better results. Creating an environment where employees are kept happy is motivating and enhancing for both management and employees of Sabertek. Employee satisfaction and motivation are affected by the level of engagement. Individuals become more motivated by factors that bring internal satisfaction than by factors that bring external satisfaction although both internal and external factors continue to motivate the employees of Sabertek.

Employees at Sabertek feel a sense of favouritism and are not able to engage with management without fear of victimisation, this stifles the employee's ability to perform at high levels or be more productive. Employee's perception of equity treatment affects motivation, satisfaction, and retention. Employees who might perceive unfair treatment at Sabertek, to other employees can potentially affect their level of loyalty and motivation within the organisation. When employees are motivated, they can be more productive, and their performance can become enhanced.

- ***Working conditions and environment***

The results indicated a positive correlation between working conditions and productivity and working hours for the employees at Sabertek. It is important to note that the factors which exceedingly motivate employees are the same factors which encourage employees to stay with the organisation. Employees at Sabertek are likely to be more productive if the working

conditions are conducive for employee commitment. Employees become motivated to perform above expectations and display increased levels of dynamism to go the extra mile and be highly productive. Employee commitment Sabertek is encouraged by the practice of employee empowerment by the management of Sabertek. Management of Sabertek needs to create a platform that would enable employee engagement and open-door communication.

- **Wages**

The most significant finding of the study confirmed that while money is a significant motivating influence for employees' productivity and prolonged working hours, it is not the only form of motivation that influences employees' productivity at Sabertek. This is important for Sabertek, as budget constraints can hinder the feasibility of workers being motivated solely by remuneration. Employees at Sabertek work not only the longer hours to supplement their income, but they seek advancement and promotional growth, personal development, and stability, so they can feel both accomplished and significant at the organisation.

Seventy-eight percent of the workforce, work between 0-10 years at Sabertek. This implies the workforce is new and looking towards growth and development from Sabertek. Money can be regarded as an extrinsic motivating factor satisfying both the young and older employees for their most basic needs but upon satisfaction of this need, employees are looking towards next level security and recognition from Sabertek.

Some respondents in this study have suggested they were seeking recognition and indicated that they are driven by recognition than by monetary gains. This is because the motivation of the employees depends on how long an employee has stayed with the organisation. Employees that have just joined the organisation and in the infant stage (5 years and below) together with employees that have spent most of their time with the organisation (20 years and above) are likely to be highly motivated to perform for different reasons. Employees in the infant stage are motivated because of the desire to grow and develop within the organisation while employees in the late adult stage are likely to be motivated by potential constraints in career movements.

Practical recommendations to Sabertek will be provided in the next discussion. These recommendations are in no particular order.

5.3 Recommendations

This study recommended that Sabertek creates a work environment to motivate their employees. This would ensure that Sabertek can enjoy the benefits of blue-collar employees who are committed to performing their job function both efficiently and effectively. It is, therefore, necessary for Sabertek to implement a monthly production performance-related incentive to motivate their staff. This would create an environment that allows for both extrinsic and intrinsic motivation.

It is also important for Sabertek to identify those employees within the organisation who display characteristics that are needed for more senior positions. Instead of Sabertek hiring outside employees for floor supervision, they should consider upgrading some of their current employees based on merit and leadership qualities.

Wage is a huge motivational factor for employees to not only perform well but to be productive, overall. The workers work overtime to supplement their salaries and therefore the company needs to look at ways to show employees recognition. There are 83% of the workers who work overtime, Sabertek should reward this dedication by initiating a rewards program that will encourage workers to feel motivated and appreciated.

Employers should spend time with their staff and structure their growth and development within the company. This encourages employees and gives them a sense of drive and determination that assists with merging their own career goals with that of the company goals. The study researcher recommends that Sabertek implement this strategy of succession, planning annually to experience a greater success rate in terms of staff retention and talent management.

Sabertek needs to continuously create opportunities to allow their employees to be satisfied, as this will impact positively on motivation and staff productivity levels. Educating employees about time and stress management also helps with the reduction of stress and helps employees cope with stress levels via monthly meetings or motivational talks. The implementation and benefits of these programmes are therefore important for Sabertek to consider.

Sabertek should always ensure that the employees working environment is being maintained and improved as this can have huge impacts on the employees. The working environment and conditions, if not suitable, can lead to safety and occupational health issues (Ali et al., 2013). Ensuring that light fittings are always in order, workstations are ergonomically

designed for best comfort and output. Using flow principals such as Just in time (JIT) systems would also merit high levels of output, by ensuring a continuous flow of work. In addition, systems such as 5 “s” should be implemented and standardisation so that workers are happier with their workstations. This would also create ease and a system that would ensure minimal wastage and frustration. To ensure high levels of employee productivity, the physical working environment needs to be conducive to the needs of the employees and motivates employees to produce better results. In order for Sabertek to maximise satisfaction and productivity, they should design the workplace around the needs of the employees.

It is important for Sabertek to ensure that workers are happy with their working environment. Workers that are happy in their working environment are known to be more productive which leads to improved levels of productivity. Employee performance can directly impact the profit of the organisation when employees are productive this could positivity impact the profitability of the organisation. This results in a happy, loyal workforce and a low level of absenteeism and therefore increased levels of productivity and business success. The management at Sabertek should invest in training as 19% of their blue-collar staff are at the age or close to the age of retirement which would mean the loss of valuable technical skills. Therefore, to ensure that employees achieve production targets during the working week they should implement continuous on-the-job training.

Employee well-being and satisfaction not only contributes to an employee’s ability to be productive, but they would be more loyal and invested in the company which would lead to a lower turnover rate. Newer staff will always look out for lucrative opportunities that benefit their well-being. Therefore, it is important for Sabertek to ensure that employees’ well-being is being considered in all management decisions. This will mean employees won’t need to worry about their well-being and can be more efficient at work. Employees working longer hours, enjoy the nature of their job and is highly productive when they are happy but have indicated that they do not have a work-life balance, and this is seen from the results and Sabertek needs to find ways of ensuring that their employees are also leading a balanced lifestyle through a wellness programme.

In addition, Sabertek should empower their employees. Empowering employees has a positive effect on the performance, productivity, and retention of employees. Employees that are empowered perform better and have a tendency of going an extra mile than those that

are not empowered. Empowered employees highly experience both internal and external satisfaction and are likely to stay with the organisation for a very long time.

Sabertek needs to recruit more blue-collar employees and design the workflow to reduce working overtime. The workers who work a night shift is due to the machinery only being able to produce a certain level of output, but when demand is greater, this stifles overall productivity. The researcher advises that Sabertek management invest or plan for more efficient machines. Sabertek should invest in machinery that is more efficient and can produce an increased rate of output. This would then reduce the high operational cost incurred from operating two shifts.

This study has provided for a rich literature towards the body of knowledge on this topic, this will be further discussed in the next section.

5.4 Implications of this Research

This section describes the contribution of the study. This research study richly contributes and adds value to the growing body of literature. The view is that productivity is not a large degree impacted by working but more by external factors that cause a greater influence on the level of output, regardless of the number of hours worked. Substantially whilst existing literature provides a deep insight into how the number of working hours impacts productivity, there is still little understanding of the extent of its impacts. More importantly, the study yields a practical understanding and information that could be used by Sabertek to guide its working standards and employee engagements, while also contributing towards the thought process of the organisation's future movement towards global expansions. A broader understanding of the factors which affect their employees working hours and productivity is beneficial and will assist in enhancing current working practices which would enable and drive the growth into broader markets successfully.

5.5 Limitations of this Study

This section discusses the limitations of the study, how it was overcome and how it can be avoided in the future. The limitations of this study included the following:

- Language Barriers

The questionnaire was manually distributed to each department at a time. The questionnaire was fully explained, and each participant then had a choice to manually fill out the questionnaire or opt to not be a part of the study. The research instrument was administered

in English. Eleven official languages exist in South Africa encompassing various ethnic backgrounds. English speaking participants have an advantage in understanding the questions better than non-English participants. Language barriers would have compromised the integrity of the survey. Due to many of the participants being older some did not understand written English. The researcher had used the assistance of those who were able to translate and explain the questionnaire.

- Working hours

There was limited time for participants to fill in the questionnaire. The employees were not willing to use their tea or hourly break to complete the questionnaire therefore the questionnaire was completed in during the working time. This did disrupt production, but the researcher had been granted permission to use working hours. Due to the working load and deadlines this was quite a tedious task and therefore had taken two days to collect data from the participants. However, after explaining that participants could complete within working hours and receive a confectionery this secured that a 97% response rate.

- Employee Drawbacks

Employees initially had reservations about filling the questionnaire as they thought it was for the organisation, although the cover letter assured them it was for study purposes only. The researcher had to further assure them that this was questionnaire which was part of a research study.

- Study Replication

The research results and findings should be duplicated and extended to various other industries within the province. The sample size is representative of a small population of the manufacturing sector i.e. electronic manufacturing with also fewer blue-collar workers. A larger population base would merit a better study and. Finally, due to limited time and resource constraints, the depth of the study and research findings only touch the surface of the subject and further investigations are merited.

5.6 Recommendations of Future Studies

The future recommendations include:

- The research focused on blue-collar workers. However, the workforce of the organisation included white-collar workers. Future studies should investigate the impacts of working hours on white-collar workers productivity and see how this

impacts the overall organisation. This would be interesting and can provide an insightful perspective by further comparing the results to that of blue-collar workers.

- This study was gender neutral. However, future studies can be undertaken to understand working hours affects each gender and their productivity.
- The study reviewed selected factors that were common in literature. Future studies can investigate the influence of other factors such as leadership, training, and efficiency.
- There is no set measurement that defines how to measure productivity, hence no theoretical framework. Future studies can focus on a constructing a model which can be used in industry to measure productivity.

5.7 Summary

Seeking strategies that will build an effective and productive workplace that engages employees is both time consuming and can vary between organisations. However, managers and leaders are clear about the value of people. This study provides both clarity and informed discussions about the impacts of working hours on employee's productivity at Sabertek. Thus, the management at Sabertek can now use this rich literature to make informed decisions to effectively ensure sustained business performance through expansive operations and overall enhanced productivity of both the employees and the organisation. The limitations posed no direct bearing on the outcomes of the research. Suitable and practical recommendations have been made to Sabertek to address the shortcomings identified in the research and problem statement. Successful implementation of the recommendations and monitoring deviations from the intended results would ensure that Sabertek's interest of improving productivity with the intention to expand globally is successful. This would also ensure enhanced employee engagements and a sustained conducive working environment for employees.

REFERENCES

Ali AYS, Ali AA and Adan AA. (2013) Working conditions and employees' productivity in manufacturing companies in sub-Saharan African context: Case of Somalia. *Journal of Educational Research International* 2(2): 67-78.

Angrave D and Charlwood A. (2015) What is the relationship between long working hours, over-employment, under-employment and the subjective well-being of workers? Longitudinal evidence from the UK. *Journal of Human Relations* 68(9): 1491-1515.

Australian Bureau of Statistics. 2013. Statistical Language - Census and Sample [Online]. Available: http://www.abs.gov.au/websitedbs/a3121120.nsf/home/statistical+language+-+census+and+sample [Accessed 9 September 2018].

Bandiera O, Prat A and Sadun R. (2018) Managing the family firm: evidence from CEOs at work. *The Review of Financial Studies* 3(5): 1605-1653.

Bannai A and Tamakoshi A. (2014) The association between long working hours and health: a systematic review of epidemiological evidence. *Scandinavian Journal of Work, Environmentt and Health* 40: 5-18.

Bassanini A and Caroli E. (2015) Is work bad for health? The role of constraint versus choice. *Journal of Economics and Statistics/Annales d'Économie et de Statistique* 1(119/120): 13-37.

Beaton D, Bombardier C, Escorpizo R, Zhang W, Lacaille D, Boonen A, Osborne RH, Anis AH, Strand CV and Tugwell PS. (2009) Measuring worker productivity: frameworks and measures. *Journal of Rheumatology* 36(9): 2100-2109.

Berniell MI and Bietenbeck J. (2017) The effect of working hours on health. *IZA Discussion Papers.* Bonn: Institute of Labor Economics (IZA).

Böckerman P and Ilmakunnas P. (2012) The job satisfaction-productivity nexus: A study using matched survey and register data. *Journal of Industrial and Labor Relations Review* 65(2): 244-262.

Briem K and Ólafsson Þ. 2015. Is less work better work? A shorter working week from a managerial viewpoint. Masters in Management, Lund University.

Bröchner J. (2017) Measuring the productivity of facilities management. *Journal of Facilities Management* 15(3): 285-301.

Carmichael SG. 2015. The research Is lear: long hours backfire for people and for companies [Online]. Available: https://hbr.org/2015/08/the-research-is-clear-long-hours-backfire-for-people-and-for-companies?autocomplete=true [Accessed 15 November 2018].

Chesley N. (2014) Information and communication technology use, work intensification and employee strain and distress. *Sage Journal: Work, employment and society* 28(4): 589-610.

Choi H. 2012. Effects of a reduction in hours of work on labor productivity and labor costs in South Korea: Evidence from a regression discontinuity design. Economics [NEKN01] Lund University.

Climate to travel. 2018. Climate - Johannesburg [Online]. Available: https://www.climatestotravel.com/climate/south-africa/johannesburg [Accessed 8 July 2018].

Collewet M and Sauermann J. (2017) Working hours and productivity. *Journal of Labour Economics* 47(1): 96-106.

Cresswell JW. (2014) Research Design. 4th ed. London: Sage Publications.

Creswell JW. (2014) A concise introduction to mixed methods research. London: Sage Publications.

Dolton P. (2017) Working hours: Past, present, and future. *IZA World of Labor*: 406.

Eden M. 2016. The Week [Online]. Available: http://documents.worldbank.org/curated/en/697101468184453119/The-week [Accessed 4 August 2018].

Fadda S. (2016) Labour coefficients reduction and working time reduction. *Journal of Economic Literature* 1(4): 67-87.

Frost J. 2018. How to interpret R-squared in Regression Analysis [Online]. Available: http://statisticsbyjim.com/regression/interpret-r-squared-regression/ [Accessed 15 November 2018].

Garnero A, Kampelmann S and Rycx F. (2014) Part-time work, wages, and productivity: evidence from Belgian matched panel data. *Industrial and Labor Relations Review* 67(3): 926-954.

Genda Y, Kuroda S and Ohta S. (2015) Does downsizing take a toll on retained staff? An analysis of increased working hours in the early 2000s in Japan. *Journal of the Japanese and International Economies* 36(1): 1-24.

Golden L. (2012) The effects of working time on productivity and firm performance, research synthesis paper. *Conditions of Work and Employment Branch.* Geneva: International Labour Office.

Hamermesh DS, Kawaguchi D and Lee J. (2017) Does labor legislation benefit workers? Well-being after an hours reduction. *Journal of the Japanese and International Economies* 44: 1-12.

Heshmati A and Rashidghalam M. (2018) Labour productivity in Kenyan manufacturing and service industries. *Determinants of Economic Growth in Africa*. Institute for the Study of Labor IZA, 259-286.

Hoboubi N, Choobineh A, Kamari Ghanavati F, Keshavarzi S and Akbar Hosseini A. (2017) The Impact of Job Stress and Job Satisfaction on Workforce Productivity in an Iranian Petrochemical Industry. *Saf Health Work* 8(1): 67-71.

Huang Cc, Chang Jj, Lai Cc and Lin Cc. (2002) Worker productivity, working time reduction, and the short–run and long–run employment effects. *Scottish Journal of Political Economy* 49(4): 357-368.

Ismail H. (2015) Job insecurity, burnout and intention to quit. *International Journal of Academic Research in Business and Social Sciences* 5(4): 310-324.

Jang T-W, Kim H-R, Lee H-E, Myong J-P and Koo J-W. (2013) Long work hours and obesity in Korean adult workers. *Journal of Occupational Health* 55(5): 359-366.

Kim I, Kim H, Lim S, Lee M, Bahk J, June KJ, Kim S and Chang WJ. (2013) Working hours and depressive symptomatology among full-time employees: Results from the fourth Korean National Health and Nutrition Examination Survey (2007-2009). *Scandinavian Journal of Work Environmental Health* 39(5): 515-520.

King LC and van den Bergh JC. (2017) Worktime reduction as a solution to climate change: Five scenarios compared for the UK. *Ecological Economics* 132: 124-134.

Koopmans L, Bernaards C, Hildebrandt V, van Buuren S, van der Beek AJ and de Vet HC. (2014) Development of an individual work performance questionnaire. *International Journal of Productivity and Performance Management* 62(1): 6-28.

Kothari CR. (2004) Research methodology: Methods and techniques: New Age International.

Labour Department. 2012. Basic Guide to working hours [Online]. Available: http://www.labour.gov.za/DOL/legislation/acts/basic-guides/basic-guide-to-working-hours [Accessed 21 August 2018].

Leblebici D. (2012) Impact of workplace quality on employee's productivity: case study of a bank in Turkey. *Journal of Business Economics and Finance* 1(1): 38-49.

Lee D and Lim H. (2014) Nonlinearity in nexus between working hours and productivity. *Bank of Korea WP 2014-24.* Bank of Korea.

Lee D and Lim H. (2017) Multiple thresholds in the nexus between working hours and productivity. *Contemporary Economic Policy* 35(4): 716-734.

Lepinteur A. (2018) The shorter workweek and worker wellbeing: Evidence from Portugal and France. *Journal of Labour Economics*.

Man NC and Ling TW. (2014) Relationships between working hours and productivity: The Case of Food Services and information communication industries in Hong Kong. *Advances in Economics and Business* 2(7): 281-292.

Morera OF and Stokes SM. (2016) Coefficient α as a measure of test score reliability: Review of 3 popular misconceptions. *American journal of public health* 106(3): 458-461.

Naharuddin N and Sadegi M. (2013) Factors of workplace environment that affect employees performance: a case study of Miyazu Malaysia. *International Journal of Independent Research and Studies* 2(2): 66-78.

OECD. 2013. OECD Better Life Index [Online]. Available: http://www.oecdbetterlifeindex.org/. [Accessed 8 August 2018].

OECD. 2018a. Compenduim of Productivity Indicators 2018 [Online]. Available: https://read.oecd-ilibrary.org/economics/oecd-compendium-of-productivity-indicators-2018_pdtvy-2018-en#page38 [Accessed 27 July 2018].

OECD. 2018b. OECD Economic Surveys: Costa Rica 2018 [Online]. Available: https://read.oecd-ilibrary.org/economics/oecd-economic-surveys-costa-rica-2018_eco_surveys-cri-2018-en#page131 [Accessed 1 August 2018].

Oswald AJ, Proto E and Sgroi D. (2015) Happiness and productivity. *Journal of Labor Economics* 33(4): 789-822.

Park J, Kwon OJ and Kim Y. (2012) Long working hours in Korea: results of the 2010 Working Conditions Survey. *Journal of Occupational Health and Safety* 50(5): 458-462.

Park J, Yi Y and Kim Y. (2010) Weekly work hours and stress complaints of workers in Korea. *American Journal of Industrial Medicine* 53(11): 1135-1141.

Park Y and Park W. (2017) The impact of a workweek reduction on labor productivity. *KDI Policy Forum No. 267(2017-03).* Korea Development Institute.

Pencavel J. (2014) The productivity of working hours. *The Economic Journal* 125(589): 2052-2076.

Pencavel J. (2016a) Recovery from work and the productivity of working hours. *The Economic Journal* 83(332): 545-563.

Pencavel J. (2016b) Whose preferences are revealed in hours of work? *The Economic Journal* 54(1): 9-24.

Penwarden R. 2013. Avoiding survey bias [Online]. Available: http://fluidsurveys.com/university/avoiding-survey-bias/ [Accessed 10 November 2018].

Raziq A and Maulabakhsh R. (2015) Impact of working environment on job satisfaction. *Procedia Economics and Finance* 23: 717-725.

Sabertek. 2018. Company overview [Online]. Available: https://www.sabertek.co.za/ [Accessed 27 September 2018].

Saeed R, Mussawar S, Lodhi RN, Iqbal A, Nayab HH and Yaseen S. (2013) Factors affecting the performance of employees at work place in the banking sector of pakistan. *Middle-East Journal of Scientific Research* 17(9): 1200-1208.

Sauermann J. (2016) Performance measures and worker productivity. *IZA World of Labor*: 260.

Saunders M, Lewis P and Thornhill A. (2016) Research Methods for Business Students, London: Pearson Education Limited.

Schank T. (2015) Employment effects of longer working hours. *IZA World of Labor*: 216.

Scott S. 2018. What is a Blue-Collar Worker and a White-Collar Worker? [Online]. Available: https://smallbusiness.chron.com/bluecollar-worker-whitecollar-worker-11074.html [Accessed 23 August 2018].

Sekaran U and Bougie R. (2013) Research methods for business :A skill-building approach, Chichester: John Wiley & Sons.

Shagvaliyeva S and Yazdanifard R. (2014) Impact of flexible working hours on work-life balance. *American Journal of Industrial and Business Management* 04(1): 20-23.

Somanathan E, Somanathan R, Sudarshan A and Tewari M. (2015) The impact of temperature on productivity and labor supply: Evidence from Indian manufacturing. Indian Statistical Institute, New Delhi, India.

Valente RR and Berry BJ. (2016) Working hours and life satisfaction: A cross-cultural comparison of Latin America and the United States. *Journal of Happiness Studies* 17(3): 1173-1204.

Virtanen M, Jokela M, Nyberg ST, Madsen IE, Lallukka T, Ahola K, Alfredsson L, Batty GD, Bjorner JB and Borritz M. (2015) Long working hours and alcohol use: systematic review and meta-analysis of published studies and unpublished individual participant data. *Bmj* 350: g7772.

Walston J, Redford J and Bhatt MP. (2017) Workshop on survey methods in education research: Facilitator's Guide and Resources. REL 2017-214. *Regional Educational Laboratory Midwest*.

Yu S. (2014) Work–life balance–work intensification and job insecurity as job stressors. *Journal of the Social and Economic Relations of Work* 24(3): 203-216.

APPENDICES

Appendix 1: Table of OECD Countries.

AUS	Australia	IRL	Ireland
AUT	Austria	ISL	Iceland
BEL	Belgium	ISR	Israel
BRA	Brazil	ITA	Italy
CAN	Canada	JPN	Japan
CHE	Switzerland	KOR	Korea
CHL	Chile	LTU	Lithuania
CHN	China (People's Republic of)	LUX	Luxembourg
COL	Colombia	LVA	Latvia
CRI	Costa Rica	MEX	Mexico
CZE	Czech Republic	NLD	Netherlands
DEU	Germany	NOR	Norway
DNK	Denmark	NZL	New Zealand
ESP	Spain	POL	Poland
EST	Estonia	PRT	Portugal
FIN	Finland	RUS	Russian Federation
FRA	France	SVK	Slovak Republic
GBR	United Kingdom	SVN	Slovenia
GRC	Greece	SWE	Sweden
HUN	Hungary	TUR	Turkey
IDN	Indonesia	USA	United States
IND	India	ZAF	South Africa

Source: OECD. 2018. Compendium of Productivity Indicators 2018 [Online]. Available: https://read.oecd-ilibrary.org/economics/oecd-compendium-of-productivity-indicators-2018_pdtvy-2018-en#page38 [Accessed 27 July 2018].

Appendix 2: GDP per Capita

A. Decomposition of GDP per capita
Relative to the OECD average, 2016

		GDP per capita	Labour productivity (GDP/hrs worked)	Labour utilisation (hrs worked/population)
Costa Rica	CRI	-0,94	-1,03	0,09
Mexico	MEX	-0,83	-0,94	0,11
Chile	CHL	-0,60	-0,67	0,08
Latvia	LVA	-0,51	-0,58	0,06
Turkey	TUR	-0,49	-0,24	-0,24
Greece	GRC	-0,47	-0,42	-0,05
Hungary	HUN	-0,43	-0,41	-0,02
Poland	POL	-0,43	-0,48	0,06
Estonia	EST	-0,36	-0,44	0,08
Portugal	PRT	-0,34	-0,37	0,04
Slovenia	SVN	-0,27	-0,23	-0,04
Slovak Republic	SVK	-0,27	-0,19	-0,09
Czech Republic	CZE	-0,22	-0,31	0,09
Israel	ISR	-0,18	-0,29	0,11
Spain	ESP	-0,15	0,00	-0,15
Italy	ITA	-0,13	0,01	-0,14
New Zealand	NZL	-0,12	-0,23	0,11
Korea	KOR	-0,09	-0,35	0,27
France	FRA	-0,02	0,24	-0,27
JAP	JAP	-0,02	-0,12	0,11
Finland	FIN	0,01	0,09	-0,08
United Kingdom	GBR	0,02	0,02	0,00
Belgium	BEL	0,08	0,32	-0,24
Canada	CAN	0,11	0,04	0,07
Austria	AUT	0,12	0,14	-0,01
Germany	DEU	0,12	0,24	-0,12
Iceland	ISL	0,16	-0,12	0,28
Australia	AUS	0,16	0,11	0,06
Denmark	DNK	0,17	0,30	-0,14
Sweden	SWE	0,17	0,18	-0,01
Netherlands	NLD	0,19	0,27	-0,08
United States	USA	0,32	0,30	0,02
Switzerland	CHE	0,36	0,21	0,15
Norway	NOR	0,45	0,52	-0,07
Ireland	IRL	0,51	0,57	-0,07
Luxembourg	LUX	0,84	0,55	0,30

Source: OECD. 2018. OECD Economic Surveys: Costa Rica 2018 [Online]. Available: https://read.oecd-ilibrary.org/economics/oecd-economic-surveys-costa-rica-2018_eco_surveys-cri-2018-en#page131 [Accessed 1 August 2018].

Appendix 3: Questionnaire

Informed Consent Letter 3C

UNIVERSITY OF KWAZULU-NATAL
GRADUATE SCHOOL OF BUSINESS AND LEADERSHIP

Dear Respondent,

MBA Research Project
Researcher: Nerissa Vallo (083 775 3420)
Supervisor: Pfano Mashau (031 260 7021)
Research Office: Ms. P Ximba 031-2603587

I, **Nerissa Vallo** an MBA student, at the Graduate School of Business and Leadership, of the University of KwaZulu-Natal invites you to participate in a research project entitled "**The impact of working hours on employee productivity: Case study of Sabertek"**. The aim of this study is to examine the relationship between working hours and employee's productivity.

Through your participation I hope to understand how the number of hours an employee works could affect their overall productivity. The results of the questionnaire is intended to contribute to a body of knowledge and also to help the organisation find ways to improve their overall productivity and for them to better understand how working hours can impact their employees so that they can improve the overall working standard at Sabertek. Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Graduate School of Business and Leadership, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The survey should take you about **15** minutes to complete. I hope you will take the time to complete this survey.

Sincerely,
Nerissa Vallo (Ms)

Signature_____ Date_____

This page is to be retained by participant

Questionnaire

The following questionnaire is designed to analyse and measure factors influencing productivity and working hours at Sabertek. The information gathered through this questionnaire will be kept confidential and will only be used for research purposes. Please give answers in the spaces provided and cross (x) the box that matches your response to the questions where applicable.

SECTION 1: DEMOGRAPHIC DATA

1. Age Group

21-30	31-40	41-50	51-60	61+

2. Gender

Male	Female

3. Race Group

African	Coloured	Indian	White

4. What shift do you work?

Day only	Night only	Both day and night

5. How many hours does it take you to travel to work?

Less than 1 hour	1 - <2	2 - <3	3 - <4	more than 4 hours

6. How many years are you working for this organisation?

0-10	11-20	21-30	31-40	more than 40 yrs.

7. The number of standard or normal hours worked per week (excluding lunch and tea breaks) is 40 hours per week or 8 hours per day?

Yes	No

8. Over Time

Do you work over time?	Yes	No

9. If yes, indicate how many hours of overtime per week:

1-5	6-10	11-15	>15

10. How often do you work over time in a month?

Once a month	Twice a month	3 Times a month	4 - 5 times a month

SECTION 2:

Personal Information:

Do you smoke?	Yes	No

If yes, when did you start	Before working at Sabertek	After working at Sabertek

Reason for smoking:	Personal	Work related	Hobby	Other
If other, please indicate the reason				

Do you drink?	Yes	No

If yes, when did you start	Before working at Sabertek	After working at Sabertek

Reason for drinking:	Personal	Work related	Hobby	Other
If other, please indicate the reason				

2.1 What is the relationship between working the standard workweek and productivity?

Rate the extent to which the following is stated correctly with an (x):

1- Strongly Disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

When working **40 hours per week** how does it affect the following?

2.1.1 Working standard hours & productivity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Normal working hours encourages me to work better	1	2	3	4	5
2. Production targets can be achieved during the standard workweek	1	2	3	4	5
3.The workload per week is manageable	1	2	3	4	5
4. My working time is flexible	1	2	3	4	5
5. I feel that 8 hours a day is enough time to meet production targets	1	2	3	4	5
2.1.2 Health & stress levels	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Meeting production targets is not stressful	1	2	3	4	5
2. I can manage different workload volumes without feeling tired	1	2	3	4	5
3. My workload is often increased because my co-workers are often absent	1	2	3	4	5
4. I am focused on my job even when I am tired	1	2	3	4	5
5. I can cope with changing workload demands without feeling stressed out	1	2	3	4	5
2.1.3 Well-being & job satisfaction	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am most productive when I am happy	1	2	3	4	5
2. I am satisfied with the work that I do	1	2	3	4	5
3. I enjoy working at the organisation	1	2	3	4	5
4. I am satisfied with the organisation and it influences my ability to be productive	1	2	3	4	5
5. The work given to me is easy and I can complete it	1	2	3	4	5
6. The work that I do is exciting, and I enjoy it	1	2	3	4	5

2.1.4 Working Conditions & environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am satisfied with the working conditions at work	1	2	3	4	5
2. The work environment motivates me to be productive	1	2	3	4	5
3. There is sufficient lighting for me to do my work	1	2	3	4	5
4. My working ability is not affected by the weather conditions	1	2	3	4	5
5. The design of the workplace allows me to be productive at my work	1	2	3	4	5
6. I am satisfied with the physical workplace	1	2	3	4	5
7. I am comfortable with my work station	1	2	3	4	5
2.1.5 Wages	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I feel I will be more productive if I was rewarded more	1	2	3	4	5
2. I am satisfied with my income	1	2	3	4	5
3. Management inspires me to work harder	1	2	3	4	5
4. My quality of life will improve with a better wage	1	2	3	4	5

2.2 What is the relationship between <u>working more than the standard workweek</u> and productivity?

Note: this section is only if employee works overtime.

When working **<u>more than 40 hours per week / (long hours)</u>** how does it affect the following?

2.2.1 Working long hours & productivity	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Long working hours encourages me to work better	1	2	3	4	5
2. Production targets are achieved when working overtime	1	2	3	4	5
3.The workload per week is manageable	1	2	3	4	5
4. My working time can be flexible	1	2	3	4	5
5. Longer work hours is required to meet production targets	1	2	3	4	5
6. Long working hours develops my skills at work	1	2	3	4	5

2.2.2 Health & stress levels	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Working long hours to meet production targets is not stressful	1	2	3	4	5
2. Working long hours does not make me tired	1	2	3	4	5
3. My workload is often increased because my co-workers are often absent.	1	2	3	4	5
4. My ability to focus on doing my job well when working long hours is good	1	2	3	4	5
5. Working long hours does not cause me stress and anxiety	1	2	3	4	5
6. When I work overtime this week, I am energetic the following week at work	1	2	3	4	5
7. My health is not affected by working long hours	1	2	3	4	5
2.2.3 Well-being & job satisfaction	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am most productive when I am happy	1	2	3	4	5
2. I am satisfied with the work that I do	1	2	3	4	5
3. I enjoy working long hours at the organisation	1	2	3	4	5
4. I am satisfied with the organisation and it influences my ability to be productive	1	2	3	4	5
5. The work given to me is easy and I can complete it when working long hours	1	2	3	4	5
6. There is sufficient work life balance when working long hours	1	2	3	4	5
2.2.4 Working Conditions & environment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am satisfied with the working conditions at work even when working long hours	1	2	3	4	5
2. The work environment motivates me to be productive	1	2	3	4	5
3. There is sufficient lighting for me to do my work	1	2	3	4	5
4. My working ability is not affected by working long hours in different weather conditions	1	2	3	4	5
5. The design of the workplace allows me to be productive at my work when working long hours	1	2	3	4	5
6. I am satisfied with the physical workplace	1	2	3	4	5

7. I am comfortable with my work station	1	2	3	4	5
2.2.5 Wages	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I feel I will be more productive if I was rewarded more	1	2	3	4	5
2. I work the long hours to improve my salary.	1	2	3	4	5
3. I am satisfied with my income when I work overtime	1	2	3	4	5
4. I work the overtime so that I can improve my quality of life	1	2	3	4	5
5. Management motivates me to work longer hours by rewarding me	1	2	3	4	5

SECTION 3

How does other factors influence the relationship between productivity and working hours?

1 - Does not affect me at all 2- Least affects me 3 - Neutral 4 - Moderately affects me 5 - Most affects me

3.1. The following factors affect my productivity when I work normal 40-hour weeks?

Category	Does not affect me at all	Least affects me	Neutral	Moderately affects me	Most affects me
Health and stress levels	1	2	3	4	5
well-being and job satisfaction	1	2	3	4	5
working conditions and environment	1	2	3	4	5
wages	1	2	3	4	5

3.2. The following factors affect my productivity when I work overtime or more than 40-hours in a week.

Category	Does not affect me at all	Least affects me	Neutral	Moderately affects me	Most affects me
Health and stress levels	1	2	3	4	5
Well-being and job satisfaction	1	2	3	4	5
Working conditions and environment	1	2	3	4	5
Wages	1	2	3	4	5

3.3. The following factors affects my level of performance.

Category	Does not affect me at all	Least affects me	Neutral	Moderately affects me	Most affects me
Health and stress levels	1	2	3	4	5
Well-being and job satisfaction	1	2	3	4	5
Working conditions and environment	1	2	3	4	5
Wages	1	2	3	4	5

Appendix 4: Ethical Clearance Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

14 November 2018

Ms Nerissa Vallo (207500635)
Graduate School of Business & Leadership
Westville Campus

Dear Ms Vallo,

Protocol reference number: HSS/0989/018M
New project title: The impact of working hours on employee productivity: Case study of Sabertek

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 13 November 2018 has now been approved as follows:

- Change in Title

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for period of 3 years from the date of original issue. Thereafter Recertification must be applied for on an annual basis.

Best wishes for the successful completion of your research protocol.

Yours faithfully

.....
Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Dr Pfano Mashau
Cc Academic Leader Research: Professor Muhammad Hoque
Cc School Administrator: Ms Zarina Bullyraj

Humanities & Social Sciences Research Ethics Committee
Professor Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

Appendix 5: Descriptive Statistics Summary

No	Characteristics (n=59)		Valid %	Chi -Square
1	Gender	Male	49,2	
		Female	50,8	
				0,896
2	Age	21-30	18,6	
		31-40	33,9	
		41-50	28,8	
		51-60	15,3	
		61+	3,4	
				0,002
3	Race Group	African	49,15	
		Coloured	44,07	
		Indian	1,7	
		White	5,1	
				0,000
4	What shift do you work?	Day Only	88,1	
		Night Only	0	
		Both day and night	11,9	
				0,000
5	Travel Time to work (Hrs)	Less than 1 hour	32,2	
		1 - <2	49,2	
		2 - <3	16,9	
		3 - <4	1,7	
		More than 4 hours	0,0	
				0,000
6	How many years are you working at the organisation?	0-10	78,0	
		11-20	22,0	
		21-30	0,0	
		31-40	0,0	
		> 40 Years	0,0	
				0,000
7	Do you work overtime?	Yes	83,1	
		No	16,9	
				0,000
8	How many hours of overtime per week?	1-5	36,7	
		6-10	59,2	
		11-15	2,0	
		>15	2,0	
				0,000
9	How many times a month you work overtime?	Once a month	8,2	
		Twice a month	12,2	
		Three times a month	18,4	
		4-5 Times a month	61,2	
				0,000

Appendix 6: Summary of Standard Working Hours

Statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Chi- Square Test
Working hours & Productivity							
Q2.1.1.1	Normal working hours encourages me to work better	8,5	1,7	16,9	45,8	27,1	0,000
Q2.1.1.2	Production targets can be achieved during the standard workweek	1,7	20,3	16,9	35,6	25,4	0,001
Q2.1.1.3	The workload per week is manageable	0,0	15,3	27,1	49,2	8,5	0,000
Q2.1.1.4	My working time is flexible	20,3	13,6	18,6	30,5	16,9	0,307
Q2.1.1.5	I feel that 8 hours a day is enough time to meet production targets	6,8	23,7	20,3	30,5	18,6	0,064
Health & Stress Levels							
Q2.1.2.1	Meeting production targets is not stressful	16,9	30,5	16,9	30,5	5,1	0,009
Q2.1.2.2	I can manage different workload volumes without feeling tired	18,6	39,0	6,8	23,7	11,9	0,001
Q2.1.2.3	My workload is often increased because my co-workers are often absent	10,2	16,9	25,4	27,1	20,3	0,240
Q2.1.2.4	I am focused on my job even when I am tired	13,6	16,9	15,3	37,3	16,9	0,024
Q2.1.2.5	I can cope with changing workload demands without feeling stressed out	13,6	16,9	23,7	32,2	13,6	0,111
Well-being & Job satisfaction							
Q2.1.3.1	I am most productive when I am happy	1,7	5,1	5,1	37,3	50,8	0,000
Q2.1.3.2	I am satisfied with the work that I do	5,1	8,5	10,2	52,5	23,7	0,000
Q2.1.3.3	I enjoy working at the organisation	0,0	5,1	15,3	50,8	28,8	0,000
Q2.1.3.4	I am satisfied with the organisation and it influences my ability to be productive	3,4	8,5	25,4	45,8	16,9	0,000
Q2.1.3.5	The work given to me is easy and I can complete it	3,4	11,9	25,4	39,0	20,3	0,000
Q2.1.3.6	The work that I do is exciting, and I enjoy it	6,8	6,8	10,2	40,7	35,6	0,000
Working conditions & Environment							
Q2.1.4.1	I am satisfied with the working conditions at work	11,9	22,0	22,0	33,9	10,2	0,030
Q2.1.4.2	The work environment motivates me to be productive	3,4	27,1	27,1	33,9	8,5	0,000
Q2.1.4.3	There is sufficient lighting for me to do my work	3,4	11,9	20,3	45,8	18,6	0,000
Q2.1.4.4	My working ability is not affected by the weather conditions	10,2	18,6	13,6	35,6	22,0	0,022
Q2.1.4.5	The design of the workplace allows me to be productive at my work	1,7	10,2	22,0	55,9	10,2	0,000
Q2.1.4.6	I am satisfied with the physical workplace	5,1	15,3	18,6	55,9	5,1	0,000
Q2.1.4.7	I am comfortable with my work station	1,7	13,6	22,0	49,2	13,6	0,000
Wages							
Q2.1.5.1	I feel I will be more productive if I was rewarded more	0,0	5,1	6,8	23,7	64,4	0,000
Q2.1.5.2	I am satisfied with my income	30,5	35,6	16,9	15,3	1,7	0,000
Q2.1.5.3	Management inspires me to work harder	13,6	18,6	28,8	30,5	8,5	0,030
Q2.1.5.4	My quality of life will improve with a better wage	3,4	3,4	13,6	23,7	55,9	0,000

Appendix 7: Summary of Long Working Hours

Statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Chi-Square Test
Long working hours & Productivity							
Q2.2.1.1	Long working hours encourages me to work better	10,2	38,8	24,5	18,4	8,2	0,005
Q2.2.1.2	Production targets are achieved when working overtime	2,0	10,2	24,5	38,8	24,5	0,001
Q2.2.1.3	The workload per week is manageable	0,0	20,8	22,9	45,8	10,4	0,005
Q2.2.1.4	My working time can be flexible	12,2	14,3	24,5	40,8	8,2	0,002
Q2.2.1.5	Longer work hours is required to meet production targets	6,1	16,3	30,6	32,7	14,3	0,014
Q2.2.1.6	Long working hours develops my skills at work	6,1	26,5	26,5	22,4	18,4	0,135
Health & Stress Levels							
Q2.2.2.1	Working long hours to meet production targets is not stressful	12,2	32,7	26,5	24,5	4,1	0,011
Q2.2.2.2	Working long hours does not make me tired	30,6	30,6	24,5	14,3	0,0	0,322
Q2.2.2.3	My workload is often increased because my co-workers are often absent	6,1	20,4	30,6	28,6	14,3	0,039
Q2.2.2.4	My ability to focus on doing my job well when working long hours is good	10,2	20,4	30,6	24,5	14,3	0,171
Q2.2.2.5	Working long hours does not cause me stress and anxiety	12,2	36,7	14,3	22,4	14,3	0,039
Q2.2.2.6	When I work overtime this week, I am energetic the following week at work	12,2	36,7	26,5	16,3	8,2	0,011
Q2.2.2.7	My health is not affected by working long hours	14,3	24,5	18,4	26,5	16,3	0,603
Well-being & Job satisfaction							
Q2.2.3.1	I am most productive when I am happy	0,0	4,1	4,1	32,7	59,2	0,000
Q2.2.3.2	I am satisfied with the work that I do	4,1	2,0	14,3	59,2	20,4	0,000
Q2.2.3.3	I enjoy working long hours at the organisation	4,1	20,4	24,5	34,7	16,3	0,015
Q2.2.3.4	I am satisfied with the organisation and it influences my ability to be productive	2,0	12,2	24,5	42,9	18,4	0,000
Q2.2.3.5	The work given to me is easy and I can complete it when working long hours	2,0	26,5	18,4	38,8	14,3	0,001
Q2.2.3.6	There is sufficient work life balance when working long hours	14,3	22,4	30,6	26,5	6,1	0,050
Working conditions & Environment							
Q2.2.4.1	I am satisfied with the working conditions at work even when working long hours	4,1	24,5	20,4	38,8	12,2	0,002

Q2.2.4.2	The work environment motivates me to be productive	4,1	20,4	22,4	44,9	8,2	0,000
Q2.2.4.3	There is sufficient lighting for me to do my work	0,0	12,2	16,3	57,1	14,3	0,000
Q2.2.4.4	My working ability is not affected by working long hours in different weather conditions	10,2	26,5	28,6	22,4	12,2	0,146
Q2.2.4.5	The design of the workplace allows me to be productive at my work when working long hours	8,2	18,4	20,4	49,0	4,1	0,000
Q2.2.4.6	I am satisfied with the physical workplace	10,2	10,2	18,4	51,0	10,2	0,000
Q2.2.4.7	I am comfortable with my work station	2,0	14,3	18,4	51,0	14,3	0,000
	Wages						
Q2.2.5.1	I feel I will be more productive if I was rewarded more	0,0	4,1	8,2	34,7	53,1	0,000
Q2.2.5.2	I work the long hours to improve my salary	0,0	4,1	10,2	30,6	55,1	0,000
Q2.2.5.3	I am satisfied with my income when I work overtime	8,2	14,3	30,6	30,6	16,3	0,039
Q2.2.5.4	I work the overtime so that I can improve my quality of life	2,0	6,1	12,2	44,9	34,7	0,000
Q2.2.5.5	Management motivates me to work longer hours by rewarding me	32,7	36,7	18,4	10,2	2,0	0,000

Appendix 8: Regression Tables: Standard Working Hours

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.449[a]	.202	.188	.7411

a. Predictors: (Constant), Q2.1.1H (Standard working hours); Source: Primary data

There is a strong positive correlation between the variables. That is, as one increases, so does the other.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.926	1	7.926	14.433	.000[b]
	Residual	31.303	57	.549		
	Total	39.229	58			

a. Dependent Variable: Q2.1.1P

b. Predictors: (Constant), Q2.1.1H

The Sig. value is less than 0.05 ($p < 0.001$). This implies that the predictors do accurately predict the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.079	.404		5.152	.000
	Q2.1.1H	.437	.115	.449	3.799	.000

a. Dependent Variable: Q2.1.1P

The coefficients table claims that the coefficients in the equation are zero. Since $p < 0.001$, it indicates that the coefficient for the dependent variable is NOT zero, and it does significantly impact the model.

Appendix 9: Regression Tables: Long Working Hours

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525[a]	.275	.260	.6951

a. Predictors: (Constant), Q2.2.1H

There is a strong positive correlation between the variables. That is, as one increases, so does the other.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.630	1	8.630	17.864	.000[b]
	Residual	22.706	47	.483		
	Total	31.337	48			

a. Dependent Variable: Q2.2.1P

b. Predictors: (Constant), Q2.2.1H

The Sig. value is less than 0.05 ($p < 0.001$). This implies that the predictors do accurately predict the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.916	.409		4.689	.000
	Q2.2.1H	.533	.126	.525	4.227	.000

a. Dependent Variable: Q2.2.1P

The coefficients table claims that the coefficients in the equation are zero. Since $p < 0.001$, it indicates that the coefficient for the dependent variable is NOT zero, and it does significantly impact the model.

Appendix 10: Turnitin Report

Turnitin Originality Report

Processed on: 05-Dec-2018 10:38 PM CAT
ID: 1042477285
Word Count: 33296
Submitted: 3

Working Hours 03 By Nerissa Vallo

Similarity Index	Similarity by Source	
10%	Internet Sources:	7%
	Publications:	3%
	Student Papers:	6%