DRIVERS OF WORK ENGAGEMENT AMONG MANAGERS IN MALAYSIA MANUFACTURING INDUSTRY

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DECLARATION

We hereby declare that:

1) This undergraduate research project is the result for our work done. Due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

3) Equal contribution has been made by each group member in completing the research project.

4) The word count of this research report is 21105

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Dedicated to:-

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LIST OF ABBREVIATIONS

CIA	Central Intelligence Agency
RM	Ringgit Malaysia
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
WP	Wilayah Persekutuan
HR	Human Resources
JA	Job Autonomy
PR	Personal Resources
POS	Perceived Organizational Support
WE	Work Engagement
IV	Independent Variables
DV	Dependent Variable
SET	Social Exchange Theory
JD-R	Job Demand-Resources
OBSE	Organizational-based Self-esteem
SPM	Sijil Pelajaran Malaysia
STPM	Sijil Tinggi Persekolahan Malaysia
SAS 7.1	Statistical Analysis System 7.1
MLR	Multiple Linear Regression
SPSS	Statistical Package for the Social Sciences

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PREFACE

The research study is necessary to conducted in our course, Bachelor of Business Administration (Hons). The research topic is "Drivers of Work Engagement among Managers in Malaysia Manufacturing Industry".

In the research study, three important variables selected that have positive influence towards work engagement among managers in Malaysia manufacturing industry. These independent variables are Job Autonomy, Personal Resources and Perceived Organizational Resources. These selected independent variables are possible factors that might associate the work engagement among managers in Malaysia manufacturing industry.

ABSTRACT

Throughout this whole research, this study investigates on how job autonomy, personal resources and perceived organization support will affect the work engagement of the managers in the manufacturing industry in Malaysia. One of the main purposes of this research is to identify the variables that will affect the working engagement of the managers in the manufacturing industry. This research carried out to recognize which of the independent variables (Job Autonomy, Personal Resources and Perceived Organizational Resources) will affect most to the dependent variable (Work Engagement). The specific objective of the research is to identify whether there is a significant relationship between job autonomy, personal resources, perceived organizational support towards the work engagement of managers.

In this research, 400 sets of questionnaire prepared and distributed to the target respondents who are working in manufacturing industries. After the data collected, Statistical Analysis System Enterprise 7.1 (SAS) was used to test the data in order to generate the result. The finding of this research shows that independent variables are positive associated with dependent variable. Through the reliability test, Pearson Correlation Coefficient and Multiple Linear Regression has used to determine the relationship between the IVs and DV.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Throughout this whole research, this study investigates on how job autonomy, personal resources and perceived organization support will affect the work engagement of the managers in the manufacturing industry in Malaysia. One of the main purposes of this research is to identify those variables which will influence the managers' working engagement in the manufacturing industry. This research is carried out to recognize which of the independent variables (Job Autonomy, Personal Resources and Perceived Organizational Resources) will affect most to the dependent variable (Work Engagement). As a summary, this chapter begins with the background of the research which reflects the outline of our research. Secondly, we will list out the problem statement, research objectives and the research questions. Furthermore, this business research will follow by the hypothesis, significant of study and chapter layout. Lastly, we will end our research project by summarizing the overall chapter.

1.1 Research Background

Malaysia is known as a Southeast Asian country with a federation with 13 states (11 in peninsular Malaysia & 2 in East Malaysia) and 3 federal territories. There are around 31.19 million of population in Malaysia (The World Bank, 2017). According to CIA World Factbook (2018), Malaysia is rich of natural resources such as: copper, timber, bauxite, petroleum, iron ore, tin and natural gas. Malaysia has successfully in approaching to diversify their economy from the process of

exporting the unprocessed materials to the growth of manufacturing, tourism and services (Central Intelligence Agency, 2018). This has all been the effort by our Prime Minister Mahathir bin Mohammad (1981-2003) which he has been contributed for 22 years.

Malaysia has been ranked as 3rd World's Most Attractive Location for Manufacturing and 2nd in Asia Pacific region (Cushman & Wakefield, 2018). This has proven that Malaysia has continuously become favourable investment destinations for foreign direct investment. It has attracted total of RM21.6 billion FDI in 2017 which including RM7.7 billion in new project and RM13.9 billion in diversification projects (Malaysia Investment Development Authority, 2018). Manufacturing industry in Malaysia has carried an important role in servicing to Malaysia's GDP. Manufacturing sector has been proven to be the 2nd biggest contributor towards Malaysia's gross domestic product (GDP) in the first quarter of 2017. The gross domestic product (GDP) for manufacturing industry is 22.8%, following up is mining at 9%, agriculture is at 7.8% and lastly construction is at 4.8% (NST Business, 2017).

There are six states in Malaysia have been providing good GDP contribution in manufacturing such as Selangor (top list) with 22.7%, WP Kuala Lumpur with 15.3%, Sarawak with 9.8%, Johor with 9.4%, Penang with 6.7% and Sabah with 6.7% (Department of Statistics Malaysia, 2017). Bayan Lepas in Penang Island is the Free Trade Zone (known as Silicon Valley of the East) due to various multinational electronic and engineering firms such as Bosch, Motorola, Dell, Intel, Hewlett Parkard, and Jabil have set up factories and plants in the town (Atkinson S. , 2018). This has created an investment platform and attracts many investors to invest in manufacturing firms. Furthermore, in the year 2015, Penang has contributed 12.8% towards their country's manufacturing revenue which consist of RM 244.2 billion. After that, Selangor has contributed their country manufacturing revenue around 28.9% (Amarthalingam, 2017).

1.2 Problem Statement

Manufacturing is a fast developing industry, where the manufacturers will always encountered new problems and concerns every year (Danielle, 2014). Manufacturing sector has been contributing towards the GDP and this has created a huge opportunity for creating employment. Work engagement is slowly being taken seriously by the company as keeping employees engaged is critical to any company's success. Employee engagement and work engagement play a role in retention in some similar ways.

Employee engagement is about how an employee engaged with the company they work for. This can include how connected they are with their colleagues and their managers or how much they use their skills in company. While work engagement is more specifically relate to the work that they're doing at the company, and fulfilment gained through the work they done. When employee engagement is good, it also will affect work engagement between managers and non-management employees. Based on the research conducted by Aon Hewitt (2017), Malaysia's employee engagement levels has drastically dropped by 3% to 59% first time in 4 years. This has led towards employees in Malaysia are least engaged as compared among major Asian markets.

Figure 1.1: Employee Engagement Scores

Source from *Aon Hewitt (2017)*

This is because with the time changes, it will be having rapid changing market conditions and environments. When environment change, people may have different value or perspective even though they are facing the same situation. Managers requires to be more carefree to adapt the changes occur from time to time and giving suitable action when problem occurs. According to the Malaysia Department of Statistics (2018), labour productivity in manufacturing industry has decrease from 4.9% (Q1 2018) to 1.7 % (Q2 2018) while the hours worked also went up 3.1% (Q2 2018) compared to 0.4% (Q1 2018). Other than that, the labour productivity per employment have a slower growth 1.5% (Q2 2018) compared to previous quadrant (Q1 2018) 3.3%.

Figure 1.2: Malaysia Manufacturing Production

Source from *Department Of Statistics Malaysia (2018)*

Based on Figure 1.2, manufacturing production Malaysia in year 2018 decreased 4% compare to year 2017. This result shows that employee engagement may be one of the issues that affect performance of company. By referring to Jamie (2018), employee's work engagement has direct result towards strong company culture. If the company has strong company's culture, employees will perceived what is presumed of them and what they're working toward. Besides that, keeping peak level of employee engagement will promotes toward short-term survival when economic fluctuation. It may also a crucial factor towards long-term business achievement and better location when market conditions become conducive. Hence, if employee's work engagement is low, company may lose the competitive advantages to compete with others.

Table 1.1: Perspective & Concepts of Engagement

Scholars	Perspective & Concepts of Engagement
Kahn (1990)	Define as psychological conditions of personal engagement which grouped into 3 major elements: • Meaningfulness- Sense of experiencing return on investment of self in role performance • Safety-Sense of being capable to portray self without worry of negative consequences to self-image, career & status • Availability-sense of able to contribute physical, emotional and psychological resources in role performance
Macey & Schneider (2008)	Engagement associated with 3 forms of conceptualizations: • State Engagement: Feelings of energy & absorptions • Trait Engagement: Positive views of life and work • Behavioural Engagement: Extra role behaviour
Alfes, Truss, Soanne, Rees, & Gatenhy (2010)	Engagement includes 3 core aspects which are: • Intellectual Engagement: Think hard how to perform job better • Affective Engagement: Feeling good about perform a job • Social Engagement: Take chances actively to converse with others work related improvements
Society for Human Resource Management (2012)	Access the level of engagement in 3 components: • Engagement Opinions: The "feelings" of engagement • Engagement Behaviour: The "look" of engagement • Engagement Conditions: The reason of engagement
Aon Hewitt (2013)	Engagement is described into 3 elements which are: • Say: Tell about the organizational positively to everyone • Stay: Express strong sense of belonging & aspirations to be part of the organization • Strive: Contribute efforts to ensure success in both their job and the company

Based on Table 1.1, it shows that every researcher have different perspectives or different concepts about engagement. This has eventually formed out the research gap that people are confusing the actual definition for engagement. Furthermore, most of the researchers done their research based on non-management employee's engagement, but not for the managers. According to senior vice-president of Google's People Operations, Laszlo Bock, people do not stay for the money. Most of the people stay because quality of people that they work with. Therefore,

manager become one of the factor that we should focus on as they not only will affect the performance of the company, but is the one who lead and bring motivation to the employee.

Besides, majority of the studies regarding to work engagement were conducted in states that have majority contribution into manufacturing industry such as Penang and Selangor. There is almost none of the study of work engagement being carried out for other states that have minority contribution in Malaysia. Hence, there is a research gap in terms of location. Manager in state of minority contribution should also being concerned by the society. This may bring in new opportunity to increase the productivity and GDP in manufacturing industry.

1.3 Research Objectives

1.3.1 General Objective

The main purpose of this final year project is to investigate the causes that influences towards the work engagement of managers in manufacturing industry.

1.3.2 Specific Objective

Specific objectives that formulated by the researchers are as following:

1. To study whether there is a significant relationship between job autonomy and the work engagement of managers.

2. To study whether there is a significant relationship between personal resources and the work engagement of managers.

3. To study whether there is a significant relationship between perceived organizational support and the work engagement of managers.

1.4 Research Questions

The research questions that formulated by the researchers for current study are:

1. Does job autonomy have a significant relationship with the work engagement of managers?

2. Does personal resources have a significant relationship with the work engagement of managers?

3. Does perceived organizational support have a significant relationship with the work engagement of managers?

1.5 Hypothesis of Study

This research study seeks to test the hypothesis that formulated by the researchers are as following:

H1: There is a significant positive relationship between job autonomy and manager's work engagement.

H2: There is a significant positive relationship between personal resource and manager's work engagement.

H3: There is a significant positive relationship between perceived organizational support and manager's work engagement.

1.6 Significance of Study

1.6.1 Board of Directors (BODs) of Manufacturing Company Perspectives

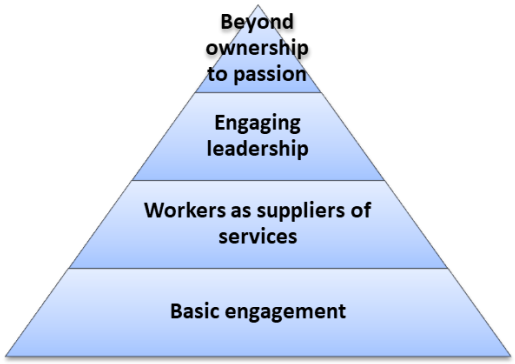
In this research study, we are focusing in work engagement among managers in Malaysia manufacturing industry. This research will able to provide some insight for Board of Directors of manufacturing industry in Malaysia to understand more about the behaviour of the managers and how to take full advantages of their behaviour to improve their work efficiency through work engagement of managers.

1.6.2 Management Perspectives

In organization perspectives, our research study are able to help the management in predict the satisfaction from the key customers, profitability and company productivity. According to Smith, 2016, work engagement enables us to deliver superior performance and gain competitive advantages towards our organization. Workers that are highly engaged tend to deliver more effort, fast-learning and they will use creative ideas and ways to solve tough decisions. Moreover, it shows that engaged workers will place high commitment towards their job and they have the

passionate to motivate the workers to move to the next level. When the workers are highly engaged, they tend to focus more towards their goals they want to achieve as they would want to have a feeling of contributing to the success of their organization. Throughout this research, we can let the management of organization to understand well the level of work engagement of their managers.

Figure 1.3: Levels of Workers Engagement



Source from *McCrimmon (2009)*

The worker's engagement can be divided into 4 levels, such as beyond ownership to passion as the first level, engaging leadership as the second level, workers as suppliers of services as the third level and the basic engagement as the base level.

Firstly, basic engagement will use motivational forces to be applied on managers and workers in their daily work routine such as good supervision, career development, open communication and more forces to be provided.

Second is worker as suppliers of services. In order for the workers to enhance themselves, they would treat other workers around them as their customers in exchange for them to learn how to market and develop their business for themselves. Through this method, workers can be more proactive to take note the needs and wants of their key customers and by that they need to develop a creative thinking to add value for them.

Third level is engaging leadership as this level mainly emphasize more on how managers see their role than the previous two level of worker engagement. This level shows that managers act as a facilitator, catalysts or coaches to guide and lead their workers in the company.

Lastly, level four is beyond ownership to passion. Workers in a company would show greater confidence towards their job that they have done so far. They will take up the courage to challenge their superior while the managers need to be more open-minded to accept the challenges from subordinates. This is to ensure that engaged workers will generate a stronger sense in showing a better direction to the organization. When workers promote their new creation and showing improvement to their managers, they will always contribute more passion in their work.

Furthermore, our research study may also help the HR management of manufacturing company to come out with some effective company policy for their company future usage. As a result, the organization will be having positive result towards company economy. According to McCrimmon, 2009, companies that possess higher worker engagement tend to give an occurrence of 19 percent of higher operating margin, net profit margin and revenue growth. The organization has a higher chance to earn up to 25 percent of earnings per share compared with those companies that have low worker engagement.

1.6.3 Researcher Perspectives

Throughout this work engagement research, we are able to provide some relevant work engagement information for the future researchers who are interested in this field. We can provide them information with our research data and research findings. In researcher perspectives, this will able to help researchers to have

clearer dimension and view in work engagement among managers in Malaysia manufacturing industry.

1.7 Chapter Layout

This research study can be separated into 5 chapters. These 5 chapters will be focusing on their respective areas.

Chapter 1 is the summarized view of the study which includes the research background, statement of the problem, research objectives and followed by research questions and hypothesis of the study. The significance of the study will outline the meaning of this research. Besides, the chapter layout and conclusion are also included.

Chapter 2 is a detailed literature reviews which overviews all the relevant sources that are related to the topic. It examines the relationship between the independent variable and dependent variables and discuss some theoretical models. This chapter will end with hypotheses development and conclusion.

Chapter 3 is the discussion of research methodology that will be used by the researchers. It will include the research design. Next, data collection method outlines the method that used by the researchers to get the data needed. Sampling design describes the target population, location, size and elements for the study. Research instrument and constructs measurement also can be found in this chapter. This chapter will end with data processing, data analysis and conclusion.

Chapter 4 is the discussion of the research result that includes findings related to problem, summary of data and test of significance.

Chapter 5 provides the overview of the results of this study as well as significant discussions and provides recommendations to improve the employee's work engagement.

1.8 Conclusion

In conclusion, chapter 1 is an overview of the research study. We have stated that our objective is to study the job autonomy, personal resources and organizational support affect the manager's work engagement in manufacturing industry. Besides that, we also stated the problem statement which had proved that the research is vital and worth to study. Hypothesis for our research topic formed based on independence variables and dependence variables to identify the significant relationship between them. The significance of the study will be used as precedence for the following chapter. In the following chapter, we will further discuss the journal article that related with our research topic. Besides that, we will discuss about independent variables and dependent variables to have a more understanding of our research.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

In Chapter 2, we are going to study the field of work engagement by analyse the past studies done by other researchers & the work engagement's antecedents and consequences. This study is conducted with the aim to study the relations between the job autonomy (JA), personal resources (PR) and perceived organizational support (POS) among manager's work engagement in manufacturing industry in Malaysia. First, we do a review on definition of each variable that influence the work engagement of managers which analysed by the researchers. The content of this chapter is review of literature on three main independent variables (IVs) and dependent variable (DV). Then, we will review the theoretical model that are relevant to our study and suggested theoretical framework of our study. Lastly, we will review the hypotheses developed by researchers that formulating the relationships between each variables in this study.

2.1 Underlying Theories

2.1.1 Social Exchange Theory (SET)

Social Exchange Theory (SET) is one of the utmost impactful conceptual paradigms to understand the organizational behaviour of employees in the workplace, especially work engagement. This theory is connected or related to

one independent variable which are perceived organizational support. The researcher found that another stronger theoretical rationale to explain employee engagement aside from the Kahn (1990) and Maslach et al.'s (2001) models is Social Exchange Theory (Saks, 2006). This theory argued that responsibilities occurred through the interchange between two parties who are in the states of mutual interdependence. According to Cropanzano & Mitchell (2005), the principle of SET is about the relationship of trust, loyal and mutual commitments over time in consideration of the parties still comply with certain "rules" of exchange. When employees get some benefit resources or possessions from the company, they definitely feel grateful to react in kind to pay back to the company. When the organization fails to provide resources needed by employees, they will start to withdrawal and disconnect themselves from the work roles.

Engagement is known as two-way relationships between the employers and employees (Robinson, Perryman, & Hayday, 2004). For employees to repay their company, they will choose to engage themselves into the work with full attention in order to respond to the resources they receive from the company. It is an overwhelming practice for an individual to fully diverse into the work roles given by company. Due to some reason, work engagement of employees is able to devote greater amount of cognitive, emotional, and physical resources in the workplace. Although some said that employees may repay their organization by performing better job performance. However, job performance is more difficult compare to work engagement in workplace. Job performance of employees is always measured and used as the basis for employee's compensation. Thus, managers will tend to exchange their engagement in workplace with their organization's resources.

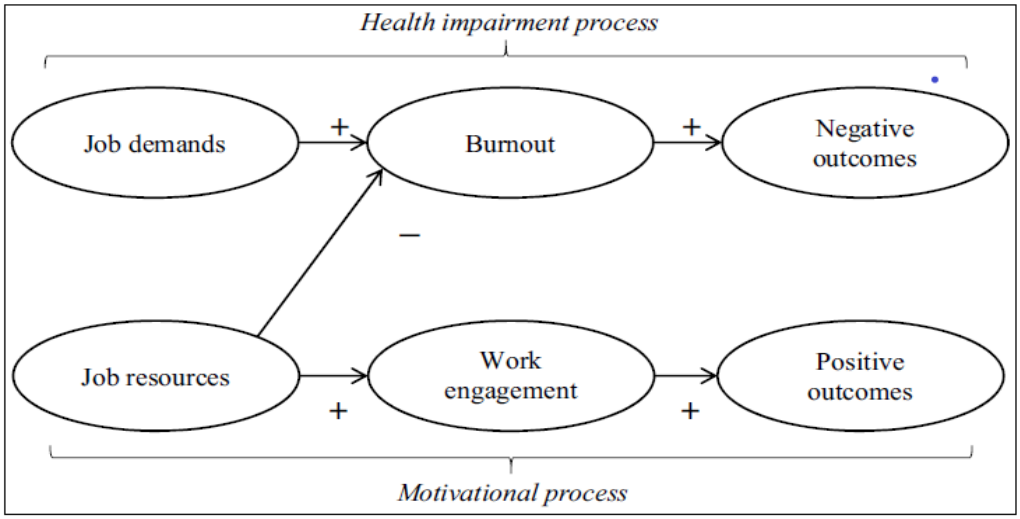
2.1.2 Job Demands-Resource Model (JD-R Model)

Job demands-resources (JD-R) is the combination of two elements, which are job resources and job demands. This model is interrelated to personal resources, and

job autonomy independent variables in our research. Based on the research conducted by Halbesleben & Buckley (2004), high in job demands such as work stress, emotional demands, and role unclearness could direct to fatigue, and health risk. However job resources like social assist, performance comment, and autonomy might motivate to job-related learning, work engagement, and company commitment (Salanova, Agut, & Peiro´, 2005). Employees easily get bored and tired of their work performance in an organization. Job design theory is important in achieving the performance of the organization and increase the productivity or outcome of the employees.

Based on Hackman & Oldham (1980), how an employee completes and practices work would be the concern of the research. According to Bakker, Demerouti, & Euwema (2005), demands-resources (JD-R) model has continually improving and frequently used by the researchers. Job burnout (Bakker et al., 2005), organizational commitment, work enjoyment (Bakker, Van Veldhoven, & Xanthopoulou, 2010), relatedness (Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007), and work engagement (Hakanen, Bakker, & Schaufeli, 2006) can be identified based on the job demand resources model.

Figure 2.1: The Job Demands Resources Model



Adapted from *Schaufeli W. (2017)*

Moreover, the JD-R theory can interpret, describe, and forecasts about employee interests or comfort like exhaustion, health, inspiration, work engagement towards job performance. JD-R has constantly explained that employees accomplish good job performance during challenging and intelligent working environments would speed up the work engagement. The organizations should offer adequate job demanding, and job resources, which include social support, skill variety and feedback to their workers. Some study proposes that organization can influence employees' job resources-demands (Nielsen, Randall, Yarker, & Brenner, 2008) and might diffusely affect employee's performance through work engagement.

2.2 Review of the Literature

2.2.1 Work Engagement (WE)

William A. Kahn, who was a professor from Boston University, was the first researcher that proposed engagement refers to psychological presence of an employee when performing the task. Kahn had first come out with the concept of engagement as '*The harnessing of organizational members*' (Kahn, 1990). These terms were referred to how one act towards their work roles. Furthermore, Kahn managed to define engagement by people's behaviour (physically, cognitively, & emotionally) when executing role performance after 25 years of research study on engagement (Kahn, 1990). Kahn found that employee will be more engaged to the work in the workplace that provide better psychological meaningfulness and psychological safety.

As a result, there are some researchers started to define and study on engagement in different paths. According to Rothbard (2001), the researcher refers engagement as psychological presence which includes two vital components

(attention & absorption) as mentioned by Kahn's study in 1990. Attention means emotional availability and the special notice taken about something or someone. (Gardner, Dunham, Cummings, & Pierce, 1989). Furthermore, engagement refers being engaged in a role and concentration of someone's focus in role (Kahn, 1990).

According to B. Schaufeli & Bakker (2004), work engagement refers to affective-motivational, working condition of accomplishment in employees which including vigor, dedication and absorption. Vigor is indicates with great levels of psychological resilience and energy in the workplace. It is also representing the willingness of an individual to invest effort in work and not easily to give up and tired when facing the obstacles. Dedication means the sense of importance from one's work. The individual will feeling enthusiastic and proud about the job handling, and enjoyed being challenged by it. Absorption is means by wholly and happily enjoyed in one's work. A person who had experienced absorption will having some difficulties to disengage from the job. An individual will fully immersed with the job until he or she forgets everything else is around.

According to May, Gilson, & Harter (2004), the researchers stated the facts if employees are engaged they will have higher energy level, more committed to their tasks, and they always focus towards their job. Later, the previously proposed statement is being supported in research journal by H.Macey & Schneider (2008). In addition, work engagement concept has been proven reliably measured by (Schaufeli, Bakker, & Salanova, 2006a). This measurement enables to differentiate from some related concepts such as workaholic (Schaufeli, Taris, & Rhenen, 2008). Besides that, there are three studies have stipulate that engagement have optimistic relationship to financial returns (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), customer satisfaction (Salanova, Agut, & Peiro ´, 2005), and in-role performance (Schaufeli, Taris, & Bakker, 2006b)

2.2.2 Job Autonomy (JA)

Job autonomy defines as standard of control of an employee over how to perform or complete the job task assigned (Madanagopal, 2015). Autonomy enables employees to investigate with different work approaches and methods. Job autonomy is one the main predecessors of employee performance through the influence of work engagement. According to Madanagopal (2015), there are three phases of autonomy, which are work criteria autonomy, work scheduling autonomy, and work method autonomy. It enables them to discover new ideas and develop it. Moreover, research also found that high in job autonomy, tend the employees to participate more in knowledge sharing and perceived the work on their own (Madanagopal, 2015). As a result, job autonomy known as a strong indicator of employee performance and work engagement. Whereas, engaged employees are committed to the organization at all levels with enthusiastic about their work, energetic, dedicated, create changes and take any initiatives in how their work conducted which contribute towards work engagement (Chua & Iyengar, 2011). For instance, lesser absenteeism, lesser quality incidents (defects), lesser turnover, lesser safety incidents, greater productivity, lesser consumer safety incidents, and greater profitability.

Participation of an employee in the decision-making is a part of job autonomy. Participation enables them to understand further the effective interactions between higher-level employees and avoid ambiguity (O. Al-Yahya, 2008). There are five alternative decision methods ranging from authoritative, benevolent authoritative, consultative, participative and delegation (O. Al-Yahya, 2008). Involvement of employee in decision-making would share the knowledge in order to achieve organizational objectives (Saha & Kumar, 2017). The employee will consider that the organization as their own responsibility when they involved in the decision-making process. Because of that employee will be more conscious about their action and every decision in that organization. Moreover, the participation of employee would create good bonding and understanding between employee and

superior (Kumar & Giri, 2013). If the employees are able to manage their job schedule, there is a higher engagement of the employee towards their specific task or job. This is because the employee can accomplish the task as he/she own wish.

According to Osibanjo Adewale Omotayo (2012), flexitime is known as an element of job autonomy. Flexitime is an assumption of the work practice where employees are able to choose or schedule their own working hours. In general, flexitime defined as the ability of the employee to schedule work time according to own comfort (Eaton, 2003). This is a way of improving the organizational performance and chances of an employee to choose their own schedule work hours. Flexitime arrangement gives time and employees' freedom as the interest of the employee (Osibanjo Adewale Omotayo, 2012). Flexible work arrangement would increase the productivity, greater job satisfaction, better organizational commitment, better financial performance, and better labour retention (Yoon, 2016).

According to Sang-Hoon Lee (2017), job autonomy a useful to work engagement by sufficient the needs of learning as well as freedom. However, job autonomy is an important element for job resource, which drives employees' to perform well in their task. The essential to managing a person outcomes and taking action based on the sense of preference would be pleased with making own choices. When the employee authorized to make decisions on their own responsibilities, objectives, workload, and feedback, further likely to feel sufficient on their task. Moreover, autonomy or task management and self-capabilities existed associated with work engagement (Halbesleben J. , 2010). According to Schaufeli, Bakker, & Van Rhene (2009), increase of self-determination and social support considerably forecasted work engagement.

2.2.3 Personal Resources (PR)

Personal resources recognized as features of personality that are mainly related to durability and personal capability to have authority and influence their environment strongly. (Hobfoll, Johnson, Ennis, & Jackson, 2003) In addition, those authors stated personal resources are an individual's mental characteristics, which eventually reduce negative influence of demands on psychological well-being of a person. According to the research by Schaufeli & Taris (2014), personal resources will directly influence well-being of a person, which can be reducing work burnout and increasing engagement of an individual.

There are some researchers found out those psychological competencies of the employees forecast points of exhaustion and engagement at the end of the year will be able to control the standard levels of demands and resources (Prieto, Soria, Mart ńez, & Schaufeli, 2008). According to Xanthopoulou, Bakker, Demerouti, & Schaufeli (2009), those authors study on personal resources which will influence the relationship between job resources and positive psychological and organizational outcomes through the factors of self-capabilities, positiveness, and organization-based self-esteem. Self-efficacy is defined as the beliefs of an individuals about their ability to manage activities that influence their lives. Optimism refers to tendency of individuals in believe themselves will gain good results in life. Organizational-based self-esteem is known as OBSE. The employees have confidence that they can meet their needs when joining in roles with company.

Self-efficacy, optimism, and organisation-based self-esteem factors have been acknowledged as vital for personal's psychological welfare and work-related welfare in certain (Hobfoll, 2002; Luthans & Yossef, 2007). Personal resources are different from the positive personality traits which are fixed, and having definition of malleable (Luthans & Yossef, 2007). Thus, personal resources are suitable and appropriate for the current study.

2.2.4 Perceived Organizational Support (POS)

Within a company, every employees wish that their company will concern more towards their own perception and commitment (Krishnan & Mary, 2012). They hope that the top management can hear the ideas generated by them. Employees will feel more motivated and gain high passionate towards their work once their effort is being realised by the top management. Hence, Perceived Organizational Support (POS) plays an important role within a company.

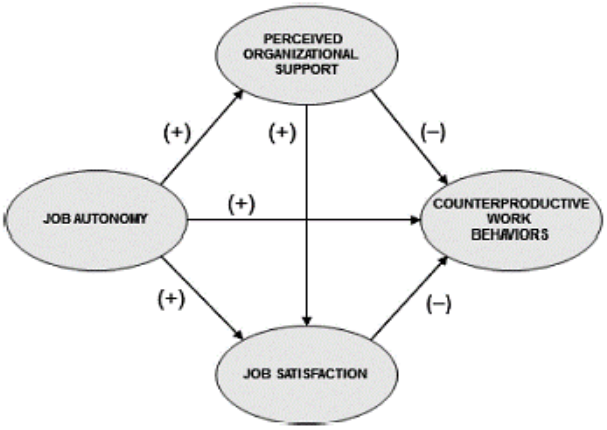
Perceived Organizational Support is known as an emotional support given to the employees which refers to the employees' perception towards the company in the means of increasing the organizational value and concerning more towards employee well-being. Perceived Organizational Support (POS) can act as a platform which will encourages the employees to work harder in order to reach the organizational objectives. As a way to encourage the employees to work hard, rewards and incentives will be given to the employee whom is able to perform well. Giving rewards and incentives to the employee can generate effective and efficient results where this can reduce the percentage of employee turnover, stress that employees faced during their daily work (Arshadi, 2011).

According to the research carried out by Eisenberger, Huntington, Hutchison, & Sowa (1986), perceived organizational support mainly focuses on employee-organizational relationship. The research has stated if the employees have high perceived organizational support (POS), they have higher motivation to help the organizational to reach its goal and objectives.

2.3 Review of Relevant Theoretical Frameworks

2.3.1 Job Autonomy (JA)

Figure 2.2: Theoretical Model of Job Autonomy

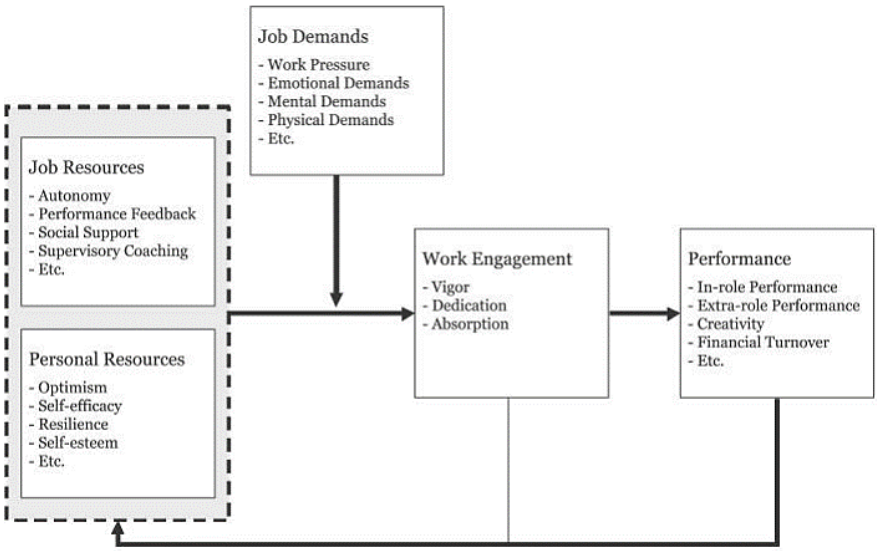


Adapted from *Brink, Emerson, & Yang (2016)*

In the figure 2.2, job autonomy has positive relationships with work engagement also with work behaviour. This illuminated that work engagement of the employees could be explain by the job autonomy. Job autonomy gives great locus of control within the field of task, methodology, and accomplishment, and emphasizes the power given to an employee in order to make their own decision (Brink, Emerson, & Yang, 2016). Moreover, job autonomy is associated with the greatest degrees of decision extent, job satisfaction, and better work performance (Chua & Iyengar, 2011). Giving an authority to the employee in decision-making could lead them to influence their work schedule and control over the performance in that organization. Moreover, job autonomy would be independent estimators for work engagement that has significance relationship. The employee those have greater participation in decision making, given flexitime, planning the work schedule in order and resource utilization would influence the work engagement in the workplace. According to Wang & Netemyer (2002) shows that higher job autonomy would lead to self-determination that could affect the work engagement directly.

2.3.2 Personal Resources (PR)

Figure 2.3: Theoretical Model of Personal Resources



Adapted from *Bakker & Demerouti (2007)*

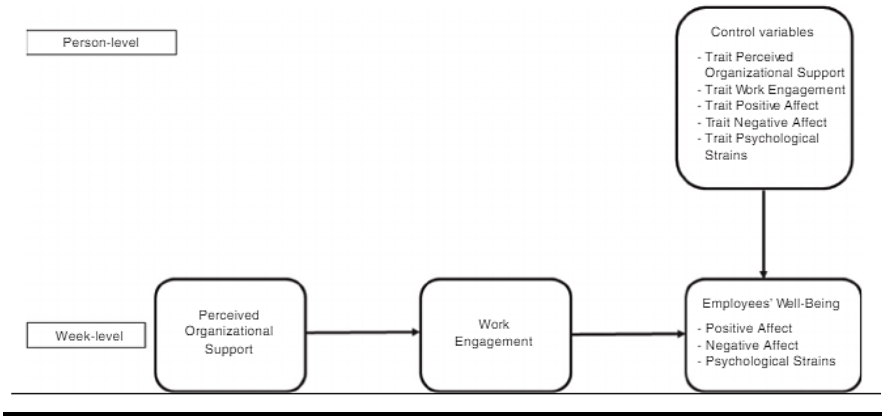
In figure 2.3, personal resources have positive relationships with work engagement as well as job performance. This indicated that work engagement of employees can be explained by the employee's personal resources such as: self-capabilities, positiveness, confidence, resilience, and others.

According to the Xanthopoulou, Bakker, Demerouti, & Schaufeli (2009), the researchers have found the evidence to support positive relationship between personal resources and work engagement and job performance. The researcher managed to expand the JD-R model by showing personal resources and work engagement will positively influence the job performance. In addition, personal resources would be an independent estimators for work engagement. Those employees who have higher personal resources will be capable to organize their task and having higher work engagement in the workplace.

Based on the researches of Kim & Hyun (2017), they separated the personal resources into three independent variables that are self-capabilities, organizational-based self-esteem, and positiveness. The work engagement acts as a mediating role in the relationship between the personal resources (self-capabilities, OBSE, optimism) and turnover purpose. The researchers had come out with three hypotheses and all those hypotheses are positively significant to each other's.

2.3.3 Perceived Organizational Support (POS)

Figure 2.4: Theoretical Model of Perceived Organizational Support



Adapted from *Caesens, Stinglhamber, & Ohana, 2016*

In figure 2.4, Perceived Organizational Support (POS) has positive relationships with work engagement as well as Employees' Well-Being. Employees' Well Being can be categorized as positive affect, negative affect and psychological strains. There are certain control variables which is used to measure employees' well-being.

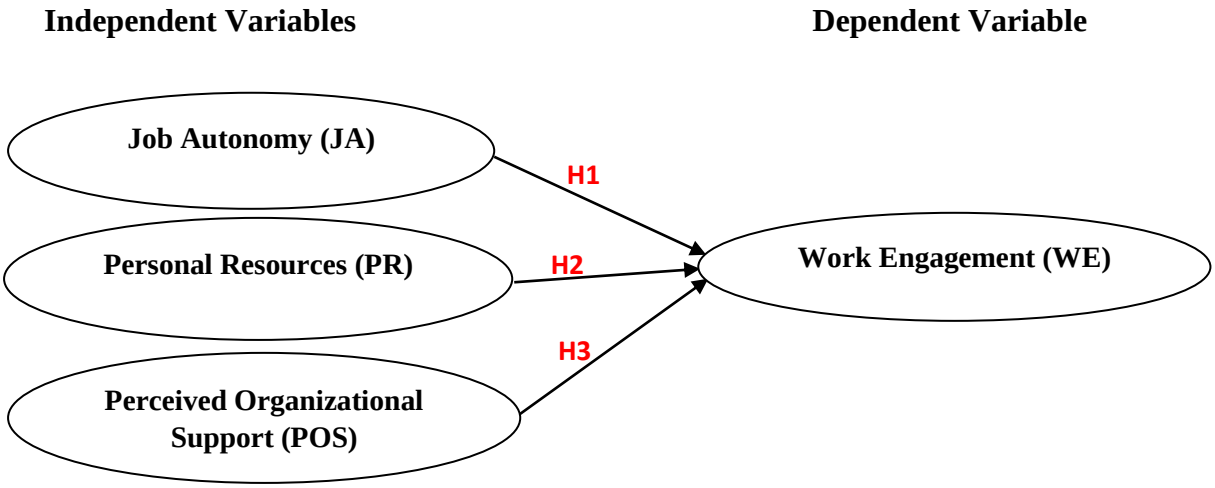
The researchers have found out the evidence to support the positive relationship between perceived organizational support and work engagement and leading to employees' prosperity (Caesens, Stinglhamber, & Ohana, 2016). The reason that

perceived organizational support (POS) has positive effects towards employees' work engagement is due to the reason that it generates the intrinsic interest towards the employees' task.

Firstly, employees have high belief towards their organization in providing the materials or emotional support whenever they need it. Secondly, the employees are given rewards and incentives if they have performed well during their task. Thirdly, perceived organizational support (POS) is able to fulfil or build up the employees' self-esteem. Lastly, perceived organizational support (POS) helps to build up the employees' intrinsic interest in way that it can generate their self-efficacy. Hence, perceived organizational support (POS) shows a positive relationship with work engagement as well as employees' well-being.

2.4 Proposed Conceptual Framework

Figure 2.5: Proposed Conceptual Framework



As stated above, this is the research study's model and their hypothesis association is draw upon job autonomy (JA), personal resources (PR), and

perceived organization support (POS) in measuring work engagement in Malaysia manufacturing industry. According to Figure 2.5, framework is developed based on the review of related theories in the previous part. So, this research comes up with hypothesis to study the relations between work engagement (DV) and three (IV) (job autonomy, personal resource, and perceived organizational support).

2.5 Hypothesis Development

2.5.1 Relationship between Job Autonomy (JA) and Work Engagement (WE)

The allowance of autonomy at work among private sectors in Malaysia serves as a motive to get a return by indicating better levels of engagement in their tasks (Yong, Suhaimi, Abdullah, Rahman, & Nik Mat, 2013). In a study, conduct by Ping found that 70% of companies recognized turnover as serious problem in the Malaysian private higher education sector. Flexible working hours is the foremost retention factors in the education sector in Malaysia (Peng, 2018). When the organization demotivates these job characteristics, the employee feels more likely to withdraw from current jobs or roles in an organization. Therefore, job autonomy plays an important role in motivating employee and enables the organization to achieve the objectives. Employees given empowerment to perform the task or job by their superiors.

Besides that, further feedback from superiors in high-autonomy tasks would expressively contribute to employees' performance. Hence, job autonomy enables the employee to receive feedbacks from their superior in related to their task and roles in an organization. According to Sisodia & Das (2013), a research study conducted between U.S., Australia, and India salespersons. As the conclusions of

the research, indications that job autonomy is the predecessor to job satisfaction. Job autonomy in work engagement toward employees from different levels of hierarchy in India and they found an employee from greater tiered degree tend to rejoice a larger volume of autonomy than lower tiered levels of employees (Sisodia & Das, 2013). Moreover, some employees did not feel satisfied with independence provided to them by their superior because they do not want to bare the obligation of task outcomes (Naqvi, Ishtiaq, Kanwal, & Ali, 2013).

H1: There is a significant influence between Job Autonomy (JA) and work engagement (WE).

2.5.2 Relationship between Personal Resources (PR) and Work Engagement (WE)

There are some researchers have proven there are a positive relationship between personal resources and work engagement. According to the Rothmann & Storm (2003), they have done a research on thousands of South African police officers and they discover that respondents are using coping style in work engagement. Those respondents are problem-focused, and they will take actions to reduce the stress makers.

Furthermore, a study conducted by Kim & Hyun (2017) examined the effect of personal resources on turnover intention and work engagement as mediating variables. The researchers have separated personal resources into three independent variables (self-capabilities, organizational-based self-esteem, positiveness) to test on turnover intention among organizations in Korea. Personal Resources are positively influencing the work engagement in the workplace are the results. The employees who have great self-efficacy will be able to highly engage and enhance with their work. But, this cannot prove that these employees will have low turnover intention. Moreover, personal resources will promote the turnover intention of employees unless mediated by work engagement. Personal

resources is a crucial variables which have positive relationship with work engagement.

H2: There is a significant influence between personal resources (PR) and work engagement (WE).

2.5.3 Relationship between Perceived Organizational Support (POS) and Work Engagement (WE)

There are some researchers have also proven that perceived organizational support and work engagement has positive relations. According to Koodamara (2014), it has stated that an organization has high dependence towards their employees where they are the key core that supports the whole organization. The employees' quality services and their commitment to the work shows a relationship with the effectiveness of an organization.

Next, a study conducted by Gupta, Agarwal, & Khatri (2016) have examined the relationship of perceived organizational support (POS), work engagement and organizational citizenship behaviour, affective dedication as the mediating variables and psychological contract breach as the moderating variable. The results show that high affective commitment will generates positive relationship between perceived organizational support (POS), organizational citizenship behaviour and work engagement. When an organization fulfilled the employees' needs, the employees will be more passionate and motivation to help the organization to reach their goals and objectives. 750 nurses working in nine large hospitals was given questionnaires and 475 nurses were responded towards the questionnaire. Throughout the whole questionnaire process, the results are perceived organizational support and work engagement has positive relations.

By referring to the research conducted by Karatepe, (2016), researchers have gathered the data from Northern Cyprus's employees and supervisors. According to this study, perceived organizational support and work engagement has a relationship.

H3: There is a significant influence between Perceived Organization Support (POS) and work engagement (WE).

2.6 Conclusion

As a conclusion, in this chapter 2, we have provided a comprehensive and specific literature review by using journal, textbook and articles according to previous researcher's literatures. Moreover, we have constructed the conceptual framework and hypothesis based on the three IVs (Job Autonomy, Personal Resources & Perceived Organizational Support) and DV (Work Engagement) to continue identify their relationship in next chapter- Research Methodology.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter shows out the alternatives and process to collect right and appropriate data for our study topic will be discussed. This includes the research design, collection of data methods, sampling design, research instrument, data analysis method, data processing and measurement inside this particular chapter.

3.1 Research Design

Research design carries out a job of collecting and data analysing framework. Priority given to the ranges of dimension in research process is being reflected through the choices of research design (Bryman, Bell, Mills, & Yue, 2011). It is a tool used in understanding more on the relationship of job autonomy, perceived organizational support and personal resources with the work engagement of managers in manufacturing industries. This part is important as it shows out steps to gather and analysis information collected (Sekaran & Bougie, Research Methods for Business: A Skill Building Approach, 2013).

3.2 Data Collection Method

One of the vital part of research processes is data collecting. Good data collection will provide better accuracy, increased validity and good reliability of the whole research.

Data collection methods splits into 2 types, first is primary data and the second is secondary data. Researchers tend to take in more than one source of data and combine them together (Harrell & Bradley, 2009, p. 7). For this research, surveys in form of questionnaires are used to collect data from the managerial employees in manufacturing sector companies and industries.

3.2.1 Primary Data

Primary data is a first-hand data source that being collected by researchers originally for a research purpose or project (Stam, 2010). Interview, experiments, field observations and surveys or questionnaires are the common techniques of primary data.

Generally, obtaining primary data through questionnaire or interview allows the researchers to obtain latest information from respondents compared to past information from secondary data methods. But primary data is much more costly to obtain and will generally take a longer time to prepare (Stam, 2010). The survey questions used in this research are adopted and adapted from different journals and then distributed to the managers. In this research, survey forms or questionnaires have questions for each independent variables leading to the dependent variable. The questions are set from ordinal scale, nominal scale to Likert Scale to see the response of the respondents.

3.2.2 Secondary Data

Secondary data are collected data by other sources and are available to the researchers now (Management Study Guide, n.d.). These data are usually cheaper and easier to analyse than primary data.

For secondary data, we searched and collected information from various websites through the internet. Internet has been a good source of reference to our research because without searching in the library for outdated source, we can easily get new and update references from the web.

Searching of definitions, data, information and theories has become easier when there is secondary data helping us to develop our framework and understand the topic of our choice much better through definitions and theories. The library E-Database has also helped us to locate the resources needed to conduct this research such as reference books and other journals. With the help of these references the flow of our research has been greatly improved.

3.3 Sampling Design

3.3.1 Target Population

For a researcher to make inferences, the whole set of units in a survey data is brought into concern as target population (Lavrakas, Encyclopedia of Survey Research Methods, 2008). The target population for research shows the definition of the units the research data are to generalize. For this research, we want to

examine the relationship between job autonomy, personal resources and perceived organizational support with the work engagement among the managers in Malaysia manufacturing industries. So, the managers in manufacturing industries in Malaysia are our target population.

Table 3.1: Population of Occupation in Malaysia Manufacturing Industry

Category of Jobs	**Paid Full-Time Employees**	**%**
Managers, Professionals and Executives	187,092	9.1
Technicians and Associate Professionals	212,917	10.4
Clerical and Related Professionals	132,114	6.4
Plant And Machine Operators and Assemblers	1,423,337	69.3
Elementary Occupations	98,305	4.8
Total	**2,053,765**	**100**

Adapted From *Department of Statistics Malaysia, Official Portal, 2016*

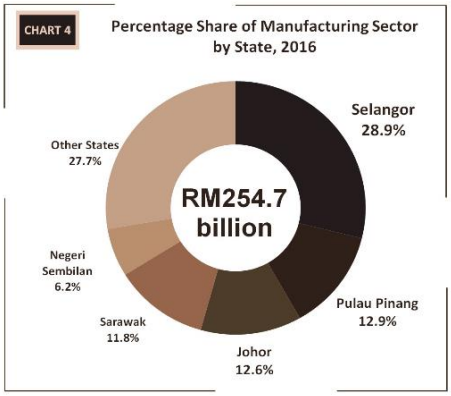
By referring to the table above, the population of managers in Malaysia manufacturing industries are 187092 people in Malaysia (Department of Statistics Malaysia, 2016) and this will be our target population.

3.3.2 Sampling Frame and Sampling Location

Sampling frame is a list used by researchers to define a population's interest. It defined as the set of elements researchers choose from a target population (Lewis-Beck, Bryman, & Liao, 2004). However throughout our research project we are unable to obtain the sampling frame. This is due to the reason that we did not manage to obtain the name list of the managers in the manufacturing industry. While sampling location is where the researchers distribute and collect data from the target respondents.

Figure 3.1: Percentage Share of Manufacturing Sector by State, 2016

Manufacturing sector was mainly contributed by Selangor with a share of 28.9 per cent followed by Pulau Pinang and Johor with 12.9 per cent and 12.6 per cent respectively as portrayed in Chart 4.



Adapted from *Department of Statistics Malaysia (2017)*

Based on the report of Department of Statistics Malaysia, the largest state contribution in manufacturing sector is Selangor (28.9%), followed by Pulau Pinang (12.9%) and followed by other states in the chart above. So, in our research, we have chosen Selangor and Pulau Pinang as the majority contribution state responding to our research and one Perak as our minority respondent in our research. Therefore, our sampling location is Selangor, Pulau Pinang and Perak while sampling frame is the managers who contributed in manufacturing industry of Selangor, Pulau Pinang and Perak.

3.3.3 Sampling Elements

The individuals who are being targeted in this research are sampling elements. The sampling elements of the study are managerial employee or as known as managers in the manufacturing industries in Malaysia. The managers included top managers, middle managers and first line managers in the company or industry. Therefore, managers of the selected companies have an equal chance of being chosen to be part of the sample no matter their qualifications or designations.

3.3.4 Sampling Technique

Since we are unable to get a sampling frame for this research, we use a non-probability sampling technique to conduct the study. Chain referral sampling or as known as snowball sampling is the sampling method that is being used to maintain confidentiality of the individual while reducing bias during sampling (Penrod, Preston, Cain, & Starks, 2003). In our research group, we have no relationship to any managerial status employee in manufacturing industries. So, we need to have a person to send the questionnaires to a person in the company and spread it out to the managers in the company and gain the response slowly among the managers alike to snowball rolling on the snowy mountain. So, since pilot test study, we have been using the same method, that is approaching the Human Resource Department and let them disperse the questionnaires while increasing the number of respondents along the way like a snowball.

3.3.5 Sampling Size

Sample size basically is a small amount of group that are being taken from the entire population (Lavrakas, Encyclopedia of Survey Research Methods, 2008). Sampling size is important to research at majority as it will reduce the cost and time to research the full population. A full population most of the time will be large and too big to survey them all.

In pilot test, we have chosen three companies from two states of our choice that is Selangor and Perak as our sampling size. While in real study after pilot test study, by following the table below, we have determined the sample size of 384 with the given population of 187092.

Figure 3.2: Required Sample Size

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

† Copyright, The Research Advisors (2006). All rights reserved.

Adapted from *Sekaran, U. (2003). Research method for business: A skill building approach, 4th edition.*

3.4 Research Instrument

3.4.1 Questionnaire

The research instrument we used in this research is questionnaire. Questionnaire can help us to obtain big amount of data from a big population of people. The

reason why we have chosen the questionnaire approach to collect our data is because the data can be collected faster and researchers do not need to physically present to distribute the questionnaires. Moreover, questionnaire's question are all standardized and in the same order. This can enable the researchers to check the reliability and consistency of results easier. It is impossible to interview and observation all samples because the number is still large depending on our manpower, time and cost. We only put in fixed-alternative questions in our questionnaire to know the degree of agreeableness of managers of each question. We do not put any open-ended questions in the questionnaire because the answers will only increase the difficulty when transferring into data to analyse.

To study the causal relations between the factors of work engagement (job autonomy, personal resource and perceived organizational support) and work engagement level of managers in manufacturing industries of Malaysia, we have categorized the questionnaires into Section A and Section B (2 section).

Firstly, under section A are the respondents' demographic profile such as respondents' age, gender, race and position of respondents. Under section B, 24 questions that are related to our variables are being selected for our research study. For each of the independent variable (job autonomy, personal resources and perceived organizational support) in our research study, we consists of 6 questions. We are using the 5-point Likert Scale to measure the degree of agreeableness of respondents to all the 24 questions in Section B.

3.4.2 Pilot Study

Before the actual studies, we have conducted a pilot study. A real study is being carried out to check whether the research instrument are reliable or not and identify the problems within the questionnaires. We printed out 50 questionnaires

and sent out among managers in Carsem (M) Sdn.Bhd. Unisem Group and ITL BioMedical. 33 useable questionnaires is being collected back from the academic staffs within one week and complete the pilot study. We exercise SAS 7.1 to run the reliability test for the valid 30 questionnaires. Below are the results of pilot study that we conduct:

Table 3.2: Reliability Test for pilot study

Construct	Cronbach's Alpha
Work Engagement	0.718486
Job Autonomy	0.811750
Personal Resources	0.622563
Perceived Organizational Support	0.873049

3.5 Constructs Measurement

3.5.1 Origin of Construct

3.5.2 Scale of Measurement

By referring to our studies, our questionnaires have 2 sections which includes Section A and Section B.

Table 3.3: Origin of Construct

Sections	Number of Questions	Sources	Scale
Section A			
Gender	1		Nominal Scale (Male or Female)

Age Group	1		Ordinal Scale (Below 30 years old, 31-40, 41-50, 51-60, Above 60 years old)
Ethnics Group	1		Nominal Scale (Chinese, Malay, Indian or Others)
Highest Education Completed	1		Nominal Scale (SPM/STPM, Certificate/Diploma, Bachelor Degree, Master/Doctoral Degree)
Years of working in company	1		Ordinal Scale (0-2 years, 3-5 years, 6-9 years, 10-14 years, more than 15 years)
Monthly Salary	1		Ordinal Scale (RM3000 and below, RM3001 to RM5000, RM5001 to RM7000, RM7001 and above)
Organizational Level	1		Nominal Scale (Lower management, Middle management, senior management)
Total Question in Section A	7		
Section B			
Work Engagement (WE)	6	Schaufeli, Bakker, & Salanova (2006).	Interval Scale 5-point Likert Scale (Strongly Disagree to Strongly Agree)
Job Autonomy (JA)	6	Brink, Emerson, & Yang (2016).	Interval Scale 5-point Likert Scale (Strongly Disagree to Strongly Agree)
Personal Resources (PR)	6	Šamija, Sporiš, & Šamija (2016).	Interval Scale 5-point Likert Scale (Strongly Disagree to Strongly Agree)
Perceived Organizational Support (POS)	6	(APODACA, 2010)	Interval Scale 5-point Likert Scale (Strongly Disagree to Strongly Agree)
Total Questions in Section B	24		

3.6 Data Processing

Data processing is the vital part for this study. After data has been collected through the questionnaire distributed to the respondents, we analysed them to test the research hypothesis. There are 4 steps in data processing to make sure that the data are usable for later analysis.

3.6.1 Data Checking

All questions in the questionnaires are screened and checked through to make sure that the respondents answer all the questions.

3.6.2 Data Editing

In this step, we need handle the data by detecting and correcting the inconsistent and missing data from the information returned by the respondent. This situation will occurs when the respondent misunderstand or overlooked some questions in the questionnaire. Therefore, data editing could help us to obtain a more reliable result through gaining a more complete and consistent set of data.

3.6.3 Data Coding

This step helps to ease the process of data entry by allocating the responses in character symbols and numerical scores given by the responses to group them. In this questionnaire, the questions in demographic part are coded as gender (1=male and 2=female); Race (1=Chinese, 2=Malay, 3=Indian, and 4=others) as same to the other questions in Section A. For Part A, the below table is the label and coding for the questions:-

Table 3.4: Coding for the questionnaire

No.	Question	Coding
1	Gender	Male=1 Female=2
2	Age	20 Years Old and Below=1 21-30 Years Old=2 31-40 Years Old=3 41 Years Old and Above=4
3	Ethnic Group	Malay=1 Chinese=2 Indian=3

		Others=4
4	Highest Education Completed	SPM/STPM=1 Certificate/ Diploma=2 Bachelor Degree=3 Master/ Doctoral Degree=4
5	Years of Working In Company	0-2 Year=1 3-5 Years=2 6-9 Years=3 10-14 Years=4 More than 15 Years=5
6	Monthly Salary	RM3000 and Below=1 RM3001 to RM5000=2 RM5001 to RM7000=3 RM7001 and Above=4
7	Organizational Level	Lower Management=1 Middle Management=2 Senior Management=3

On the other hand, the questions in section B uses 5-point Likert Scale which is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

3.6.4 Data Transcribing

Final procedures of data processing is data transcribing. For this step, collected data are keyed-in into an Excel file and transcribed by the SAS 7.1. The data are then gathered by the researcher to carry out data analysis later.

3.7 Data analysis

SAS 7.1 are being used by the researchers to interpret and analyse the collected data from the responses. Reliability analysis (Pearson Correlation Coefficient) and Multiple Linear Regression in the software are being used by us for data analysis.

3.7.1 Descriptive Analysis

In this study, we analyse both percentage and frequency distribution of the general information of the respondent under section A of questionnaire by using SAS enterprise software. So, to classify the respondent's gender, age, ethnics group, education level, work length, monthly salary, and organizational level.

3.7.2 Scale Measurement

To check the reliability of the responses in the questionnaires, Cronbach's alpha is being used to calculate the accuracy of this research. Cronbach's alpha is a modulus that shows how variables are correlated between them (Sekaran, 2003). By referring to the table below, the reliability strength of the questionnaire will be referred to this table.

Table 3.5: Reliability Strength of Questionnaire

Coefficient Alpha	Level of Reliability
0.80 to 0.95	Very Good Reliability
0.70 to 0.80	Good Reliability
0.60 to 0.70	Fair Reliability
<0.60	Poor Reliability

Adapted from *Sekaran, U. (2003). Research method for business: A skill building approach, 4th edition.*

Table 3.6: Reliability Test for actual study

Construct	Cronbach's Alpha
Work Engagement	0.783909
Job Autonomy	0.844093
Personal Resources	0.780292
Perceived Organizational Support	0.894507

3.7.3 Inferential Analysis

3.7.3.1 Pearson's Correlation Coefficient

Pearson's Correlation Coefficient is used in research to see how strong a relationship between two variables (Statisticshowto.com, 2018). For all variables that are measured using ratio and interval scales, Pearson Correlation Coefficient is being used to indicate the correlation between them.

In Section B of the questionnaires, Pearson's Correlation Coefficient is being used to test out the relations of variables' questions. While the relations' strength of the variables are analysed using the range table below:-

Table 3.7: Reliability indicator (Pearson's Correlation Coefficient)

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible correlation

Adapted From Statistics Corner: A Guide to Appropriate Use of Correlation Coefficient in Medical Research, 2012

3.7.3.2 Multiple Linear Regression

The relationship between two or more independent variables (Job Autonomy, Personal Resources, and Perceived Organization Support) and a dependent variable (work engagement) can be explained by using Multiple Linear Regression (MLR) Analysis.

In Section B, the MLR results have being used to determine the contribution of IVs towards DV using the parameter estimates.

Besides that, R^2 value can assist to explain the variance of DV and adjusted R^2 value can be used when there are multiple IV in the study model. This is because adjusted R^2 value is more accurate than R^2 value.

And lastly the P-Value of each variable can help to explain the significance of relationship of the variables with the model that we have drawn out.

3.8 Conclusion

For chapter 3, it basically explains the methods of research used in the study: how data is being gained, processed and analysed. This chapter also explained about the process of the research that involves method used in collection of data, designing sample, instrument for research, construct measurement, processing data and analysing data. Lastly, in this chapter also explain the software that we choose to examine the questionnaires.

CHAPTER FOUR: RESEARCH RESULTS

4.0 Introduction

In chapter 4, analysis of our research results and explanation of our study topic will be discussed. We have gathered up a total of 347 set of questionnaires to analyse and had been interpreted through Statistical Analysis System (SAS) Enterprise Guide software. In descriptive analysis, we will be discussing respondents' general demographic profile. Next, frequency analysis is being used under central tendencies measurement of construct. Moreover, we have shown the results of reliability analysis under scale measurement. Under inferential analysis, we have included Pearson's correlation analysis result and multiple linear regression analysis result. In a nutshell, it has concluded with a summary of entire chapter 4.

4.1 Descriptive Analysis

We have used frequency analysis to analyse our respondents' demographic information. It is including gender, age, ethnic group, education level, working duration in current company, income level, and organization level. The data can be obtained in questionnaires' Section A that has been prepared by researchers. We will discuss frequency analysis final results in the following sub-chapters.

4.1.1 Respondent's Demographic Profile

In this section, we are going to discuss about demographic data that obtained from respondents that include gender, age, ethnic group, educational level, work duration, salary and organization level.

Table 4.1: Respondent's Demographic Profile

Demographic Factors	Categories	Frequency	Percentage
Gender	Male	201	57.93
	Female	146	42.07
	Total	347	
Age	20 years old and below	14	4.03
	21 - 30 years old	177	51.01
	31 - 40 years old	103	29.68
	41 years old and above	53	15.27
	Total	347	
Ethnics Group	Malay	83	23.92
	Chinese	88	25.36
	Indian	159	45.82
	Others	17	4.9
	Total	347	
Educational Level	SPM / STPM	70	20.17
	Certificate / Diploma	105	30.26
	Bachelor Degree	146	42.07
	Master / Doctoral Degree	26	7.49
	Total	347	
Working Duration	0 - 2 years	126	36.31
	3 - 5 years	104	29.97
	6 - 9 years	62	17.87
	10 - 14 years	34	9.8
	More than 15 years	21	6.05
	Total	347	
Income Level	RM 3000 and below	180	51.87
	RM 3001 to RM 5000	86	24.78
	RM 5001 to RM 7000	43	12.39
	RM 7001 and above	38	10.95
	Total	347	
Organizational Level	Lower management	146	42.07
	Middle management	154	44.38
	Senior management	47	13.54
	Total	347	

Source: Developed from research

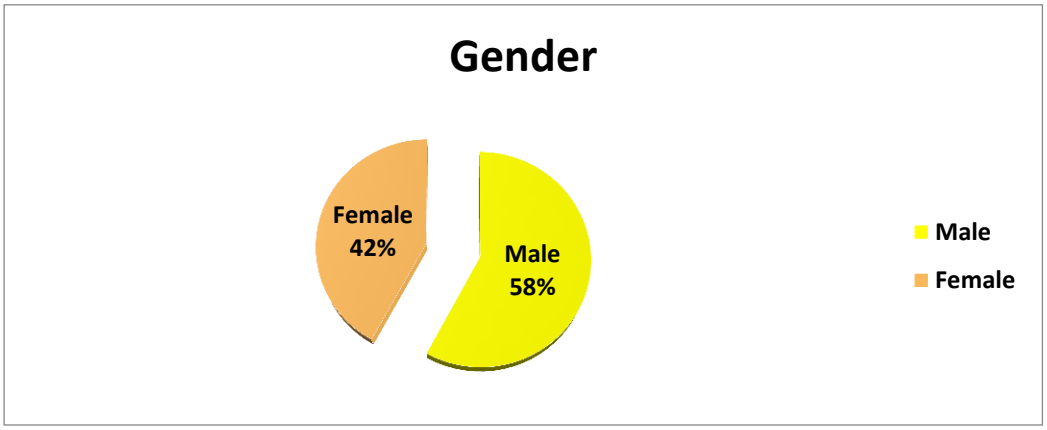
4.1.1.1 Gender

Table 4.2: Statistics of Respondent Gender

Gender	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
Male	201	57.93	201	57.93
Female	146	42.07	347	100.00
Total	347			

Source: Developed from research

Figure 4.1: Statistics of Respondent Gender



Source: Developed from research

Refer to the Table 4.2 and Figure 4.1, a total of 58% respondents are male whilst female respondents take up to the rest of 42%. In 347 set of questionnaires, there are 201 male and 146 female who are involved in this research. From the Table 4.2 and Figure 4.1, it indicates that number of female is slightly lower than male. This can be supported by the statistics of labour force in year 2018 which there is 9.42 million male employees and 6.03 million female employees in labour force (Department of Statistics Malaysia, 2019).

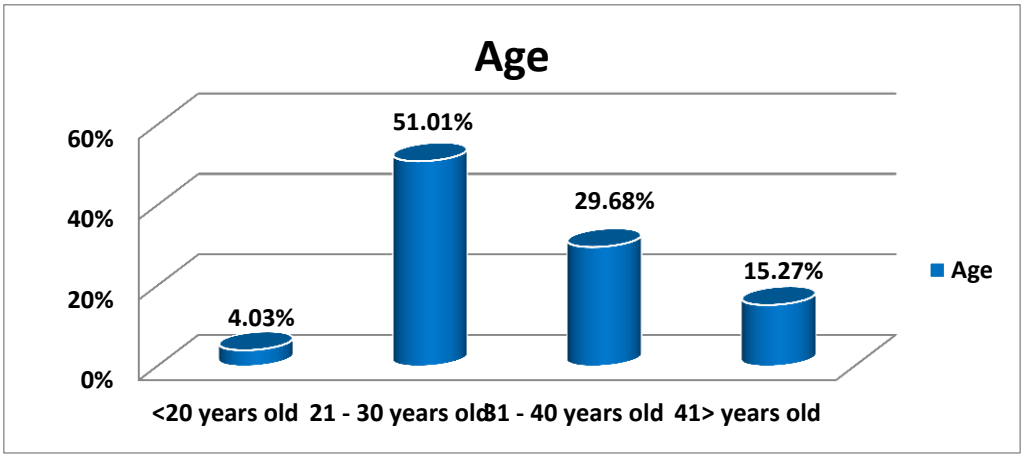
4.1.1.2 Age

Table 4.3: Statistics of Respondent Age

Age	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
20 years old and below	14	4.03	14	4.03
21 - 30 years old	177	51.01	191	55.04
31 - 40 years old	103	29.68	294	84.73
41 years old and above	53	15.27	347	100.00
Total	347			

Source: Developed from research

Figure 4.2: Statistics of Respondent Age



Source: Developed from research

From Table 4.3 and Figure 4.2 revealed the respondents' age frequency. From the results above, the largest amount of respondents is fall under the group of 21-30 years old (51.01%) and involves 177 respondents. The age group of 20 years old and below has contributes 4.03% which included 14 respondents. A number of 103 respondents in the age group of 31-40 years old have contributes 29.68% in the survey. For the age group of 41 years old and above, those respondents have contributed 15.27% which consists of 52 respondents. Most of the respondent

finished their tertiary education at age of 23-25 years old (ExpatFocus , n.d.). Hence, most of the respondents will be 23 years old onwards.

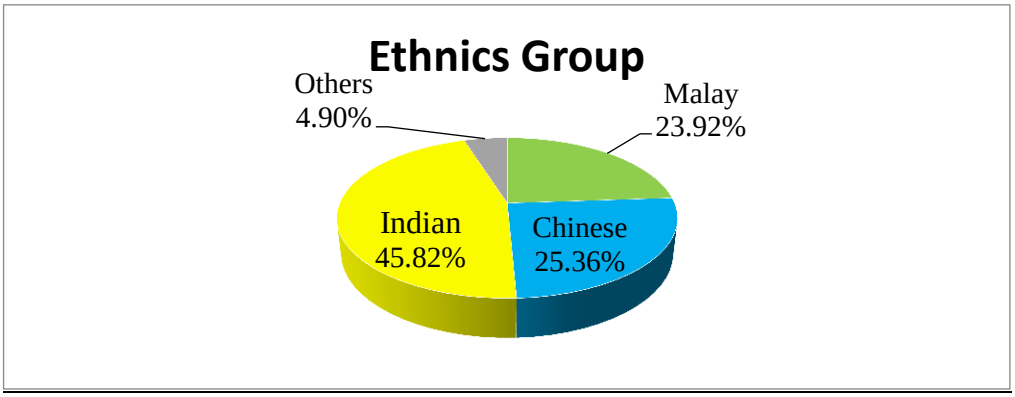
4.1.1.3 Ethnics Group

Table 4.4: Statistics of Respondent Ethnic Group

Ethnic Group	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
Malay	83	23.92	83	23.92
Chinese	88	25.36	171	49.28
Indian	159	45.82	330	95.10
Others	17	4.9	347	100.00
Total	347			

Source: Developed from research

Figure 4.3: Statistics of Respondent Ethnic Group



Source: Developed from research

In ethnic group, there consists of four types of ethnic group which are Malay, Chinese, Indian and others. From the Table 4.4 and Figure 4.3 illustrates that there are 23.92% of the total respondents which had made up of 83 respondents are Malay while there are 25.36% of the respondents are Chinese and consists of 88 respondents. At the same time, there are 159 Indian respondents and contribute 45.82% in the survey. There are 17 respondents from other ethnic group and only cover up the total of 4.90% in the survey.

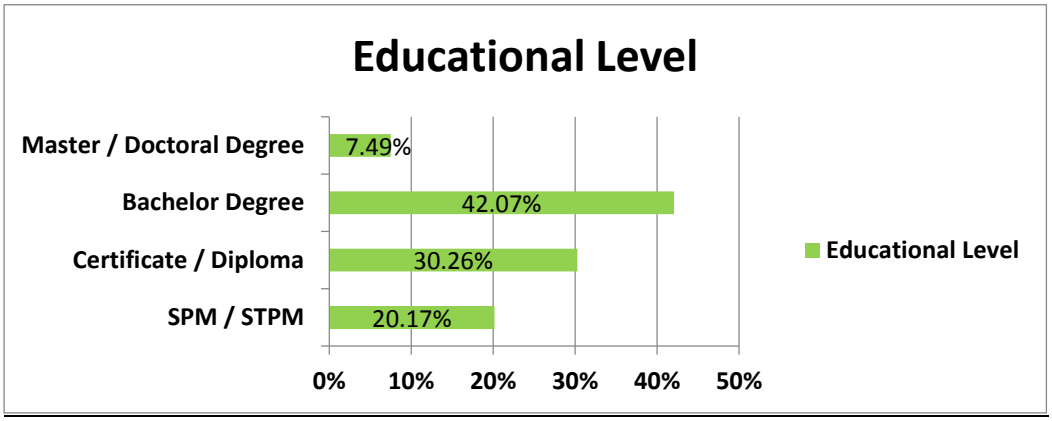
4.1.1.4 Educational Level

Table 4.5: Statistics of Respondent Educational Level

Educational Level	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
SPM / STPM	70	20.17	70	20.17
Certificate / Diploma	105	30.26	175	50.43
Bachelor Degree	146	42.07	321	92.51
Master / Doctoral Degree	26	7.49	347	100.00
Total	347			

Source: Developed from research

Figure 4.4: Statistics of Respondent Educational Level



Source: Developed from research

Based on Table 4.5 and Figure 4.4, there are 146 or 42.07% of respondents had completed their studies in Bachelor Degree which is the highest percentage in this research. There are 105 or 30.26% of respondent had their education until Certificate or Diploma level while 70 or 20.17% of respondent had their education until SPM or STPM level. There are only 26 or 7.49% of respondent had completed their studies in Master or Doctoral Degree. As an employee who which to apply a job in Malaysia, the minimum requirement for educational level is Bachelor Degree. Majority respondents study until Bachelor Degree and start their working life.

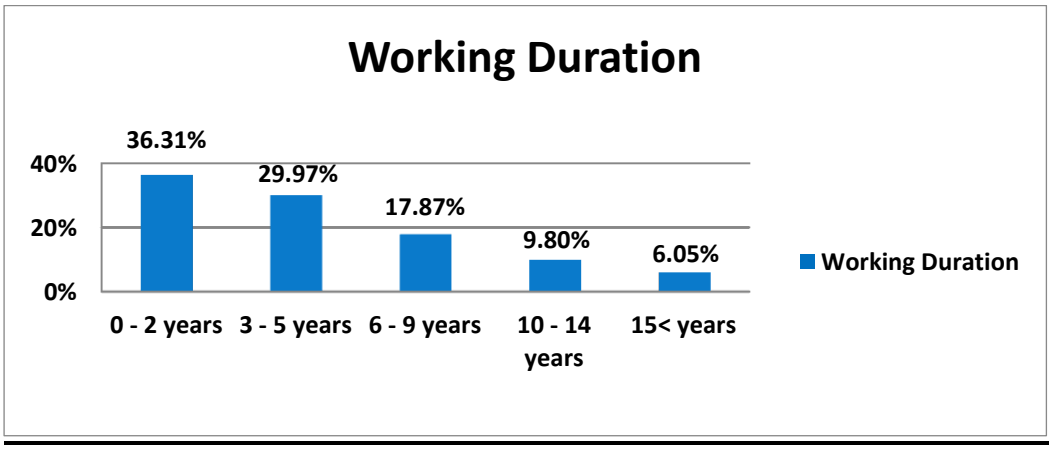
4.1.1.5 Working Duration in Current Company

Table 4.6: Statistics of Respondent working duration in Current Company

Working Duration	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
0 - 2 years	126	36.31	126	36.31
3 - 5 years	104	29.97	230	66.28
6 - 9 years	62	17.87	292	84.15
10 - 14 years	34	9.80	326	93.95
More than 15 years	21	6.05	347	100.00
Total	347			

Source: Developed from research

Figure 4.5: Statistics of Respondent working duration in Current Company



Source: Developed from research

Table 4.6 and Figure 4.5 display frequency of working duration of research respondents. Based on the table and figure, most of the respondents are working for the company less than 2 years that includes 126 or 36.31% of respondent. There are 104 or 29.97% of respondent had worked for 3 to 5 years, 62 or 17.87% of respondent had worked for 6 to 9 years and 34 or 9.80% of respondent had worked for 10 to 14 years. Lastly, there are only 21 or 6.05% of respondent who had worked for more than 15 years in company. Since most of the respondent is in

the age of 21-30 years old, most of them are only finish their degree in age of 23 years old, so they change to a new company easily for a better working environment and higher compensation.

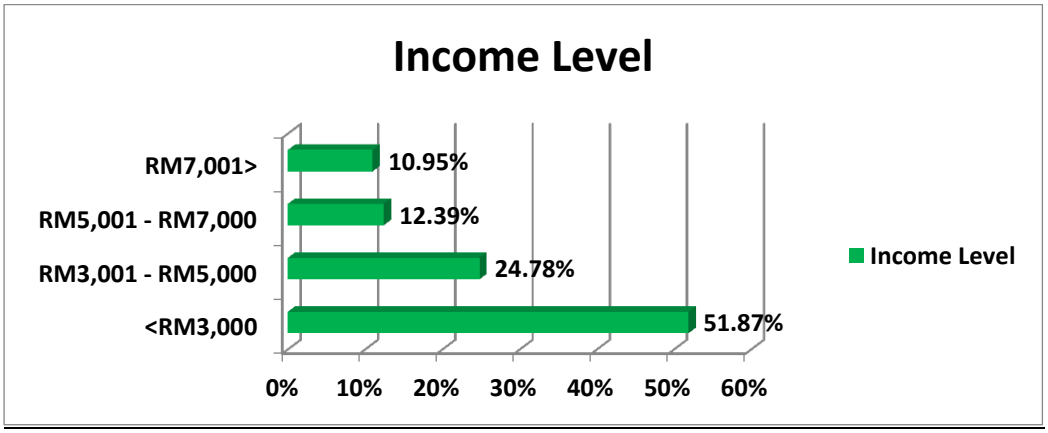
4.1.1.6 Income Level

Table 4.7: Statistics of Respondent Income Level

Salary	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
RM 3,000 and below	180	51.87	180	51.87
RM 3,001 to RM 5,000	86	24.78	266	76.66
RM 5,001 to RM 7,000	43	12.39	309	89.05
RM 7,001 and above	38	10.95	347	100.00
Total	347			

Source: Developed from research

Figure 4.6: Statistics of Respondent Income Level



Source: Developed from research

Table 4.7 and Figure 4.6 display respondents' income level frequency. There are 180 respondent earn less than RM3,000 which are made up of 51,87% of total respondent. For RM 3,001-RM5,000, there are 86 respondents with the percentage of 38.28 %. Besides, there are 43 respondents that consist of 12.39% in the

category of RM5,001-RM7,000 while there are 38 respondents that consist of 10.95% in the category of RM7,001 and above. The majority respondents worked for the company is 0-2 years so their minimum salary is at least RM1100, which is below than RM3000 (Ramasamy, 2018).

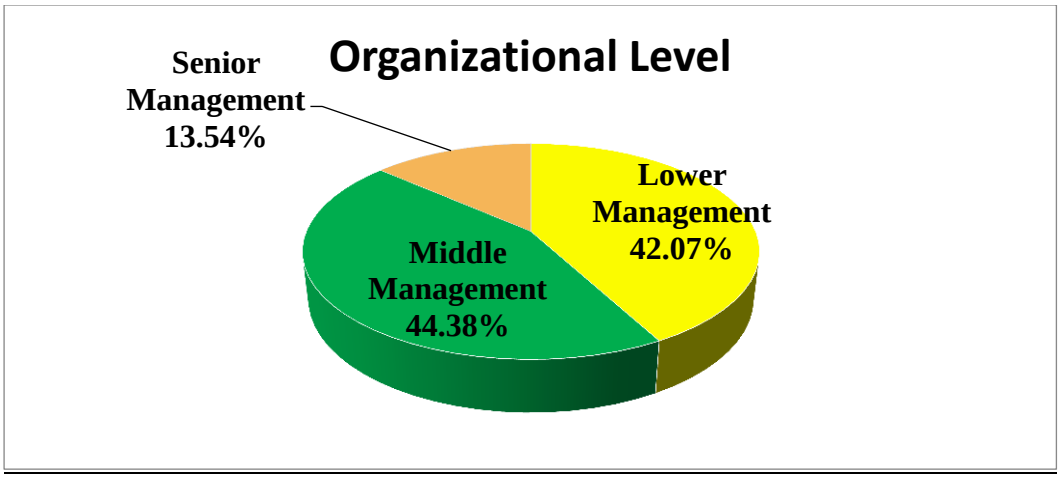
4.1.1.7 Organizational Level

Table 4.8: Statistics of Respondent Organizational Level

Organizational Level	Frequency	Percent (%)	Cumulative Frequency	Cumulative Percent (%)
Lower Management	146	42.07	146	42.07
Middle Management	154	44.38	300	86.46
Senior Management	47	13.54	347	100.00
Total	347			

Source: Developed from research

Figure 4.7: Statistics of Respondent Organizational Level



Source: Developed from research

Table 4.8 and Figure 4.7 display frequency of organizational level of research respondents. Based on the table and figure, most of the respondents had worked under middle management that includes 154 or 44.38% of respondent. There are

146 or 42.07% of respondent had worked under lower management and 47 or 13.54% of respondent had worked under senior management in company.

4.1.2 Central Tendencies Measurement of Construct

The measurement of mean and standard deviation value of DV and three IV will be discussed in this subchapter. There are 7 questions shown in Section A inside the questionnaires and we have tested the questions using SAS Enterprise Guide. There are total 24 items are being measured by using 5 points Likert Scales which are included 1=Strongly Disagree =(SD), 2=Disagree (D), 3= Neutral (N), 4=Agree (A), and 5= Strongly Agree (SA).

4.1.2.1 Work Engagement

Table 4.9: Central Tendencies Measurement of Work Engagement

No.	Statement	Mean	Standard Deviation	Ranking
WE1	At my work, I feel bursting with energy.	3.90202	0.88773	4
WE2	I find my work that I do full of meaning and purpose.	3.94524	0.85673	3
WE3	Time flies when I am working.	3.87896	0.96905	6
WE4	My job inspires me.	3.89337	0.93589	5
WE5	To me, my job is challenging.	4.02594	0.86480	2
WE6	At my work, I always keep on trying, even when things do not go well.	4.07493	0.87027	1

Source: Developed from research

Table 4.9 displays the central tendencies measurement of Work Engagement. It indicates that WE6 has the mean value of 4.07493 that is the most respondents

agree with that statement. Then continued with WE5 (4.02594), WE2 (3.94524), WE1 (3.90202), WE4 (3.89337) and ended with WE3 with the lowest mean of 3.87896.

We also can see that WE3 has a high standard deviation of (0.96905). Then continued by WE4 (0.93589), WE1 (0.88773), WE2 (0.85673), WE5 (0.86480), and then ended with WE6 (0.87027) that has the least variance in answer and more people agreed on that statement.

4.1.2.2 Job Autonomy

Table 4.10: Central Tendencies Measurement of Job Autonomy

No.	Statement	Mean	Standard Deviation	Ranking
JA1	I have considerable opportunity for independence of my job.	3.87896	0.85834	1
JA2	I can decide when to come to work and leave work, either officially or unofficially.	3.42939	1.20574	6
JA3	I can decide on my own how to go about doing my work.	3.74352	1.01459	3
JA4	I design important aspects of my own work and put my ideas into practice.	3.84150	0.88056	2
JA5	I have a lot of freedom to decide when I do my work/ task.	3.61671	1.05899	5
JA6	I can considerably slow down my pace of work for a day when I want to.	3.63977	1.01715	4

Source: Developed from research

Table 4.10 displays the Job Autonomy's central tendencies measurement. It indicates that JA1 has a high mean (3.87896) which the questions are being agreed by the majority. Then continued with JA4 (3.84150), JA3 (3.74352), JA6 (3.63977), JA5 (3.61671) and ended with JA2 with the lowest mean of 3.42939.

We also can see that JA2 has a high standard deviation of (1.20574). Which then continued by JA5 (1.05899), JA6 (1.01715), JA3 (1.01459), JA4 (0.88056), and then ended with JA1 (0.85834) that has the lowest variance in answer.

4.1.2.3 Personal Resources

Table 4.11: Central Tendencies Measurement of Personal Resources

No.	Statement	Mean	Standard Deviation	Ranking
PR1	Although I am in a bad mood and nervous, I am confident that my performance will be good.	3.81268	0.91995	3
PR2	My working condition will still at top form even I have stress on work.	3.66859	0.89133	6
PR3	I can make a difference in the workplace.	3.81268	0.97486	4
PR4	I am cooperative in the workplace.	4.07781	0.83787	1
PR5	I always look the bright side of the things.	4.00000	0.85680	2
PR6	I always expect things to go my way.	3.76081	0.94525	5

Source: Developed from research

Table 4.11 displays the Personal Resource's central tendencies of measurement. It indicates clearly that PR4 has a high mean of 4.07781, which the statement of PR4 is being agreed by most of the respondents. Then continued with PR5 (4.00000), PR1 (3.81268), PR3 (3.81268), PR6 (3.76081) and ended with PR2 with the lowest mean of 3.66859.

We can know that PR3 has a high standard deviation of (0.97486). Which then followed by PR6 (0.94525), PR1 (0.91995), PR2 (0.89133), PR5 (0.85680), and then ended with PR4 (0.83787) that has the lowest variance in answer.

4.1.2.4 Perceived Organizational Support

Table 4.12: Central Tendencies Measurement of Perceived Organizational Support

No.	Statement	Mean	Standard Deviation	Ranking
POS1	The company give me emotional supports whenever I need it the most.	3.69741	1.08221	6
POS2	My superior has always acknowledges my efforts and contributions towards the company.	3.78674	0.91900	3
POS3	My superior has provided me with opportunity to move up my rank in the company.	3.78098	0.98156	4
POS4	My superior always concern towards our opinions.	3.81268	0.92621	1
POS5	My company always concern about our best interest when making tough decision.	3.70029	0.94476	5
POS6	Help is available from the firm when employees have a problem.	3.80692	0.89968	2

Source: Developed from research

Table 4.12 displays the Perceived Organizational Support's central tendencies measurement. POS4 has the mean of 3.81268, this prove that most of the respondents agree with the statement of POS4. Then continued with POS6 (3.80692), POS2 (3.78674), POS3 (3.78098), POS5 (3.70029) and ended with POS1 with the lowest mean of 3.69741. We also can see that POS1 has the highest standard deviation of (1.08221). Which then followed by POS3 (0.98156), POS5 (0.94476), POS4 (0.92621), POS2 (0.91900), and then ended with POS6 (0.89968) that has the least differences in answer.

4.2 Scale Measurement

In this subchapter, analysis of reliability is conducted by using SAS 7.1 to analyse the independent variables: Job Autonomy, Personal Resources, and Perceived Organizational Support. Throughout the reliability analysis, we can figure out whether the data collected is reliable and accurate through testing the consistency and stability. To determine the consistency response of respondents of our study, we have used Cronbach‘s Alpha coefficient to measure it. This can show how well our IV and DV positively correlated with each other’s.

Scale of measurement is to identify the questionnaires responses’ reliability. Cronbach’s alpha is used to check the reliability and accuracy in this research. Cronbach’s alpha is the modulus that reveal how correlated the variables are to another. (Sekaran, 2003). By referring to the table below, the reliability strength of the questionnaire will be referred to the table below.

Table 4.13: Reliability indicator (Cronbach’s alpha)

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible correlation

Adapted from *Sekaran, U. (2003). Research method for business: A skill building approach, 4th edition.*

4.3 Inferential Analysis

4.3.1 Pearson's Correlation Coefficient Analysis

Pearson Correlation Coefficient is correlation between two variables which also known as covariance. In the measurement of an interval level, this analysis can be indicator for significant, direction, and strength of variables that were used in the measurement. Pearson's Correlation Coefficient Analysis is applied to test the hypothesis of three independent variables in our study such as Job Autonomy, Personal Resources and Perceived Organizational Support and dependent variable, work engagement.

In Section B of the questionnaire we are using Pearson's Correlation Coefficient to test out the relations of the questions in variables. While the relationship strength of relationship of questions in variables are analysed based on the coefficient range as the table below:-

Table 4.14: Correlation indicator (Pearson's Correlation Coefficient)

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (0.00 to -0.30)	Negligible correlation

Adapted From *Malawi Medical Journal (2017).*

4.3.1.1 Job Autonomy

Table 4.15: Correlation between Job Autonomy & Work Engagement

		Job Autonomy	Work Engagement
Job Autonomy	Pearson Correlation		0.60296
	P-Value		<0.0001
	N		347
Work Engagement	Pearson Correlation	0.60296	
	P-Value	<0.0001	
	N	347	

Source: Developed from Research

Direction

The correlation coefficient value of job autonomy is 0.60296. This positive correlation coefficient values indicates the Job Autonomy and Work Engagement are positively related. When Job Autonomy is high, Work Engagement is high.

Strength

The correlation coefficient value is 0.60296 where it has a positive correlation coefficient value, Job Autonomy and Work Engagement are moderate positively related. Therefore, when Job Autonomy is high, Work Engagement increases moderately.

4.3.1.2 Personal Resources

Table 4.16: Correlation between Personal Resources & Work Engagement

		Personal Resource	Work Engagement
Personal Resource	Pearson Correlation		0.65319
	P-Value		<0.0001
	N		347
Work Engagement	Pearson Correlation	0.65319	
	P-Value	<0.0001	
	N	347	

Source: Developed from Research

Direction

The correlation coefficient value of personal resources is 0.65319. This positive correlation coefficient values indicates the positive relationship of Personal Resource and Work Engagement. When Personal Resource is high, Work Engagement is high.

Strength

The correlation coefficient value is 0.65319 where it has a positive correlation coefficient value, it has a moderate positive relationship between Personal Resource and Work Engagement. Therefore, when Personal Resource is high, Work Engagement increases moderately.

4.3.1.3 Perceived Organizational Support

Table 4.17: Correlation between Perceived Organizational Support & Work Engagement

		Perceived Organizational Support	**Work Engagement**
Perceived Organizational Support	Pearson Correlation		0.62388
	P-Value		<0.0001
	N		347
Work Engagement	Pearson Correlation	0.62388	
	P-Value	<0.0001	
	N	347	

Source: Developed from Research

Direction

The correlation coefficient value of perceived organizational support is 0.62388. This positive correlation coefficient values indicates that Perceived Organizational Support and Work Engagement are positively related. When Perceived Organizational Support is high, Work Engagement is high.

Strength

The correlation coefficient value is 0.62388 where it has a positive correlation coefficient value, Perceived Organizational Support and Work Engagement are moderate positively related. Therefore, when Perceived Organizational Support is high, Work Engagement increases moderately.

4.3.1.4 Summary of Pearson's Correlation Coefficient Analysis

Table 4.18: Summary of Pearson's Correlation Coefficient Analysis

		Job Autonomy	**Personal Resource**	**Perceived Organizational Support**
Work Engagement	Pearson Correlation	0.60296	0.65319	0.62388
	P-Value	<0.0001	<0.0001	<0.0001
	N	347	347	347

4.3.2 Multiple Linear Regression Analysis

The relationship between two or more independent variables (Job Autonomy, Personal Resources, and Perceived Organization Support) and a dependent variable (work engagement) can be explained by using Multiple Linear Regression (MLR) Analysis. The MLR results have a usage of determining contribution of IVs towards DV. Besides that, R^2 value can assist to explain the variance of DV and adjusted R^2 value can be used when there are multiple IV in the study model. This is because adjusted R^2 value is more accurate than R^2 value.

Table 4.19: Multiple Linear Regression Analysis (P-value)

Source	DF	Sum of Square	Mean Square	F Value	Pr > F
Model	3	72.76124	24.25375	135.36	< 0.0001
Error	343	61.45778	0.17918		
Corrected Total	346	134.21902			

Source: Developed from Research

a) Independent Variables: Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)
b) Dependent Variable: Work Engagement (WE)

Based on table above, P value <0.0001 is less than alpha value of 0.05. Moreover, F-statistics (135.36) is significant. From the research, the model is very relative to the relationship between DV and IV. Independent Variables (Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)) while the Dependent Variable (Work Engagement (WE)).

Table 4.20: Multiple Linear Regression Analysis (R-Square)

Root MSE	R Square	Dependent Mean	Adjusted R Square	Coefficient Variance
0.42329	0.5421	3.95341	0.5381	10.70704

Source: Developed from Research

a) Independent Variables: Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)
b) Dependent Variable: Work Engagement (WE)

R^2 indicates the percentage that our chosen IV can be explained by the variation in the DV. Based on Table, the independent variables (Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)) can be described by 54.21% of the variations in our DV (Work Engagement (WE)). Almost 45.79% (100%-54.21%=45.79%) that could not be explain by this study alone such as the other variables (Job Resources, Incentives and Compensation, Job Security and etc.).

Table 4.21: Multiple Linear Regression Analysis (Parameter Estimates)

Variable	DF	Parameter Estimates	Standard Error	t-Value	Pr > [t]
Intercept	1	1.07698	0.14756	7.30	< 0.0001
Job Autonomy	1	0.17549	0.04092	4.29	< 0.0001
Personal Resource	1	0.33730	0.05039	6.69	< 0.0001
Perceived Organizational Support	1	0.24657	0.03771	6.54	< 0.0001

Source: Developed from Research

According to the results shown in Table 4.21, because all of the p-value for the independent variables (Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)) are all less than 0.0001 that is less than the alpha value of 0.05, therefore Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS) has a significant prediction of DV: Work Engagement (WE).

The three variables are the causes that can determine the work engagement of managers. The formulas are expressed below:-

Z=C+D1E1+D2E2+D3E3+D4E4

By substituting the results collected:-

Z= Work Engagement

C= Intercept

E1= Job Autonomy

E2= Personal Resource

E3= Perceived Organizational Support

D= Regression of Coefficient of X

Therefore, the full formula will be like this:-

Work Engagement= 1.07698 + 0.17549 (Job Autonomy) + 0.33730 (Personal Resource) + 0.24657 (Perceived Organizational Support)

Table 4.22: Multiple Linear Regression Analysis (Standard Beta)

Independent Variable	Standard Coefficient, Beta	Ranking
Job Autonomy	0.17549	3
Personal Resource	0.33730	1
Perceived Organizational Support	0.24657	2

Source: Developed from Research

Table 4.22 indicates the ranking for the Independent Variables' Beta Value Ranking. The ranking shows from high to low the contributions of independent variables [Job Autonomy (JA), Personal Resource (PR) and Perceived Organization Support (POS)] towards the dependent variable [Work Engagement (WE)].

The highest ranking will be Personal Resource as the highest contributor to work engagement that has the standard coefficient of 0.33730 that is relatively high among the three variables. This also means that Job Autonomy has the strongest relationship with Work Engagement and will affect most onto the dependent variable.

Then, the second highest ranking will be Perceived Organizational Support as the second highest contributor to work engagement that has the standard coefficient of 0.24657 that is second high among the three variables. This also means that Job Autonomy has the second strongest relationship with Work Engagement and will affect second most onto the dependent variable.

Lastly, the third highest ranking will be Job Autonomy as the third highest contributor to work engagement that has the standard coefficient of 0.17549 that is the lowest among the three variables. This also means that Job Autonomy has the lowest relationship with Work Engagement and will affect less onto the dependent variable compared to the other two variables.

4.4 Conclusion

In a nutshell, we had summarized descriptive analysis for the questionnaires by using frequency analysis. SAS Enterprise Guide has been used to evaluate the relations between the IVs (Job Autonomy, Personal Resources, and Perceived Organizational Support) and DV (Work Engagement). Through the reliability test, we can summarize that majority of the IVs has positive relationship with DV. Pearson Correlation Coefficient and Multiple Linear Regression has been applied to check the relations of IVs and DV. All these results are being discussed in chapter 5.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

5.0 Introduction

Statistical analysis that embraces the descriptive analysis and inferential analysis will be discussed in this chapter. This chapter continued to discuss on the major findings, implications of study, and some suggestions for future studies.

5.1 Summary of Statistical Analysis

In this subchapter, it shows out the discussion of descriptive analysis and inferential analysis that previously discuss for example descriptive analysis, scale measurement, and inferential analysis.

5.1.1 Respondent Demographic Profile

There are 347 respondents have contributed in our survey and research project. The total number of male respondent is 201 (57.93%) while the number of female respondent is 146 (42.07%). Our research study primarily focuses on managers from different organizational level in manufacturing industry at Malaysia.

From the results generated in Chapter 4, most of the target respondents are between 21-30 years old. They are made up of 177 respondents out of total 347

respondents (51.01%). The second largest of respondents from age range is between 31-40 years old which made up of 103 respondents (29.68%). Whereas, the third age range is 41 years old and above which having 53 respondents (15.27%). For the fourth which is 20 years old and below which only have 14 respondents (4.03%) which is the lowest. Then, for the ethnic group, majority of our respondents are Indian which are 159 respondents (45.82%), Chinese which are 88 respondents (25.36%) and Malay which are 83 respondents (23.92%) and for the least is from others group are 17 respondents (4.9%).

For the educational level, most of the target respondents 'educational level are Bachelor Degree which consisting of 146 respondents (42.07%). Secondly is certificate/Diploma which consisting of 105 respondents (30.26%). Whereas, the third is SPM/STPM which consisting of 70 respondents (20.17%). The least educational level among target respondents is Master/Doctoral Degree consisting 26 respondents (7.49%) only.

For the working duration, the group which representing zero to two years is the highest, consisting 126 respondents, which consist 36.31% of the total targeted respondents. Secondly is three to five years, consisting of 104 respondents, which is 29.97% of the targeted respondents. Thirdly is six to nine years which consisting 62 respondents (17.87%) of the targeted respondents. Fourthly is ten to fourteen years, consisting 34 respondents, which is 9.8% of targeted respondents only. Lastly is more than 15 years, only consist of 21 respondents, which is 6.05%, the lowest.

For the income level, 180 respondents (51.87%) have income level that is RM3000 and below and only 38 respondents (10.95%) are having high income level of RM7001 and above. For the income level of RM3001 to RM5000 are 86 respondents (24.78%) and around RM5001 to RM7000 are 43 respondents (12.39%).

For the organizational level, most of our respondents are from middle management consists of 154 respondents, which is 44.38%. Next, in lower management consists of 146 respondents, which is 42.07% and senior management level consists of 47 respondents, which is 13.54% of targeted respondents.

5.1.2 Central Tendencies Measurement of Constructs

According to the results in chapter 4, most of the respondents are having same opinion and totally agree with the 18 questions that constructed in our questionnaire regarding the 3 variables (Job Autonomy, Personal Resources, and Perceived Organizational Support) are having significant relationship with work engagement in Malaysia manufacturing industry.

Table 5.1: Central Tendencies Measurement of Constructs

Variables	Mean		Standard Deviation	
	Lowest	Highest	Lowest	Highest
Work Engagement (Refer to Table 4.9)	3.87896	4.07493	0.85673	0.96905
Job Autonomy (Refer to Table 4.10)	3.42939	3.87896	0.85834	1.20574
Personal Resources (Refer to Table 4.11)	3.66859	4.07781	0.83787	0.97486
Perceived Organizational Support (Refer to Table 4.12)	3.69741	3.81268	0.89968	1.08221

Source: Developed from research

According to the results generated by SAS system version 7.1, the mean of all items by referring to Central Tendencies Measurement of Conduct (Table 4.9 to Table 4.12) is within the range of 3.42939 to 4.07781 while the standard deviation is ranging from 0.83787 to 1.20574.

5.1.3 Reliability Test

From the results generated in chapter 4, the three IVs have positive relation with the DV because the Cronbach's alpha value are all greater than 0.6. The independent variable of job autonomy has the Cronbach's alpha value of 0.844093. Second independent variable is personal resources, it has Cronbach's alpha value of 0.780292. The Cronbach's alpha value of perceived organizational support has 0.894507. Lastly, the dependent variable of work engagement has the Cronbach's alpha value of 0.783909. By abiding to the Cronbach's alpha rule of thumb, personal resources (0.780292) and work engagement (0.783909) are to be considered good reliability because the results fall under the range of 0.70-0.80. For job autonomy (0.844093) and perceived organizational support (0.894507), their Cronbach's alpha values are known to be very good reliability because the results fall under the range of 0.80-0.95.

5.1.4 Inferential Analysis (Pearson Correlation Analysis)

From the research report, the personal resources have the most significant value of 0.65319, and followed by perceived organizational support (0.62388) and job autonomy (0.60296). Job autonomy, personal resources, perceived organizational support are all moderate relationship because they all fall under the range of ±0.50 to ±0.70. Thus, between the IVs and DV, they have positive relations.

5.1.5 Inferential Analysis (Multiple Linear Regression Analysis)

Table 5.2: Multiple Linear Regression Analysis (Parameter Estimates)

Variable	DF	Parameter Estimates	Standard Error	t-Value	Pr > [t]

Intercept	1	1.07698	0.14756	7.30	< 0.0001
Job Autonomy	1	0.17549	0.04092	4.29	< 0.0001
Personal Resource	1	0.33730	0.05039	6.69	< 0.0001
Perceived Organizational Support	1	0.24657	0.03771	6.54	< 0.0001

Source: Data generated by *Statistical Analysis System (SAS) version 7.1*

Generally, the relationship that showed by all the IV are significant with the DV because all the variables have significant value which less than 0.05. Thus, alternative hypothesis one to three have been accepted. The R^2 indicates the percentage of the DV that can be interpreted by the 3 IVs. In this study, IVs (job autonomy, personal resources, and perceived organizational support) can explain 54.21% of the dependent variable (work engagement). However, it still has the remainder of 45.79% (100%-54.21%) unexplained in this research. So, this might prove to us there are other variables that are more appropriate and significant to explain work engagement that have not been considered in this research.

Multiple Linear Regression equation:

Work Engagement =1.07698 + 0.17549 (job autonomy) + 0.33730 (personal resources) + 0.24657 (perceived organizational support)

Based on the equation above, personal resources have the highest parameter estimation of 0.33730 which is also the highest influence to the DV. Perceived organizational support has the parameter estimation of 0.24657 and it has the second highest influence to the work engagement. Then, job autonomy has the lowest parameter estimation of 0.17549 which ranked third in influencing the DV.

5.2 Discussion of Major Findings

This part explored the influences of one independent variables (IV) with its three drivers of work engagement among managers in Malaysia manufacturing industry. A sample of 347 target respondents completed the distributed questionnaire related concerning of their opinion for job autonomy, personal resources and perceived organizational support towards the work engagement of mangers in Malaysia manufacturing industry. Multiple Linear Regression models are engage in evaluate further the connection between independent and dependent variable separately. Major finding was all of the predicting elements such as job autonomy, personal resources, and perceived organizational supports are found pointedly and significantly interrelated with work engagement of mangers at different point.

Table 5.3: Table of Hypothesis Statement Acceptance

Hypotheses	Hypothesis statement	Result
Hypothesis 1	There is a significant relationship between job autonomy and manager's work engagement.	Accepted
Hypothesis 2	There is a significant relationship between personal resource and manager's work engagement.	Accepted
Hypothesis 3	There is a significant relationship between perceived organizational support and manager's work engagement.	Accepted

5.2.1 Hypothesis 1: Job Autonomy

The correlation coefficient value of job autonomy is 0.60296. This positive correlation coefficient values shows that Job Autonomy and Work Engagement is moderate positively related. However, Job Autonomy has a p-value less than 0.0001 that is less than the alpha value of 0.05, therefore Job Autonomy and Work Engagement are significantly related.

Throughout the study conduct by De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem (2014), indicates that job autonomy has a positive (direct and

indirect) relationship with work engagement. In terms of HR practice, this research shows that job autonomy (job content) serve as a significant trigger for employee engagement. Employees would engage and willing to take action when they are given a high degree of control regarding their task or assignment (De Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014).

Another researcher provides the same explanation that work engagement may give intrinsic results through autonomy of employee at work high (Malinowska, Tokarz, & Wardzichowska, 2018). This means that the employee should give equals task engagement that would increase the involvement of an employee in that organization. According to Deci and Ryan, recognized control is a mode of independent motivation for the employee. Even though the tasks are not pleasant and comfortable, they force to be done with high enthusiasm, energy, and because the employee identifies the purpose and intention of their jobs.

Through Multiple Linear Regressions, for job autonomy, we can see that the parameter estimate of job autonomy is 0.17549. This means that if job autonomy increases by 1, work engagement will increase by 1.25247 including the intercept. Then through R-Square of Multiple Linear Analysis, job autonomy is one of the independent variable that contributes to the 54.21% that explains the dependent variable.

5.2.2 Hypothesis 2: Personal Resources

The correlation coefficient value is 0.65319 where it has a positive correlation coefficient value; it has a moderate positive relationship between Personal Resource and Work Engagement. Therefore, when Personal Resource is high, Work Engagement increases moderately. However, Personal Resource has a p-value less than 0.0001 that is less than the alpha value of 0.05; therefore, Personal Resource and Work Engagement are significantly related.

According to Sl öetjes (2014), the findings of that study show that work engagement and personal resources are partially mediated. The researcher found that enrichment of personal resources such as influences the job engagement. The presence of personal resources improves the likelihood of employee proactive behaviour, worker flexibility, and assertiveness. Thus, the actuality of job resources obviously produces personal resources, that has a decisive effect on work engagement (Sl öetjes, 2014).

According to Mille Myhre (2014), personal resources significantly contribute to work engagement. By giving sufficient job resources in organisational culture may contribute to sufficient of controlling their work environment or engagement (Mille Myhre, 2014). Furthermore, these job resources are important in the defence of fatigue, since the employees' self-efficacy is high. For instance, an employee who works in a nice environment feels more proficient to excel in their task and less likely to become fatigued. Personal resources would give beneficial impacts on work engagements (Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2010). For example, self-efficacy make employees feel skilled, assured, and encouraged. Therefore, they experience more work engagement, which boosts their performance.

Then through Multiple Linear Regressions, we can see that the parameter estimates for personal resource is 0.33730. This means that if personal resources increases by 1, work engagement will increase by 1.41428 including the intercept. Then through R-Square of Multiple Linear Analysis, personal resources is also one of the independent variable that contributes to the 54.21% that explains the dependent variable.

5.2.3 Hypothesis 3: Perceived Organization Support

The correlation coefficient value is 0.62388 where it has a positive correlation coefficient value, Perceived Organizational Support and Work Engagement are moderate positively related. However, Perceived Organizational Support has a p-value less than 0.0001 that is less than the alpha value of 0.05, therefore Perceived Organizational Support and Work Engagement are significantly related.

According to Dai & Qin (2016), organizational support significantly influences employee engagement. Meanwhile, the employees perceive the organizational support; the employee's belonging thought to the organization will increased. It would encourage the employees to work hard to help organization achieve its goals, and showing a greater level of employee engagement.

Another research explains that perceived organizational support performs a vital role in upholding employee engagement in the corporate sector (Khaliq Alvi, Sattar Abbasi, & Haider, 2014). When the company increased the perceived organizational support in their systems, procedures would increase employee commitment, and loyalty, reduces employee turnover, increased the organization productivity.

According to Peng (2018), the guide of the work, and the well-being would strengthen engagement and exchange for perceived organizational support. For instance, improving job resources and reducing job demands, which might have a confident, satisfying, work-related state of mind those lead to work engagement.

Last and not least is the Multiple Linear Regressions, we can see that the parameter estimates for perceived organizational support is 0.24657. This means that if perceived organizational support increases by 1, work engagement will

increase by 1.32355 including the intercept. Then through R-Square of Multiple Linear Analysis, perceived organizational support is also one of the contributors that contributes to the 54.21% that explains the dependent variable.

5.3 Managerial Implication

Based on the research that we have done in the manufacturing industry, there are many factors that affects the dependent variable (work engagement). Throughout the whole research, the results show that job autonomy, personal resources and perceived organization support are the factors that drive the working engagement among the mangers in the manufacturing industry. The results also show that they have significant relationship with each other.

5.3.1 Implication of Job Autonomy

The relationship between Job Autonomy and Work Engagement of managers are sufficiently significant. Job autonomy is a method where managers are allowed to organize their own schedule. In other words, managers can decide how to distribute their task evenly and they can have more time to do their stuff. If the company exercises job autonomy within their company policy, the managers are able to choose their own schedule working hours.

5.3.2 Implication of Personal Resources

The relationship between Personal Resources and Work Engagement of managers are sufficiently significant. In this independent variable Personal Resources can

influence the working engagement of the managers. If the managers have good personal resources, they will have strong beliefs within themselves that they are able to manage their jobs well. This can act as a motivation to drive their passionate to get things done effectively and efficiently.

5.3.3 Implication of Perceived Organizational Support (POS)

The relationship between Perceived Organizational Support (POS) and Work Engagement of managers are sufficiently significant. In this independent variable Perceived Organizational Support shows that managers need to gain some support from their top management in order for the managers to have high passionate towards their work. Appraising their working performance is one of the methods for the managers to gain their passionate towards their job. Without the strong support from the company, managers would not have much motivation to strive for company's objectives. Company can also provide some rewards for the managers that have been performing well in the company. This is also a way to boost up managers' passionate in performing well in the company.

5.4 Limitations of the Study

This research has found out that the independent variables such as Job Autonomy, Personal Resources and Perceived Organizational Support (POS) have a significant relationship towards the work engagement of the managers in the manufacturing industry. On the other hand, we have encountered some restrictions whenever we were conducting out research project.

The first limitation that we have encountered that some companies were not interested in helping us with our research project such as distributing the questionnaires among managers in the company. This is because the company worried that distributing the questionnaires among managers will affect and delay their company production. The managers are responsible for managing their activities that are part of the production of the good and services, they need to ensure the planning run smoothly.

Next, the restriction that we have encountered a problem where we were unable to obtain the name list of the managers. Because as most of the company's policy, it stated that they will keep their employees' information as private and confidential. If there are no related activities directly to the company, the company will not disclose any information about it.

Then, throughout our whole research project we had been using SAS Data Analysis to interpret our data. SAS 7.1 Data Analysis System is not the most advance method to analyse the research study data. This is due to the reason that SAS Software was stable release in year 2013 while Smart PLS 3.2.8 was stable release during November 2018. The Smart PLS is available in 11 languages such as Indonesian, Persian, Japanese, Italian, Portuguese, English, Spanish, Chinese, Arabic, German and French.

Lastly, this research is a cross sectional study. We only collect the data once for our research and we cannot confirm any causal relationship as we only collect the data during a certain period of time.

5.5 Recommendations for Future Research

Fortunately, we are able to complete this research project although we are facing with various challenges ahead and limitation to restrict us in carrying out our research project. For the future research purpose, there are some recommendations need to be written down based on the problems that we have encountered.

Firstly, we would like to recommend to give out incentives to the manufacturing industry that are willing to cooperate with us on our research especially our questionnaire data collection process. Incentive is an attractive way to encourage respondent to spend their time on to our questionnaires. Incentives that can be used as an attraction for the respondent to fill up our survey are gift cards, appreciative post that are engraved on keychains or some snacks. This will let the individuals more motivated and willing to respond to our questionnaires.

Next, the researchers need to resend the emails or questionnaires to the company after a certain period. The reason that we need to resend the emails or questionnaires to the company is to remind that we have sent them and wishes them to help us to fill up the questionnaires.

Then, we would recommend the researchers to try different Data Analysis to interpret the data such as SPSS. Furthermore, we highly recommend the university should promote the usage of other data analysis system such as PLS. The students are unfamiliar with the latest software will used up some time to learn it. So, it is strongly recommended that the university should invest more time on introducing the latest software that will benefit the students in research field.

Lastly, we encourage the future researchers to carry out longitudinal research if there is a right amount of research grant given to prove there is causal relationship with the variables while having more data to carry out their analysis.

5.6 Conclusion

Based on this research project, our group have improved ourselves towards the recognition on the element that drive the work engagement of the managers in manufacturing industry. The factors that drive the work engagement of managers are Job Autonomy, Personal Resources and Perceived Organizational Resources have significant relationship with Work Engagement (Dependent Variable) among managers in manufacturing industry. This research helps the company in manufacturing industry to understand more about their managers. This is important as these factors can lead towards high motivation of managers in reaching the company's objectives.

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Appendix

Appendix 1.0: Reliability Test of Job Autonomy Pilot Test Study

Reliability Test of Job Autonomy

The CORR Procedure

6 Variables:	JA1	JA2	JA3	JA4	JA5	JA6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
JA1	30	3.86667	0.86037	116.00000	1.00000	5.00000	Independence
JA2	30	3.26667	1.28475	98.00000	1.00000	5.00000	Leave and Come
JA3	30	3.53333	1.13664	106.00000	1.00000	5.00000	Decide Own
JA4	30	3.96667	0.66868	119.00000	3.00000	5.00000	Own Ideas
JA5	30	3.80000	0.88668	114.00000	2.00000	5.00000	Work Freedom
JA6	30	3.40000	1.22051	102.00000	1.00000	5.00000	Pace of Work

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.811750
Standardized	0.797282

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
JA1	0.342428	0.824764	0.356884	0.809542	Independence
JA2	0.753486	0.736010	0.716024	0.726191	Leave and Come
JA3	0.727275	0.743926	0.677053	0.735898	Decide Own
JA4	0.254249	0.834189	0.278962	0.825889	Own Ideas
JA5	0.653754	0.768382	0.674665	0.736488	Work Freedom
JA6	0.708621	0.748523	0.648105	0.743001	Pace of Work

Pearson Correlation Coefficients, N = 30
Prob > |r| under H0: Rho=0

	JA1	JA2	JA3	JA4	JA5	JA6
JA1	1.00000	0.31404	0.32205	0.23176	0.32545	0.15105
Independence		0.0910	0.0826	0.2178	0.0793	0.4256
JA2	0.31404	1.00000	0.70211	0.21140	0.50249	0.74329
Leave and Come	0.0910		<.0001	0.2621	0.0047	<.0001
JA3	0.32205	0.70211	1.00000	0.11494	0.48585	0.73574
Decide Own	0.0826	<.0001		0.5453	0.0065	<.0001
JA4	0.23176	0.21140	0.11494	1.00000	0.45364	0.05915
Own Ideas	0.2178	0.2621	0.5453		0.0118	0.7562
JA5	0.32545	0.50249	0.48585	0.45364	1.00000	0.58628
Work Freedom	0.0793	0.0047	0.0065	0.0118		0.0007

Appendix 2.0: Reliability Test of Perceived Organizational Support Pilot Test Study

Reliability Test of Perceive Organization Support

The CORR Procedure

6 Variables:	POS1	POS2	POS3	POS4	POS5	POS6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
POS1	30	4.00000	1.05045	120.00000	1.00000	5.00000	Emotional Support
POS2	30	4.13333	0.86037	124.00000	2.00000	5.00000	Acknowledge
POS3	30	4.13333	0.86037	124.00000	2.00000	5.00000	Opportunity
POS4	30	4.16667	0.94989	125.00000	2.00000	5.00000	Concern
POS5	30	4.03333	0.85029	121.00000	2.00000	5.00000	Best Interest
POS6	30	4.00000	1.05045	120.00000	1.00000	5.00000	Help

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.873049
Standardized	0.877970

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables		
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha	Label
POS1	0.655588	0.856203	0.651932	0.862349	Emotional Support
POS2	0.785503	0.834239	0.789793	0.838811	Acknowledge
POS3	0.636896	0.857847	0.648562	0.862908	Opportunity
POS4	0.633691	0.858437	0.647131	0.863145	Concern
POS5	0.767335	0.837534	0.759289	0.844130	Best Interest
POS6	0.613365	0.864169	0.610877	0.869113	Help

Pearson Correlation Coefficients, N = 30
Prob > |r| under H0: Rho=0

	POS1	POS2	POS3	POS4	POS5	POS6
POS1	1.00000	0.61047	0.41970	0.41470	0.57910	0.59375
Emotional Support		0.0003	0.0210	0.0227	0.0008	0.0005
POS2	0.61047	1.00000	0.67391	0.81574	0.55935	0.41970
Acknowledge	0.0003		<.0001	<.0001	0.0013	0.0210
POS3	0.41970	0.67391	1.00000	0.56258	0.60648	0.34339
Opportunity	0.0210	<.0001		0.0012	0.0004	0.0632
POS4	0.41470	0.81574	0.56258	1.00000	0.46251	0.34558
Concern	0.0227	<.0001	0.0012		0.0101	0.0614
POS5	0.57910	0.55935	0.60648	0.46251	1.00000	0.77213
Best Interest	0.0008	0.0013	0.0004	0.0101		<.0001

Appendix 3.0: Reliability Test of Personal Resources Pilot Test Study

Reliability Test of Personal Resources

The CORR Procedure

6 Variables:	PR1	PR2	PR3	PR4	PR5	PR6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
PR1	30	3.73333	0.58329	112.00000	2.00000	5.00000	Confident
PR2	30	3.70000	0.70221	111.00000	3.00000	5.00000	Stress
PR3	30	4.16667	0.46113	125.00000	3.00000	5.00000	Make Difference
PR4	30	4.16667	0.64772	125.00000	3.00000	5.00000	Cooperative
PR5	30	4.16667	0.64772	125.00000	2.00000	5.00000	Bright Side
PR6	30	3.53333	1.13664	106.00000	1.00000	5.00000	Go My Way

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.622563
Standardized	0.671791

Cronbach Coefficient Alpha with Deleted Variable

	Raw Variables		Standardized Variables		
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha	Label
PR1	0.624541	0.493131	0.633323	0.544629	Confident
PR2	0.528354	0.509388	0.597830	0.558375	Stress
PR3	0.199409	0.626330	0.236263	0.684878	Make Difference
PR4	0.313616	0.593675	0.339161	0.651302	Cooperative
PR5	0.444614	0.547552	0.428485	0.620622	Bright Side
PR6	0.221166	0.698332	0.214219	0.691831	Go My Way

Pearson Correlation Coefficients, N = 30
Prob > |r| under H0: Rho=0

	PR1	PR2	PR3	PR4	PR5	PR6
PR1	1.00000	0.47145	0.42733	0.21296	0.39550	0.37794
Confident		0.0085	0.0185	0.2585	0.0305	0.0395
PR2	0.47145	1.00000	0.47920	0.34116	0.34116	0.16417
Stress	0.0085		0.0074	0.0650	0.0650	0.3860
PR3	0.42733	0.47920	1.00000	0.01924	-0.09621	-0.04386
Make Difference	0.0185	0.0074		0.9196	0.6130	0.8180
PR4	0.21296	0.34116	0.01924	1.00000	0.50685	0.01561
Cooperative	0.2585	0.0650	0.9196		0.0043	0.9347
PR5	0.39550	0.34116	-0.09621	0.50685	1.00000	0.20296
Bright Side	0.0305	0.0650	0.6130	0.0043		0.2821

Appendix 4.0: Reliability Test of Work Engagement Pilot Test Study

Reliability Test of Work Engagment

The CORR Procedure

6 Variables:	WE1	WE2	WE3	WE4	WE5	WE6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
WE1	30	2.93333	1.01483	88.00000	1.00000	5.00000	Energy
WE2	30	3.90000	0.66176	117.00000	2.00000	5.00000	meaningful
WE3	30	3.86667	0.89955	116.00000	1.00000	5.00000	time0
WE4	30	4.23333	0.62606	127.00000	3.00000	5.00000	Inspiring
WE5	30	4.16667	0.69893	125.00000	3.00000	5.00000	Challenging
WE6	30	4.10000	0.80301	123.00000	2.00000	5.00000	Trying

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.718486
Standardized	0.753427

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
WE1	0.167771	0.788709	0.171479	0.798626	Energy
WE2	0.635664	0.634981	0.629938	0.679389	meaningful
WE3	0.436247	0.686851	0.458153	0.727190	time0
WE4	0.512864	0.669510	0.539130	0.705142	Inspiring
WE5	0.559121	0.652264	0.575362	0.694998	Challenging
WE6	0.587268	0.636940	0.620698	0.682060	Trying

Pearson Correlation Coefficients, N = 30
Prob > |r| under H0: Rho=0

	WE1	WE2	WE3	WE4	WE5	WE6
WE1	1.00000	0.29781	0.06547	-0.02895	0.21067	0.09309
Energy		0.1100	0.7310	0.8793	0.2638	0.6246
WE2	0.29781	1.00000	0.38231	0.39118	0.41004	0.60348
meaningful	0.1100		0.0371	0.0326	0.0244	0.0004
WE3	0.06547	0.38231	1.00000	0.42452	0.31079	0.40099
time0	0.7310	0.0371		0.0194	0.0946	0.0281
WE4	-0.02895	0.39118	0.42452	1.00000	0.53850	0.50071
Inspiring	0.8793	0.0326	0.0194		0.0021	0.0048
WE5	0.21067	0.41004	0.31079	0.53850	1.00000	0.46079
Challenging	0.2638	0.0244	0.0946	0.0021		0.0104

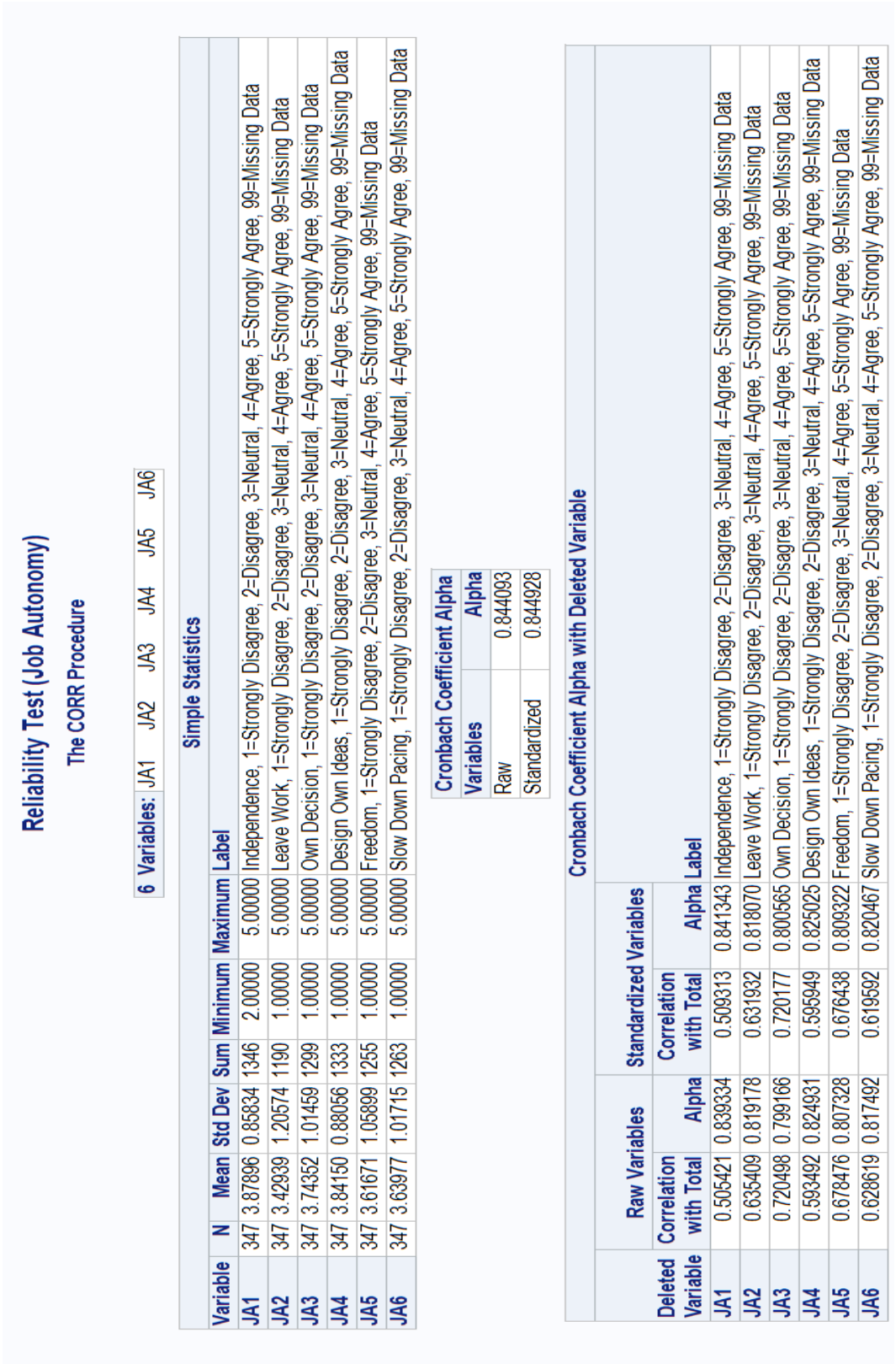
Appendix 5.0: Raw Data from Pilot Test Page 1

No.	Gender	Age	Ethnic Group	Highest Education	Years of Work	Monthly Salary	Organization Level	WE1	WE2	WE3	WE4	WE5	WE6	JA1	JA2	JA3	JA4	JA5	JA6
1	1	3	1	3	5	2	2	3	4	4	4	4	4	5	4	4	4	4	3
2	2	4	3	4	4	4	3	4	4	4	5	4	5	4	5	1	2	5	4
3	2	2	3	2	1	1	2	4	4	4	5	4	3	5	5	3	3	4	4
4	2	3	2	3	2	2	2	2	4	4	4	5	4	5	4	3	4	3	4
5	2	2	3	3	2	2	2	3	4	4	4	5	5	4	4	1	4	5	4
6	1	2	3	3	3	2	3	4	3	3	3	4	3	3	3	3	3	4	4
7	1	3	2	3	4	4	3	2	3	3	3	4	3	2	3	2	2	3	3
8	1	2	2	2	2	1	2	3	4	3	4	4	4	4	3	3	4	4	4
9	1	3	1	3	3	3	2	3	4	5	4	4	5	3	4	1	1	3	3
10	2	2	4	4	2	2	2	3	2	4	5	5	5	4	4	4	5	3	2
11	1	4	1	3	3	3	3	2	4	5	5	4	4	4	5	5	4	4	4
12	1	4	1	4	5	4	3	3	4	3	4	4	4	4	4	4	5	4	5
13	1	2	3	4	3	3	3	4	5	4	4	4	4	4	4	4	5	4	5
14	2	3	2	3	4	3	3	3	3	3	3	3	3	3	4	5	5	5	5
15	2	3	2	3	3	3	3	3	3	3	3	3	3	3	4	5	5	5	5
16	2	4	4	3	4	3	3	1	4	4	5	5	4	4	5	4	4	4	4
17	2	2	3	3	4	2	3	1	4	4	4	4	4	5	4	4	4	4	5
18	2	4	3	1	5	1	1	4	4	4	4	4	4	4	4	4	4	4	4
19	1	4	3	4	5	2	1	5	5	5	5	5	5	5	1	2	1	4	3
20	2	2	1	3	1	2	1	2	4	4	4	4	4	5	5	5	4	4	4
21	2	2	1	3	2	2	3	3	4	3	4	4	4	4	3	3	4	4	4
22	1	2	3	1	1	1	1	4	4	1	4	4	5	4	4	2	4	3	4
23	1	4	3	2	5	2	2	5	5	5	5	5	5	5	4	3	3	5	3
24	1	2	3	3	2	2	1	2	4	4	4	4	4	4	4	2	2	4	2
25	2	4	1	4	5	4	3	3	5	5	5	5	5	5	4	5	4	5	5
26	1	3	3	3	3	2	2	2	2	2	4	5	5	5	3	2	4	3	2
27	2	3	2	4	3	2	3	2	4	4	4	5	4	4	4	4	3	4	3
28	1	2	3	1	1	1	1	2	3	4	4	3	4	3	3	4	4	3	4
29	2	2	3	3	4	1	1	3	4	4	3	4	4	3	4	3	3	4	4
30	2	3	2	4	3	3	2	3	4	4	4	4	5	5	4	2	2	4	4

Appendix 6.0: Raw Data from Pilot Test Page 2

PR1	PR2	PR3	PR4	PR5	PR6	POS1	POS2	POS3	POS4	POS5	POS6
4	4	4	4	4	4	5	5	4	5	3	3
4	5	5	5	5	1	5	5	5	5	5	5
3	3	4	5	4	3	4	3	2	2	3	3
4	4	4	4	4	4	5	5	4	4	4	4
4	4	4	5	5	1	4	4	3	4	4	5
3	3	4	3	4	3	3	3	4	2	3	3
4	4	4	4	4	4	4	5	4	5	5	4
4	3	4	4	5	4	5	5	5	5	5	5
3	3	4	4	4	1	4	4	4	4	4	4
4	3	5	3	2	2	4	3	5	3	4	2
4	4	4	4	5	4	5	4	4	4	4	4
4	4	4	4	4	4	5	5	5	5	5	5
3	3	4	3	4	5	3	3	4	3	5	5
3	4	4	4	4	4	5	5	5	5	5	5
4	4	4	4	4	4	3	3	3	4	4	4
4	4	4	5	5	5	4	4	5	4	4	4
4	5	5	4	4	4	5	5	4	5	4	4
4	3	4	4	4	4	2	2	2	3	2	3
4	4	5	3	4	3	1	4	4	5	3	1
4	3	4	5	4	4	3	4	4	4	2	2
4	3	4	4	5	4	5	5	5	5	5	5
4	3	4	4	4	4	3	5	5	5	4	4
4	4	4	5	5	4	3	4	4	4	4	4
4	4	4	4	4	4	4	4	5	4	4	5
5	5	5	5	5	5	4	4	4	5	4	5
3	4	3	4	4	3	4	3	3	3	4	4
3	3	4	5	4	3	5	4	4	5	4	4
2	3	4	4	3	2	3	4	4	3	4	4
4	3	4	4	4	4	5	5	5	5	5	5
4	5	5	5	4	5	5	5	5	5	5	5

Appendix 7.0: Reliability Test of Job Autonomy



Reliability Test (Job Autonomy)

The CORR Procedure

6 Variables: JA1 JA2 JA3 JA4 JA5 JA6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
JA1	347	3.87896	0.85834	1346	2.00000	5.00000	Independence, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA2	347	3.42939	1.20574	1190	1.00000	5.00000	Leave Work, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA3	347	3.74352	1.01459	1299	1.00000	5.00000	Own Decision, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA4	347	3.84150	0.88056	1333	1.00000	5.00000	Design Own Ideas, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA5	347	3.61671	1.05899	1255	1.00000	5.00000	Freedom, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA6	347	3.63977	1.01715	1263	1.00000	5.00000	Slow Down Pacing, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.844093
Standardized	0.844928

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables		
	Correlation with Total	Alpha	Correlation with Total	Alpha	Label
JA1	0.505421	0.839334	0.509313	0.841343	Independence, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA2	0.635409	0.819178	0.631932	0.818070	Leave Work, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA3	0.720498	0.799166	0.720177	0.800565	Own Decision, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA4	0.593492	0.824931	0.595949	0.825025	Design Own Ideas, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA5	0.678476	0.807328	0.676438	0.809322	Freedom, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
JA6	0.628619	0.817492	0.619592	0.820467	Slow Down Pacing, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Appendix 8.0: Reliability Test of Perceived Organizational Support

Reliability Test (Percieved Organizational Support)

The CORR Procedure

6 Variables: POS1 POS2 POS3 POS4 POS5 POS6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
POS1	347	3.69741	1.08221	1283	1.00000	5.00000	Emotional Support, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS2	347	3.78674	0.91900	1314	1.00000	5.00000	Acknowledge Effort, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS3	347	3.78098	0.98156	1312	1.00000	5.00000	Opportunity to Move Up, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS4	347	3.81268	0.92621	1323	1.00000	5.00000	Concern on Opinion, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS5	347	3.70029	0.94476	1284	1.00000	5.00000	Employee Best Interest, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS6	347	3.80692	0.89968	1321	1.00000	5.00000	Help Available, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.894507
Standardized	0.895748

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables		
	Correlation with Total	Alpha	Correlation with Total	Alpha	Label
POS1	0.694210	0.881221	0.694783	0.881151	Emotional Support, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS2	0.715998	0.876211	0.715726	0.877927	Acknowledge Effort, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS3	0.727618	0.874250	0.728158	0.876000	Opportunity to Move Up, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS4	0.746958	0.871497	0.748298	0.872860	Concern on Opinion, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS5	0.746729	0.871356	0.747729	0.872949	Employee Best Interest, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
POS6	0.680165	0.881556	0.678942	0.883572	Help Available, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Appendix 9.0: Reliability Test of Personal Resources

Reliability Test (Personal Resource)

The CORR Procedure

6 Variables: PR1 PR2 PR3 PR4 PR5 PR6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
PR1	347	3.81268	0.91995	1323	1.00000	5.00000	Confindence, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR2	347	3.66859	0.89133	1273	1.00000	5.00000	Top Form on Stress, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR3	347	3.81268	0.97486	1323	1.00000	5.00000	Make Difference, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR4	347	4.07781	0.83787	1415	1.00000	5.00000	Cooperative, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR5	347	4.00000	0.85680	1388	1.00000	5.00000	Bright Side, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR6	347	3.76081	0.94525	1305	1.00000	5.00000	Expect Things Go Own Way, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.780292
Standardized	0.781767

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables: Correlation with Total	Raw Variables: Alpha	Standardized Variables: Correlation with Total	Standardized Variables: Alpha	Label
PR1	0.553042	0.740914	0.551999	0.743414	Confindence, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR2	0.586681	0.732764	0.584005	0.735377	Top Form on Stress, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR3	0.555569	0.740369	0.555979	0.742421	Make Difference, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR4	0.515364	0.750650	0.518137	0.751790	Cooperative, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR5	0.549387	0.742495	0.551707	0.743487	Bright Side, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
PR6	0.416644	0.775532	0.417847	0.775840	Expect Things Go Own Way, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Appendix 10.0: Reliability Test of Work Engagement

Reliability Test (Work Engagement)

The CORR Procedure

6 Variables:	WE1	WE2	WE3	WE4	WE5	WE6

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
WE1	347	3.90202	0.88773	1354	1.00000	5.00000	Energy, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE2	347	3.94524	0.85673	1369	1.00000	5.00000	Purpose, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE3	347	3.87896	0.96905	1346	1.00000	5.00000	Time Flies, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE4	347	3.89337	0.93589	1351	1.00000	5.00000	Insipring, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE5	347	4.02594	0.86480	1397	1.00000	5.00000	Challenging, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE6	347	4.07493	0.87027	1414	1.00000	5.00000	Keep On Trying, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

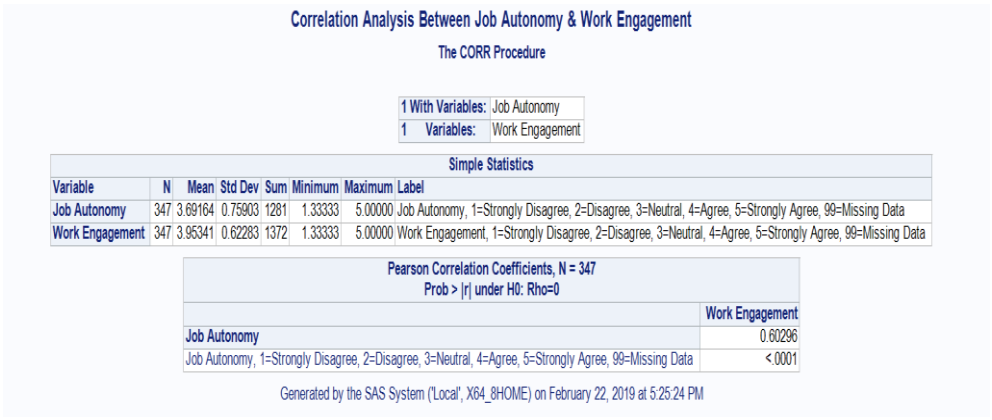
Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.783909
Standardized	0.785087

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables		
	Correlation with Total	Alpha	Correlation with Total	Alpha	Label
WE1	0.450312	0.770862	0.450673	0.772600	Energy, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE2	0.647460	0.724074	0.646565	0.724500	Purpose, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE3	0.525337	0.753825	0.525381	0.754763	Time Flies, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE4	0.543652	0.748644	0.545908	0.749753	Insipring, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE5	0.519689	0.754476	0.519953	0.756079	Challenging, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
WE6	0.518389	0.754763	0.519112	0.756283	Keep On Trying, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Appendix 11.0: Pearson Correlation Coefficients (Job Autonomy-Work Engagement)



Correlation Analysis Between Job Autonomy & Work Engagement

The CORR Procedure

1 With Variables:	Job Autonomy
1 Variables:	Work Engagement

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
Job Autonomy	347	3.69164	0.75903	1281	1.33333	5.00000	Job Autonomy, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
Work Engagement	347	3.95341	0.62283	1372	1.33333	5.00000	Work Engagement, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Pearson Correlation Coefficients, N = 347
Prob > |r| under H0: Rho=0

	Work Engagement
Job Autonomy	0.60296
Job Autonomy, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	<.0001

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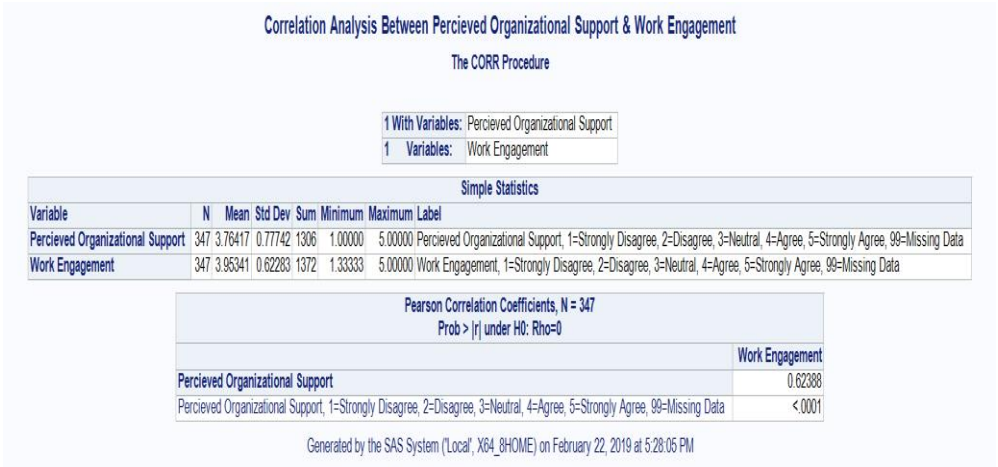
Appendix 12.0: Pearson Correlation Coefficients (Perceived Organizational Support-Work Engagement)



Correlation Analysis Between Percieved Organizational Support & Work Engagement

The CORR Procedure

1 With Variables:	Percieved Organizational Support
1 Variables:	Work Engagement

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
Percieved Organizational Support	347	3.76417	0.77742	1306	1.00000	5.00000	Percieved Organizational Support, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
Work Engagement	347	3.95341	0.62283	1372	1.33333	5.00000	Work Engagement, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Pearson Correlation Coefficients, N = 347
Prob > |r| under H0: Rho=0

	Work Engagement
Percieved Organizational Support	0.62388
Percieved Organizational Support, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	<.0001

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Appendix 13.0: Pearson Correlation Coefficients (Personal Resources-Work Engagement)

Correlation Analysis Between Personal Resource & Work Engagement

The CORR Procedure

1 With Variables:	Personal Resource
1 Variables:	Work Engagement

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
Personal Resource	347	3.85543	0.62515	1338	1.66667	5.00000	Personal Resource, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data
Work Engagement	347	3.95341	0.62283	1372	1.33333	5.00000	Work Engagement, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Pearson Correlation Coefficients, N = 347
Prob > |r| under H0: Rho=0

	Work Engagement
Personal Resource	0.65319
Personal Resource, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	<.0001

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Appendix 14.0: Multiple Linear Regressions

Linear Regression Results

The REG Procedure
Model: Linear_Regression_Model
Dependent Variable: Work Engagement Work Engagement, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data

Number of Observations Read	347
Number of Observations Used	347

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	72.76124	24.25375	135.36	<.0001
Error	343	61.45778	0.17918		
Corrected Total	346	134.21902			

Root MSE	0.42329	R-Square	0.5421
Dependent Mean	3.95341	Adj R-Sq	0.5381
Coeff Var	10.70704		

Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	1.07698	0.14756	7.30	<.0001
Job Autonomy	Job Autonomy, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	1	0.17549	0.04092	4.29	<.0001
Personal Resource	Personal Resource, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	1	0.33730	0.05039	6.69	<.0001
Percieved Organizational Support	Percieved Organizational Support, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree, 99=Missing Data	1	0.24657	0.03771	6.54	<.0001

Generated by the SAS System ('Local', X64_8HOME) on February 22, 2019 at 5:31:44 PM

Appendix 15.0: Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF BUSINESS AND FINANCE
BACHELOR OF BUSINESS ADMINISTRATION (HONS)
FINAL YEAR PROJECT 2018/2019

TOPIC: THE DRIVERS OF WORK ENGAGEMENT AMONG MANAGERS IN MALAYSIA MANUFACTURING INDUSTRY.

Dear respondents,

We are final year undergraduate students of Bachelor of Business Administration (Hons), from University Tunku Abdul Rahman (UTAR). The purpose of this survey is to collect information regarding to the title of our research — The drivers of work engagement among managers in Malaysia manufacturing industry.

Instruction

1) There are **TWO (2)** sections in this questionnaire. Please answer **ALL** questions in ALL sections
2) Completion of this survey will take you approximately 10 minutes
3) The contents of this questionnaire will kept PRIVATE, and CONFIDENTIAL
4) Please be informed that in accordance with Personal Data Protection Act 2010 (PDPA) which came into force on 15th November 2013, UTAR is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information

Acknowledgment of Notice

[ ] You have notified me and that I hereby understood, consented and agreed per UTAR notice.
[ ] I disagree; my personal data will not be processed.

NO.	NAME	STUDENT ID
1.	LEE YEN SHEAN	1503963
2.	LIM SENG HIAN	1605627
3.	NGEOW PEI HSIN	1605668
4.	PRAVEENA SELVALINGAM	1605546
5.	YOW MEI YI	1502818

QUESTIONNAIRE

Section A: Demographic Profile

Please place a tick "√" or fill in the blank for each of the following:

1. Gender:
- □ Male
- □ Female

2. Age:
- □ 20 years old and below
- □ 21- 30 years old
- □ 31-40 years old
- □ 41 years old and above

3. Ethnics group:
- □ Malay
- □ Chinese
- □ Indian
- □ Others

4. Highest education completed:
- □ SPM/STPM
- □ Certificate/Diploma
- □ Bachelor Degree
- □ Master/ Doctoral degreee

5. How long have you worked for your company?
- □ 0-2 year
- □ 3-5 years
- □ 6-9 years
- □ 10-14 years
- □ More than 15 years

6. Monthly salary:
- □ RM 3000 and below
- □ RM 3001 to RM 5,000
- □ RM 5,001 to RM 7,000
- □ RM 7,001 and above

7. Organizational level
- □ Lower management
- □ Middle management
- □ Senior management

SECTION B

Please circle your answer to each statement using 5 Likert scale
[(1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree]

WORK ENGAGEMNT (WE)

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	At my work, I feel bursting with energy.	1	2	3	4	5
2.	I find the work that I do full of meaning and purpose.	1	2	3	4	5
3.	Time flies when I am working.	1	2	3	4	5
4.	My job inspires me.	1	2	3	4	5
5.	To me, my job is challenging.	1	2	3	4	5
6.	At my work, I always keep on trying, even when things do not go well.	1	2	3	4	5

JOB AUTONOMY (JA)

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I have considerable opportunity for independence of my job.	1	2	3	4	5
2.	I can decide when to come to work and leave work, either officially or unofficially.	1	2	3	4	5
3.	I can decide on my own how to go about doing my work.	1	2	3	4	5
4.	I design important aspects of my own work and put my ideas into practice.	1	2	3	4	5
5.	I have a lot of freedom to decide when I do my work/task.	1	2	3	4	5
6.	I can considerably slow down my pace of work for a day when I want to.	1	2	3	4	5

PERSONAL RESOURCES (PR)

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Although I am in a bad mood and nervous, I am confident that my performance will be good.	1	2	3	4	5
2.	My working condition will still at top form even I have stress on work.	1	2	3	4	5
3.	I can make a difference in the workplace.	1	2	3	4	5
4.	I am cooperative in the workplace.	1	2	3	4	5
5.	I always look the bright side of the things.	1	2	3	4	5
6.	I always expect things to go my way.	1	2	3	4	5

PERCEIVED ORGANIZATIONAL SUPPORT (POS)

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	The company give me emotional supports whenever I need it the most.	1	2	3	4	5
2.	My superior has always acknowledges my efforts and contributions towards the company.	1	2	3	4	5
3.	My superior has provided me with opportunity to move up my rank in the company.	1	2	3	4	5
4.	My superior always concern towards our opinions.	1	2	3	4	5
5.	My company always concern about our best interest when making tough decision.	1	2	3	4	5
6.	Help is available from the firm when employees have a problem.	1	2	3	4	5

END OF QUESTIONNAIRE. THANK YOU FOR YOUR ASSISTANCE IN COMPLETING THIS QUESTIONNAIRE ☻

Appendix 16.0: Approval letter to conduct survey

UNIVERSITI TUNKU ABDUL RAHMAN
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

18th July 2018

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their *Bachelor of Business Administration (Hons)* program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:

Name of Student	**Student ID**
Lee Yen Shean	15ABB03963
Lim Seng Hian	16ABB05627
Ngeow Pei Hsin	16ABB05668
Praveena A/P Selvalingam	16ABB05546
Yow Mei Yi	15ABB02818

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

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