PERCEIVED WORK ENVIRONMENT AND EMPLOYEE ENGAGEMENT AMONG MANUFACTURING EMPLOYEES

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Thesis Submitted to
School of Business Management
Universiti Utara Malaysia,
in Partial Fulfilment of the Requirement for the Master of Human Resource
Management

Pusat Pengajian Pengurusan Perniagaan

SCHOOL OF BUSINESS MANAGEMENT

Universiti Utara Malaysia

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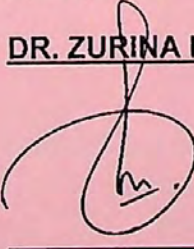**MASTER OF HUMAN RESOURCE MANAGEMENT**

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ABSTRACT

Employee engagement has emerged as an important management focused activity in order to perform in a dynamic business environment. Engaged employees are expected to be able to help organizations in all sectors including manufacturing to achieve its business objectives. This study, in general, aims to explore the factors that may be relevant to employee engagement. In specific, this study attempts to examine the relationships between perceived of work environment (the work itself, relationship with co-workers, leadership of supervisor, pay and benefit) and employee engagement among manufacturing employees in Sendayan Tech Valley. Quantitative method was used whereby questionnaires were provided to participants. Data acquired was examined using the Statistical Package for Social Science (SPSS) software. Inferential analyses specifically regression and correlation were used to examine the relationship between perceived of work environment factors and employee engagement. The findings of this study showed that, of four factors analysed, only the work itself had significant relationship with employee engagement whereas relationship with co-workers, leadership of supervisor, pay and benefit did not show any significant relationships with employee engagement. The results derived from this study suggest that the work itself should be given attention if the management of these manufacturing companies were to increase the engagement of their employees. This study was carried out on two manufacturing companies using convenience sampling technique, therefore the results cannot be generalized to other manufacturing companies or other organizations in different sectors. Future research is hope to extend the current scope of the research to include more manufacturing companies throughout the country and utilize a different sampling technique to confirm on these findings.

Keywords: Employee engagement, work itself, relationship with coworker, leadership of supervisor, pay and benefit.

ABSTRAK

Libat urus pekerja semakin menjadi fokus penting pihak pengurusan bagi memastikan organisasi berjaya dalam persekitaran perniagaan yang dinamik. Pekerja yang mempunyai keterlibatan yang tinggi dijangkakan boleh membantu organisasi dalam pelbagai sektor termasuk sektor pembuatan bagi mencapai objektif perniagaan masing-masing. Kajian ini bertujuan untuk mengenalpasti faktor-faktor yang mungkin mempunyai hubungkait dengan libat urus pekerja. Secara khususnya, kajian ini ingin menilai hubungan di antara kerja itu sendiri, hubungan dengan rakan sekerja, kepimpinan penyelia, gaji dan faedah dengan libat urus pekerja dalam kalangan pekerja pembuatan di *Sendayan Tech Valley*. Kaedah kuantitatif digunapakai di mana soal selidik diedarkan kepada responden di beberapa organisasi pembuatan. Data yang telah dikumpulkan, dianalisis menggunakan perisian Statistical Package for Social Science (SPSS). Analisis inferensi iaitu korelasi dan regresi digunakan untuk memeriksa hubungan di antara faktor tanggapan persekitaran kerja dan libat urus pekerja. Dapatan kajian ini menunjukkan daripada empat faktor yang dikaji, hanya kerja itu sendiri menunjukkan hubungan yang signifikan dengan libat urus pekerja manakala hubungan dengan rakan sekerja, kepimpinan penyelia, gaji dan faedah tidak menunjukkan sebarang hubungan yang signifikan. Dapatan daripada kajian ini mencadangkan faktor kerja itu sendiri perlu diberi perhatian oleh kumpulan pengurusan organisasi pembuatan yang terlibat dalam kajian ini sekiranya mereka ingin meningkatkan komitmen pekerja mereka terhadap organisasi masing-masing. Kajian ini telah dilaksanakan di dua organisasi pembuatan menggunakan teknik persampelan secara kebetulan, oleh yang demikian, dapatan kajian ini tidak boleh digeneralisasikan kepada organisasi pembuatan lain dan organisasi bukan pembuatan dalam sektor yang berbeza. Kajian akan datang di harapkan dapat meluaskan lagi skop kajian ini dengan melibatkan lebih banyak organisasi pembuatan di seluruh nagera dan menggunakan teknik persampelan lain untuk mengesahkan dapatan kajian ini.

Kata kunci: Libat urus pekerja, kerja itu sendiri, hubungan dengan rakan sekerja, kepemimpinan penyelia, gaji dan faedah.

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LIST OF ABBREVIATIONS

HRM   Human Resource Management

SPSS   Statistical Package for the Social Science

MIDA   Malaysian Investment Development Authority

MITI   Ministry of International Trade and Industry

SET   Social Exchange Theory

SPSS   Statistical Package for the Social Science

EE   Employee Engagement

WI   Work Itself

RC   Relationship with Coworker

LS   Leadership of Supervisor

PB   Pay and Benefit

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Employee engagement has become the highly focused element in today's business environment. Due to the technological revolution, the way people live and work are highly impacted and therefore organization especially Human Resource Management (HRM) is required to adapt to changes in the workforce. The rules and regulation within the business environment scope keeps evolving and the global competition has increased intensively (Cresnar and Jevsenak, 2019). Many areas of employment are impacted due to the change in business environment and technology influences. Individuals tend to look forward to work with industries or organization which is highly competitive and provides a good package of employee benefit.

Thus, the competency business environment led HRM to develop employee engagement, as it has a direct correlation to increased productivity and growth of a company. This was highlighted in an International Conference on Economics, Management and Technologies on May 2020 (ICEMT 2020). The conference was also emphasised that employee engagement is the central condition that can stimulate employees to be competent at executing their work. Similarly, in another Journal of Business and Economic Development in the year 2017, it was highlighted that employee engagement has attracted much concern from many intellectuals as a prevalent administrative theory in the current times. Moreover, the journal also indicated that a highly engaged employee developed mindfulness of business

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framework, and cooperated with co-workers to increase work performance for the benefit of the organization.

However, many issues related to employee engagement have been raised for decades. A researcher Quah (2014), detailed that in Malaysia, one out of two Malaysian corporations deemed people issues as the ultimate business challenge, highlighting on the need for employee engagement, which is imperative to drive Malaysia to a superior revenue standing. The company workers are not engaged in their respective work, and most of them are only doing their job for the monthly salary which indicates that the level of work engagement is very low (Alzyoud, 2018). The employer should take initiative to ascertain whether their employees are involved or detached in their workplace, as disconnection or estrangement can be the chief reason for staff's lack of enthusiasm and dedication (Saxena and Srivastava, 2015).

Besides, the global human resource solution firm proved Malaysian and Singaporean are the least engaged in Asia. The report mentioned, that a mere 33% of employees are fully committed and employees with low engagement level, led to lower productivity and high turnover in the companies (New Strait Times, 2019). The Employee Engagement Report by TINY pulse in the year 2017 provided an exciting topic on employee engagement to the readers. The report was concluded after obtaining the feedback from unidentified employees from 1,000 organizations all over the world. The result of the report says that 26% employee felt valued at their workplace. The report also concluded that employees are not recognized at the right time for what they deserve. Feeling less valued and recognized may lead to less

employee engagement. Moreover, the 2017 report states that the employee engagement challenges are to be taken seriously, as the results from the report highlighted on poor co-worker communication, and lack of transparency in work-related matters.

Subsequently, manufacturing industries contributes significantly to the growth of the country's economy. It is predicted that in the next 7 years, there is an incredible rise in productivity per employee by 30 per cent (Othman and Mahmood, 2020). They added that Malaysia acknowledges the contribution of manufacturing industries, to the economic growth of the country. Besides MITI (2018) released a statement that the manufacturing sector anticipated to hire 35% of potential workers and they are expected to shoot up the productivity by an average of 30% per employee. This has become the reason to create an optimal workforce in order to acquire great employee engagement.

Figure 1.1 shows the percentage that indicates compensation of employee in the year 2018 for 5 different sectors. The figure reveals that the manufacturing sector forms the second largest sector with 22.3 percent after the service sector which makes about 62 per cent. Other sectors include the construction sector that is of 9.8 per cent, followed by agriculture and mining & quarrying sectors which accounted for 4.1 per cent and 2.1 per cent of share to the overall Malaysia's CE respectively.
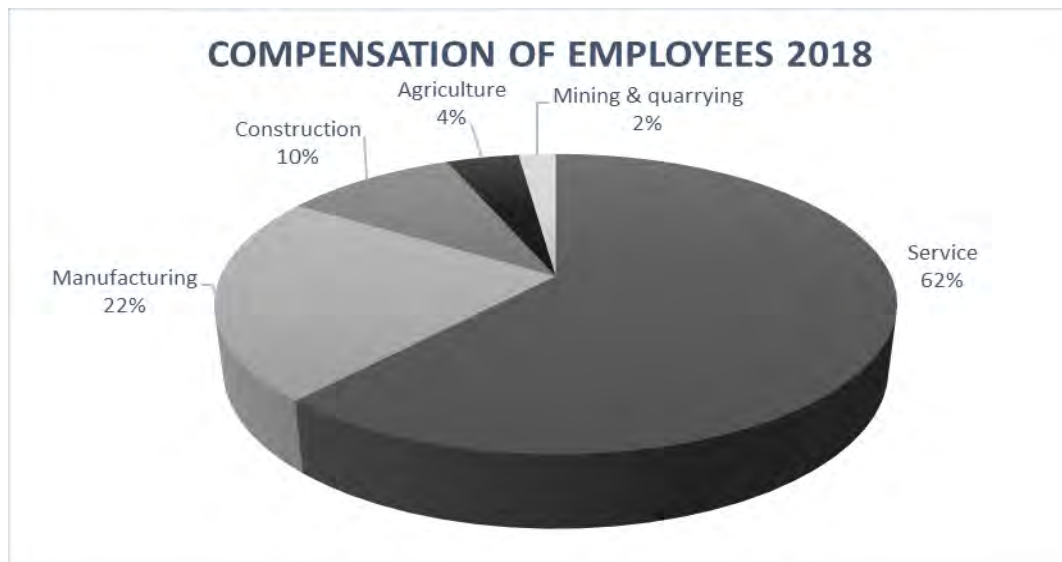
Figure 1.1
Compensation of Employee Year 2018
Source: Department of Statistics, Malaysia 2020. Available at <https://www.dosm.gov.m>
[Accessed 3 July 2020]

Besides, this similar statistics report, shows Malaysia Gross Domestic Product (GDP) were recorded at a value of RM1,500.00 billion (round up) in the year 2018, a value that was raised by 5.5 per cent from the previous year. The contribution of compensation of employee to Malaysia's GDP expanded to 36.0 per cent with a growth of 6.0 per cent (2017: 9.5%) which was largely driven by services and manufacturing sectors. Therefore, the manufacturing sector is a vital theme to consider for this business research study.

Negeri Sembilan is one of the state located at the west coast of Peninsular Malaysia. At the state level, economic activities in the state of Negeri Sembilan resemble the national level, whereby the manufacturing sector is more significant than the service sector. To support this statement, Malaysian Investment Development Authority which is a government primary promotion agency under the Ministry of International

Trade and Industry (MITI) had a media release on 21st February 2020, stating there were 901 manufacturing projects executed in Negeri Sembilan, with total investments of RM37.2 billion as of June 2019 and by September 2019, Negeri Sembilan attracted a total of 33 supplementary manufacturing projects worth RM2.6 billion which could generate 100,00 job openings. In summary, the state of Negeri Sembilan is highly dependent on the manufacturing sector as its main economy generator. Therefore, the state serves as an excellent avenue for business research study related to manufacturing sector.

Based on the comprehensive literature review and also as far as the researcher knowledge goes, there was limited research conducted regarding employee engagement in a manufacturing sector. Therefore, in order to identify and improve employee engagement level especially in the manufacturing industry, this study was carried out to understand the factors that influence employee engagement in manufacturing organization companies at Sendayan Tech Valley, Negeri Sembilan.

1.2 Problem Statement

Employee engagement has become a popular concept for many decades. Business leaders, whom intend to keep their employees engaged, must first recognize the features that affect employee engagement. This important topic was researched by many academicians. For an instance, Kahn (1990) studied on the emphasis of psychological conditions such as availability, well-being and meaningfulness. Maslach and Leiter (2001), on the other hand, looked into equality, the relationship among job demands and personal values, rewards and acknowledgement, and work

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regulatory as factors that affected employee engagement. The more engaged the employee is the higher the chances of a manufacturing organization to achieve their objectives.

However, identifying the dimensions that affect employee engagement is still most studied topic among many researchers. Varies studies were done on identifying the factors to drive employee engagement and some managed to quote in the study. Macey and Schneider (2008) deliberated on individual characteristics, governance, and job features on influencing employee engagement. They investigated the effect of the management of the human resource such as training, monetary and non-monetary appreciation, marginal assistances, and manager-employee affiliation on employee engagement in manufacturing firms in Malaysia, while Mun (2012) researched on the impact of job autonomy, tactical consideration, role advantage and objective setting in private sector in Malaysia as precursors to employee engagement.

A similar study conducted in Malaysian Health Care Industry in determinants of employee engagement, whereby the study hypothesised the relationship between pay and benefits, leadership style of supervisor, communication, work life balance and employee engagement (Jaya, Maisarah and Abdullah, 2017). The results proved that all four independent variables predict the dependent variable. The outcome also indicates pay and benefits is the most significant factor on employee engagement among employees in the industry.

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In addition, other in-depth research studies found the emerging factors that influence employee engagement. For instance, Barik and Kochar (2017) identify amount of work, physical work conditions, supervision and financial reward as the antecedents towards engagement level. Joshi and Sodhi (2011) found that compensation of financial benefits, work itself, top management and employee relation, and welfare facilities as dimensions that led to strong employee engagement in Indian organizations. Another researcher identified interpersonal relations, career opportunities, objectivity, pay and benefit as variables that has strong relationship with employee engagement (Baldev, Sombhala, and Ningthoujam, 2014).

Based on the overall finding from the above-mentioned authors, it can be concluded that there are some common factors or perceived work environments, that have greater impact to employee engagement such as work itself, relationship with co-worker, leadership of supervisor and pay and benefit. As far as the researcher's knowledge goes, there were no specific studies of these dimensions in a manufacturing industry setting. Therefore, this study focuses on the relationship between perceived work environment dimensions towards employee engagement in the manufacturing industry. It will analyse whether manufacturing employees at Sendayan Tech Valley, Negeri Sembilan are engaged based on a variety of the perceived work environment dimension.

1.3 Research Objective

The research has been raised to achieve the following objective.

1   To examine whether the work itself influence the scope of employee engagement among manufacturing employee.

2   To examine whether the relationship with coworkers influence the scope of employee engagement among manufacturing employee.

3   To examine whether the leadership of supervisor influence the scope of employee engagement among manufacturing employee.

4   To examine whether the pay and benefit influence the scope of employee engagement among manufacturing employee.

1.4   Research Question

The questions that may appear here are as follows:

1   Is there work itself has a significant relationship with employee engagement among manufacturing employee?

2   Is there relationship with coworkers has a significant relationship with employee engagement among manufacturing employee?

3   Is there leadership of supervisor has a significant relationship with employee engagement among manufacturing employee?

4   Is there pay and benefit has a significant relationship with employee engagement among manufacturing employee?

1.5   Scope of the Research

The general intent of this study is to know the factors involved in employee engagement with a focus on manufacturing companies in Sendayan Tech Valley, Negeri Sembilan. Data for the study is composed from a survey carried out on 175 employees from two different manufacturing companies in Sendayan Tech Valley, Negeri Sembilan. The survey was constructed in a simple and less time-consuming format, as a convenience to the participants to complete in a short time period.

1.6   Significance of the Study

The outcome of the study provides brief knowledge in regards to administrator, organization practitioner and researchers on engagement level of employees in the manufacturing industry. The measurement of the level of employee engagement will create awareness for administrators to work on and implement some new strategies that will in turn, will help the organization to engage employee, thus benefiting the productivity of the organization.

Moving forward, the practitioners will realize that employee engagement is a significant influence in creating a conducive work environment. Additionally, those who are in supervisory role will have a better understanding of their subordinates needs. This also works in vice versa, as when the subordinates realise that their needs are being met, they will in turn follow the footstep or guidance of their immediate supervisor or leader. Employees will also be able to grip the behaviour of their immediate supervisors; thus, it may be difficult for them to be engaged unless the leaders are very kind with the subordinates (Antony, 2018). Therefore, supervisors

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must work on to create an environment of positivity and happy vibration at work, which eventually improves the engagement level between the supervisor and subordinates.

Lastly, researchers may use the same data to conduct studies on employee engagement in manufacturing sector. Besides, researchers also can attempt studies on the engagement level in different organization with various factors that affect the engagement level. This study may also assist future researchers to adopt a new approach that explores different possible variables based on this study. In future, this study on employee engagement will be able to expand the productivity of the companies and the development of a country's' economy.

1.7 Definition of the Key Terms

The dependent and independent variables are defined as follows:

1.7.1 Employee Engagement

The employee engagement concept defined the connecting of organizational members' selves to their work roles whereby they express themselves physically, cognitively, and emotionally during role performances (Kahn, 1990).

1.7.2 Perceived Work Environment

The assessment of a person's perception of the work environment whereby the instrument that behaviour function of the person's environment and it related to the person location in the organization (Newman, 1975).

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1.7.3 Work Itself

Work Itself includes factors such as diversity, strengthening the job, being meaningful, contact with others, opportunities for evaluation, and in order to increase job satisfaction and also employees' performance (Korman , 1977).

1.7.4 Relationship with Coworkers

Relationship with Coworkers is the extent to which employees think their coworkers are concerned about their well-being and available to offer assistance in their work-roles (Susskind, 2003).

1.7.5 Leadership of Supervisor

The leadership skills are a factor to influence subordinate to perform tasks over a period of time using motivational methods rather than power or authority (Kotter, 1996).
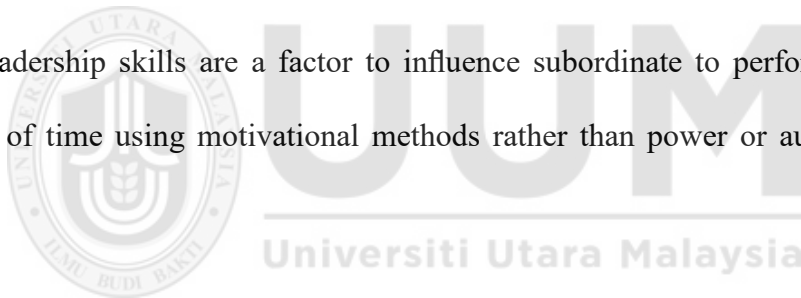
1.7.6 Pay and Benefit

The reward that an individual gets for doing some work is known as pay and benefits, which allows the engagement in regular and appropriate financial compensation at work (Nazir, Shah, and Zaman, 2012).

1.8 Organization of the Study

This research paper contains five chapters. Chapter one includes the background of the study, problem statement, research objective, research question, scope of the

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research, significance of the study, definition of the key terms and lastly, organization of the study. Chapter two provides literature review on variables involved, which are employee engagement, and perceived work environment. This is followed by, the reviews of theories used for the study and the development of the framework. The study then is continued with chapter three which presents conceptual framework, research hypothesis, research design, population and sampling technique, instrument development, response format, questionnaire design, data collection, statistical analysis procedures and finally the summary. Moving forward, chapter four discusses the findings of study whereby the results from the data collected, was presented, and in turn was reviewed. Lastly, Chapter five consist of reviewed results, discussion, limitation, future recommendation and conclusion.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of the literature related to employee engagement and perceived work environment (PWE) dimensions. The chapter begins with a discussion and reviews previous studies on employee engagement and also the related variables in this study, which are work itself, relationship with co-worker, leadership of supervisor and pay and benefits. Finally, this chapter is ended with the explanation of the theories that is the underpinning theory for my study.

2.2 Employee Engagement

Employee engagement has been deliberated on for the longest time, because of its significance to establishments and employees. In the past, researchers established a concept titled organizational commitment (Mowday, Steers and Porter, 1979). Over time, the term 'organizational commitment' was altered to 'employee engagement'. This is because the emphasis is now on comprehending the associations between organizational input and employee engagement (Gibbons, 2006; Harter, 2002; Richman, Crawford, Rodgers and Rogers, 1998).

The idea of employee engagement has initiated an extensive curiosity, over the past ten years. One of the first few researchers that described the employment engagement concept is Kahn (1990). He highlighted on the necessity of psychological conditions, which describes employee personal engagement level

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across different scenarios at work. He found that employees transform in difference degrees while performing their duties and they were committed in three elements which are physical, cognitive and emotional. He concludes the study, by proposing that there were three conditions that make employees perform at work. These conditions are meaningfulness, safety, and availability.

In detail, state of meaningfulness refers to as how an employee feels like when they are valued and appreciated for the work that they have been doing. They feel that they make difference in the organization. Meanwhile, Khan described safety as a conducive work environment that make an employee feel comfortable and normal to work without any doubt on negative impact in term of safety such as dangerous work environment. The third role which is availability was defined by Khan as sense of possibility of the employee who really can relate their action with the psychological condition in their work environment and work role. It they can match both factors, and then they are considered as an engaged worker. It can be concluded that, conducive work environment that fulfils these three psychological conditions ensures employees remain engaged towards the organization.

In another study, Saks (2006) defines employee engagement as to what degree the employee can continuously concentrate and be immersed towards the roles at workforce. He continued that it is the positive feelings of an employee's towards the job and it may lead to the employees being motivated at work. Similarly, Bakkar and Scheufeli (2008) explained the term as that "it is a psychological state where employees feel a vested interest in the organization's success and perform to a high

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standard that may exceed the stated requirements of the job." Apart from this, another author said that the employee engagement is also based on the organization contribution towards healthy work environment that provide to every employee in any organization. Moreover, clear career development plan is important to be put in place as it can develop workers confidence level and create mutual understanding between both employee and employment, which directly affects employee engagement (Baig, 2010).

2.3 Perceived Work Environment (PWE)

Work environment can be illustrated as an employee work station that includes work instrument and the work itself which clearly explains the organizational policies and rules (Vadi, 2004). Meanwhile, Ababneh (2007) defined working environment as a place where a job is performed successfully which involved physical aspect as well as surrounding of the workplace. Bright and Davis (2003) emphasised that work environment is made up of two components known as job characteristic and work context, whereby the component represents the factors that influence the degree of employee satisfaction in the organization. The level of satisfaction usually is measured by the most basic aspect, such as the work itself; the designation of the job (Tsai, 2007). Vadi (2004) mentioned that employees are concerned about comfortable work environment because it is one of the factors that influence job satisfaction. Thus, work environment must be in normal conditions so that it will allow employee to do their job properly (Thomas, 2008). Therefore, perceived work environment ensures that employees give continuous support and enable them to be

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attracted towards the job and simultaneously increase the level of employee engagement. In order to justify the above statements, the subsequent subtopic will describe in detail on the dimensions of perceived work environment which may become a factor that influences the level of employee engagement.

2.3.1 Work Itself

Work itself has become an important dimension in employee engagement. Employees prefer to perform duties when the job assigned is challenging and competitive. Employees prefer non-repetitive work (Singh, 2016). He added, there were two important elements in work itself that influences the engagement level, which are job variation and work instruction. Arnold also mentioned that the diversity level of a job plays a major role in intolerance among employees. He stated that, the diversity level is inversely proportionate to the level of intolerance. The more diversified the job is the more engaged the workers will be, and thus the level of intolerance will be lowered.

Based on Korman (1977) research, work satisfaction could be achieved if considering the few factors as freedom of making decision in term of work planning and performing work related activities. Next, frequently received feedback from the superior is also considered as a factor whereby individual whom perform duties sincerely, are expected to get immediate feedback for the current work performed within their job scope. Korman (1977) also indicated that the interaction with co-workers may also influences the work itself whereby, employees are required to contact each other and work as a team.

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2.3.1.1 Previous studies on work itself and employee engagement

A previous study on the relationship on work itself and employee engagement by the author Singh (2016) proved that work itself has significant relationship with employee engagement. The survey was conducted on 98 respondents from an information technology organization. The findings indicated that inherent factors such as engagement of work itself play a bigger role in motivating and stimulating the employee engagement level. The result shows that work itself scored the higher engagement level with 34% engagement level compared to other factors such as pay, recognition, autonomy and culture of respect, trust and rapport scored 11%, 21%, 12% and 22% respectively.

Similarly, Nguyen and Pham (2020) are also conducted research on employee engagement at not-for-profit organizations. The factors that are involved in this research were leadership, work itself, learning and development, recognition and work-life balance. The variable, work itself was defined by the authors as the nature of work that has an impact on the employee thinking skills, feeling and willingness to contribute ideas and whether it creates the significant attachment towards the employer. The result of the standardized β coefficient is 0.430, which reveals that the variable of work itself has a strong significant level with the independent variable employee engagement at non-profit organizations.

Another study on the relationship on work itself and employee engagement was researched at a centralized national company. Factor for work itself scored p-value of 0.536, whereby the majority respondent, which is 229 out of 400 responses, stated

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that they were very satisfied with their work itself. Other factors such as relationships with co-workers, career development opportunities, management's recognition of employee job performance, leadership of immediate supervisor also were scored highly in the survey. The research study concluded many internal factors that influence the employee engagement level such as restructuring on work itself, change in management and many others. However, the study took convenience sampling for easy access to the population and this type of sampling may be considered as limitation as it is not feasible to conclude for the whole population (Lapoint and Liprie-Spence, 2017).

2.3.2 Relationship with Coworker

Co-worker relationship has the power to transform the work environment to positive or the other way around. There are studies done previously on workplace environment support, focused on co-worker relationship. A research has mentioned that co-worker bonding refers to two employees who assist one another in their basic work by extending their support in term of knowledge and work experience (Zhou and George, 2001). They added, a good co-worker relationship is shown by encouragement and support given by an employee to another employee.

In another study, Karasek, Triantis and Chaudhry (1982) emphasised that co-worker relationship may determine the work environment harmony or confrontation to management which means it not only affects the work environment but also the external division apart from workforce such as management. Kahn (1990) in his study highlighted that team spirit and togetherness of the employees, was useful for

employees who were struggling at work due to work pressure. These employees felt the remarkable support of their co-workers, and were thus able to cope and function better. This statement was supported by another author where the positive relationship among workers gives significant impact to any type of engagement level (May, 2004).

2.3.2.1 Previous studies on relationship with coworker and employee engagement

A previous study on relationship with co-worker and employee engagement by an author named Anitha (2014) studied the factors that determine engagement level of a worker. The survey for the study was conducted in simple random sampling to select middle and lower managerial employees from a small-scale organization. Work environment, leadership, co-worker relationship, compensation, and work place wellbeing are the variables deliberated on, in her research. The research results substantiated that co-worker relationship has significant t value in relation with employee engagement. In summary, when a worker is able to build a positive relationship with team members, and will in turn transform the level of work engagement and eventually lead to the peak of productivity.

A very recent study on the relationship between co-worker and employee engagement was conducted by Makera (2020). The research was based on the responses from non-academic staff from Federal University of Technology. The main objective of the study is to identify the correlation between co-worker relationship and employee engagement. However, the result does not favour

positively as both variable relationships is low (r = 0.252), (β = -0.29), t = -0.0465, p > 0.05, therefore it can be concluded that the hypothesis is not supported. This result is contradicting with previous study that found significant in both variables. This can be concluded that university employees do not really depend or rely on co-worker support to perform their task. Along with this study, the current study will focus on relationship with co-worker based on the existing knowledge around the relationship with co-worker in different industry which is manufacturing.

Similarly, Lapoint, and Liprie-Spence (2017) determine that relationship with co-worker and employee engagement have significant relationship in a study conducted at a centralized national company specifically smaller owned company. Relationships with co-worker's variable have a p score of 0.6377, which indicates that the independent variable is highly significant with the dependent variable employee engagement.

2.3.3 Leadership of Supervisor

Leadership of supervisor is assessed by observing the level at which the supervisor understands and appreciate the presence of the subordinates as well as the value of the subordinate's contribution towards the job. A good leader is someone who is concerned of the wellbeing of the subordinates (Eisenberger and Stinglhamber, 2011). Social exchange theory (SET) states that if a supervisor leads by giving importance to the workers need and support them on their daily role, then it will create a feeling of attachment towards the organization. Moreover, the workers feel grateful for being cared and therefore they remain in the organization to show their

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gratitude and return the favour towards their supervisor (Cropanzano and Mitchell, 2005).

Another study suggests that the relationship with a supervisor as one of the key factors that maintain high employees work engagement especially with a good supervisory style inclusive of leadership style. This is based on feedback given on the performance and productive communication among supervisor and subordinates. This may increase workers competences level as they feel they are also a part of the company (Van der Heijden, 2010). Similarly, supervisor who used their leadership skill to interact with their subordinates from time to time, has positively influenced the workers to be committed and dedicated at work. This is basically done by the effect of the supervisor to invest time on taking extra care on subordinates' problems or issues. Therefore, workers with positive impression of their supervisor, tend to show higher engagement at workforce. This shows that employees become engaged when supervisors display very good leadership-oriented behaviours toward the subordinates (May, Gilson and Harter, 2004).

Additionally, another study by Heslin, Vandewalle, and Latham (2006), also provided feedback on how employee work together with supervisor in order to solve problems and improve their work attitude with the leadership of the supervisors. The full support of the supervisor in guiding the subordinates will transform the energy into action and will result in an increase in production. The more concentrated support or care provide by the supervisor throughout their leadership will boost the production performance to the next level (Holtom, Mitchell, and Lee, 2006).

2.3.3.1 Previous studies on Leadership of Supervisor and employee engagement

Leadership of supervisor is often described as an expressive predictor of employee engagement (Jin, and McDonald, 2017). To justify the statement, a study was conducted to examine the supervisor role among nurses. A factor was also tested in the study, which is the direct voice which defined as the direct communication between an employer with the superior or the management. The result shows both variables are positively associated with employee engagement. (Holland, Cooper, and Sheehan, 2017). The result was supported by the value of (β =0.40, p < .05). Thus, the result enforced that employees who feel valued and connected with their supervisors were highly engaged at work.

Meanwhile, Lin and Wang (2016) measured the leadership of supervisor by using the 10-item scale where the respondent were required to answer the question regarding their supervisor leadership behaviour. This study was carried out in an insurance company with 441 respondent. The Cronbach alpha in the research was scored at 0.96 which is the acceptance level, which is very good. However, the result only showed leadership of supervisor scored a moderate level of relationship with employee engagement. Hence, the authors recommended enhancing the leadership skill through training in order to increase the engagement level.

Based on Khan, and Lakshmi (2018), they illustrate that there is an influence of independent variable leadership of supervisor on the dependent variable of employee engagement. The result shows coefficient of leadership of supervisor is positive with

significant level of 0.000 and standard error of 0.13. Therefore, the hypothesis of the research is accepted where it insists that both variables are significantly related. However, this study has the limitation as it took only small sample size restricted to the management institutions which is located in Delhi, India.

2.3.4 Pay and Benefit

Luthans (1998) refers to pay as the financial compensation that an individual receives, which became the multidimensional factors in job satisfaction. He added, pay is not only to help individuals to consume basic needs, but also to satisfy the need of people in terms of their feelings. On the other side, benefits refer to a total compensation package offered to employee from the employer which is not including the pay for their time spent at work place. Milkovich and Newman (2008), said benefits are a group membership reward extended in order to provide security support to the employees and their family.

Another source, mentioned that pay and benefit is a proper salary system that should be in place, in order to encourage workers to perform in an organization. In relation to enhancement, the management may provide good compensation and benefit package to the employee. It may include bonus, increase in pay, allowances, pension and many other. The researcher also said, when employees are offered a good pay and benefit package, they will be more engaged at work. Moreover, the employees should have the understanding of the benefit to portray the greater level of engagement amongst them (Chandani and Mehta, 2016).

Anitha (2014) argued that pay and benefit is an important factor that contribute employee to keep performing in their field of work throughout their years of service in any organization. She even specifically mentioned that attractive pay and benefit package will affect the engagement level in middle and lower managerial category of the staff. Sanchez and McCauley (2006) perceived that a fair pay package has become a key factor to employee engagement in many countries as a whole, which includes China, United Kingdom and Japan. This study insisted that pay and benefit fairness is important to meet the employee expectation and satisfaction to improve level of engagement at work.

2.3.4.1 Previous studies on pay and benefit and employee engagement

Based on Memon and Salleh (2017), they insist that pay and benefit have signification relationship with employee engagement on his research that was conducted among the Malaysian oil and gas sector's professional employees. The total respondent were 409 professionals. The overall result from the finding revealed that the independent variable pays and benefit is positively affecting the employee engagement in the oil and gas sector. The result shows coefficients for both relationships were statistically significant ($p < 0.05$) as the value ($\beta = 0.267$, $t = 5.585$, $p < 0.05$). In summary, the finding indicated pay and benefit has a positive significant on employee engagement among Malaysian oil and gas professionals. This result reinforced the finding of other two authors Juhdi (2013) and Anitha (2013) where both stated that high level of pay and benefit satisfaction will increase the employee engagement level at workplace.

Similarly, Yalabik, Rayton, and Rapti (2017) indicated pay and benefit will be related to employee engagement in their research in US bank specialist lending division. However, the result was in no favour to the objective of the study whereby the hypotheses found no support. Which means, the pay and benefit is not significant towards employee engagement with value (β0.015, p=0.00). Hence the author justifies the result may be due to the limitation whereby, the data is from only a single company which may not reflect the whole population.

2.4 Underpinning Theory

The Social Exchange Theory (SET) is the underpinning theory for this study as it clearly explains the reason of employee being engaged and not engaged in various stage at work. Saks (2006) has proposed employee engagement refers to the level emotional and rational feeling, in order to perform their daily routine at the same time, and obey the policy and regulations of the organization. Employee should develop accountability and ownership attributes towards the job they have been doing in order to achieve the target or company goals. Engaged employees may have the respect towards the customer and treat them well to maintain the reputation of the organization. The real justification for employee engagement is that, it provides a positive energy that has led to skilled and improvised talent for organizations. This was illustrated by the social exchange.

SET, also mentions that the relationship between employee and employer foster characters such as trust, loyal and mutual voluntary on the situation that follow the rules of exchange. SET also described that, the engagement level of employees relied

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heavily on the benefit or advantage that the employee's received from the management such as conducive work environment, good leadership style of supervisor with best communication practice, the work itself, and pay. Employee's present their appreciation and dedication through emotional, cognitive and physiology methods.

SET emphasises that every individual has a strong exchange thought whereby they feel grateful to return the organizational benefit that they receive via high engagement level towards the management. As for the engagement level which consist of psychological behaviour between workers and the management can be transformed both in a positive or negative manner at a workforce. Therefore, the organization plays an important role in employee engagement, as to sustain the positive level at all times (AbuKhalifeh, and Som, 2013).
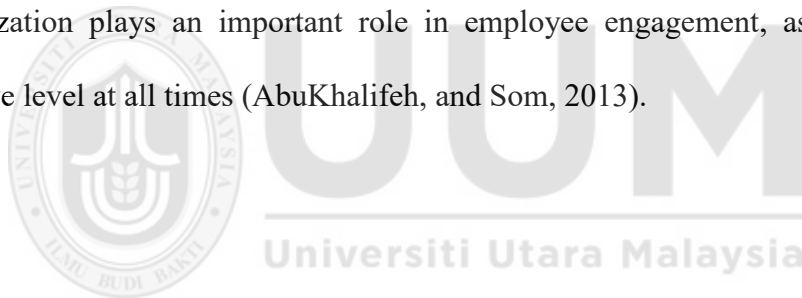
CHAPTER 3

METHODOLOGY

3.1 Introduction

Chapter three by explain the several procedures that has been use to collect data and conduct the study. The significant relationship between the independent variable and dependent variable were identify through statistical analysis. The data grouped from questionnaire will reflect the relation between the variables and analysed by the method of correlation.

3.2 Research Framework

The research framework constructed base on the literature review whereby Social Exchange Theory (SET) used as key point for the development of the framework. This is because, SET deliver abstract source why employee being engaged or disengaged at workforce. Hence, the framework focus on dimension that impact employee engagement. Employee engagement become the dependent variable for this study. Work itself, relationship with coworker, leadership of supervisor and pay and benefit are the four independent variables. The model of the research framework has been shows below

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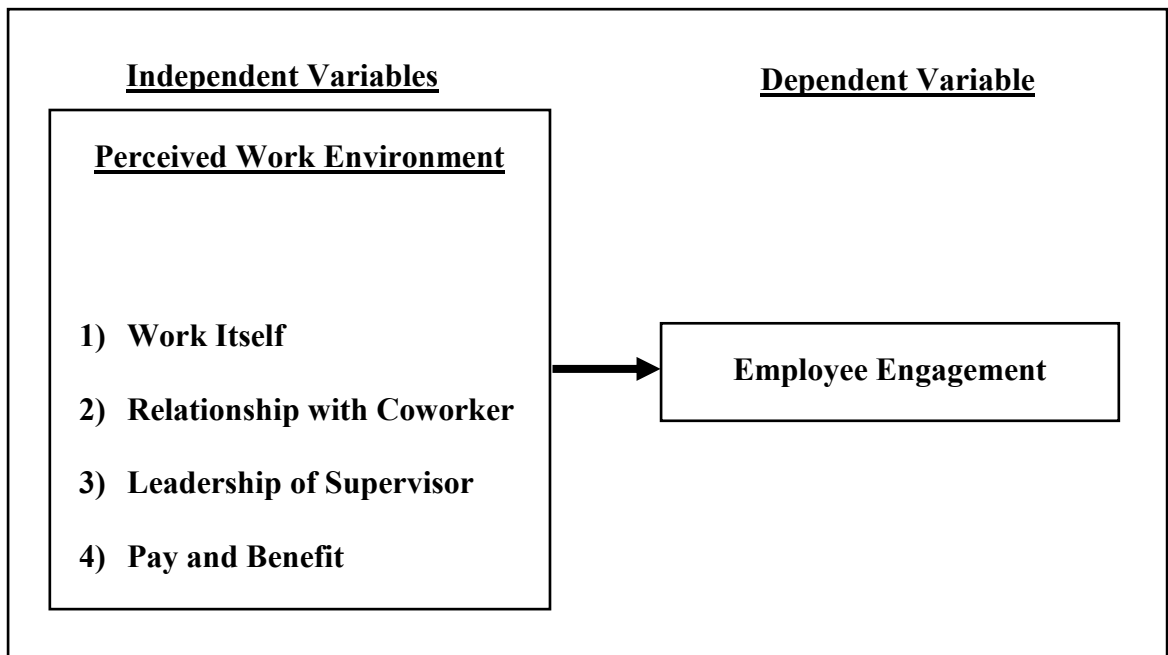
Figure 3.1
Research Framework

3.3 Summary of Research Hypotheses

These following generated hypotheses are hereby proposed in order to test the relationship between perceived work environment and employee engagement.

Hypothesis 1

H1: There is a significant relationship between work itself and employee engagement among manufacturing employee.

Hypothesis 2

H2: There is a significant relationship between relationship with coworker and employee engagement among manufacturing employee.

Hypothesis 3

H3: There is a significant relationship between leadership of supervisor and employee engagement among manufacturing employee.

Hypothesis 4

H4: There is a significant relationship between pay and benefit and employee engagement among manufacturing employee.

3.4 Research Design

The design of the research will illustrate the specific detail of the research process in collection information in order to rectify the research problem (Malhorta, 1999). For the purpose of this research, quantitative research design was adopted in order to study the significant level of both independent and dependent variables (Kreuger and Neuman, 2006). This also make easy for the researcher identify the comparative idea or concept of one variable to another variable (Anderson, Sweeny and Williams, 2000). Besides, quantitative research design can help to find solution for the question regarding the measurement of the relationship with the purpose of explanation and directing the occurrence (Leedy and Ormrod, 2005). Thus, quantitative research method is useful and benefited as it is permit to test the relationship among perceived work environment and employee engagement by using the statistical methods.

The unit analysis for the purpose of this study is individual level those who worked in manufacturing industry in Sendayan Tech Valley. As mention in the earlier part, the questionnaires were distributed to identify the perceptions from respondents

about the work itself such as job interest at work place and relationship with coworker such as support level trust level and other factor related to leadership of supervisor as communication, and pay factor such as salary satisfaction become the fundamental point to understand their influence on employee engagement. Thus, it is reasonable to use individual employee as an element of analysis to test all the variables shown in the research framework. Furthermore, distributed questionnaire were collected upon given one-week time. It is very simple, low cost and ensure the data collection have been done at easy way and timely manner.

3.5 Population and Sampling Technique

3.5.1 Population

Population of this study includes the manufacturing employees at Sendayan Tech Valley. The employees are including of all the two (2) manufacturing companies accordingly. The survey was distributed at Company B less than 20% because only selected employees were willing to participate in the survey. The total population for this study was 294 as the population shows the total manufacturing employee in overall. The distribution of population as shown in Table 3.1 below.

Table 3.1
Distribution of Population by Manufacturing Companies

Company	No of Employee	Questionnaire Distributed	Questionnaire Returned
Company A	154	154	149
Company B	140	26	26
Total	**294**	**180**	**175**

3.5.2 Sample Size

According to Zikmund (2003), he argued that if in a case where the population is huge and not practical to collect data as whole, then sampling process should apply in order to decide the sampling size. This was explain by Sekaran and Bougie (2010), where he said sample size as a "subset of the population of study". Therefore, sample size will be use to represent the whole of population in research. Generally, sampling process consist of three main steps which are identifying the population of the research as step one. Step two would be identify the sample size and last step will be choosing the sample. In this scenario, the total number of population is 294. Based on Krejcie and Morgan (1970) and refer to the Figure 3.2 if the population is 290, then the suggested sample size would be 165. This means 165 manufacturing employees need to represent the whole study population. However, it use larger sample size, which is 180 due to a possibility of not getting back the questionnaires from any particular employee due to any circumstance.
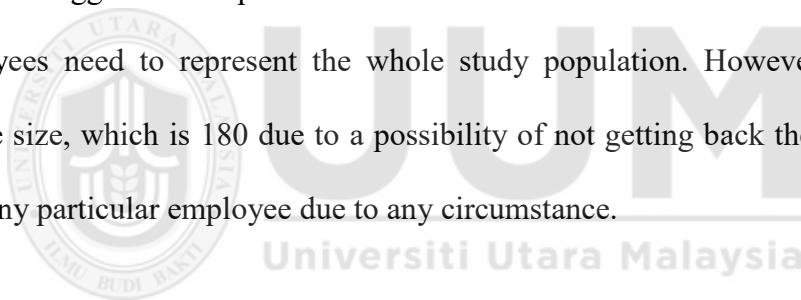
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Figure 3.2
Determining of Sample Size
Note: Population Size (N); Sample Size(S)

3.5.3 Sampling Technique

The research process for selecting appropriate members of the population for the study is consider as sampling (Sekaran and Bougie, 2013). This research adopts the convenience sampling. This is because even though the questionnaire was distributed to two (2) companies at Sendayan Tech Valley but there was not promise participant that can get for this research. Therefore, the researcher obtain participant from both mention companies by the availability and own interest of the employees, typically on the convenient. Moreover, the researcher decided to use larger sample size, which is 180 due to a possibility of not getting back the questionnaires from any particular employee due to any circumstance.

3.6 Instrument Development

The main research instrument is questionnaire on this study. For the purpose of this study, four independent variables and a dependent variable were examined. A five-point Likert scale range used to measure the variables. The instrument was divided into four main dependent variables, which are work itself; relationship with coworker, leadership of supervisor, pay and benefit (independent variables), and employee engagement (dependent variable), Next sub-section below demonstrates the details of the variables involved in the study.

3.6.1 Dependent Variable Employee Engagement

Employee engagement construct was operationalized as one-dimensional. A scale developed by Teo (2020), consisting of nine items was used to measure employee engagement. The details of the items are shown in Table 3.2.

Table 3.2

Operational Definition and Items for Employee Engagement

Variable	Operational Definition	Items/Measures
Employee Engagement ($\alpha = 0.81$)	Employee engagement is defined as "a positive attitude held by the employee toward the organization and its values (Robinson, Perryman, and Hayday, 2004).	1. At my work, I feel bursting with energy 2. I find the work that I do full of meaning and purpose 3. Time flies when I'm working 4. When I get up in the morning, I feel like going to work 5. I am enthusiastic about my job 6. I am immersed in my work 7. I persevere, even when things do not go well 8. I am proud of the work that I do

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| | | 9. I feel happy when I am working intensely |

Source: Teo (2020)

3.6.2 Independent Variables; Work Itself

An instrument developed for the variable work itself with four items was measure.

The items are shown in Table 3.3

Table 3.3
Operational Definition and Items for Work Itself

Variable	Operational Definition	Items/Measures
Work Itself ($\alpha = 0.847$)	Work itself is an activity directed towards goals beyond the enjoyment of the activity itself (Warr, 1983).	1. I enjoy my job 2. My job is interesting 3. My job gives me a sense of accomplishment 4. The work I do is very important for my unit/department and the organization as a whole

Source: Bojadjiev (2015)

3.6.3 Independent Variables; Relationship with Coworker

Relationship with Coworker was measured which consist of five items. Table 3.4

shows the detail of the items.

Table 3.4
Operational Definition and Items for Relationship with Coworker

Variable	Operational Definition	Items/Measures
Relationship with Coworker ($\alpha = 0.748$)	Coworker relationship has been considered as stimulates positive feelings and self-esteem that enhance employee capacity to deal with organizational	1. I respect my co-worker and trust them 2. I am consistently treated with respect by my co-workers 3. I can count on my co-workers to help me out when needed

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challenges (Roussea, 2009).

4. My co-worker and I work as a team

5. My unit/department collaborates effectively with other unit/departments within the organization.

3.6.4 Independent Variables; Leadership of Supervisor

This instrument consists of six items to measure leadership of supervisor, as shown in Table 3.5.

Table 3.5
Operational Definition and Items for Leadership of Supervisor

Variable	Operational Definition	Items/Measures
Leadership of Supervisor (α = 0.792)	Leadership of Supervisor embraces inspirational motivation, by which leaders/supervisor provide meaning and challenge to the assigned employees' work; whereby leaders support employees' adaptively and creativity in a blame free context (Bass, 2003).	1. My supervisor effectively communicates with the co-workers 2. My supervisor is an effective decision maker for the organization 3. My supervisor is approachable and easy to talk to 4. My supervisor gives me constructive feedback on my performance 5. My supervisor considers my idea and remarks 6. My supervisor deals effectively with poor performance

3.6.5 Independent Variables; Pay and Benefit

An instrument developed for the variable work environment with two items was utilize. The items are show in Table 3.6.

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Table 3.6
Operational Definition and Items for Pay and Benefit

Variable	Operational Definition	Items/Measures
Pay and Benefit (α = 0.784)	Pay and benefits defined as the ways in which people are rewarded when they come to work which allows the engagement in regular and appropriate financial compensation at work (Armstrong, 2017)	1. I am satisfied and fairly paid for what I do 2. My salary/pay rate is a significant factor in my decision to stay at the organization.

Source: Bojadjiev (2015)

In short, total 26 items for questionnaire have been develop for this study. Table 3.7

below shows the list of items used including all four variables involved in this study.

Table 3.7
Summary of Variables and Measurement of Instruments

Variable	No. of items	Source
Employee engagement	9	*Teo (2020)*
Work Itself	4	*Bojadjiev (2015)*
Relationship with Coworker	5	*Bojadjiev (2015)*
Leadership of Supervisor	6	*Bojadjiev (2015)*
Pay and Benefit	2	*Bojadjiev (2015)*
Total number of items	**26**	

3.7 Response Format

As for the format, norminal scale used for collet personal details of the respondents.

Meanwhile, Likert scale was optimist to measure the respondents answers from the

various itemise questionnaire on each variables regardless dependent or independent

variables. The scale that demonstrate the score from one to five scale that applied by

using Likert scale Sekaran (2010) showed as below:

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

3.8 Questionnaire Design

The questionnaire figures out three main part which are part A, B and C. Part A consist of personal information of the respondent or the participant such as age, gender, marital status, education qualifications, work experience and job grade. Whereas, part B question was construct for respondent to answer the on employee engagement, which is the dependent variable for this study. The last part, which is part C, independent variable, was question in order for the respondent to respond. The elaboration of all three parts was presented in the below Table 3.8. The researcher also attached the questionnaire sample in the end of this paper in Appendix A

Table 3.8
The Questionnaire Design

Questionnaire Part	Descriptions
PART A	A number of demographic variables measured for descriptive purpose including the age, gender, marital status, education qualifications, work experience and job grade.
PART B	Contains questions on measuring dependent variable employee engagement, which it will shows the level of engagement in the workforce
PART C	Consists of questions on measuring independent variable which inclusive of perceived work environment.

3.9 Data Collection Procedures

Data collection procedures could be done via several methods in order to distribute the questionnaires or to gain the research-related information, such as self-

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administrated, portal, telephones, internet or fax, face-to-face hand out, personal observations, or distribute questionnaires through electronic medium such as personal or group emails (Frazer and Lawley, 2000 ; Sekaran, 2003).

As for this study, researcher has decided to conduct a self-administered and collect the complete questionnaire from the participants among employees in manufacturing companies since it has its own advantages like provides a high response rate, reduce interview bias and help the researcher to provide necessary explanation regarding the study (Oppenheim, 2000). Furthermore, it helps the researcher to collect the complete questionnaire in a provided time. Respondents given one weeks to complete the questionnaire before the researcher himself collect the complete questionnaire. Respondents assured that all the information given will remain confidential at all times and will be use for the study only.

3.10 Statistical Analysis Procedures

The statistical techniques that used on this study was use from Statistical Package for Social Sciences (SPSS). Data preparation and screening should be done in advance to ensure that the data can use for analysis to developed hypotheses are supported or not. Screening here meaning it is includes data coding, data editing and finally data transformation to make sure the collected date are qualified.

The statistical techniques that used on this study are discussed as per the below points.

3.10.1 Reliability Analysis

The reliability analysis conducted base on Cronbach's Alpha scale whereby its measure internal consistency. . The measure reliability show the stability of the dimension in a concept. Sekaran (2003), insist that Cronbach's Alpha scale is one of the famous tool to check on reliability test on a variable to another variable. Therefore, many researchers prefer to use this Cronbach's Alpha scale for their study. For this study, Cronbach's Coefficient Alpha acceptance level of the reliability value was based on Tabachnick and Fidell (2001) studies.

Table 3.9
Interpreting the Cronbach's Alpha Value

Cronbach's Alpha Value	Degree of Reliability
More than 0.8	Good
In the range 0.7	Acceptable
Less than 0.6	Poor

Source: Tabachnick and Fidell (2001)

From Table 3.9, any value above 0.8 will consider as good. The value in the range of 0.7 may consider as acceptable. Moreover, any value that less than 0.6 then it considered poor.

3.10.2 Descriptive Analysis

Descriptive Analysis will describe the element of the data in the research, such as the minimum, maximum, mean and standard deviation of a sample. As for this study, these categories of data helps the researcher to summarize the variables. The main reason is to ensure that the respondents in this study represent the demographic

characteristics of the whole population. Among the demographic characteristics asked in the questionnaire, include gender, age, marital status, highest education qualification, working experience and job grade

3.10.3   Correlation Analysis

Correlation analysis help the researcher to identify the linear relationship between two variables. (Pallant and Manual, 2001). For the extent of this study, Pearson Correlation was used to determine the relationship between both dependent and independent variables. The positive value that reflect as result may conclude that there is a positive correlation between the two variables. For instant, if the one variable increase it will also increase another variable. The correlation value zero point out that there is no relationship between the both variables. The perfect score for this correlation is 1 or -1 whereby it reflects that significance of one variable has influence value on the other variable. This was explained by Muchinsky (1993) that any value measured near to +1, the relationship between the both variables are more significant. The strength and direction of the coefficient of correlation as shown in table 3.10 below.

Table 3.10
Strength and Direction of the Coefficient of Correlation

Value of Coefficient	Relation between variables
0.0 – 0.30	Very Low Relationship
0.30 – 0.50	Low Relationship
0.50 – 0.70	High Relationship
0.70 – 1.00	Very High Relationship

3.10.4 Regression Analysis

Multiple regression also is one of the statistical techniques that used to analyse the relationship between a single dependent (criterion) variable and several independent (predictor) variables. In other words, it can estimate the relationship among variables. Sekaran (2003) argued that multiple regression analysis is use the independent variable whose values known to predict the single dependent value selected by the researcher. Therefore, this value could provide information and determine the predictive power on the independent variables towards dependent variable. In addition, this analysis may forecast future outcomes.

As in this study, multiple regression is conduct to determine the relationship between independent variables (perceived work environment) towards the dependent variable (employee engagement).

3.11 Summary

This chapter describe the several aspects in the methodological approach that employed in this study. Besides, sampling procedure and techniques, the selection of the respondents, development of the questionnaire, the research materials, and other analysis methods presented in this chapter.

CHAPTER 4

RESULTS

4.1 Introduction

The chapter presents findings over the study that has been conducted among manufacturing employees. The data which distributed and collected from the respondents has been analysed using Statistical Package for the Social Sciences (SPSS) version 26.0. The analysis inclusive of respondent's frequency analysis, descriptive analysis, reliability test, Pearson's correlation analysis and multiple regressions analysis. Meanwhile, the hypothesis will be testing concurrently with the analysis to justify whether the hypothesis is accepted or rejected.

4.2 Respondents' Frequency Analysis

Frequency Analysis helps the researcher to analysis on demographics information of the respondents. There were 180 questionnaires were distributed and 175 questionnaires are return successfully. The response rate was 97.22%. From the total 175 respondents, 89 (50.9%) respondents are in the age group 30 year and below. Next, there are 49 (28.0%) respondents who are within the age range from 31 to 40 years old. The frequency of the respondents from the age group 41-50 years and 51-60 years are 29(16.6%) and 8 (4.6%) respectively. As for gender, male respondent was responded in majority with 160 (91.4%). The remaining 15(8.6%) were responded by female participant. The marital status of overall respondents stated average whereby single and married were responded 84 (48%) and 91 (52%) respectively.

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Another demographic characteristic that analyse is respondents Educational Qualification. Majority of the respondents are certificate / diploma holders 76 (43.4%), followed by secondary certificate and below with frequency of 63 (36.0%). Degree / Professionals respondent are 28 (16.0%) and only 6 respondents (3.4%) with Masters / Doctor of Philosophy. However, there are 2 respondents did not fill in the Educational Qualification column, therefore the total frequency for the particular demographic category is only 173 respondents. In another dimension, 149 (85.1%) respondents have 5 years and below working experience and 14(8.0%) of the respondents have 6 to 10 year of working experience. 5 (2.9%) respondents have 11 to 15 years of working experience and only 7 (4.0%) respondents have 16 years and above of working experience. Last in the analysis category is the job grade whereby there are 121 (69.1%) respondents are Non-Executive and below and only 54 (30.9%) are executive and above respondents. The below Table 4.1 shows the summary of socio-demographic profile of participants.

Table 4.1
Frequency of Respondents Demographic Profile (n=175)

Demographic Characteristic	Category	Frequency	Percentage (%)
Age	30 years and below	89	50.9
	31- 40 years	49	28.0
	41-50 years	29	16.6
	51- 60 years	8	4.6
Gender	Male	160	91.4
	Female	15	8.6
Marital Status	Single	84	48.0
	Married	91	52.0
Educational Qualification	Secondary Certificate and Below	63	36.0

	Certificate / Diploma	76	43.4
	Degree / Professionals	28	16.0
	Masters / Doctor of Philosophy	6	3.4
Work Experience	5 years and below	149	85.1
	6-10 years	14	8.0
	11-15 years	5	2.9
	16 years and above	7	4.0
Jod Grade	Executive and above	54	30.9
	Non-Executive and below	121	69.1

4.3 Coding

The data coding for all the nine items in dependant variable (DV) which is employee engagement was coded as EE1. EE2, EE3, EE4, EE5, EE6, EE7, EE8, EE9 accordingly. For the four items in independent variable (IV), work itself was coded WI1, WI2, WI3, and WI4. The same coding process did for relationship with co-worker variable as RC1, RC2, RC3, and RC4and RC5 for the five items. Leadership of supervisor which is one the independent variable also coded the same method as LS1, LS2, LS3, LS4, LS5 and LS6. Last variable which is pay and benefit were coded as PB1, and PB2 in order to enter in SPSS version 26.0. The Table 4.2 below shows the coding of the variables used accordingly.

Table 4.2
Variable Coding

Variable	DV / IV	Code
Employee Engagement	DV	EE
Work Itself	IV	WI
Relationship with Coworkers	IV	RC
Leadership of Supervisor	IV	LS
Pay and Benefit	IV	PB

4.4 Normality Analysis

In order to do any analysis and statistical test, the data normality should be the essential (Mishra, Pandey, Singh, Gupta, Sahu, and Keshri, 2019). Therefore, prior to data analysis, normality analysis should be done to identify whether the data is normally distributed or not. Base on Kim (2013), skewness, or kurtosis absolute z-value within -3.29 to +3.29 for any sample size between 50 to 300 will be conclude that the data is normally distributed. Otherwise, if the absolute z-value not within the range, will be rejected and conclude that the data is not normally. The researcher may refer Kim (2013) z-value range since the sample size in this study is 175 which within the said range and conclude that the data is normally distributes ad the z values for all variables are within the range.

Table 4.3
Normality Test (n=175)

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Z value	Kurtosis Statistic	Z value
EE	175	1.78	5.00	3.7092	.86434	-.531	-2.886	-1.086	-2.975
WI	175	2.75	5.00	4.2571	.52688	-.500	-2.717	.131	0.359
RC	175	2.20	5.00	4.0400	.73500	-.535	-2.908	-.890	-2.438
LS	175	2.17	5.00	4.0745	.62783	-.420	-2.283	-.523	-1.433
PB	175	1.00	5.00	3.8257	.88874	-.535	-2.908	.029	0.079
Valid N (listwise)	175								

Note: Standard error for skewness is 0.184 and for kurtosis is 0.365

4.5 Reliability Analysis

Cronbach"s Alpha scale used to measure internal consistency, which describe how a variable positively correlated to another variable (Sekaran, 2003). The acceptance level of the reliability value on the Cronbach's Alpha followed as recommended by

Tabachnick and Fidell (2001). The author also describes the acceptable value on the Table 3.10 in chapter 3. The result for the reliability analysis relied under the range of 'Good' level of reliability as the values of Cronbach's alpha for all is above 0.8. The Cronbach"s alpha for the dependent variable, employee engagement is 0.931, which falls on Good level. The highest Cronbach's alpha value among the independent variables obtained by relationship of co-worker with 0.913, followed by leadership of supervisor with the value score 0.906. The independence variable work itself score the value 0.767 which in the range of acceptable. Thus, pay and benefit variable score in the range 0.657, which consider poor. However, since the item in the variable is less than 10 items, the range could be acceptable as is above 0.5.

Table 4.4
Reliability Statistic of Variables

Items	Number of Items	Cronbach's Alpha
EE	9	0.931
WI	4	0.767
RC	5	0.913
LS	6	0.906
PB	2	0.657

4.6 Descriptive Analysis

Descriptive analysis will initiate to explore the data that collected, and help in the process of summarizing and describing. Base on the result shown in the Table 4.5, the dependant variable employee engagement scored a high level on mean with 3.709. Meanwhile, on the independent variable pay and benefit the high level of mean with 3.826, however, the other independent variables relationship with coworker, leadership of supervisor and work itself showed higher value of mean with 4.040, 4.074 and 4.257 respectively. As for the standard deviation, the dependant

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variable employee engagement has the standard deviation of 0.864 and the standard

deviation for all four independent variables including work itself, relationship with

coworker, leadership of supervisor pay and benefit has the value 0.527,0.735,0.628,

and 0.889 respectively. Both dependent and independent variables showed high-level

standard deviation in overall. The Table 4.5 portray the summary of descriptive

analysis.

Table 4.5
Summary of Descriptive Analysis (N =175)

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
EE	175	1.78	5.00	3.7092	.86434
WI	175	2.75	5.00	4.2571	.52688
RC	175	2.20	5.00	4.0400	.73500
LS	175	2.17	5.00	4.0745	.62783
PB	175	1.00	5.00	3.8257	.88874

4.7 Pearson's Correlation Analysis

The purpose of conducting the Pearson's Correlation analysis is to examine the

correlation among the independent variables such work itself, relationship with

coworker, leadership of supervisor and pay and benefit with the dependent variable

employee engagement. The findings from the analysis has been shown in Table 4.6

Table 4.6
Correlations Among Variables (n=175)

		EE (DV)	WI (IV)	RC (IV)	LS (IV)	PB (IV)
EE	Employee Engagement	1	.333**	.200**	.235**	.018
WI	Work Itself		1	.331**	.333**	.320**
RC	Relationship with Coworker			1	.575**	.232**
LS	Leadership of Supervisor				1	.118
PB	Pay and Benefit					1

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

Based on the result in Table 4.6, the correlation is significant at the level 0.01 at two-tailed. The correlation between work itself and EE was significant. The correlation coefficient, r= 0.333 indicates that the relationship is positive and moderate. The same goes to the variable relationship with co-worker where the correlation between relationship with co-worker and EE was significant. The correlation coefficient, r= 0.200 indicates that the relationship is positive and moderate. The next variable is leadership of supervisor where the correlation between EE was significant as well. The correlation coefficient, r= 0.235 indicates that the relationship is positive and moderate. The last variable, the correlation between pay and benefit and EE is also significant. The correlation coefficient, r= 0.018 indicates that the relationship is not significant.

4.8 Multiple Regression Analysis

Multiple Regression Analysis use to identify the R-squared and contribution of each variable. Neuman (2000), the R-square will describe how it has been related to dependent variable and also explaining further in the relationship between the independent variables (work itself, relationship with coworker, leadership of supervisor pay and benefit) and dependent variable (employee engagement). Base on the result shown in Table 4.7, R^2 square result of 0.139 classified that only 13.9% of the variance in employee engagement were explained by the independent variables work itself, relationship with coworker, leadership of supervisor and pay and benefit respectively. This indicates only a very small percentage on variance. Meanwhile,

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from the ANOVA, it can be concluded that there was a statistically significant interaction at the significance level of 0.000 (p<0.05).

Moving forward, regression analysis showed that only one (1) out of four dimensions have the significant relationship with the dependent variable (employee engagement) which is work itself (β = 0.311, p = 0.000) where the significant level is less than 0.05 (p<0.05). Next, the value coded for relationship with co-worker with employee engagement is (β=0.060, p = 0.507) and the valued coded for leadership of supervisor with employee engagement is (β=0.110, p = 00.218). Last variable which is pay and benefit coded negative beta value (β = -0.109, p = 0.154). All these three independent variables marked as insignificant as the significance level is more than 0.05 (p>0.05). Details on the multiple regression analysis show in Table 4.7.

Table 4.7
Multiple Regression Analysis (n=175)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.373a	.139	.119	.81124

a Predictors: (Constant), MEAN_IV_D, MEAN_IV_A, MEAN_IV_C, MEAN_IV_B
b Dependent Variable: MEAN_DV_E

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.113	4	4.528	6.881	.000b
	Residual	111.879	170	.658		
	Total	129.992	174			

a. Dependent Variable: EE
b. Predictors: (Constant), PB, LS, WI, RC

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Coefficients Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.042	.571		1.825	.070
	WI	.511	.131	.311	3.902	.000
	RC	.070	.105	.060	.665	.507
	LS	.151	.122	.110	1.235	.218
	PB	-.106	.074	-.109	-1.431	.154

a. Dependent Variable: EE

Results on the hypotheses testing are as follows and summary of hypothesis testing is present in Table 4.8

H1: There is a significant relationship between work itself and employee engagement among manufacturing employee.

Beta (β) value of work itself dimension showed positive value with 0.311, the t value is 3.902 (t > 1.645) and significance value is 0.000 (p<0.05). Since the t value is more than 1.645 and significance value is less than 0.05, this result concluded that work itself does have a significant relationship with the dependent variable, employee engagement. Hypothesis 1 is accepted.

H2: There is a significant relationship between relationship with coworker and employee engagement among manufacturing employee.

The beta value for relationship with coworker variable is a positive with 0.060. The *t* value should be more than 1.645, unfortunately this variable scored a lower *t* value (0.665) and the significance value (0.507), which is more than 0.05 indicates that

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relationship with coworker do not have significant relationship with the employee engagement. Hypothesis 2 is reject.

H3: There is a significant relationship between leadership of supervisor and employee engagement among manufacturing employee.

Beta value for leadership of supervisor variable is a positive with 0.110. The t value should be more than 1.645, however this variable scored a lower t value (1.235) and the significance value (0.218), which is more than 0.05 indicates that leadership of supervisor do not have significant relationship with the employee engagement. Hypothesis 3 is reject.

H4: There is a significant relationship between pay and benefit and employee engagement among manufacturing employee.

Even though the correlation analysis showed that there is positive relationship between pay and benefit and employee engagement, the multiple regression showed a different prospective whereby it showed that the beta value of this variable is negative with -0.109; also the t value is less than 1.645 as it scored -1.431 and the significance level is 0.154 ($p<0.05$) which is more than acceptable range, thus leads pay and benefit to have insignificant relationship with the employee engagement. This may happen as the correlation relationship was low, and this situation was clearly explained by Sekaran and Bougie (2013) who stated that a weak or low correlation between the two variables can give an impact of insignificant relationship in the regression analysis stage. In conclusion, hypothesis 4 is also rejected.

4.9 Summary of Hypotheses

Table 4.8

Summary of Hypothesis Testing

Hypothesis	Description	Result
H1	There is a significant relationship between work itself and employee engagement among manufacturing employee.	Accepted
H2	There is a significant relationship between relationship with coworker and employee engagement among manufacturing employee.	Rejected
H3	There is a significant relationship between leadership of supervisor and employee engagement among manufacturing employee.	Rejected
H4	There is a significant relationship between pay and benefit and employee engagement among manufacturing employee.	Rejected

4.10 Chapter Summary

This chapter concluded with all the finding based on the statistical analysis whereby at the end it has justified the developed hypothesis at the earlier of this study. This chapter analysed normality test, respondents' frequency analysis, mean, standard deviation, Pearson Correlation test and Multiple Regression test. The results show that there was a significant relationship for on one variable, which is work itself with employee engagement. The summary of findings, discussions, limitations, recommendations and conclusion are present in following chapter.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter will lead to discuss and conclude the study by summarized the finding and proposed recommendation for the future researchers. Also, not missed that this paper help in examining the factor have significant relationship in prompting employee engagement level among manufacturing employees.

5.2 Summary of the Study Findings

The purpose of this whole research is to examine the perceived work environment dimension that influence the scope of employee engagement among manufacturing employee. The researched carry out with 175 respondents at Sendayan Tech Valley, Negeri Sembilan. SPSS version 26.0 were used to run the analysis and generate the results. Normality test, Reliability test, Descriptive analysis test, Correlation test and Multiple Regression test are the tests that conducted via SPSS. Not forgetting, the Socio-demographic profile also has been analysed among the respondents to get the frequency findings.

In summary, the result helps in meeting the research objective, whereby only one hypothesis has been accepted for this research. First of all, in meeting the first objective, which is to examine whether the work itself influence the scope of employee engagement among manufacturing employee has justified that there is

significant relationship between both variables. Thus, the first hypothesis (H1) was accepted.

Beside this work itself (independent) factor, all other three independents factor such Relationship with Coworkers marked the p value with (p = 0.507), Leadership of Supervisor coded (p = 0.218), Pay and Benefit coded (p = 0.154). These variables shown insignificant relationship with the dependent variable employee engagement. This is proven via multiple regression analysis, whereby the p value coded more than the significant level (p>0.05).

5.3   Discussion

This section will lead further discussion on the findings referring to the previous literatures and findings that related to the variables involved in this research.

5.3.1   Relationship between work itself and employee engagement

The first objective of this study is to examine whether the work itself influence the scope of employee engagement among manufacturing employee. The t value for this variable is 3.902 (t > 1.645) and significance value is 0.000 (p<0.05), therefore this result concluded that work itself does have a significant relationship with the dependent variable, employee engagement. The similar result found by (Singh, R., 2016) on his study at information technology organization. Work itseft factor at information technology organization plays bigger role in motivation the employees.

Another study conducted by Nguyen and Pham (2020) at not-for-profit organizations also prove significant relationship among both variables. The result of the standardized β coefficient is 0.430 show the strong significant level of the independent variable. This none profit organization; work itself culture looks more to giving freedom of thinking, accept new ideas on work that creates the significant attachment towards the organization.

Similarly, the study conducted by Lapoint amd Liprie-Spence (2017) also insists that the positive relationship among work itself and employee engagement. The independent variable work itself scored p-value of 0.536 whereby majority respondent from centralized national company feels satisfied with their work itself. After review all the above studies, it can conclude that work itself has signification relationship with employee engagement regardless what industries the employee belongs too. Similar to the situation, this study also proven work itself has strong relationship with employee engagement among manufacturing industries.

5.3.2 Relationship between relationship with coworker and employee engagement

The second objective of this study is to examine whether the relationship with coworker influence the scope of employee engagement among manufacturing employee. Even thought the beta value for relationship with coworker variable is a positive with 0.060, unfortunately this variable scored a lower t value (0.665) and the significance value (0.507), which is more than 0.05 indicates that relationship with coworker do not have significant relationship with the employee engagement.

The result was contradicted with the study by Anitha (2014), where in her research the both variables have significant relationship. The major respondent is lower level employee which is similar respondent group for this study. The different is the type of the organization, whereby this study is among manufacturing and the research was conducted by Anitha (2014) was among small-scale organization. However, the result in both in not same. One of the reasons for the significant relationship among both variable because small scare organization might work closely each other in a team where they meet every co-worker very frequent basis.

There is another study where the result shows the relationship with co-worker does not significant with employee engagement (Makera, 2020). Similar to this study, the result value also low with (r = 0.252), (β = -0.29), t = -0.0465. Therefore, it come to conclusion that the hypothesis is not supported. A very important point that should be take into consideration on this discussion which is the industry. Makera (2020) conducted the study at non-academic staff from Federal University of Technology. The possibility of this result could be the university employees may work by themselves without expecting the co-worker support or involvement.

5.3.3 Relationship between leadership of supervisor and employee engagement

The third objective of this study is to examine whether the leadership of supervisor influence the scope of employee engagement among manufacturing employee. Again, this factor also showed leadership of supervisor not significant with employee engagement. This variable scored a lower t value (1.235) and the significance value (0.218), which is more than 0.05 indicates that leadership of supervisor do not have

significant relationship with the employee engagement. The result explains the situation in manufacturing industries especially those who took part in this research where the workers tend to work by their own rather seeking help or guidance from the superior. Another possibility may because the superior is not trained well on taking care of their subordinates.

A study with similar variable show leadership of supervisor and employee engagement have positive significant relationship (Jin, and McDonald, 2017). The study was conducted among nurses and the result was supported by the value of (β =0.40, p < .05). this may possible in nursing industry where the nurses are too dependent on the supervisor in order for obtain approval or concern prior to any kind of medical test conducted to patience. Any the nurses in supervisory level may take good care and at the same time take the responsibility on the performance of the nurses reporting under them. The significant level enforced that nurses who feel valued and connected with their supervisors were highly engaged at work.

Meanwhile, Lin and Wang (2016) study on the relationship of leadership of supervisor with employee engagement at insurance industry. The result was also contradicting with this study, whereby the both variables are positively significant. The positive result may be justifiable in insurance companies as the down liner are totally depends on the up-liner staff to guide or train them prior to meet customer or clients. The employee needs the supervisor leadership support in order to perform in the industry line in term of marketing skills or sale knowledge.

5.3.4 Relationship between pay and benefit and employee engagement

The last objective of this study is to examine whether the pay and benefit influence the scope of employee engagement among manufacturing employee. This factor is also failed to show positive significant level in both variables. correlation analysis showed that there is positive relationship between pay and benefit and employee engagement, but the multiple regression showed a different prospective whereby it showed that the beta value of this variable is negative with -0.109, and the *t* value scored -1.431. Thus, it leads pay and benefit to have insignificant relationship with the employee engagement.

A study by Memon and Salleh (2017), proven that pay and benefit have signification relationship with employee engagement among Malaysian oil and gas sector's professional employees. The result shows coefficients for both relationships were statistically significant as the value (β= 0.267, t= 5.585, p< 0.05). This is possible in oil and gas industry as the pay structure has the higher range compare to other industry. Therefore, employee in this industry higher rely on the pay range, which eventually lead the engagement level. Similar finding was found on Juhdi (2013) and Anitha (2013) studies.

Research conducted by Yalabik, Rayton, and Rapti (2017) indicate pay and benefit was in no favour to the objective of the study whereby the hypothesis found no support. Which means, the pay and benefit is not significant towards employee engagement with value (β0.015, p=0.00). This study was conducted at bank

industries. May conclude that bank industries were not focus on the salary range to make the employee engaged toward the companies.

5.4 Limitations

The sample size is one of the limitations for this study as it only conducted in two manufacturing companies at Sendayan Tech Valley, Negeri Sembilan. So, the generalizability of the study is limited as not many manufacturing employees were took part of this study. One of the companies that took part is only 26 respondents are willing to took part out of 140 as total number of employees. The second limitation is that the biasness. This could be the limitation as one of the companies is the own company that the researcher is working with. The employee may answer with different option rather than genuine answer just to avoid any judgement from researcher. Some respondents are very diplomatic where the answer all 26 items as 'neutral'.
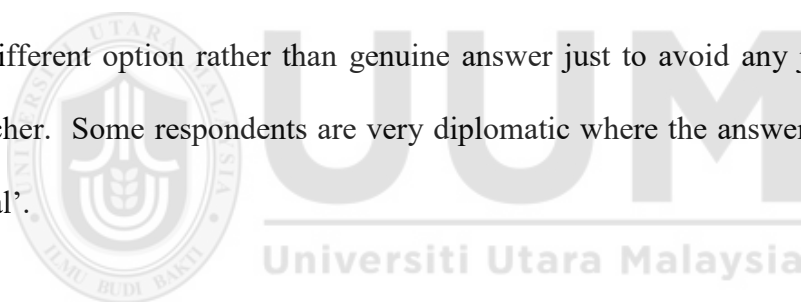
5.5 Recommendations

5.5.1 Recommendation to Employer

Without any doubt, many researchers have proven that employee engagement has become high priority to today's organization especially for manufacturing industries. Since work itself was proven as significant dimension of employee engagement at manufacturing companies at Sendayan Tech Valley, therefore the management should consider improvising some of the element to sustain the engagement level among the employees. Employers should provide work environment where the

employee could explore different skill or talent aside from on the daily duty. Besides, employer should give full authority to control a task completely on all the decision-making matter and outcome of the task. This freedom will make the employee more valued and that feeling will enhance the engagement level.

Even though other independent variables were rejected, employer should also give important, as the factor might be secondary level of support towards employee engagement. This is especially for the variable such as relationship with co-worker. This is important factor to take concern at because working in a team spirit may enhance the togetherness and unity, which eventually increase the engagement level.

5.5.2   Recommendation to Employees

Employees should aware that they are a part in the organization. Every employee contributes equally for the great success of the company. Thus, they should know on their rights and expectation towards the organization. When the employee gives full support toward the productivity, it may increase the employee engagement level. This will give the feeling of being value in the work place. Employee should be always proactive and shown involvement towards the job to keep the worm environment in positivity. In summary, the recommendation may not suit for all the organization, but appreciate if every individual regardless employee neither employee to keep an open-minded attitude in adopting the changes.

5.6 Conclusions

In conclusion, the research objectives have been fulfilled in examining the relationship between the four independents factors work itself, relationship with coworker, leadership of supervisor and pay and benefit with the dependent variable employee engagement among the manufacturing companies at Sendayan Tech Valley, Negeri Sembilan. In total four variable was tested and the finding show only one variable work itself has significant relationship with employee engagement. The result is key factor for the discussion and lead for the recommendation. Hence, the information including the definition, theoretical framework, analysis method and overall concept of engagement might be useful for the future researcher on their research studies.

REFERENCES

Ababneh, Hesham Okla Hamad (2007). *Factors Influencing Employee Engagement: A Survey of the Islamic Bank of Jordan.* Master of Human Recourse Management dissertation. Universiti Utara Malaysia, Malaysia.

AbuKhalifeh, A. N., & Som, A. P. M. (2013). The antecedents affecting employee engagement and organizational performance. *Asian Social Science*, *9*(7), 41-46.

Alikhanova, L. H., Mineva, O. K., & Smirnova, D. S. (2020, May). Employee Online Surveys: Satisfaction, Engagement, Loyalty, and Readiness for Personal Branding. In *International Conference on Economics, Management and Technologies 2020 (ICEMT 2020)* (pp. 553-559).

Alzyoud, A. A. Y. (2018). The influence of human resource management practices on employee work engagement. Foundations of Management, 10(1), 251-256.

Anderson, D., Sweeney, D.J., & Williams, T.A. (2000). *Essentials of statistics for business and economics* (2nd ed.). Cincinnati, Ohio: South-Western College Publishing.

Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International journal of productivity and performance management*. 63(3), 308-323.

Anitha, J. "Determinantsof Employee Engagement and Their Impact on Employee Performance."*International   Journal   of Productivity and Performance Management* 63, no. 3 (2014): 308-23.

Antony, M. R. (2018). Paradigm shift in employee engagement–A critical analysis on the drivers of employee engagement. *International Journal of Information, Business and Management*, *10*(2), 32-46.

Baig, A. (2010). *Human resource management practices in Reliance industries Ltd*. (Doctoral dissertation). Aligarh Muslim University, Aligarh.

Bakkar, A. B., & Scheufeli, W. B. (2008). Positive organizational behaviour: Engaged employee in flourishing organizations. *Journal of Organizational Behaviour, 29,* 147-154. doi: 10.1002/job.515

Barik, S., & Kochar, A. (2017). Antecedents and consequences of employee engagement: A literature review. *International Journal of Latest Technology in Engineering, Management & Applied Science*, *6*(4), 33-38.

Bojadjiev, M., Stefanovska Petkovska, M., Tomovska Misoska, A., & Stojanovska, J. (2015). Perceived work environment and job satisfaction among public administration employees. *The European Journal of Applied Economics, 12(1), 10-18.*

Chandani, A., Mehta, M., Mall, A. & Khokhar, V. (2016). Employee engagement: A review paper on factors affecting employee engagement. *Indian Journal of Science and Technology,9(15),* 1-7.doi: 10.17485/ijst/2016/v9i15/92145

Cresnar, R., & Jevsenak, S. (2019). The millennials' effect: How can their personal values shape the future business environment of industry 4.0?. *Nase gospodarstvo/Our economy*, *65*(1), 57-65.

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. Journal of Management, 31, 874-900.

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. Journal of Management, 31, 874-900.

Eisenberger, R., & Stinglhamber, F. (2011). Perceived organizational support: Fostering enthusiastic and productive employees. Washington, DC: American Psychological Association.

Eisenberger, R., & Stinglhamber, F. (2011). Perceived organizational support: Fostering enthusiastic and productive employees. Washington, DC: American Psychological Association.

Frazer, L., & Lawley, M. (2000).*Questionnaire design & administration*. Australia: John Wiley & Sons.

Gibbons, J. (2006). Employee engagement: A review of current research and its implications. NewYork: The Conference Board.

Herman Aguinis. (2005). Performance Management, Prentice Hall.

Heslin, P. A., Vandewalle, D., & Latham, G. P. (2006). Keen to help? Managers' implicit person theories and their subsequent employee coaching. Personnel Psychology,59, 871–902. http://dx.doi.org/10.1111/j.1744-6570.2006.00057.x.

Heslin, P. A., Vandewalle, D., & Latham, G. P. (2006). Keen to help? Managers' implicit person theories and their subsequent employee coaching.Personnel Psychology,59,871–902. http://dx.doi.org/10.1111/j.1744-6570.2006.00057.

Holland, P., Cooper, B., & Sheehan, C. (2017). Employee voice, supervisor support, and engagement: The mediating role of trust. *Human Resource Management*, *56*(6), 915-929.

Holtom, B. C., Mitchell, T. R., & Lee, T. W. (2006). Increasing human and social capital by applying job embeddedness theory.Organizational Dynamics,35,316–331.http://dx.doi.org/10.1016/j.orgdyn.2006.08.007

Ibiwani Alisa Hussain, Noormala Amir Ishak, The Relationship Between Organizational Learning and Employee Engagement, *in the Perspective of Young Employees from Commercial Banks in Malaysia, Journal of Business and Economic Development*. Vol. 2, No. 1, 2017, pp. 57-62.

International Journal of Latest Technology in Engineering, Management & Applied Science (IJLTEMAS)Volume VI, Issue IV, April 2017 | ISSN 2278-2540

Jaya Ganesan, Maisarah Binti Zainal Azli, Mohammed Abdullah Fageeh. (2017). *Determinants of Employee Engagement in the Malaysian Health Care Industry.* World Applied Sciences Journal 35 (10), 2180-2186.

Jin, M. H., & McDonald, B. (2017). Understanding employee engagement in the public sector: The role of immediate supervisor, perceived organizational support, and learning opportunities. *The American Review of Public Administration*, *47*(8), 881-897.

Jose, G., & Mampilly, S. R. (2015). Relationships among perceived supervisor support, psychological empowerment and employee engagement in Indian workplaces. *Journal of Workplace Behavioral Health*, *30*(3), 231-250.

Joshi, R. J., & Sodhi, J. S. (2011). Drivers of employee engagement in Indian organizations. Indian Journal of Industrial Relations, 162-182

Joshi, R. J., & Sodhi, J. S. (2011). Drivers of employee engagement in Indian organizations. Indian Journal of Industrial Relations, 162-182.

Juhdi, Nurita, Fatimah Pa'wan, and Ram Milah Kaur Hansaram. "HRPractices and Turnover Intention: The Mediating Roles of Organizational Commitment and Organizational Engagement ina Selected Region in Malaysia."*The International Journal of Human Resource Management 24*, no. 15 (2013): 3002-19.

Kahn, W.A. (1990), "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, 33 (4), pp. 692-724.

Karasek, R. A., Triantis, K. P., & Chaudhry, S. S. (1982). Co-worker and Supervisor Support as Moderators of Associations between Task Characteristics and Mental Strain. *Journal of Occupational Behaviour, 3,* 181-200.

Khan, M., & Lakshmi, N. (2018). Mediating role of employee engagement in the relationship between perceived supervisor support and job satisfaction. *Asian Journal of Management*, *9*(1), 189-196.

Khan, N. (2013). *Human resource policies and practices in hospitality industry in India: A case study of selected hotels.* (Doctoral dissertation). Aligarh Muslim University, Aligarh.

Kim, H. Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative dentistry & endodontics*, 38(1), 52-54.

Korman, A. (1997). Industrial and Organizational Psychology, Trans: Shekarkan, H. (1997), Tehran:Growth Publishing

Korman, A. (1997). Industrial and Organizational Psychology, Trans: Shekarkan, H. (1997), Tehran:Growth Publishing

Korman, A. (1997). Industrial and Organizational Psychology, Trans: Shekarkan, H. (1997), Tehran:Growth Publishing

Kotter, J.P. (1996), Leading Change, Harvard Business School Press, Cambridge, MA.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychology Measurement, 30*, 607-610.

Kreuger, L. W. & Neuman, W. L. (2006).*Social work research methods: qualitative and quantitative applications*. Boston and New York. Pearson Education, Inc.

Lapoint, P. A., & Liprie-Spence, A. (2017). Employee Engagement: Generational Differences in the Workforce. *Journal of Organizational Psychology*, *17*(5).

Leedy, P. D., & Ormrod, J. E. (2005). *Practical Research: Planning and Design (8th ed,)* Pearson Educational International and Prentice Hall: New Jersey.

Lin, W., Wang, L., Bamberger, P. A., Zhang, Q., Wang, H., Guo, W., ... & Zhang, T. (2016). Leading future orientations for current effectiveness: The role of

engagement and supervisor coaching in linking future work self salience to job performance. *Journal of Vocational Behavior*, *92*, 145-156.

Luthanas, F. (1998). *Organisational Behaviour* (Vol. 8th ed). Boston: Irwin McGrawHill.

Luthans, F. (1998). Organisational Behaviour. 8th ed. Boston: Irwin McGraw-Hil

Macey, W. H. and Schneider, B. 2008. The meaning of employee engagement. Industrial and Organizational Psychology, 1(1), 3-30.

Makera, A. U., Nasidi, Y., Kamaruddeen, A. M., & Jemaku, I. M. (2020). Correlation between Team and Co-worker Relationship and Employee Engagement. *Journal of Advanced Research in Business and Management Studies*, *14*(1), 16-24. Retrieved from http://www.akademiabaru.com/submit/index.php/arbms/article/view/1322

Malhotra, N.K. (1999). *Marketing research: An applied orientation* (3rd ed.). New Jersey: Prentice Hall.

May, D.R., Gilson, R.L., & Harter, L.M. 2004. The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work.Journal of Occupational and Organisational Psychology, 77(1),11-37.

May, DR., Gilson, R.L., & Harter, L.M (2004). The psychological condition of the meanifullness, safety and availability and the engagement of the human spirit at work. *Journal of occupational and Organizational Psychology,77*(1), 11-37

Memon, M. A., Salleh, R., & Baharom, M. N. R. (2017). The mediating role of work engagement between pay satisfaction and turnover intention. *International Journal of Economics, Management and Accounting*, *25*(1), 43-69.

Milkovich, G. T., & Newman, J.M. (2008). Compensation. In *(9th Ed)*. McGraw Hill International Edition USA.

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of cardiac anaesthesia*, 22(1), 67.

Mowday, R., Steers, R., & Porter, L. (1979). The measurement of organizationalcommitment. Journal of Vocational Behavior, 14, 224247.

Muchinsky, P. (1993). *Psychology applied to work: An introduction to industrial/organizational psychology*. Los Angeles: Brooks/Cole.

Mun, Y. S., Suhaimi, M. N. Abdullah, S. S., Abdul Rahman, S. & Nik Mat, N. K. (2012). Employee Engagement.

Nazir, T., Shah, S. F. H., & Zaman, K. (2012). Literature review on total rewards: An international perspective. *African Journal of Business Management*, *6*(8), 3046-3058.

Newman, J.E. "Understanding the Organizational Structure—Job Attitude Relationship Throught Perception of the Work Environment," Organizational Behaviour and Human Permormance, Vol. 14 (1975), 371-397.

NGUYEN, L. G. T., & PHAM, H. T. (2020). Factors affecting employee engagement at not-for-profit organizations: A case in Vietnam. *The Journal of Asian Finance, Economics, and Business*, *7*(8), 495-507.

Oppenheim, A. N. (2000). Questionnaire design, interviewing and attitude measurement: New Edition. London: Continuum.

Othman, S. A., & Mahmood, N. H. N. (2020). Linking Level of Engagement, HR Practices and Employee Performance Among High-potential Employees in Malaysian Manufacturing Sector. Global Business Review, 0972150919877342.

Pallant, J., & Manual, S. S. (2001). *A step by step guide to data analysis using SPSS for Windows version 15*. Buckingham, Philadelphia: Crows Nest, Open University Press.

Proceeding of the 5th International Conference on Management and Muamalah 2018 (ICoMM 2018) e-ISBN: 978-967-2122-52-4

Quah, D. (2014). Human Capital Top Challenge For Ceos Worldwide. The Star. Retrieved from http://thestar.com.my

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600-619. doi: 10.1108/02683940610690169 Bakkar, A. B., & Scheufeli, W. B. (2008). Positive organizational behaviour: Engaged employee in flourishing organizations. *Journal of Organizational Behaviour, 29,* 147-154. doi: 10.1002/job.515

Saks, A. M. and Gruman, J. A. 2011. Manage employee engagement to manage performance.Industrial and Organizational Psychology: Perspectives on Science and Practice, 4(2), 204-207.

Sanchez, Paul, and Dan McCauley. "Measuring and Managing Engagement in a Cross-Cultural Workforce: New Insights for *Global Companies."Global Business and Organizational Excellence 26*,no. 1 (2006): 41-50.

Saxena, V., & Srivastava, R. K. (2015). Impact of employee engagement on employee performance–Case of manufacturing sectors. International Journal of Management Research and Business Strategy, 4(2), 139-174.

Sekaran, U. (2003). Research Methods for Business: A Skill Building Approach, John Wiley Sons,. USA.

Sekaran, U., & Bougie, R. (2013). Research Methods for Business: A Skill BuildingApproach: John Wiley & Sons.

Shahidan, N. A., Hamid, A. N., Kamil, M. A. B., Rani, A. H. S., & Aziz, A. H. H.(2016). *Linking Work Environment, Team and Co-worker*.

Singh, R. (2016). The impact of intrinsic and extrinsic motivators on employee engagement in information organizations. *Journal of Education for Library and Information Science*, *57*(2), 197-206.

Susskind, A.M., Kacmar, K.M. and Borchgrevink, C.P. (2003),"Customer service providers'attitudesrelating to customer service and customer satisfaction in the customer-server exchange",Journal of Applied Psychology, Vol. 88 No. 1, pp. 179-187.The Expression of Voice. *The Academy of Management Journal, 44,* 682-696.

Tabachnick, B. G., & Fidell, L. S. (2001). Using multivariate statistics (4th ed.). Boston: Allyn & Bacon.

Teo, S. T., Bentley, T., & Nguyen, D. (2020). Psychosocial work environment, work engagement, and employee commitment: A moderated, mediation model. International Journal of Hospitality Management, 88, 102415.

Thomas J. DeStefano, Henry Clark, Megan Gavin & Thomas Potter (2008). The Relationship between Work Environment Factorsand Job Satisfaction Among Rural Behavioral Health Professionals. Northern Arizona University

Tsai P. F., Et Al. (2007). A Study on Motivating Employees Learning Commitment in The Post Downsizing Era: Job Satisfaction Perspective. Journal of World Business, 42 (2), 157-169

Vadi M (2004). Organizational Cultural in Estonia: Manifestations and Consequences. University of Tartu

Van der Heijden, B. I. J. M., Kummerling, A., Van Dam, K., Van der Schoot, E., Estryn-Behar, M., & Hasselhorn, H. M. (2010). The impact of social support upon intention to leave among female nurse in Europe: Secondary analysis of data from NEXT survey. *International Journal of Nursing Studies*, 47, 434-445.

Yalabik, Z. Y., Rayton, B. A., & Rapti, A. (2017, December). Facets of job satisfaction and work engagement. In *Evidence-based HRM: a global forum for empirical scholarship*. Emerald Publishing Limited.

Zhou, J., & George, J. M. (2001). When Job Dissatisfaction Leads to Creativity: Encouraging

Zikmund, W. G. (2003). *Business research methods* (7th ed.). Thomson/South-Western.

Zuraina Dato Mansor, Nor Siah Jaharudin, & Norlelyy Mat Nata, 2018.

PERCEIVED WORK ENVIRONMENT AND EMPLOYEE ENGAGEMENT

AMONG MANUFACTURING EMPOYEES

Dear Respondent,

This survey is conducted in order to examine the relationship of perceived work environment with employee engagement among manufacturing employee in Sendayan Tech Valley.

The following questionnaire will require approximately 10 minutes to complete. Your cooperation in answering these research questions as honest as possible is really appreciated as this will help the completion of the research. All information given will be keep strictly confidential and for the purpose of this research only. If you require additional information or have questions, please send your enquiry to my email address genga25haran@yahoo.com.

Thank you for your valuable time, attention and cooperation.

Regards,

Gengatharan A/L Kanapathy
Master of Human Resource Management
School of Business Management
Universiti Utara Malaysia

PART A: DEMOGRAPHIC PROFILE / PROFIL DEMOGRAFI

INSTRUCTION: Please place the (X) at the appropriate column for the following questions.
ARAHAN   : Tandakan (X) pada pilihan anda bagi soalan berikut:

1. Age / Umur

[ ]   30 years and below   [ ]   31- 40 years / tahun
      30 tahun dan ke bawah

[ ]   41-50 years / tahun   [ ]   51- 60 years / tahun

2. Gender / Jantina

[ ]   Male / Lelaki   [ ]   Female / Perempuan

3. Marital Status / Status Perkahwinan

[ ]   Single / Bujang   [ ]   Married / Kahwin

4. Educational Qualification / Kelayakan Pelajaran

[ ]   Secondary Certificate and Below   [ ]   Certificate / Diploma
      Sijil Menengah dan ke Bawah   Sijil / Diploma

[ ]   Degree / Professionals   [ ]   Masters / Doctor of Philosophy
      Ijazah / Profesional   Sarjana / Doktor Falsafah

5. Work Experience / Pengalaman Kerja

[ ]   5 years and below   [ ]   6-10 years / tahun
      5 tahun dan ke bawah

[ ]   11-15 years / tahun   [ ]   16 years and above / dan ke atas

6. Job Grade / Gred Pekerjaan

[ ]   Executive and above   [ ]   Non Executive and below
      Eksekutif dan ke atas   Bukan Eksekutif dan ke bawah

INSTRUCTION: Please indicate the degrees of your agreement or disagreement towards the statement below by placing the (X) upon your response according to the following option:

ARAHAN : Sila berikan tahap persetujuan atau sebaliknya terhadap kenyataan di bawah dengan menandakan (X) pada respon yang mewakili anda:

Strongly Disagree / Sangat Tidak Setuju	Disagree / Tidak Setuju	Neutral	Agree / Setuju	Strongly Agree / Sangat Setuju
1	2	3	4	5

	STATEMENT RELATED TO EMPLOYEE ENGAGEMENT / PENYATAAN BERKAITAN LIBAT URUS PEKERJA	1	2	3	4	5
1	At my work, I feel bursting with energy Saya berasa penuh bertenaga di tempat kerja saya					
2	I find the work that I do full of meaning and purpose Saya mendapati kerja yang saya lakukan penuh bermakna dan berhala tuju					
3	Time flies when I'm working Masa berlalu sangat cepat ketika saya bekerja					
4	When I get up in the morning, I feel like going to work Saya berasa seperti hendak ke tempat kerja setiap kali saya bangun pada waktu pagi					
5	I am enthusiastic about my job Saya bersemangat dengan pekerjaan saya					
6	I am immersed in my work Saya begitu asyik dengan pekerjaan saya					
7	I persevere, even when things do not go well Saya tabah, walaupun keadaan tidak berjalan lancar					
8	I am proud of the work that I do Saya berasa bangga dengan kerja yang saya lakukan					
9	I feel happy when I am working intensely Saya berasa gembira ketika saya bekerja dengan bersungguh-sungguh					

PART C: PERCEIVED WORK ENVIRONMENT /
KEPERLUAN PERSEKITARAN PEKERJAAN

INSTRUCTION: Please indicate the degrees of your agreement or disagreement towards the statement below by placing the (X) upon your response according to the following option:

ARAHAN　　　: Sila berikan tahap persetujuan atau sebaliknya terhadap kenyataan di bawah dengan menandakan (X) pada respon yang mewakili anda:

Strongly Disagree / Sangat Tidak Setuju	Disagree / Tidak Setuju	Neutral	Agree / Setuju	Strongly Agree / Sangat Setuju
1	2	3	4	5

STATEMENT RELATED TO WORK ITSELF / PENYATAAN BERKAITAN KERJA ITU SENDIRI	1	2	3	4	5
1 I enjoy my job Saya suka pekerjaan saya					
2 My job is interesting Kerja saya sangat menarik					
3 My job gives me a sense of accomplishment Kerja saya membekalkan perasaan mencapai kejayaan					
4 The work I do is very important for my unit/department and the organization as a whole Kerja yang saya lakukan sangat penting bagi unit / jabatan dan juga organisasi saya secara keseluruhan					

STATEMENT RELATED TO RELATIONSHIP WITH COWORKER / PENYATAAN BERKAITAN HUBUNGAN DENGAN RAKAN SEKERJA	1	2	3	4	5
1 I respect my co-worker and trust them Saya menghormati dan mempercayai rakan sekerja					
2 I am consistently treated with respect by my co-workers Saya selalu dilayan dengan hormat oleh rakan sekerja					
3 I can count on my co-workers to help me out when needed Saya boleh bergantung pada rakan sekerja untuk membantu saya apabila diperlukan					

		1	2	3	4	5
4	My co-worker and I work as a team Saya dan rakan sekerja bekerja sebagai satu pasukan					
5	My unit/department collaborates effectively with other unit/departments within the organization. Unit / jabatan saya berkerjasama dengan berkesan antara unit / jabatan lain dalam organisasi.					

STATEMENT RELATED TO LEADERSHIP OF SUPERVISOR / PENYATAAN BERKAITAN KEPIMPINAN PENYELIA		1	2	3	4	5
1	My supervisor effectively communicates with the co-workers Penyelia saya berkomunikasi secara berkesan dengan rakan sekerja					
2	My supervisor is an effective decision maker for the organization Penyelia saya adalah seorang yang membuat keputusan secara berkesan untuk organisasi					
3	My supervisor is approachable and easy to talk to Penyelia saya mudah dirujuk dan senang berkomunikasi					
4	My supervisor gives me constructive feedback on my performance Penyelia saya memberi maklum balas yang membina ke atas prestasi saya					
5	My supervisor considers my idea and remarks Penyelia saya mempertimbangkan idea dan cadangan saya					
6	My supervisor deals effectively with poor performance Penyelia saya menangani prestasi yang rendah dengan berkesan					

STATEMENT RELATED TO PAY AND BENEFIT / PENYATAAN BERKAITAN GAJI DAN MANFAAT		1	2	3	4	5
1	I am satisfied and fairly paid for what I do Saya berpuas hati dan dibayar dengan adil untuk kerja yang saya lakukan					
2	My salary/pay rate is a significant factor in my decision to stay at the organization. Kadar gaji saya adalah faktor penting dalam keputusan saya untuk kekal di organisasi.					

Your time, efforts and cooperation is much appreciated

THANK YOU

APPENDIX B: STATISTICAL ANALYSIS OUTPUT

Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EE	175	1.78	5.00	3.7092	.86434	-.531	.184	-1.086	.365
WI	175	2.75	5.00	4.2571	.52688	-.500	.184	.131	.365
RC	175	2.20	5.00	4.0400	.73500	-.535	.184	-.890	.365
LS	175	2.17	5.00	4.0745	.62783	-.420	.184	-.523	.365
PB	175	1.00	5.00	3.8257	.88874	-.535	.184	.029	.365
Valid N (listwise)	175								

Correlations

Correlations

		EE	WI	RC	LS	PB
EE	Pearson Correlation	1	.333**	.200**	.235**	.018
	Sig. (2-tailed)		.000	.008	.002	.817
	N	175	175	175	175	175
WI	Pearson Correlation	.333**	1	.331**	.333**	.320**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	175	175	175	175	175
RC	Pearson Correlation	.200**	.331**	1	.575**	.232**
	Sig. (2-tailed)	.008	.000		.000	.002
	N	175	175	175	175	175
LS	Pearson Correlation	.235**	.333**	.575**	1	.118
	Sig. (2-tailed)	.002	.000	.000		.121
	N	175	175	175	175	175
PB	Pearson Correlation	.018	.320**	.232**	.118	1
	Sig. (2-tailed)	.817	.000	.002	.121	
	N	175	175	175	175	175

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Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.373[a]	.139	.119	.81124

a. Predictors: (Constant), PB, LS, WI, RC

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.113	4	4.528	6.881	.000[b]
	Residual	111.879	170	.658		
	Total	129.992	174			

a. Dependent Variable: EE

b. Predictors: (Constant), PB, LS, WI, RC

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.042	.571		1.825	.070
	WI	.511	.131	.311	3.902	.000
	RC	.070	.105	.060	.665	.507
	LS	.151	.122	.110	1.235	.218
	PB	-.106	.074	-.109	-1.431	.154

a. Dependent Variable: EE

Frequency Test

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30 years and below	89	50.9	50.9	50.9
	31- 40 years	49	28.0	28.0	78.9
	41-50 years	29	16.6	16.6	95.4
	51- 60 years	8	4.6	4.6	100.0
	Total	175	100.0	100.0	

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	160	91.4	91.4	91.4
	Female	15	8.6	8.6	100.0
	Total	175	100.0	100.0	

MARITAL STATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	84	48.0	48.0	48.0
	Married	91	52.0	52.0	100.0
	Total	175	100.0	100.0	

EDUCATIONAL QUALIFICATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary Certificate and Below	63	36.0	36.4	36.4
	Certificate / Diploma	76	43.4	43.9	80.3
	Degree / Professionals	28	16.0	16.2	96.5
	Masters / Doctor of Philosophy	6	3.4	3.5	100.0
	Total	173	98.9	100.0	
Missing	System	2	1.1		
Total		175	100.0		

WORK EXPERIENCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5 years and below	149	85.1	85.1	85.1
	6-10 years	14	8.0	8.0	93.1
	11-15 years	5	2.9	2.9	96.0
	16 years and above	7	4.0	4.0	100.0
	Total	175	100.0	100.0	

JOD GRADE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Executive and above	54	30.9	30.9	30.9
	Non Executive and below	121	69.1	69.1	100.0
	Total	175	100.0	100.0	