

THE INFLUENCE OF PERCEIVED HIGH-PERFORMANCE WORK SYSTEMS
ON INNOVATIVE WORK BEHAVIOR THROUGH WORK ENGAGEMENT

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DEDICATION

This thesis is dedicated to my husband Tijani Muhammad Asshobah bin Abd Mukti, my beloved mother Latifah binti Abd Rahim, my children Zulaykha, Khadeja Zunairah, Eiliyah Zahraa and Azman Habibie Al Baqeer. Their support, encouragement, and constant love have sustained me throughout this journey.

In loving memory of my late father Husin bin Mahmad.

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ABSTRACT

The present study examined the influence of high-performance work systems (HPWS) on innovative work behavior through work engagement in medium-sized manufacturing enterprises. Although much has been done to investigate various outcomes of innovative work behavior, little is known about HPWS implementation amongst medium-sized manufacturing enterprises and more concentrated on large manufacturing enterprises in Malaysia. Also, empirical study about HPWS practice towards innovative work behavior is very limited. According to job demands-resources theory, organizational resources can be explained through seven dimensions of HPWS and its effect on innovative work behavior and how work engagement intervenes in the relationship. Applying the job demands-resources theory, the study attempts to investigate the dominant predictor of HPWS in medium-sized enterprises and identify the effect of HPWS practices towards innovative work behavior and work engagement. Further, the influences of HPWS on innovative work behavior through the support of work engagement as a mediator were also investigated. Using a sample of 170 middle management staff in medium-sized manufacturing enterprises in Klang Valley, Malaysia, this study tested the causal pathway between HPWS dimensions, namely selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal and compensation for innovative work behavior and the possible influence of mediating effect of work engagement. Statistical Package for the Social Sciences (SPSS) and Smart Partial Least Square (PLS) softwares were used to conduct the analysis. Among the tested hypotheses, eight were accepted. The results showed that selective staffing was the dominant predictor of HPWS towards innovative work behavior in Malaysian medium-sized enterprises. It was also found that selective staffing, mentoring, and employee participation significantly related to innovative work behavior. The findings also showed that work engagement has a significant effect on innovative work behavior with a medium effect size. Furthermore, work engagement mediates the relationship between selective staffing, mentoring, and employee participation. The findings of this study add to the body of knowledge related to HPWS implementation, particularly in medium-sized manufacturing enterprises. In addition, it contributes to practice by giving the management, especially those involved in the decision making process related to innovativeness, some insight on HPWS practices that should be applied in enhancing innovative behavior for their employees.

ABSTRAK

Kajian ini mengkaji pengaruh sistem kerja berprestasi tinggi (SKBT) terhadap kelakuan kerja inovatif melalui penglibatan kerja dalam sektor pembuatan di perusahaan pembuatan bersaiz sederhana. Walaupun banyak kajian telah dilakukan untuk mengkaji pelbagai hasil kelakuan kerja inovatif, hanya sedikit yang diketahui mengenai pelaksanaan SKBT di kalangan perusahaan pembuatan bersaiz sederhana dan ia lebih tertumpu kepada perusahaan pembuatan bersaiz besar di Malaysia. Selain itu, kajian empirikal mengenai SKBT terhadap kelakuan kerja inovatif adalah sangat terhad. Menurut *job demands-resources theory*, sumber organisasi dapat diterangkan melalui tujuh dimensi SKBT and kesannya terhadap kelakuan kerja inovatif dan bagaimana penglibatan kerja mengantara hubungan tersebut. Menggunakan *job demands-resources theory*, kajian ini berusaha untuk mengkaji amalan dominan SKBT dalam perusahaan pembuatan bersaiz sederhana dan mengenal pasti kesan amalan SKBT terhadap kelakuan kerja inovatif dan penglibatan kerja. Selanjutnya, pengaruh SKBT terhadap kelakuan kerja inovatif melalui sokongan penglibatan kerja sebagai pengantara juga dikaji. Dengan menggunakan sampel 170 kakitangan pengurusan pertengahan dalam perusahaan pembuatan bersaiz sederhana di Lembah Klang, Malaysia, kajian ini menguji hubungan antara dimensi SKBT iaitu pengambilan selektif, latihan yang meluas, bimbingan, jaminan pekerjaan, penyertaan pekerja, penilaian prestasi dan pampasan terhadap kelakuan kerja inovatif dan kemungkinan pengaruh kesan pengantara penglibatan kerja. Perisian Pakej Statistik Sains Sosial (SPSS) dan Separa Kedua Terkecil (SmartPLS) digunakan untuk menjalankan analisis. Melalui hipotesis-hipotesis yang diuji, lapan daripadanya diterima. Hasil kajian menunjukkan bahawa pengambilan selektif merupakan peramal utama SKBT terhadap kelakuan kerja inovatif kerja di perusahaan pembuatan bersaiz sederhana di Malaysia. Hasil kajian mendapati bahawa pengambilan selektif, bimbingan, dan penyertaan pekerja mempunyai hubungan yang signifikan dengan kelakuan kerja inovatif. Seterusnya, hasil kajian juga menunjukkan bahawa penglibatan kerja mempunyai pengaruh yang signifikan terhadap kelakuan inovatif kerja dengan ukuran kesan sederhana. Tambahan pula, penglibatan kerja juga dapat menjadi pengantara antara hubungan pengambilan selektif, bimbingan, dan penyertaan pekerja. Penemuan kajian ini menambah pengetahuan dalam kajian berkaitan dengan pelaksanaan SKBT khususnya di perusahaan pembuatan bersaiz sederhana. Di samping itu, secara praktikal ia menyumbang dengan memberikan pandangan mengenai amalan SKBT yang harus diterapkan kepada pihak pengurusan terutama mereka yang terlibat dalam proses membuat keputusan bertujuan untuk meningkatkan kelakuan kerja inovatif di kalangan pekerja mereka.

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LIST OF ABBREVIATIONS

AVE	-	Average Variance Extracted
BCI LL	-	Bias Corrected Interval Lower Level
BCI UL	-	Bias Corrected Interval Upper Level
CMV	-	Common Method Variance
EOA	-	Expert Opinion Analysis
HPWS	-	High-Performance Work Systems
HTMT	-	Heterotrait-monotrait
IWB	-	Innovative Work Behavior
MD	-	Mahalanobis Distance
SEM	-	Structural Equation Modeling
SME	-	Small and Medium Enterprises

LIST OF SYMBOLS

α	-	Cronbach's Alpha
β	-	Standard Beta
R^2	-	Coefficient of Determination
f^2	-	Effect Size
Q^2	-	Predictive Relevance
D^2	-	Mahalanobis Distance

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter explains about the issue and gaps and the motivation of study and further described in more detail in the problem statement section. Based on the problems and gaps identified, this chapter will address the issues and further develop the objective of the study of the phenomenon of interest. Significant of study, scope of study and limitations are also discussed in this chapter. To give a clear picture of the framework for this study, research hypothesis is also included.

1.2 Background of Study

Over the last few decades, creativity and innovation have been increasingly popular as significant contributors to corporate performance (De Spiegelaere, Van Gyes, and Van Hootegem, 2016; Fu, Flood, Bosak, Morris, and O'Regan, 2015; Huselid, 1995; Shahriari, Abzari, Isfahani, and Kianpour, 2017). The importance of innovation in the organization's success cannot be denied. Organizational managers find solutions to company problems and challenges through innovation, which create the foundation for the firm's long-term existence and success. Organizations that achieve a competitive advantage in the marketplace through creativity and innovation have seen business success because they understand how to generate new ideas and then use them to create distinctive products, services, and work processes through maximizing human capital (De Jong and Den Hartog, 2007a). Utilizing employees' ability to innovate and develop creative ideas and solutions to improve products and services is one way for firms to develop their innovative capacity (Donate, Peña, and Sánchez de Pablo, 2016).

It is commonly acknowledged that creativity and innovation are critical to corporate success, particularly in today's ever-changing and uncertain world. While creativity is the capacity to come up with new and original ideas, innovation is the capacity to put those ideas into action. Companies would be caught in a rut if they didn't use creativity and innovation. Nevertheless, being creative makes a company more likely to become inventive and able to provide something new, putting them ahead of the competition within industry. As a result, it is clear that for firms to progress their production and service delivery in achieving superior performance in today's volatile market environment, innovation is required (Jiménez-Jiménez & Sanz-Valle, 2011).

SMEs make up more than a third of the Malaysian economy. SMEs contributed RM552.3 billion to the economy in 2019, with 5.8 percent GDP growth compared to 6.2 percent in 2018. As a result, SMEs boosted their contribution to 38.9 percent from 38.3 percent the previous year. SMEs' employment increased by 3.0 percent in 2019, bringing their contribution to total employment to 48.4 percent, up from 48.0 percent in 2018. In 2019, SME exports showed a growth of 2.6 percent compared to 3.4 percent in 2018 due to relatively weak external demand. Of the total SME exports, 48 percent was contributed by the manufacturing sector (Departments of Statistics Malaysia, 2020). Budget 2019 has just earmarked RM210 million from 2019 to 2021 to support the transition and migration to Industry 4.0. The government is also recognizing and fostering specialized economic sectors, particularly among medium-sized enterprises. Therefore, in the increasingly demanding and challenging business world, medium-sized enterprises need to compete with large and multinational firms to remain competitive in the industry.

In the next 15 to 20 years, 14 percent of existing employment may be eliminated due to automation, while another 32 percent are expected to change dramatically as individual specific functions are automated (OECD, 2019). Individuals will be subjected to significant and quick change because of changes in choices, business models, and contract types. Many people will have to change their jobs and their occupations, and most of them will have to update their abilities and work techniques. The shift to new responsibilities and occupations may be challenging and

costly for certain employees. Despite this, low-skilled adults are those most likely to be harmed by future changes. They participate in training at a rate 40 percentage points lower than high-skilled adults on average across OECD countries. However, even for individuals who do have access to training, the learning alternatives are frequently tied to their present employment. It may not adequately prepare them for a new job, let alone a new career (OECD, 2019). One method for firms to remain competitive and preserve competitive advantage is through stimulated creativity and innovative work behavior (IWB) (Stokes *et al.*, 2016) because the foundation of IWB lies within the skill sets of individual employees (Xerri and Brunetto, 2013). Creative employees produce most ideas in firms and therefore medium-size enterprises should attempt to encourage their employees to be inventive and creative because in principle innovation is achieved through IWB (Knezović and Drkić, 2020).

Nevertheless, it is notable that success in innovation is influenced by different factors such as organizational structure, organizational support, organizational learning, innovative work behavior, industrial relations, unionization, among others (De Spiegelaere *et al.*, 2016; Drummond and Stone, 2007; Fu, Flood, *et al.*, 2015; Prajogo and Ahmed, 2006; Shahriari *et al.*, 2017; Vatankhah, Javid, and Raoofi, 2017). However, human factors and organizational context are the main determinants of successful innovation (Prajogo and Ahmed, 2006). Innovation capabilities profoundly dangles on employees' skill, knowledge and abilities (Chowhan, 2016; Donate *et al.*, 2016) because human roles are sources of competitive advantage in organizations (Becker and Huselid, 1998; Tsai, 2006). It is notable that a company that rely on human capital as a source of competitive advantage requires productive behavior to implement strategies (Becker and Huselid, 1998). Organizations are responsible to provide opportunities for their employees' to innovate by enrich their knowledge, skills, and abilities (Fu, Flood, *et al.*, 2015) to supply ideas and channel the creative ability to convert the ideas into innovations that is profitable (Prajogo and Ahmed, 2006). According to Agarwal (2014, pp.102), "one option for organizations to become more innovative is to encourage their employees to be innovative".

With this regard, it is imperative for organization to use a high-performance system that promotes good management and the growth and competitiveness of

employees (Tsai, 2006). Principle of HRM required employees to come out with novelty and creative ideas in work organizations (Ahmed, Ayub, and Klimoski, 2018). According to research on strategic human resource practices (SHRM), high-performance work systems (HPWS) help businesses become more successful and obtain a competitive edge (J. Zhang, Akhtar, Bal, Zhang, and Talat, 2018) by allowing employees to express their ability to innovate, gain motivation and provided an opportunity for them to grow professionally.

Prior research viewed HPWS as key factor that contributes innovation and performance outcome at organizational and individual level (Fu *et al.*, 2015; Shahriari *et al.*, 2017; Zhang *et al.*, 2018). They are more willing to take the risk of issuing and sharing new ideas in balancing their behavior towards innovation (Escribá-Carda, Balbastre-Benavent, and Teresa Canet-Giner, 2017). Training, promotion, participation, rewarding and safety at work are among the elements in HPWS as a bundle of HR practices which, open a path for employees to learn new knowledge and develop innovative work behavior amongst them.

Recently, scholars have pinched their attention on the implementation and effectiveness of HPWS and investigate the influence towards organizations performance (e.g. Ogonnaya and Valizade, 2018; Úbeda-García, Claver-Cortés, Marco-Lajara, Zaragoza-Sáez, and García-Lillo, 2018; Jerez-Gómez, Céspedes-Lorente, and Pérez-Valls, 2017; Uyen and Mohamed Zainal, 2016; Shin and Konrad, 2017), organizational innovation (Fu *et al.*, 2015; Mamun, 2018;), counter-productive work behavior (Vatankhah *et al.*, 2017), employee voice (Rasheed, Shahzad, Conroy, Nadeem, and Siddique, 2017a), creative and innovative behavior of employees (Escribá-Carda *et al.*, 2017) amongst others. Most common of previous research revealed the linked between HPWS and organizational innovation, higher organizational performance, and HR-related sustainable competitive advantage. Evidently, HPWS has been proven positively influence organizational innovation through a bundle of HR-related practices (Rasheed, Shahzad, Conroy, Nadeem, and Siddique, 2017b). It giving ideas that the more organizations adopt and implement HPWS practices, the effect of organizational innovation on the firm's performance are greater (Torre and Solari, 2011).

Fu *et al.*, (2015) examined how a system of HRM practices labeled as HPWS actually influence organizational innovation which, the companies that utilize HPWS are associated with better innovation performance. This is further supported by empirical evidence that HPWS are heavily significant and declared as crucial to increase innovation (Shahriari *et al.*, 2017). Therefore, by implementing HPWS, employees' have the opportunity and motivation to produce new idea and figure out to exploit all the ability in them to demonstrate and convert all the ideas into innovation because they are provided with new ways of working that are conducive for form innovation through HR practices such as work engagement, job design and employee participation (Fu, Flood, *et al.*, 2015). Escribá-Carda *et al.*, (2017) found that implementation of HPWS give impact on innovation-oriented behavior through exploratory learning.

Similarly Zhu, Liu, and Chen (2018) in their study demonstrated that HPWS can improve the level of innovativeness through entrepreneurial orientation that work as mediator i.e. the higher level of organizational learning an employee obtain, the better organizations can perform because it allows employees bold to risk-taking, create new ideas so that can outperform their counterparts. Further research revealed role of employee creativity evidently mediate the link between firm innovation (K. Jiang, Lepak, Han, *et al.*, 2012). Fu *et al.*, (2015) again discovered HPWS able to encourage firm innovation by increasing the number of new clients and applied new services with the strong support of mediating innovative work behavior.

Should companies want to develop products and improve management process, employees should be given opportunity and motivation to generate creative ideas and develop innovative approaches (Jiménez-Jiménez and Sanz-Valle, 2011). Referred on most of these studies tabled the positive impact and effect of HPWS on the innovation of organization's performance. Hence, companies should invest more effectively in advance HR practices (Mamun, 2018; Liao *et al.*, 2009) to expose and provide employees' with knowledge and stimulate innovative behavior (Zhu *et al.*, 2018), thus they can obtain benefit such as necessary skills, motivation and opportunities to improve their work productivity and creativity (Mamun, 2018) that lead to overall firm performance.

Volatility, uncertainty, complexity, and ambiguity (VUCA) characterize today's business climate. The economic crisis, when combined with the present COVID-19 pandemic, has made economies and organizations particularly anxious about economic growth and survival (Dev and Sengupta, 2020). According to the previous study, corporate innovation is one element that promotes economic growth and long-term competitive advantage for both individuals and nations (Chen et al, 2018; Ode and Ayavoo, 2020; Shahzad et al, 2019). As a result, achieving cost-effectiveness and long-term success for a business through innovation in goods, processes, ideas, and services is more desirable than ever (Calantone et al, 2002). With the introduction of the resource-based paradigm in business in recent years, it has been suggested that a firm's human resources and intellectual capital (intangible asset) are essential sources of innovativeness (Coff, 1997; Mao and Weathers, 2019; Ode and Ayavoo, 2020). It is argued that to attain creative performance, businesses must take advantage of their employees' abilities, expertise, opportunity, and motivation to innovate (Fu et al, 2015). As a result, researchers have investigated the significance of high-performance human resource practices in fostering employee innovative behavior (Escribá-Carda *et al.*, 2017).

Innovative work behavior (IWB) of employees is observed to be correlated with their innovation performance (Fu et al, 2015). IWB refers to the individual's creation, introduction, and performance, as well as the group or organization's (Janssen, 2000, p.288). Scholars in the HRM area have successfully attempted to explain the function of HPWS and IWB (Fu et al, 2015), based on the idea that IWB is highly dependent on people's knowledge, skills, and competence (Verworn and Hipp, 2009). Through IWB, HPWS creates a culture and processes for innovation that allow for maximum productivity while consuming little resources (Radhakrishnan, 2020). Most studies on HPWS-IWB interactions have been undertaken in large organizations, while SMEs, particularly medium-sized enterprises, have received less attention (Rasheed *et al*, 2017; Singh, 2020). It is worth noting that medium-sized businesses create many jobs in emerging economies like Malaysia's industrially backward districts and are often referred to as the "backbone" of developing economies. Given the importance of medium-sized enterprises in creating jobs and fostering inclusive growth in emerging economies, medium-sized enterprises must strive for long-term growth and competitiveness. Medium-sized businesses' long-term

growth and productivity are thought to be influenced by innovation (Krishnan and Scullion; OECD, 2015). According to a recent OECD policy note on boosting innovation in SMEs, the level of innovation in SMEs is lower than in large organizations (OECD, 2019, p. 3). According to the same report, growing and productive SMEs will be able to provide better working conditions and wages for their employees, further reducing socioeconomic inequities (OECD, 2019). Now the challenge is how to stimulate innovation in SMEs. It has been demonstrated that SMEs that successfully employ and deploy their strategic resources (i.e. management and labor) are highly inventive by stimulating their innovative behavior (Shahzad, 2019). There is a substantial correlation between human resources and people management practices (i.e., HPWS) and innovation (OECD, 2019). Training in Mexico, Inter-company Vocational Training Centres in Germany, Group Training Organizations in Australia, and Training Consortia in Korea, for example, have demonstrated the benefit of such initiatives on developing new products and processes in SMEs (OECD, 2019). Thus, it is critical to investigate the role of various HPWS-IWB interactions and the underlying mechanism from the standpoint of SMEs, especially in the setting of a rising economy.

1.3 Problem Statement of Study

Two main research gaps have been identified for this study based on previous studies involving field gaps and previous study literature gaps and will be explained in depth for each. First gap to address in this study is issue that aroused among medium-sized businesses in Malaysia. Medium-sized enterprises are still lagging and most of them are unprepared and less innovative to compete in the technological era, especially with the arrival of Industry Revolution 4.0 (Federation of Malaysia Manufacturers, 2019). This is consistent with the report by OECD (2021), despite the potential of enormous benefits, small and medium-sized enterprises have been lagging in the race to digital. The smaller the size of company, the more at risk to get lost in transition. Even though emerging technologies offer a range of applications to improve performance overcome the size-related limitations they are facing in doing business, most of medium-sized enterprises are less prepared.

Malaysia also lags behind OECD countries and advanced Southeast Asian economies such as Singapore and Hong Kong in terms of labor force education and skill levels. Malaysian enterprises are encountering increasing competition from their East Asian peers, therefore productivity growth has been modest in recent years (OECD, 2013; 2015). In line with the Malaysia Productivity Corporation's (MPC) (2018/2019) report, which claimed that labor productivity in the manufacturing sector fell from 3.8 percent in 2016 to 2.4 percent in 2018. The 11th Malaysia Plan targets an ambitious aim of 3.7 percent annual labor productivity growth from 2016 to 2020, compared to 2 percent from 2011 to 2015. However, a creative destruction process is happening, in which specific tasks are taken over by robots or offshored. Manufacturing employment has decreased by 20 percent in the last two decades, while employment in the service sector has increased by 27 percent (OECD, 2019). SMEs remain dominated by around 60 percent of semi-skilled workers and only 25 percent of high-skilled workers (SME Corporation 2019). Let alone, Malaysia is now having difficulty finding qualified and skilled workers (Kunjiapu, 2021). Asada (2017) highlighted this issue in OECD Economic Department 2017 that Malaysia has underperformed several of its major regional neighbors in terms of worker productivity since 2001. Innovative work behavior (IWB) of employees are depends on their knowledge, skills, and expertise (Stoffers *et al.*, 2020). With a lower percentage of high-skilled workers among medium-sized enterprises, it caused massive challenge for medium-sized enterprises to stimulate IWB among individuals in organizations because the core of IWB is rely on the skill sets of individual employees (Knezović and Drkić, 2020). According to the OECD (2014), medium-sized businesses confront challenges in training and development, as well as maintaining competent people. Medium-sized enterprises are also encounter mismatch problems between skills required by employers and skills acquired by employees and thus creating skills gaps (SME Corporation 2019). As a result, a company's competitiveness is hampered by a lack of skills and innovative abilities among its personnel, regardless of its size (Kunjiapu, 2021). Hanifah *et al.* (2019) also addressed that the challenges faced by small and medium-sized sector are lack of creative and innovative employees that affected from limited resources provided by medium-sized enterprise compared to large businesses that able to offer better condition of employment.

This tendency has also been fueled by skill-biased technology change, which is a process in which technical advancements mostly favor employees with greater levels of education and innovative ability. The awareness of various parties in Malaysia on the need to produce capable and international standard skilled and innovative workers are high. However, the work environment in medium-sized enterprises that does not support and does not meet the needs of employees is a barrier factor for them to innovate (OECD, 2019). Employees must engage in activities focused at creating and implementing ideas for innovation to emerge. As a result, management must understand how IWB can be shaped and stimulated (Bos-Nehles *et al.*, 2017a). Management and colleague support are two elements of supportive work environments that function as antecedents of innovative work behavior (IWB) by extending employees' self-perception of their position and motivating them to be proactive (Prieto and Pérez-Santana, 2014).

Highly innovative and skilled employees are determinant to the ability of medium-sized enterprises to achieve a balance of competition in the current business environment (Kunjiapu, 2021; Noorsafiza *et al.*, 2014). In addition, Rauch, Wiklund, Frese, and Lumpkin (2005) and Pfeffer (1998) state that human resource management plays a role in improving change in the development of small to mid-scale enterprises. Work environment that companies have provided over the past half century is increasingly unsuitable for new work patterns as well as preventing employees from reaching their full potential and creativity to stimulate IWB (Noorsafiza *et al.*, 2014). Flexible workplace strategies are needed to accommodate employees. Employees expect today's office environment to be able to adapt to high-tech features. Stress in the workplace, accompanied by constant advances in technology, is changing work patterns and creating a need for more innovative workplace strategies. Today's workplace needs to accommodate rapid organizational culture changes and more progressive work styles.

In doing business, every entrepreneur needs creative thinking and needs innovative ways to compete in the upcoming trend. Local manufacturing medium-sized enterprises require a shift in mindset as well as public-private funding to assist them in handling and implementing new technology in order to improve production

capacities. Small and medium-sized businesses (SMEs) are thought to be the backbone of a country's economic development because through medium-sized enterprises, there are many job opportunities; increase income level, and contribution to gross domestic product. Consequently, looking at the importance of medium-sized enterprises contribution in economy, scholars and policy makers have given more attention to medium-sized enterprises (Bianchi, Glavas, and Mathews, 2017; Gray and Jones, 2016).

Let alone with the upcoming Industrial Revolution 4.0 (IR 4.0) that promises increased flexibility in manufacturing, along with mass adjustments, better quality, and increased productivity. Thus, it enables companies to cope with the challenges of producing an increasingly individual product with a short time to market with higher quality. Smart manufacturing plays a vital role in Industry 4.0 (Lin, Lee, Lau, and Yang, 2018). The government has already put the initiative to allocate funding that focuses on the human capital development for the successful set-up and readiness for implementing IR 4.0 technologies (SME Annual Report, 2016/2017, p.55). Thus, to improve and enforce smart manufacturing (Industry 4.0), e-commerce, automated, mechanization, and robotic, SME policies and incentives must be aligned with Industry 4.0 to utilize every opportunity offered by this technology. Budget 2019 has set aside RM210 million from 2019 to 2021 to help transition and migration to Industry 4.0. The government also identifies and nurtures specific economic sectors, especially the SME community.

According to Dr. Dzaharudin Mansor, Microsoft Malaysia's National Technology Officer, during The Edge SME Forum 2017, headlined " Industry 4.0: Thriving in the Age of Disruption," despite the almost constant flood of information about it, many Malaysian SMEs are not prepared. Organizations that do not evolve the way they operate or service their customers will be less competitive or even outdated as disruptions occur, as we have learned from previous industrial revolutions. In Malaysia, SMEs account for 97.3 percent of all business establishments. As a result, SMEs will drive a major amount of new technology adoption as time goes on.

However, according to a survey conducted by the Federation of Malaysian Manufacturers, around 55 percent of SMEs are not ready for Industry 4.0. Meanwhile, Sivanganam Rejaretan, CEO of the Malaysian Institute of Management, noted that the local sector is currently in the Industry 2.0 stage. Some industry leaders are still at 1.5, while others are at 2.5, and still others are at 3.0. Therefore, there is a need and opportunity to bridge the gap. Another study conducted by SME Corporation Malaysia (SME Annual Report, 2017/2018) revealed that 79.7 percent of SME players realized the importance of ICT adoption as of the technological innovation and its role in improving business productivity and efficiency. However, ICT adoption by SMEs is just 10 percent, according to Malaysia Productivity Corporation (MPC). In comparison, adoption rates in other developed countries are over 50 percent. This is already a very relevant topic for very large industrial enterprises and multinational groups.

The importance of Industry 4.0 has not gone ignored by the government when distributing funds for the SME community. SME, on the other hand, do not appear to see industry 4.0 as being particularly relevant to them, despite the fact that they are the most likely to benefit from the transition (Tay Lay Tinga, Ramadhansyah Putra Jayaa*, Abdul Hassana, Haryati Yaacoba, Dewi Sri Jayantib, and Ariffinc, 2016). Resistance to change is a big stumbling point for SMEs who see it as one of several barriers to embracing the transformation.

Second gap of this study is the dearth of research on these variables referring to previous study regarding HPWS implementation towards employee innovative behavior (IWB) in organizations especially in medium-sized enterprises. Previous literatures have discussed and proved theoretically and empirically about the causal mechanisms of which HPWS influences organizational innovation (see Ahmed *et al.*, 2018; Fu, Flood, *et al.*, 2015; Gritti and Leoni, 2012a; Mazzei, Flynn, and Haynie, 2016a; Rasheed *et al.*, 2017b; Shahriari *et al.*, 2017). Notwithstanding, recent scholars have still called for in-depth and empirical research on the relationship between HPWS and the organizational innovation to fully understand the mechanisms between these two variables (see Afsar, Badir, & Khan, 2015b; Escribá-Carda *et al.*, 2017; Fu *et al.*, 2015; Jerez-Gómez *et al.*, 2017; Rasheed *et al.*, 2017; Zhu *et al.*, 2018). Thus, further

investigation is still needed because existing research has not adequate to cover medium-sized enterprises innovation especially the indirect path between these strategic HRM practices and organizational innovation (Chowhan, 2016; Donate *et al.*, 2016; Fu, Flood, *et al.*, 2015; Rasheed *et al.*, 2017).

Another noticeable issue is that most studies of HPWS have been conducted in large firms and multinational companies. Those on medium-sized enterprises have only focused on the performance outcome of implementing HPWS (Qiao, Wang, and Wei, 2015). Moreover, the majority of studies on HPWS-IWB interactions also have been undertaken in large organizations, and they have received less attention in SMEs, particularly medium-sized businesses (Rasheed *et al.*, 2017; Singh *et al.*, 2020; Torre and Solari, 2011). Therefore, effectiveness of the practices in the medium-sized enterprises towards IWB is still less clear and require further research. Medium-sized enterprises have also received very little attention from scholars concerning innovation and HRM (Poorkavoos *et al.*, 2016). According to Gritti and Leoni (2012a), research on innovation in medium-sized enterprises is small and remains as an crucial area of inquiry (Rasheed *et al.*, 2017). This statement had been agreed by Qiao *et al.* (2015), HPWS research was mainly focused on large organizations, therefore there is a need to explore the development of HPWS in medium-sized enterprises to fill in the gap.

In large businesses, relevant studies have found a positive relationship between HPWS and IWB (Singh *et al.*, 2020). How HPWS implementation can promotes IWB and what comprises the underlying mechanism between HPWS and IWB in medium-sized businesses is less clear and more research is needed. The motivation of this investigation is to see how employee perceived HPWS to be implemented in medium-sized enterprises compared to major corporations (Adla *et al.*, 2020; Sheehan, 2014). Staffing activity in medium-sized firms, for example, are largely dependent on local market conditions, thus they may not be able to acquire expensive talent from abroad or distant locations, whereas large organizations can recruit talent from a wider range of labor markets (Zheng *et al.*, 2009). Due to a lack of resources, knowledge, and formal procedures, medium-sized businesses find it difficult to devote greater resources to staff training and development (Sheehan, 2014; Singh *et al.*, 2020). Many medium-sized enterprises find it challenging to adopt a performance-based

compensation system because of these circumstances. Employees' motivation to learn and grow may be harmed by a lack of opportunities to deepen learning by participating in meetings and sharing ideas (Zheng *et al.*, 2009).

Malaysia has made significant investments in human capital since the 1970s. To meet the rising demand for skilled labor, the government focused on primary and secondary education before beginning a makeover of higher education (OECD, 2013). People should prepare for a change in line with technology development in the manufacturing industry so skilled labor can foster IWB and keep up with changes in technology. A slowdown in global trade growth and a lack of innovation are two factors contributing to this downturn. Aside from that, an organizational culture that limits their resources from investing in training and development is another culprit that undermines productivity and the development of IWB (Kunjiapu, 2021). Raising innovation productivity, as the 11th Malaysia Plan proposes, necessitates a comprehensive set of policies to strengthen human capital development, improve regulatory environment, and promote regional integration through innovation. This indicates Malaysia's conviction that increasing productivity is critical to obtaining high-income status. As a result, it is advised that the focus be on building human capital through education and skills training, as well as fostering IWB (Hidekatsu *et al.*, 2017; Kunjiapu, 2021).

According to Parvin Hosseini (2014) there was relatively little knowledge concerning the nature of Malaysian medium-sized enterprises innovation. Despite the growing research interest in firm-level innovation, there is a paucity of knowledge regarding how to stimulate creativity at the individual level. However, in order for firms to pursue new strategies and align employee behavior with those plans, this understanding is required (Bos-Nehles, Renkema, and Janssen, 2017). While it is generally documented that HPWS has a beneficial impact on an organization's innovation performance, the topic of how this relation manifests itself, particularly in the context of a medium-sized enterprises, remains an important field of research (Obeidat, 2020).

One of the most crucial points is the fundamental criticism directed towards HPWS concerns its lack of theoretical development and the need for a more explicit articulation of the 'black box' phenomenon (Heffernan and Dundon, 2016). In response to recent calls, experts are beginning to investigate additional variables as underlying processes via which HPWS affects company outcomes (Jiang and Liu, 2015). Despite the fact that this basic relation between HPWS and performance has been empirically demonstrated, we know relatively little about how HR practices contribute to individual creativity and innovation (Jiang, Lepak, Han, *et al.*, 2012). As a result, further research is needed to completely understand the relationship between HPWS and performance in general, and the relationship between HPWS and innovation in particular (Zhang, di Fan, and Zhu, 2014).

The above arguments indicate that it is necessary to better understand the role of HPWS such as selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, and compensation on IWB in medium-sized enterprises context. IWB plays a central role in the long-term survival of knowledge-intensive business services in Malaysia. Even though innovation and creativity and their influences on the Malaysian economy and its future growth are important, research on this area is still inadequate. Thus, this research is an attempt to explore and ascertain different types of HPWS and their contributions to IWB in the medium-sized enterprises context. This research has noted these issues have been looked at previously, but not in great depth (Shahzad, Arenius, Muller, *et al.*, 2019; Singh *et al.*, 2020) tested the association between a high-performance work systems and innovation performance in SMEs. Their examination considered the bivariate relationship between a high-performance work system and innovation performance. The research supplement (Shahzad, *et al.*, 2019) by testing a multivariate model of HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, and compensation) and IWB. Although innovative behavior is regarded as a complex process that is interactional in nature, only few studies have described in detail how effective human resource practices can promote IWB (Dhar, 2015). This research advances the research by (Fu, Flood, *et al.*, 2015) by the extant knowledge domain by examining the underlying mechanism through which HPWS promote IWB. This research motivated to empirically examines the mediating effects of work engagement between the HPWS and IWB relationship.

It is found that people who experience work engagement often feel intrinsically motivated (Fu, Flood, *et al.*, 2015) this invokes positive and innovative behavior (Yidong and Xinxin, 2013). Thus, this research is an effort to extend the knowledge base in this domain with an emphasis on the effect of HPWS and work engagement in enabling IWB of employees in the medium-sized enterprises context.

Malaysia is moving fast forward in the development of Revolution 4.0. The rapid Industry 4.0 revolution that is taking place around the world requires all parties to act quickly in line with the rapid growth of technological products and smarter automation systems. However, with the situation of medium-sized enterprises still lagging, medium-sized enterprises need to move aggressively so as not to be left behind in competing. Moreover, studies on the level of HPWS and innovative work behavior are also still lacking to help medium-sized enterprises understand the factors that can help them stimulate employee innovation to become more efficient. These factors also help employees engage in more committed work to ensure their level of innovation behavior is optimal. Therefore, based on the abovementioned gap addressed, there is a need to investigate further and motivate to entangle the black box that relates between the relationship of high-performance work systems and innovative work behavior. Further research is also needed to investigate the influence of high-performance work systems (HPWS) on innovative work behavior and mediating role of work engagement in small and medium enterprises that focus on medium-sized enterprises.

1.4 Research Question

The problems discussed in the previous section raise a number of questions that deserve further investigation, which are outlined below:

1. What is the level of HPWS dimensions (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) implementation in Malaysian medium-sized enterprises?

2. Is there any significant effect between HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) and innovative work behavior among middle management employees in Malaysian medium-sized enterprises?
3. Is there any significant effect between HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) and work engagement among middle management employees in Malaysian medium-sized enterprises?
4. Is there any significant effect between work engagement and innovative work behavior among middle management employees in Malaysian medium-sized enterprises?
5. Does work engagement mediate the relationship between HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) and innovative work behavior among middle management employees in Malaysian medium-sized enterprises?

1.5 Research Objectives

The aim of the proposed research is to investigate the relationship between high-performance work systems (HPWS), employee engagement, and innovative work behavior among middle management employees in medium-sized manufacturing enterprises in Malaysia. Therefore, to answer the research questions, this present study would address five (5) research objectives:

1. To identify the level of HPWS dimensions (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) implementation in Malaysian medium-sized enterprises.
2. To determine the significant relationship between HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) and innovative work behavior among middle management employees in Malaysian medium-sized enterprises.

3. To identify the significant relationship between HPWS (selective selection, extensive training, mentoring, job security, performance appraisal, compensation) and work engagement among middle management employees in Malaysian medium-sized enterprises.
4. To examine the significant relationship between work engagement and innovative work behavior among middle management employees in Malaysian medium-sized enterprises.
5. To investigate the mediating effect of work engagement between HPWS (selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, compensation) and innovative work behavior among middle management employees in Malaysian medium-sized enterprises.

1.6 Purpose of Study

Purpose of the study is to examine the influence of HPWS namely selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, and compensation, towards innovative work behavior for middle management employees in medium-sized manufacturing enterprises. Alongside also to look at the impact of work engagement that mediates the relationship between HPWS and innovative work behavior.

1.7 Research Hypothesis

Figure 1.1 showed the research hypotheses developed based on existing theory and previous study. The research hypotheses at Figure 1.1 are before analysis carried out. While further discussion about research hypothesis after run analysis will be explained in Chapter 4. Below is the result of research hypotheses developed for this study:

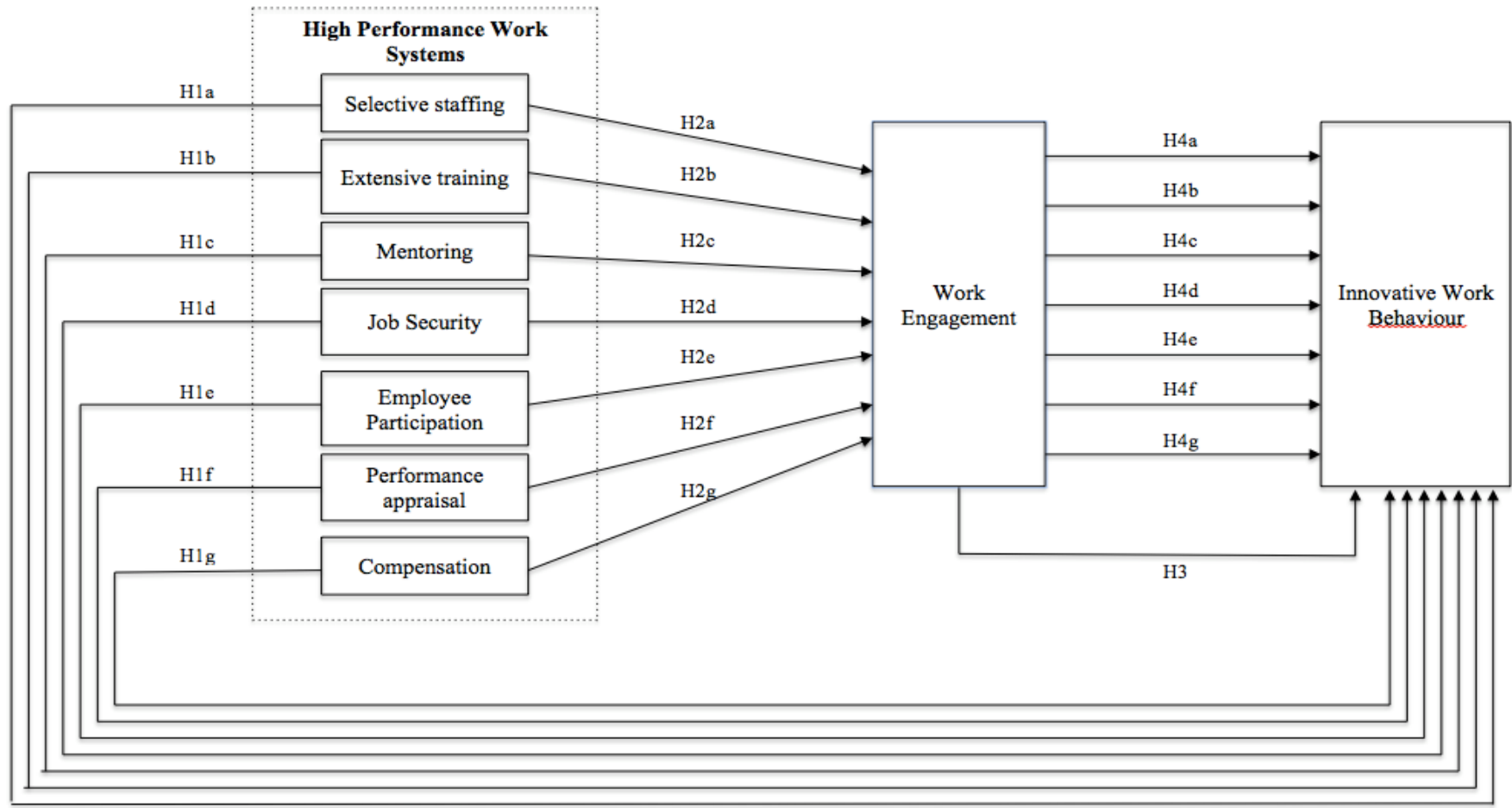


Figure 1.1 Proposed research framework

1.8 Significance of Study

Following the abovementioned objectives, this research is anticipated to have academic and practical repercussions. This study adds to the body of knowledge and empirical research on strategic HRM particularly in high-performance work systems (HPWS) and employees' innovative work behavior specifically in Malaysia's medium-sized enterprises manufacturing sector context. In terms of practical ramifications, the study contributes to organizational and practitioners' knowledge in handling people and emphasize on strategic HR practices. The study aided in precisely comprehending how to develop and encourage innovative behavior amongst employees by providing practitioners with actionable knowledge on how to effectively implement HPWS practices to build a competitive advantage.

Despite the growing number of literatures examining HPWS implementation in organization, there are few studies about this implementation taken by the SMEs. Most of prior studies measured the HPWS implementation towards innovation at organizational level in large company. The current study is novel in the way it looks at different viewpoints, by testing the model based on individual perspective. Taken as whole, understanding what factors are perceived in order to measure innovation at individual level are crucial in order to invest these systems in its business processes. Evidently, less empirical research in the literature on the SMEs implementation of HPWS in a country, that is, at the medium-size level. This study extends the current knowledge of HPWS implementation towards innovative work behavior by filling research gaps in existing literature. On top of that, there is considerable scientific interest to determine whether the construct (i.e. HPWS and work engagement) differs in HPWS process, with the view of gaining an understanding of the drives, benefits and barriers towards innovative work behavior.

Specifically, this study provides details information about the influence of HPWS towards innovative work behavior as well as information about the perception of HPWS amongst middle management employees in manufacturing SMEs in Malaysia. Most of the prior studies have considered this phenomenon in determining organizational performance. Whereas, the present study attempt to examines the

relationship between HPWS and innovative work behavior that is still understudied. In addition, the current research provide novelty in introducing work engagement to estimate the impact of this variable on innovative work behavior, as well as revealing the mediating role for work engagement concurrently which is comparatively new link in this field.

Furthermore, the findings of this study could also contribute to the practices empirically. HPWS in small and medium-sized firms has been related to the high costs involved in implementing all practices whereby the level of investment needed can be a strong argument against introducing HPWS in their firms. The conceptual model developed in this study has pivotal implications for medium-sized enterprises in such a way that work engagement is an ultimate state with relevant organizational outcomes, SMEs should create a way to sustain the level of energy and passion that people bring to work. (De Jong and Den Hartog, 2010) stated that employee engagement able to create and cultivate competitive advantage that increases a fair treatment and trustworthy work environment. It is expected that this study would help firms to have better understanding on how a good HR practices can enhance innovative work behavior amongst their employees, at the same time, they could improve policy and procedure to sustain them in the future through work engagement and organizational climate perspective.

Moreover, this research can generate greater awareness among medium-sized enterprises on the importance of having a proper and practical strategic HR practices (i.e., HPWS) as a vehicle to organizational innovation effectiveness. From 2002 to mid-2021, the number of published articles on the topics of high-performance work systems, work engagement, and innovative work behavior increased, as did the number of citations for each variable. The rise in this trend implies that high-performance work systems, work engagement, and innovative work behavior are becoming more significant areas to investigate and themes that are attracting the attention of scholars all around the world.

Table 1.1 displays a graph derived from the Web of Science database that depicts number of publications and citations for all research variables. Data reveals

that the number of published publications on the areas of high-performance work systems, work engagement, and innovative work behavior has increased from 2002 to mid-2021, as has the number of citations for each variable. The rise in this trend implies that the factors of high-performance work systems, work engagement, and innovative work behavior are becoming increasingly relevant and important areas of study, as well as topics of interest to scholars worldwide.

Table 1.1 Comparison of the number of articles published each year and the number of cited by year

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<table border="1"> <caption>Total Publication by Year (High-Performance Work Systems)</caption> <thead> <tr><th>Year</th><th>Publications</th></tr> </thead> <tbody> <tr><td>2002</td><td>20</td></tr><tr><td>2003</td><td>25</td></tr><tr><td>2004</td><td>30</td></tr><tr><td>2005</td><td>35</td></tr><tr><td>2006</td><td>40</td></tr><tr><td>2007</td><td>45</td></tr><tr><td>2008</td><td>55</td></tr><tr><td>2009</td><td>65</td></tr><tr><td>2010</td><td>75</td></tr><tr><td>2011</td><td>85</td></tr><tr><td>2012</td><td>95</td></tr><tr><td>2013</td><td>105</td></tr><tr><td>2014</td><td>115</td></tr><tr><td>2015</td><td>140</td></tr><tr><td>2016</td><td>185</td></tr><tr><td>2017</td><td>180</td></tr><tr><td>2018</td><td>190</td></tr><tr><td>2019</td><td>215</td></tr><tr><td>2020</td><td>230</td></tr><tr><td>2021</td><td>45</td></tr><tr><td>2022</td><td>40</td></tr> </tbody> </table>	Year	Publications	2002	20	2003	25	2004	30	2005	35	2006	40	2007	45	2008	55	2009	65	2010	75	2011	85	2012	95	2013	105	2014	115	2015	140	2016	185	2017	180	2018	190	2019	215	2020	230	2021	45	2022	40	<table border="1"> <caption>Sum of Times Cited by Year (High-Performance Work Systems)</caption> <thead> <tr><th>Year</th><th>Citations</th></tr> </thead> <tbody> <tr><td>2002</td><td>0</td></tr><tr><td>2003</td><td>0</td></tr><tr><td>2004</td><td>0</td></tr><tr><td>2005</td><td>50</td></tr><tr><td>2006</td><td>100</td></tr><tr><td>2007</td><td>150</td></tr><tr><td>2008</td><td>200</td></tr><tr><td>2009</td><td>250</td></tr><tr><td>2010</td><td>300</td></tr><tr><td>2011</td><td>350</td></tr><tr><td>2012</td><td>400</td></tr><tr><td>2013</td><td>450</td></tr><tr><td>2014</td><td>500</td></tr><tr><td>2015</td><td>550</td></tr><tr><td>2016</td><td>600</td></tr><tr><td>2017</td><td>650</td></tr><tr><td>2018</td><td>700</td></tr><tr><td>2019</td><td>800</td></tr><tr><td>2020</td><td>9000</td></tr><tr><td>2021</td><td>3500</td></tr><tr><td>2022</td><td>3500</td></tr> </tbody> </table>	Year	Citations	2002	0	2003	0	2004	0	2005	50	2006	100	2007	150	2008	200	2009	250	2010	300	2011	350	2012	400	2013	450	2014	500	2015	550	2016	600	2017	650	2018	700	2019	800	2020	9000	2021	3500	2022	3500
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1.9 Research Scope

This study is focuses on investigating and analysis of the HPWS and its effect on innovative work behavior. The context of work engagement also will be analyzed between this relationship and essential to identify whether there is any mediating effect between HPWS and innovative work behavior. In addition, the results from the analysis will help organization in create an approach to enhance innovation culture amongst its employees.

The scope of the study is limited to middle management employees from manufacturing company in medium-sized enterprises located in Klang Valley. The abovementioned research scope play an important role as they make important contributions to their organizations (Nelson and Cooper, 2007 cited from Agarwal, 2014c) have to make decision and generate new ideas or method in order to align their entire project with organizations objectives. Klang Valley region comprises Federal Territory of Kuala Lumpur, Federal Territory of Putrajaya, Selangor District of Petaling, Klang, Gombak, and Hulu Langat. The reason of choosing Klang Valley as the main location for this study is because Selangor has the highest number of SMEs

with 19.8 percent and Kuala Lumpur showed the second highest number of SMEs with 14.7 percent compared to other region and state (Economic Census, Department of Statistics Malaysia, 2016).

The middle management employees also play a role as a communicator involving the relationship between the individual and the group, the motivator that helps raise the motivation of his / her subordinates and involves employees in making decisions. In addition, middle management employees need to deal with problems that require them to be creative to resolve the problem firmly without abandoning long-term impact on the organization. Most importantly, the role of this level is to make decisions about the organization's requisite reforms whether in the form of management processes, production of goods, or services offered. They need to be wise to use the opportunity to start a positive change.

Some previous studies also used the approximate approach of managers and supervisors as their target respondents, for example Agarwal (2014c) which made a study of work engagement on managers working in the manufacturing and pharmaceutical sector in India, found that managers and supervisors played an important role in labor-organizational relationship for fostering a fair and healthy work environment. The study conducted by Kuvaas (2006) shows managers work with intrinsic rewards rather than traditional workers. They are in phase to achieve growth and employment opportunities (Agarwal, 2014c). Middle management employees are usually very educated and have long experience in their field. As such, they are responsible for the implementation of organizational strategies, facilitating change, creating an effective work environment, ensuring the smooth operation and ensuring that its subordinates are motivated (Zhang *et al*, 2008). The manufacturing sector relies on the creativity and innovation of middle management employees involved to survive in the industry. Hence, middle management employee's engagement is an essential requirement for an effective organization. They are also involved in operational and strategic decision making within organization (Agarwal, 2014a). The purpose of this study is to study innovative work behavior among middle management employees in the context of the medium-sized enterprises manufacturing industry in Malaysia.

This study is also limited to the manufacturing industry comprising medium-size enterprises. 90 percent of total establishments in the manufacturing sector are small and medium enterprises that make medium-sized enterprises very significant in the manufacturing sector in Malaysia. The study conducted by Rosli (2013) also shows that SMEs in the manufacturing sector tend to innovate rather than large manufacturing companies. This further reinforces that the study of medium-sized enterprises in the manufacturing sector is crucial to the understanding of the relationship between the strategic HR practices and innovative work behavior among their employees.

1.10 Conceptual and Operational Definition

Definition of key variables will be explained in detail for each subject in order to have a better understanding of this research based on the definition given. Various variables in previous research would be adopted and these include innovative work behavior, HPWS, and work engagement.

1.10.1 Middle Management Employees

Conceptual Definition: Middle management employees is defined as any employees who is two levels below the Chief Executive Officer (CEO) and one level above frontlines employees (Lampaki and Papadakis, 2018) and have a pivotal role in the sense that they carry the burden of transforming the strategic intentions into operational practice (Lampaki and Papadakis, 2018, Guo, Huy and Xiao, 2017). Middle management employees also interact with top managers by sharing information and by participating in the decision-making process, interact with frontlines employees by advocating decisions and supporting an atmosphere that promotes change adaptation and communicates with their colleagues to make sense of the essence of the changes expected and their implications for them and to the firm (Lampaki and Papadakis, 2018). Middle management employees referred to within organizations, departmental managers, assistant managers, project managers,

executives, and supervisors were considered middle management employees (Chuang, Chen, and Tsai, 2015).

Operational Definition: Operational definition for middle management workers is Malaysian citizens working in small and medium size enterprises from managerial level of various department, mainly middle management including managers, assistant managers, executives, supervisors, and project leaders that are involved in IWB activities exclude for employees in human resource management department, part-timers and independently contracted employees.

1.10.2 Medium-Sized Enterprise

Conceptual Definition: According to 2017/2018 SME Annual Report, the definition of Small and Medium Enterprises is based on two criteria, first sales turnover and number of full-time employees. For the manufacturing sector, the threshold for sales turnover is not more than RM50 million or the number of full-time employees does not exceed 200, while for the services and other sector, sales turnover does not exceed RM20 million or number of full-time employees does not exceed 75. SMEs in manufacturing sector refer to three main components namely petroleum, chemical, rubber and plastic products; food, beverages and tobacco products; non-metal mineral products, basic metals, and fabricated metal products (Department of Statistics, Malaysia).

Operational Definition: Medium-sized enterprise defined as an organization with sales turnover range between RM15 million and does not exceeding RM50 million or the number of full-time employees between 75 and does not exceeding 200 that are located in Klang Valley. Manufacturing sector involved are petroleum, chemical, rubber and plastic products; food, beverages and tobacco products; non-metallic mineral products, basic metal and fabricated metal products; and other manufacturing.

1.10.3 High-Performance Work Systems

HPWS refers to a set of human resource practices to improve the employee's quality of work, commitment and productivity in an effort to provide knowledge-based employees that can be their foundation and advantage in obtaining sustainable competitive advantage (Datta, Guthrie, and Wright, 2005). Even though there is no precise or universal agreement on the definition of HPWS (Huselid, 1995), nonetheless many previous literature has used the same definition (e.g. Fu, Bosak, and Flood, 2018; Fu, Flood, *et al.*, 2015) for their work.

In present study, this study adopts seven dimensions of HPWS that frequently used based on previous literature namely selective staffing, extensive training, mentoring, job security, employee participation, performance appraisal, and compensation. The operational definitions of each dimension are as follows:

1.10.3.1 Selective Staffing

Conceptual definition: Selective staffing is a process involving the search for a pool of candidate, pre-assessment and evaluation and appointment of a selected candidate for a particular position (Huselid, 1995). K. Jiang, Lepak, Hu, and Baer (2012) defined selective staffing is a skills-enhancing human resource practice that purposely developed to employ the right candidate for a particular job.

Operational definition: Selective staffing is a process of searching a right candidate that involved searching from a pool of candidates, evaluating each of them based on qualifications from several panels, shortlisted and assigning the best candidate to a specific post in medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.2 Extensive Training

Definition of Concept: Training and development refer to giving new or present employees the skills they need to perform their jobs (Dessler, 2008).

Definition of Operation: Extensive training is conceptualized as a structured training plan provided from organization for each employee and provide them with proper guidance, necessary skills, ability and knowledge in order to enhance innovative behavior and solved especially complex problem among middle management employees in medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.3 Mentoring

Conceptual definition: Definition of mentoring refers to the one-on-one and on-site relationship that occur in the context of learning from more experienced individual referred to as mentors passing down knowledge and guidance to less experienced individual, referred to as mentees. Aspects involved in the process of mentoring are research guidance, operating on projects together (hands-on), promotion guidance, protection from situations and individuals, socialization advice, and friendship that includes trust and encouragement (Whitten, 2016).

Operational definition: Mentoring is a process of providing knowledge and guidance in area of expertise and coaching from more experience individual referred to as mentor to less experience individual referred as mentee and take good care of their welfare whether formal or informal mentoring in terms of career development, exposure on handling difficult task, promotions, friendship and protection to their subordinates or mentee at medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.4 Job Security

Conceptual definition: Job security refers to the long-term job security that the employee expects to stay in their job (Delery and Doty, 1996).

Operational definition: Job security is defined as when one has a feeling that his or her job is guaranteed its continuity provided by organizations without any threat from individuals or other factors within organizations in performing task and one can ensure the continuity of his or her current and future employment among middle management employees in medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.5 Employee Participation

Conceptual definition: Employee participation as a process that involves individuals in making decisions rather than following the instructions of top management. Employee participation also a part of decentralized process of empowering individuals in which transfer the authority from central administrative power to whom can make decisions for the execution of organizational activities (Uma, 2015).

Operational definition: Employee participation is involving middle management employees in organizational activities in assisting to meet the organization's mission and objectives by contributing creative ideas, expertise and, decision-making and effort towards problem solving in medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.6 Performance Appraisal

Conceptual definition: Dessler (2008) defined is a process that begins with the setting of work standards, and then the performance of the workers is evaluated according to those standards, and feedback must be given in an effort to mitigate or eliminate the lack of performance to improve the quality of work performed above par.

Operational Definition: Performance appraisal is a process that involves middle management employees actual performance based on performance standard set by organization in a time period given such as once in six months or once a year. Performance appraisal involves setting performance standards by organization, evaluating an employee's actual performance, providing feedback on actual performance, helping middle management employees improve their performance and eradicate scarcities according to the performance standards set by the company in medium-sized enterprises manufacturing sector in Malaysia.

1.10.3.7 Compensation

Conceptual Definition: Compensation refers to all forms of pay going to employees and arising from their employment, includes direct and indirect financial payments (Dessler, 2008). Compensation was given based on increments of time or on performance.

Operational Definition: Compensation is a reward that an employee receives as a result of his or her employment, including in terms of tangible and intangible based on their performance after they have been appraised from the management among middle management employees in medium-sized enterprises manufacturing sector in Malaysia.

1.10.4 Work Engagement

Conceptual Definition: Work engagement refer to a positive, fulfilling, work-related state of mind characterized by vigour, dedication, and absorption (Schaufeli, Salanova, González-romá, and Bakker, 2002). An engaged employee finds it difficult to detached themselves from work because of the high level of energy they have and passionate about their work.

Operational Definition: Work engagement operationally defined as middle management employees who has full commitment, high work ethic and dedication in matters of short or long term employment in performing their work roles. They continuously expressing their opinions to contribute ideas and try to implement it to every problem in the job they face, adoring, enthusiastic and give their attention to the work by bestowing what they have for the benefit of the job and the organization in medium-sized enterprises manufacturing sector in Malaysia.

1.10.5 Innovative Work Behavior

Conceptual Definition: Innovative work behavior is defined as behavior that involve processes or procedures concerning generates new ideas for the development of a product or service, it is also involve until the final process which is the implementation of the useful ideas (W. B. Schaufeli et al., 2006).

De Jong and Den Hartog (2010) had distinguish four dimensions of innovative work behavior namely idea exploration, idea generation, idea championing and idea implementation. Idea generation requires oneself come out with generation of ideas that may relate to new products, services or processes, on how to penetrate a new market, improvement in current work processes that are generally related to solutions of identified problems.

Once idea generation has been recognized, the next phase of innovative work behavior is idea championing that is involved in finding supports and building

coalitions. This is the stage where oneself need to promote his/her ideas to ensure that ideas can be implemented after overcoming a few obstacles such as uncertain of ideas and resistance to change from other members in organizations. Lastly, idea implementation includes making innovation part of the regular work processes.

Operational Definition: Innovative work behavior is the psychological attitude of an employee (the context of the study is middle management employees) voluntarily participating in the company's innovation development including giving ideas, developing ideas and applying them in medium-sized enterprises manufacturing sector in Malaysia.

1.11 Organization of Study

The main purpose of this study is to determine the relationship between HPWS and innovative work behavior. In other words, how the HPWS cause influence the middle management employees to innovate. The remainder of this thesis is organized are as follows:

The theoretical nature of the research and literature review are laid out in Chapter 2. Outline the literature that will be used to support this study. The literature review is based on previous support research undertaken by scholars and researchers. Because HPWS is such an important issue in this thesis, it will be discussed in depth. Innovative work behavior will be examined in particular, as well as the relationship between HPWS and innovative work behavior. Based on the prior study, it is possible to achieve a better outcome in this one.

The paradigms of research methodology used are explained thoroughly in chapter three. As this study employed quantitative approach, each steps taken and justification are also described and provided in details. Next, enlightening the research design, framework and research process and purposes.

The fourth chapter examines the findings of study. It entails statistical analysis based on data gathered from respondents using quantitative methodologies.

In Chapter 5, the outline discusses the research's concluding discussions and offers recommendations to organizations on how to promote and incentivize employees to innovate, which leads to improved company performance. The contributions are then presented, as well as the implications for academics and practitioners. Limitations of study are also reported as well as highlighting direction for future research. Finally, it concludes with overall conclusion.

1.12 Summary

This study is precisely limited on investigating the relationship between HPWS, employee engagement, and innovative work behavior among middle management employees in medium-sized manufacturing sector in Malaysia. Nonetheless, employee engagement would be tested as mediator in the relationship between HPWS and innovative work behavior.

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Appendix A Definitions of High-Performance Work Systems by Strategic HRM Scholars

Author	Year	Definition	Dependent Variable (s)
Huselid	1995	HPWS is designed to improve knowledge, skills, and abilities of a firm's current and potential employees, increase motivation, reduce shirking, and enhance employee retention while encouraging nonperformers to leave the firm.	Productivity
(Guthrie & Flood, 2008)	2008	HPWS is a set of HR practices designed to equip employees with skills, information, motivation and latitude yielding a work force that is a source of competitive advantage	Innovation performance
(Evans & Davis, 2005)	2005	HPWS as an integrated system of HR practices that are internally consistent with organizational strategy.	Firm performance
(Datta et al., 2005)	2005	A system of HR practices designed to enhance employee's skills, commitment, and productivity to become a source of competitive advantage	Labor productivity
(Demirbag et al., 2014)	2014	A fair degree of discretion, and where practices are relatively easy to compare, communication and participation, investment in people, and in approaches to reward and promotion.	Firm performance
(Prieto & Pérez-Santana, 2014)	2014	A combination of separate but interconnected HR practices that work simultaneously to treat workers with respect, to invest in their development and foster their collective behavior towards organizational goals	Innovative work behavior
(K. Lu et al., 2015)	2015	High performance HRM is a systems containing a series of organic combination of human resource practices	Firm performance
(Heffernan & Dundon, 2016)	2016	A range of innovative HR practices and work design when used in certain combinations or bundles are mutually reinforcing and produce synergistic benefits	Job satisfaction, effective commitment

(Messersmith et al., 2018)	2018	HPWS as a complete menu of HR practices aimed to increase employee ability and motivation, and provide opportunities for employees to demonstrate their talent in attempt to improve firm performance	Vertical-pay dispersion
(Fu et al., 2018)	2018	HPWS is a bundle of HR practices aimed at enhancing employees' abilities, commitment, and performance.	Firm performance
The researcher	2019	HPWS is a bundle of HR practices designed to increase employees' ability, enhance motivation that encourage them to engage within their firm to stimulate their creativity and talent that lead to innovative work behavior.	Innovative work behavior

Appendix B Best Practices of HPWS Dimension

Author	HR Practices
Preffer (1994)	Job security, selection, self-management team, performance-based pay, extensive training, information sharing, reducing the level of gaps.
Delery and Doty (1996)	Internal occupation opportunity, staff training, performance appraisal, job security, profit sharing, employee participation, job definition.
Appelbaum, Bailey, Berg, and Kalleberg (2004)	Training, employment security, quality incentives, opportunity to participate.
Datta <i>et al.</i> (2005)	Recruitment and selection, performance management, extensive communication, employee involvement, training and development.
Sun <i>et al.</i> (2007)	Staffing, training, mobility, job security, appraisal, rewards, job design, participation.
Beltrán-Martín, Roca-Puig, Escrig-Tena, and Bou-Llusar (2008)	Comprehensive staffing, extensive training, developmental performance appraisal, equitable reward system, performance-based pay.
Takeuchi, Chen, and Lepak (2009)	Selective staffing, compensation, extensive training, performance appraisal.
Bayo-Moriones and Galdon-Sanchez (2010)	Selection, Employment security, training, teamwork training, pay above market, skill pay, performance appraisal, incentive payment, teams, job rotation, improvement groups, suggestion system, meetings, attitude surveys.
Ling and Nasurdin (2010)	Performance appraisal, career management, training, reward system, recruitment.
Jiang, Lepak, Hu, <i>et al.</i> (2012)	Skill enhancing: Recruitment, selection, training Motivation enhancing: Performance appraisal, compensation, incentive, benefit, promotion, career development, job security Opportunity enhancing: Job design, work teams, employee involvement, information sharing, complaint processes, formal grievance.
Poshtuma, Campion, Masimove, <i>et al.</i> (2013)	Compensation and benefit, job and work design, training and development, recruiting and selection, employee relations, communication, performance management & appraisal, promotion, turnover, retention & exit management.
Oladapo and Onyeaso (2013)	Selection, training, performance management, compensation, information sharing.

Zhang, Fan, Zhu (2014)	Recruitment, training, compensation, employee participation, job security
Demirbag <i>et al.</i> (2014)	Employee training, competence-based performance appraisal, merit-based promotion, internal communication, employee empowerment, HRM-strategy fit, performance-based compensation.
Prieto and Pérez-Santana (2014)	Staffing, training, compensation, performance appraisal, job design, participation.
Fan <i>et al.</i> (2014)	Training skills, job security, job description, performance appraisal, employee voice, and communication.
Jiang and Liu (2015)	Staffing, self-managed team, decentralized decision making, training, flexible work assignment, communication, compensation.
Wu, Hoque, Bacon, and Bou Llusar (2015)	Selective hiring, extensive training, employee involvement, team working.
Fu, Rousseau, <i>et al.</i> (2015)	Selective recruitment, training and development, performance management, remuneration, information sharing, participation.
Lu <i>et al.</i> (2015)	Training, employee participation, job analysis, performance evaluation, employee development, profit sharing.
Latorre <i>et al.</i> (2016)	Training and development, merit-pay, performance appraisal, provision of interesting/varied jobs.
Jerez-Gómez <i>et al.</i> (2017)	Employment security, intensive training, job descriptions, internal career opportunities, performance appraisal, incentive systems.
Shin and Konrad (2017)	Training, incentive compensation, employee involvement, participative work design.
Shahriari <i>et al.</i> (2017)	Training and development, pay for performance, career development, participation, job security.
Vatankhah <i>et al.</i> (2017)	Empowerment, reward, promotion
Rasheed <i>et al.</i> (2017)	Selection, training & development, mentoring, participation, information sharing, compensation, performance management
Wang and Xu (2017)	Staffing, training, involvement, participation, performance appraisal, compensation/rewards, caring
Karadas and Karatepe (2018)	Selective staffing, job security, training & development, rewards, teamwork, career opportunities.
Rubel, Rimi, Yusliza, and Kee (2018)	Compensation, internal career opportunity, participation, performance appraisal, training & development.

Fu <i>et al.</i> (2018)	Recruitment, training & development, performance management, compensation, employee participation.
Bendickson <i>et al.</i> , (2018)	Comprehensive recruitment, selection, self-managing team structures, extensive training. Flexible work arrangement, employee involvement, open communication, information sharing, compensation, performance management.
Úbeda-García <i>et al.</i> , (2018)	Selective staffing, extensive training & development, performance appraisal, equitable reward system.
Ogbonnaya and Valizade (2018)	Training, performance appraisal, team working
Zhang <i>et al.</i> (2018)	Recruitment, selection, training, developmental performance management, performance-based compensation, flexible job design, participative decision-making, information sharing.
Rubel <i>et al.</i> (2018)	Compensation, internal career opportunity, participation, performance appraisal, training & development.
Messersmith <i>et al.</i> (2018)	Selection, training, pay level, benefit, communication, performance evaluation, pay for performance, employee suggestion, job rotation, job autonomy, employee participation in decision-making.
Shahzad <i>et al.</i> , (2019)	Formal selection, training and development, participation, grievance handling, information sharing, compensation, and performance management)

Appendix C Expert Opinion Analysis

Expert Opinion Analysis Form



Expert Opinion Analysis (EOA)

Title of Research: The Influence of High-Performance Work Systems (HPWS) On Innovative Work Behavior Through Work Engagement

Purpose of Expert Opinion Analysis (EOA) : The purpose of this expert opinion analysis is to increase the validity of an instrument. Therefore, expert opinion in this field of study is needed to review and confirm whether the research instrument is good enough to represent and measure the concept that the researcher should measure. You are expected to answer all the questions carefully to assist the researcher in improving the research instrument so that the research objectives are achieved. All feedback provided will be kept confidential. Your cooperation in completing this questionnaire is very much appreciated.

NOOR HASSANAH BINTI HUSIN

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**Azman Hashim International Business School
Universiti Teknologi Malaysia**

Section A: Respondent's Demography (Please tick (/) at the space provided)

Items No	Are questions asked relevant?		Is language understood?		Is the scale of questions clear?		Spelling Error		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	
1.	/		/		/			/	
2.	/		/		/			/	Add 25 'years' old
3.	/		/		/			/	Change 'Kaum' to 'Bangsa'
4.	/		/		/			/	
5.	/		/		/		/		
6.	/		/		/			/	
7.	/		/		/			/	
8.	/		/		/			/	

Note : 1.

SECTION B : HIGH PERFORMANCE WORK SYSTEMS (HPWS)

1. SELECTIVE STAFFING *(Please tick (/) at the space provided)*

Item No	Are questions asked relevant?		Is language understood?		Is the scale of questions clear?		Spelling error?		Represents selective staffing?		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B1	/		/		/			/	/		
B2	/			/	/			/	/		Corrected BM translation
B3	/		/		/			/	/		
B4	/		/		/			/	/		
B5	/		/		/			/	/		
B6	/		/		/			/	/		
B7	/		/		/			/	/		
B8	/		/		/			/	/		

Note: Change ‘Pemilihan Selektif’ to ‘Pemilihan Kakitangan/Staff’

SECTION B: HIGH PERFORMANCE WORK SYSTEMS (HPWS)

2. EXTEVSIVE TRAINING (*Please tick (/) at the space provided*)

Item No	Are the questions asked relevant?		Is language understood		Is the scale of questions clear?		Spelling error		Represent extensive training?		Additional Comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B9	/		/		/		/		/		Change from 'employees' to 'me'
B10	/			/	/		/		/		Rephrase BM translation accordingly
B11	/			/	/			/	/		Rephrase BM translation accordingly
B12	/		/		/			/	/		
B13	/			/	/			/	/		Rephrase BM translation accordingly
B14	/		/		/			/	/		Rephrase BM translation accordingly
B15	/		/		/			/	/		
B16	/		/		/			/	/		

SECTION B: HIGH PERFORMANCE WORK SYSTEMS (HPWS)

3. MENTORING (*Please tick (/) at the space provided*)

Item No	Are the questions asked relevant?		Is language understood?		Is the scale of questions clear?		Spelling error?		Represent mentoring?		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B17	/		/		/			/	/		
B18	/		/		/			/	/		
B19	/		/		/			/	/		
B20	/		/		/			/	/		
B21	/		/		/			/	/		
B22	/		/		/			/	/		
B23	/		/		/			/	/		
B24	/		/		/		/		/		Add 'kemampuan mentor saya'
B25	/		/		/			/	/		

SECTION B: HIGH PERFORMANCE WORK SYSTEMS (HPWS)

4. JOB SECURITY (*Please tick (/) at the space provided*)

Item No	Are the questions asked relevant?		Is language understood		Is the scale of questions clear?		Spelling error?		Represent job security?		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B26	/		/		/			/	/		
B27	/		/		/		/		/		Change accordingly
B28	/		/		/			/	/		
B29	/			/	/			/	/		Rephrase BM translation.

Note: Change BM translation to ‘dalam syarikat ini, saya berharap menjadi orang terakhir yang akan diberhentikan’ (B29).

SECTION B: HIGH PERFORMANCE WORK SYSTEMS

5. EMPLOYEE PARTICIPATION *(Please tick (/) at the space provided)*

Item No	Are the questions relevant		Is the language understood		Is the scale of questions clear?		Spelling error		Represents employee participation		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B30	/		/		/			/	/		
B31	/		/		/		/		/		
B32	/		/		/		/		/		Change 'diajak' to 'dipelawa'
B33	/		/		/			/	/		Change 'dijemput' to 'dipelawa'
B34	/		/		/			/	/		Change 'berkaitan' to relevan and 'tujuan' to 'matlamat'
B35	/		/		/			/	/		

SECTION B: HIGH PERFORMANCE WORK SYSTEMS

6. PERFORMANCE APPRAISAL (*Please tick (/) at the space provided*)

Item No	Are the questions relevant		Is the language understood		Is the scale of questions clear?		Spelling error		Represents performance appraisal		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B36	/		/		/			/	/		
B37	/		/		/			/	/		Change ‘ telah berusaha’ to ‘mempunyai keupayaan’
B38	/		/		/			/	/		‘dibuat’ to ‘dilaksanakan’
B39	/		/		/			/	/		
B40	/		/		/			/	/		
B41	/		/		/			/	/		
B42	/		/		/			/	/		Rephrase BM translation accordingly
B43	/		/		/			/	/		
B44	/		/		/			/	/		
B45	/		/		/			/	/		
B46	/		/		/			/	/		Change ‘bayaran faedah’ to ‘bonus’

SECTION B: HIGH PERFORMANCE WORK SYSTEMS

7. COMPENSATION (*Please tick (/) at the space provided*)

Item No	Are the questions relevant		Is the language understood		Is the scale of questions clear?		Spelling error		Represents compensation		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
B47	/			/	/			/	/		Rephrase BM translation
B48	/		/		/			/	/		
B49	/		/		/			/	/		
B50	/		/		/		/		/		
B51	/		/		/			/	/		
B52	/		/		/			/	/		
B53	/		/		/			/	/		
B54	/		/		/			/	/		
B55	/			/	/			/	/		Rephrase BM translation

SECTION C: MEDIATOR (WORK ENGAGEMENT) (*Please tick (/) at the space provided*)

Item No	Are the questions asked relevant		Is language understood		Is the scale of questions clear?		Spelling error?		Represents work engagement?		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
C1	/			/				/	/		Rephrase BM translation
C2	/		/		/			/	/		
C3	/			/	/			/	/		Rephrase BM translation
C4	/			/	/			/	/		Rephrase BM translation
C5	/			/	/			/	/		Rephrase BM translation
C6	/			/	/			/	/		Rephrase BM translation
C7	/		/		/			/	/		
C8	/		/		/			/	/		Add 'pada waktu pagi'
C9	/		/		/			/	/		
C10	/		/		/			/	/		
C11	/		/		/			/	/		
C12	/		/		/			/	/		
C13	/		/		/			/	/		Delete ' To me'
C14											
C15	/		/		/			/	/		Change 'terbawa-bawa' to 'leka semasa'
C16	/		/		/			/	/		Change 'ketika' to 'semasa'
C17	/			/	/			/	/		Rephrase BM translation

SECTION D: INNOVATIVE WORK BEHAVIOUR (Please tick (/) at the space provided)

Item No	Are the questions asked relevant		Is language understood		Is the scale of questions clear?		Spelling error		Represent innovative work behaviour?		Additional comments
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
D1	/		/		/			/	/		Add 'mampu' in sentence
D2	/		/		/		/		/		'baru ' to 'baharu'
D3	/		/		/			/	/		Add 'mampu' in sentence
D4	/		/		/			/	/		Add 'mampu' in sentence
D5	/		/		/			/	/		Add 'mampu' in sentence
D6	/		/		/			/	/		
D7	/		/		/			/	/		
D8	/		/		/			/	/		
D9	/		/		/			/	/		Add 'mampu' in sentence

Note: Change all questions 'We are able' to 'I am able'

Do the questions asked in the questionnaire as a whole reflect the dimensions and elements measured?

Yes

No

If not, please specify :

Your cooperation in this study is greatly appreciated.

Research Questionnaire / Borang Soal Selidik



QUESTIONNAIRE : THE INFLUENCE OF HIGH PERFORMANCE WORK SYSTEMS (HPWS) ON INNOVATIVE WORK BEHAVIOUR THROUGH WORK ENGAGEMENT (SOAL SELIDIK: PENGARUH SISTEM KERJA BERPRESTASI TINGGI KE ATAS TINGKAH LAKU INOVASI MELALUI PENGLIBATAN PEKERJA)

Assalamualaikum / Greetings,

- This questionnaire is designed to obtain feedback on the impact of the implementation of high performance work systems for innovative behaviour of employees through work engagement who worked in manufacturing sector, in medium-size enterprises (*Soal selidik ini dibuat untuk mendapatkan maklum balas berhubung dengan pengaruh sistem kerja berprestasi tinggi terhadap tingkah laku inovasi melalui penglibatan pekerja (pengurus dan eksekutif yang berkhidmat dalam sektor pembuatan, di perusahaan bersaiz sederhana).*
- It is hoped that you answer all questions carefully to help researcher to improve the quality of services for Small and Medium Enterprise (SMEs) in Malaysia) (*Diharapkan anda menjawab semua soalan dengan teliti bagi membantu penyelidik memperbaiki mutu perkhidmatan Perusahaan Kecil dan Sederhana (PKS) di Malaysia).*
- Your response will be kept strictly **CONFIDENTIAL** (*Segala maklum balas anda adalah SULIT*).
- Your cooperation in completing this questionnaire is greatly appreciated (*Kerjasama anda dalam melengkapkan soal selidik ini amatlah dihargai*).

NOOR HASSANAH HUSIN

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Section (Bahagian) A: Background / Demography (Latar Belakang / Demografi)

For each question, please tick (√) or fill in the related information in the space provided
(Bagi setiap soalan, sila tandakan (√) atau isi maklumat yang berkaitan pada ruangan yang disediakan.)

1. Gender (*Jantina*): Male (*Lelaki*) Female (*Perempuan*)

2. Age (*Umur*)
 25 years and Less (*25 tahun dan kurang*) 46 - 55 years old (*46-55 tahun*)
 26 – 35 years old (*26-35 tahun*) 56 years and (*56 tahun dan ke atas*)
 36 - 45 years old (*36-45 tahun*)

3. Race (*Bangsa*):

 Malay (*Melayu*)
 Chinese (*Cina*)
 Indian (*India*)
 Others (please specify) *Lain-lain (sila nyatakan)* _____

4. Level of Education (*Tahap pendidikan*):

 SPM or equivalent (*SPM atau setaraf*)
 Skills Certificate/Vocational (*Sijil Kemahiran/Vokasional*)
 STPM/Diploma
 Bachelor Degree (*Ijazah Sarjana Muda*)
 Master Degree (*Ijazah Sarjana*)
 Others (*please specify*) *Lain-lain (sila nyatakan)* _____

5. Working Experience (*Pengalaman bekerja*):
 Less than 5 years (*kurang dari 5 tahun*) 21 – 25 years (*21 – 25 tahun*)
 6 – 10 years (*6 – 10 tahun*) 26 years and above (*26 tahun dan ke atas*)
 11 – 15 years (*11 – 15 tahun*)
 16 – 20 years (*16 – 20 tahun*)

6. Monthly Income (*Pendapatan bulanan*):
 RM1000 - RM2500
 RM2501 - RM4000
 RM4001 – RM5500
 RM5501 – RM7000
 More than RM7001 (*Lebih dari RM7001*)

7. Marital Status (*Status perkahwinan*):
 Single (*Bujang*)
 Married (*Berkahwin*)
 Divorced (*Bercerai*)
 Widow/Widower (*Balu/Duda*)

Section (Bahagian) B: High Performance Work System Practices (*Amalan Sistem Kerja Berprestasi Tinggi*)

For each question, please choose your answer according to the scale given. (*Bagi setiap soalan, sila pilih pendapat anda mengikut skala yang diberikan*).

Scale (Skala)				
1	2	3	4	5
Sangat Tidak Setuju (<i>Strongly disagree</i>)	Tidak Setuju (<i>Disagree</i>)	Neutral (<i>Neutral</i>)	Setuju (<i>Agree</i>)	Sangat Setuju (<i>Strongly agree</i>)

Questions (Soalan-soalan)						
Selective Staffing (Pemilihan Kakitangan/Staf)						
B1	My company uses extensive procedures in selection process (<i>Syarikat saya menggunakan prosedur yang meluas dalam proses pemilihan</i>)	1	2	3	4	5
B2	My company put high importance of selecting the best candidate (<i>Syarikat saya meletakkan harapan yang tinggi dalam memilih calon pekerja yang terbaik</i>)	1	2	3	4	5
B3	My company put great effort in selecting the best candidate for every position (<i>Syarikat saya berusaha memilih calon pekerja yang terbaik bagi setiap jawatan</i>)	1	2	3	4	5
B4	My company spent adequate times to select the best candidate (<i>Syarikat saya memperuntukkan masa yang secukupnya untuk memilih calon pekerja yang terbaik</i>)	1	2	3	4	5
B5	There are few peoples involve in the selection process (<i>Terdapat beberapa orang yang terlibat dalam proses pemilihan</i>)	1	2	3	4	5
B6	My company spent a great amount of money on selecting the best candidate (<i>Syarikat saya membelanjakan sejumlah wang yang banyak untuk memilih calon pekerja yang terbaik</i>)	1	2	3	4	5
B7	Great importance is placed on staffing process (<i>Kepentingan yang tinggi diletakkan untuk proses pemilihan pekerja</i>)	1	2	3	4	5
B8	My company is very selective with a number of applicants screened for each position (<i>Syarikat saya sangat selektif dengan jumlah pemohon yang disaring bagi setiap jawatan</i>)	1	2	3	4	5
Extensive Training (Latihan Meluas)						
B9	Extensive trainings are provided for me in this company (<i>Latihan yang meluas disediakan kepada saya di syarikat ini</i>)	1	2	3	4	5
B10	High priority is placed on training programs (<i>Keutamaan yang tinggi dilaksanakan kepada saya bagi program-program latihan</i>)	1	2	3	4	5

B11	My company provides a formal and systematically structured training process (<i>Syarikat saya menyediakan proses latihan yang berstruktur, formal dan sistematik</i>)	1	2	3	4	5
B12	I am given opportunities for training (<i>Saya diberikan peluang untuk menjalani latihan</i>)	1	2	3	4	5
B13	I am provided with adequate hours of formal training per year (<i>Saya diberikan latihan formal dengan jumlah jam latihan yang mencukupi untuk setiap tahun</i>)	1	2	3	4	5
B14	I am provided with different kind of training programs (<i>Saya diberikan dengan pelbagai program latihan yang berbeza</i>)	1	2	3	4	5
B15	My company spent a great amount of money on training programs (<i>Syarikat saya membelanjakan sejumlah wang yang banyak bagi program-program latihan</i>)	1	2	3	4	5
B16	My company views expenditure on training programs as an investment (<i>Syarikat saya melihat perbelanjaan bagi program-program latihan sebagai pelaburan</i>)	1	2	3	4	5
Mentoring (Mentor)						
B17	My mentor takes personal interest in my career (<i>Mentor saya mengambil kira kepentingan peribadi dalam kerjaya saya</i>)	1	2	3	4	5
B18	My mentor helps me coordinate professional goals (<i>Mentor saya membantu menyelaraskan matlamat profesional saya</i>)	1	2	3	4	5
B19	My mentor has devoted special time and consideration to my career (<i>Mentor saya menumpukan masa dan memberi pertimbangan khusus untuk kerjaya saya</i>)	1	2	3	4	5
B20	I share personal problems with my mentor (<i>Saya berkongsi masalah peribadi dengan mentor saya</i>)	1	2	3	4	5
B21	I consider my mentor to be a friend (<i>Saya menganggap mentor saya sebagai kawan</i>)	1	2	3	4	5
B22	I try to model my behaviour after my mentor (<i>Saya cuba mencontohi tingkah laku mentor saya</i>)	1	2	3	4	5
B23	I admire my mentor's ability to teach others (<i>Saya mengagumi kemampuan mentor saya untuk mengajar orang lain</i>)	1	2	3	4	5
B24	I admire my mentor's ability to motivate others (<i>Saya mengagumi kemampuan mentor saya untuk memotivasikan orang lain</i>)	1	2	3	4	5
B25	I respect my mentor's ability to teach others (<i>Saya menghormati kemampuan mentor saya untuk mengajar orang lain</i>)	1	2	3	4	5
Job Security (Jaminan Pekerjaan)						
B26	I expect to stay in this company for as long as I wish (<i>Saya boleh menjangkakan untuk bekerja di syarikat ini selama mana yang saya inginkan</i>)	1	2	3	4	5

B27	It is very difficult to dismiss an employee in this company (<i>Agak sukar untuk memberhentikan pekerja di syarikat ini</i>)	1	2	3	4	5
B28	I am guaranteed job security in this company (<i>Saya diberikan jaminan pekerjaan di syarikat ini</i>)	1	2	3	4	5
B29	If this company were facing economic problems, as an employee in this company I would be the last to be terminated (<i>Jika syarikat ini menghadapi masalah ekonomi, sebagai pekerja dalam syarikat ini, saya berharap adalah orang terakhir yang akan diberhentikan</i>)	1	2	3	4	5
Employee Participation (Penglibatan Pekerja)						
B30	I am allow to make decisions (<i>Saya dibenarkan untuk membuat sebarang keputusan</i>)	1	2	3	4	5
B31	I am provided the opportunity to suggest improvements in the way things are done (<i>Saya diberikan peluang untuk memberi cadangan penambahbaikan bagi perkara yang dilakukan</i>)	1	2	3	4	5
B32	I am invited to participate in a wide range of issues, including performance standards, quality improvements, benefits, etc (<i>Saya dipelawa untuk mengambil bahagian dalam pelbagai isu termasuk standard prestasi, penambahbaikan kualiti, faedah, dan lain-lain</i>)	1	2	3	4	5
B33	I often invited by superior to participate in problem solving and decisions making process (<i>Saya sentiasa dipelawa oleh pegawai atasan untuk terlibat dalam menyelesaikan masalah dan proses membuat keputusan</i>)	1	2	3	4	5
B34	I receive information on the relevant concerns of the company (goal, performance, etc (<i>Saya menerima maklumat tentang makluman-makluman relevan berkaitan syarikat(matlamat, prestasi, dan lain-lain)</i>)	1	2	3	4	5
B35	My superior keep an open communication with me in this company (<i>Penyelia saya sentiasa memastikan komunikasi terbuka dengan saya di syarikat ini</i>)	1	2	3	4	5
Performance Appraisal (Penilaian Prestasi)						
B36	I receive formal performance appraisals (<i>Saya menerima penilaian prestasi secara formal</i>)	1	2	3	4	5
B37	My company has put effort to measure employee performance (<i>Syarikat saya mempunyai keupayaan untuk menilai prestasi pekerja</i>)	1	2	3	4	5
B38	Performance appraisal conducted is focus on my present and future performance (<i>Penilaian prestasi saya dilaksanakan fokus kepada prestasi semasa and prestasi akan datang</i>)	1	2	3	4	5
B39	I receive my performance appraisal which is used to set goals and plan my skill development (<i>Saya menerima</i>	1	2	3	4	5

	<i>maklum balas penilaian prestasi yang akan digunakan untuk menetapkan matlamat dan merancang kemahiran)</i>					
B40	My performance appraisal conducted is based on fixed performance standards (<i>Penilaian prestasi saya dilaksanakan berasaskan kepada standard prestasi yang tetap</i>)	1	2	3	4	5
B41	My performance appraisal conducted based on flexible performance standards (<i>Penilaian prestasi saya dilaksanakan berasaskan kepada standard prestasi yang fleksibel</i>)	1	2	3	4	5
B42	There are frequent discussions about my performance at least once in 6 month (<i>Perbincangan tentang prestasi saya dibincangkan secara kerap sekurang-kurangnya 6 bulan sekali</i>)	1	2	3	4	5
B43	Performance appraisal conducted emphasizes on my personal development. (<i>Penilaian prestasi yang dilaksanakan menekankan perkembangan peribadi saya</i>)	1	2	3	4	5
B44	Performance appraisal is an approach to discuss my performance. (<i>Penilaian prestasi adalah pendekatan untuk membincangkan pencapaian prestasi kerja saya</i>)	1	2	3	4	5
B45	I receive feedback and input on my appraisal from more than one source (i.e several individuals such as supervisors, peers, etc) (<i>Saya menerima maklum balas dan input mengenai penilaian prestasi saya lebih daripada satu sumber (i.e. beberapa individu seperti penyelia, rakan, dsb.)</i>)	1	2	3	4	5
B46	I receive my performance appraisal which is used to determine their compensation (<i>Saya menerima penilaian prestasi yang akan digunakan untuk menentukan bonus saya</i>)	1	2	3	4	5
Compensation (Pampasan)						
B47	My salary is higher than any other company with same position (<i>Gaji saya lebih tinggi dengan jawatan yang sama berbanding syarikat lain</i>)	1	2	3	4	5
B48	My salary increases every year (<i>Gaji saya meningkat setiap tahun</i>)	1	2	3	4	5
B49	Salary that paid to me is competitive in the industry (<i>Gaji yang dibayar kepada saya adalah kompetitif dalam industri</i>)	1	2	3	4	5
B50	My salary is based on what other companies would pay (<i>Gaji saya adalah berdasarkan kepada gaji yang dibayar oleh syarikat yang lain</i>)	1	2	3	4	5
B51	I receive monetary rewards based on my individual performance. (<i>Saya menerima ganjaran kewangan berdasarkan prestasi saya secara individu</i>)	1	2	3	4	5

B52	My company's pay system reflects employee's contribution to the company (<i>Sistem gaji syarikat saya mencerminkan sumbangan pekerja kepada syarikat</i>)	1	2	3	4	5
B53	My salary pay increment, promotions, bonuses and incentive is based on my individual performance (<i>Bayaran gaji, kenaikan pangkat, bonus dan insentif adalah berdasarkan prestasi saya secara individu</i>)	1	2	3	4	5
B54	My company's pay is based on comparison to others in unit (<i>Syarikat saya membayar gaji berdasarkan perbandingan kepada pekerja lain dalam satu unit</i>)	1	2	3	4	5
B55	I receive wide range of pay across members in unit (<i>Saya menerima pelbagai ganjaran melalui ahli-ahli dalam unit</i>)	1	2	3	4	5

Section (Bahagian) C: Work Engagement (Hubungan Kerja)

For each question, please circle your answer according to the scale given. (*Bagi setiap soalan, sila bulatkan pendapat anda mengikut skala yang diberikan*)

Scale (Skala)				
1	2	3	4	5
Sangat Tidak Setuju (Strongly disagree)	Tidak Setuju (Disagree)	Neutral (Neutral)	Setuju (Agree)	Sangat Setuju (Strongly agree)

Questions (Soalan-soalan)						
WORK ENGAGEMENT (HUBUNGAN KERJA)						
C1	At my work, I feel bursting with energy (<i>Saya berasa sangat bertenaga di tempat kerja</i>)	1	2	3	4	5
C2	I find the work that I do is full of meaning and purpose (<i>Saya merasakan kerja yang saya lakukan penuh dengan makna dan tujuan</i>)	1	2	3	4	5
C3	Time flies when I am working (<i>Saya merasakan masa berlalu dengan cepat ketika saya sedang bekerja</i>)	1	2	3	4	5
C4	At my job, I feel strong and vigorous (<i>Saya berasa seronok dan bertenaga ketika bekerja</i>)	1	2	3	4	5
C5	I am enthusiastic about my job (<i>Saya sangat seronok dengan pekerjaan saya</i>)	1	2	3	4	5
C6	When I work, I forget everything else around me (<i>Saya akan melupakan segala-galanya di sekeliling saya ketika saya bekerja</i>)	1	2	3	4	5
C7	My job inspires me (<i>Kerja saya memberi inspirasi kepada saya</i>)	1	2	3	4	5

C8	When I get up in the morning, I feel like going to work (<i>Apabila saya bangun pada waktu pagi, saya terasa ingin pergi bekerja</i>)	1	2	3	4	5
C9	I feel happy when I work intensely (<i>Saya berasa gembira apabila saya bekerja dengan gigih</i>)	1	2	3	4	5
C10	I am proud of the work that I do (<i>Saya bangga dengan kerja yang saya lakukan</i>)	1	2	3	4	5
C11	I am immersed in my work (<i>Saya leka dengan kerja saya</i>)	1	2	3	4	5
C12	I can continue working very long periods at a time (<i>Saya boleh terus bekerja dalam jangka waktu yang panjang pada satu masa</i>)	1	2	3	4	5
C13	My job is challenging (<i>Kerja saya sangat mencabar</i>)	1	2	3	4	5
C14	I get carried away when I work (<i>Saya leka semasa bekerja</i>)	1	2	3	4	5
C15	At my job, I am very resilient and mentally strong (<i>Saya sangat berdaya tahan dan mempunyai mental yang kuat semasa bekerja</i>)	1	2	3	4	5
C16	It is difficult to detach myself from my job (<i>Sukar untuk saya melepaskan kerja saya</i>)	1	2	3	4	5
C17	At my work, I always persevere, even when things do not go well (<i>Semasa bekerja, saya sentiasa bertahan walaupun dalam keadaan terdesak.</i>)	1	2	3	4	5

Section (Bahagian) D: Innovative Work Behavior (Kelakuan Inovasi Kerja)

For each question, please choose your answer according to the scale given (*Bagi setiap soalan, sila pilih pendapat anda mengikut skala yang diberikan*).

Skala(Scale)				
1	2	3	4	5
Sangat Tidak Setuju (Strongly disagree)	Tidak Setuju (Disagree)	Neutral	Setuju (Agree)	Sangat Setuju (Strongly agree)

Questions (Soalan-soalan)						
INNOVATIVE WORK BEHAVIOUR (KELAKUAN INOVASI KERJA)						
D1	I am able to create new ideas for difficult issues (<i>Saya mampu mencipta idea-idea baharu untuk masalah yang sukar</i>)	1	2	3	4	5
D2	I am able to search new working methods, techniques, or instruments (<i>Saya mampu mencari kaedah, teknik, dan instrumen kerja yang baharu</i>)	1	2	3	4	5
D3	I am able to generate original solutions for problems (<i>Saya menghasilkan kaedah penyelesaian yang original</i>)	1	2	3	4	5

D4	I am able to mobilize support for innovative ideas (<i>Saya mampu menggerakkan sokongan untuk idea-idea yang inovatif</i>)	1	2	3	4	5
D5	I am able to acquire approval for innovative ideas (<i>Saya mampu memperoleh kelulusan untuk idea-idea yang inovatif</i>)	1	2	3	4	5
D6	I am able to make important organizational members enthusiastic for innovative ideas (<i>Saya mampu membuat ahli-ahli penting dalam organisasi bersemangat untuk idea-idea yang inovatif</i>)	1	2	3	4	5
D7	I am able to transform innovative ideas into useful application (<i>Saya mampu mengubah idea-idea yang inovatif menjadi aplikasi yang berguna</i>)	1	2	3	4	5
D8	I am able to introduce innovative ideas into the work environment in a systematic way (<i>Saya mampu memperkenalkan idea-idea inovatif ke dalam persekitaran kerja dengan cara yang sistematik</i>)	1	2	3	4	5
D9	I am able to evaluate the utility of innovative ideas (<i>Saya mampu menilai utiliti idea-idea yang inovatif</i>)	1	2	3	4	5

Your cooperation in participating this research is highly appreciated and thank you. (*Kerjasama anda dalam menjayakan kajian ini adalah amat dihargai dan didahului dengan ucapan terima kasih*).

Appendix E Random ID for Data Entry Error

Case Summaries

		Case Number	Approximately 10% of the cases (SAMPLE)
1		9	1
2		12	1
3		20	1
4		29	1
5		32	1
6		34	1
7		43	1
8		60	1
9		70	1
10		72	1
11		79	1
12		97	1
13		117	1
14		126	1
15		138	1
16		145	1
17		146	1
18		156	1
19		159	1
20		171	1
21		173	1
22		174	1
23		175	1
Total	N		23

Appendix F Mahalanobis Distance Output

Descriptives

		Statistic	Std. Error
Mahalanobis	Mean	7.9542857	.53117985
Distance	95% Confidence Lower Bound	6.9059006	
	Interval for Mean Upper Bound	9.0026708	
	5% Trimmed Mean	7.1194803	
	Median	5.6279735	
	Variance	49.377	
	Std. Deviation	7.02684889	
	Minimum	.68120	
	Maximum	46.37283	
	Range	45.69163	
	Interquartile Range	5.95851	
	Skewness	2.250	.184
	Kurtosis	6.736	.365

Extreme Values

		Case Number	Value
Mahalanobis	Highest	1	107
		2	1
		3	117
		4	53
		5	74
Distance	Lowest	1	172
		2	171
		3	26
		4	140
		5	7

Mahalanobis Distance Stem-and-Leaf Plot

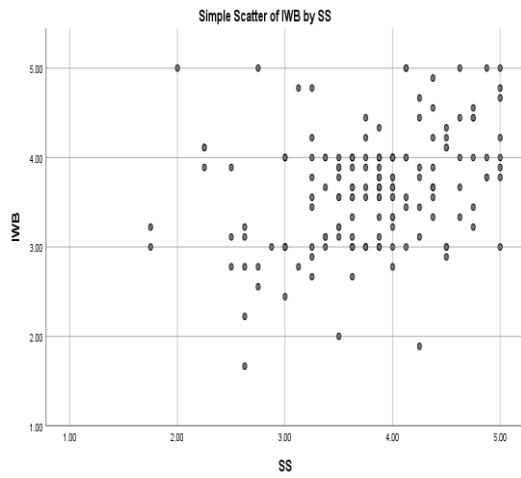
Frequency	Stem & Leaf
5.00	0 . 66799
11.00	1 . 02224556678
14.00	2 . 00113445555588
22.00	3 . 0000122244467778888999
28.00	4 . 0000111222223344446677777899

13.00	5 .	0145666668889
12.00	6 .	345567789999
11.00	7 .	12445568999
10.00	8 .	0122233559
7.00	9 .	2255778
5.00	10 .	02446
7.00	11 .	3377899
4.00	12 .	3566
1.00	13 .	6
3.00	14 .	388
.00	15 .	
4.00	16 .	0449
3.00	17 .	149
1.00	18 .	3
14.00	Extremes	(>=19.0)

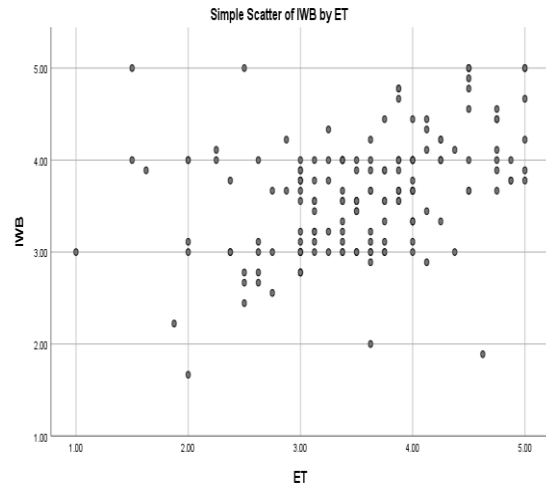
Stem width: 1.00000

Each leaf: 1 case(s)

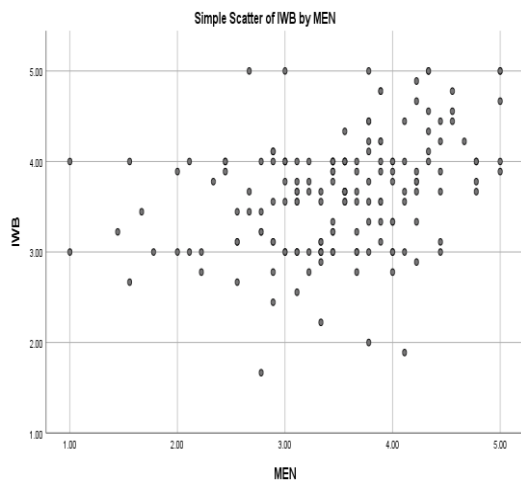
Appendix G Linearity Test



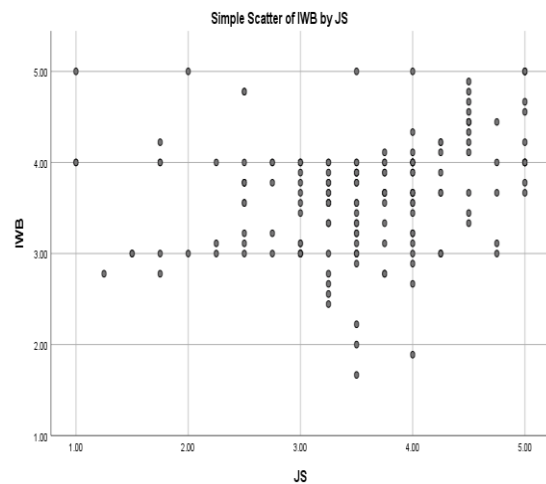
Variable: Selective Staffing



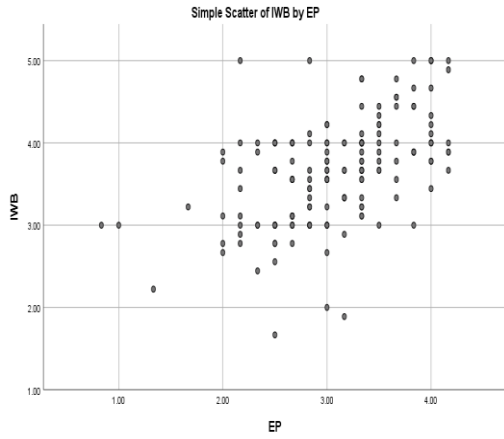
Variable: Extensive Training



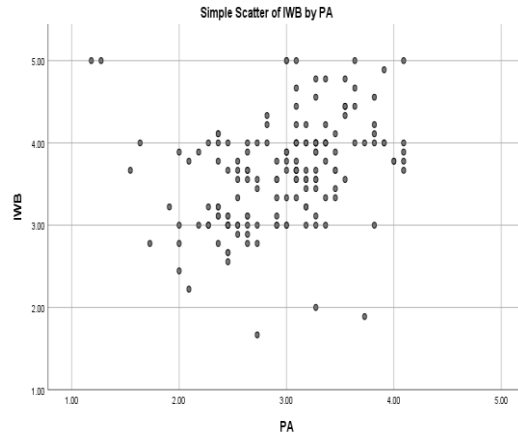
Variable: Mentoring



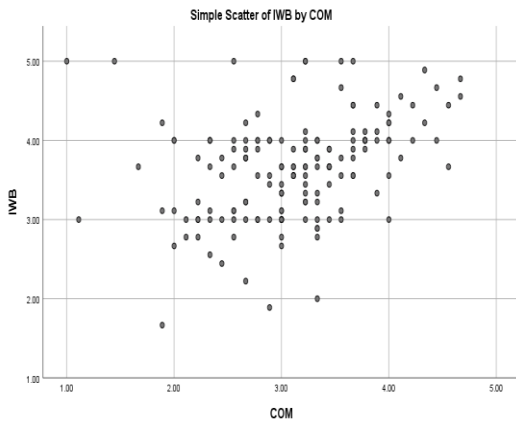
Variable: Job Security



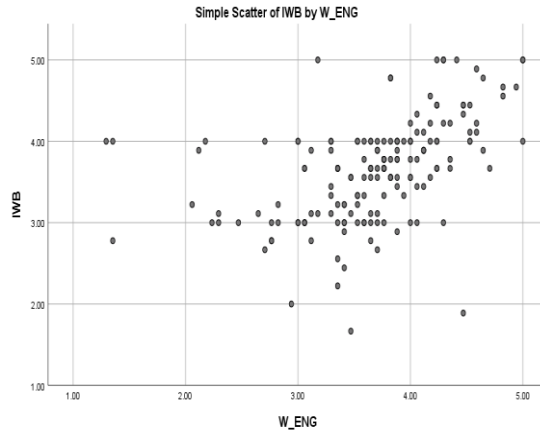
Variable: Employee Participation



Variable: Performance Appraisal

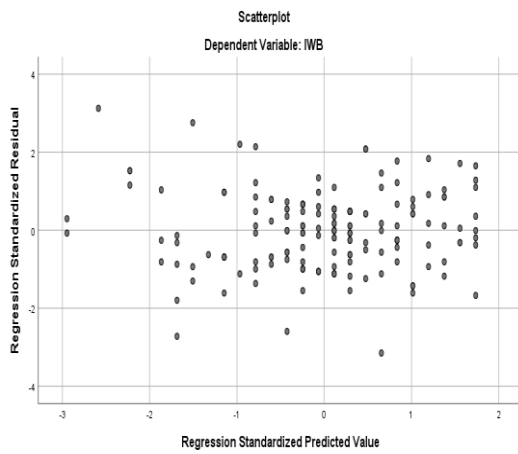


Variable: Compensation

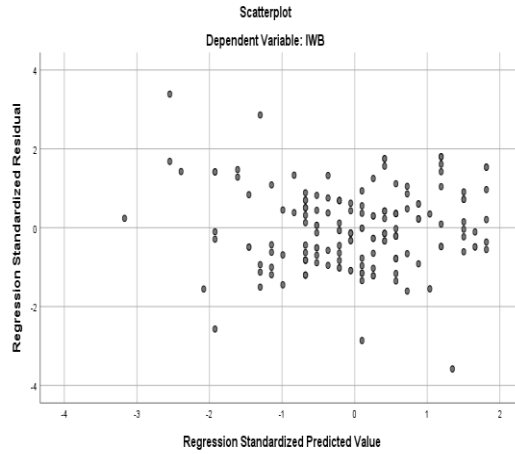


Variable: Work Engagement

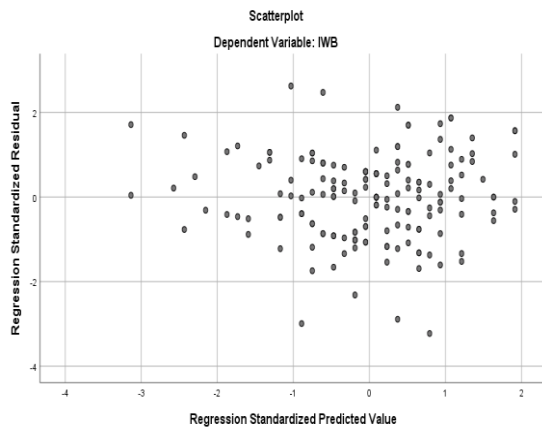
Appendix H Homoscedasticity Test



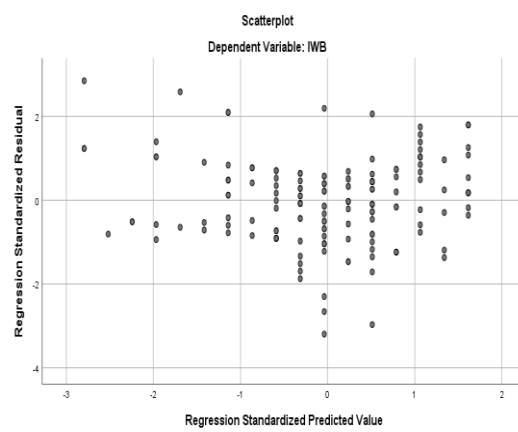
Variable : Selective Staffing



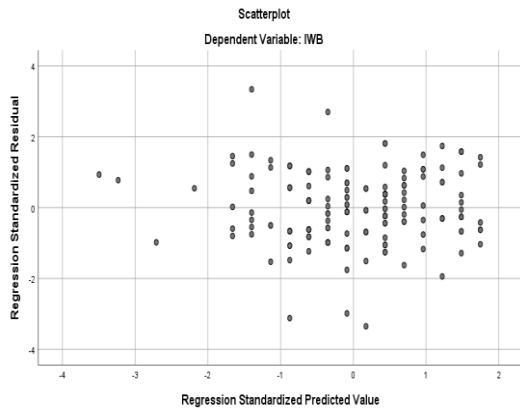
Variable: Extensive Training



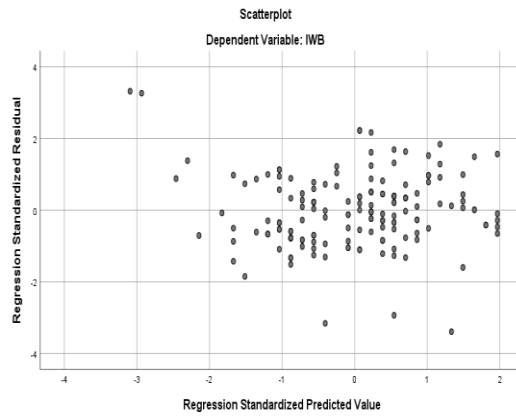
Variable: Mentoring



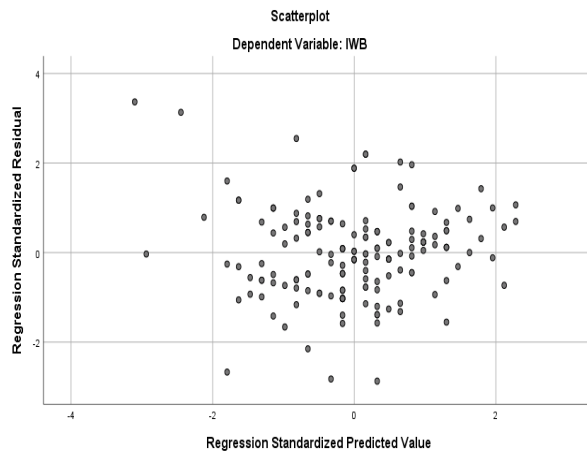
Variable: Job Security



Variable: Employee Participation



Variable: Performance Appraisal



Variable : Compensation

Appendix I Durbin Watson Analysis

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.566 ^a	.320	.286	.53465	1.846

a. Predictors: (Constant), WE, COM, JS, SS, MEN, PA, ET, EP

b. Dependent Variable: IWB

Appendix J Full Collinearity Output

		Coefficients^a					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients			Tolerance	VIF
Model		B	Std. Error	Beta	t	Sig.		
1	(Constant)	.508	.022		23.363	.000		
	Compensation	.028	.034	.101	.849	.397	.421	2.377
	Employee Participation	.049	.040	.175	1.216	.226	.288	3.472
	Extensive Training_	-.009	.036	-.031	-.241	.810	.355	2.819
	Innovative Work Behaviour	-.009	.026	-.031	-.329	.742	.680	1.472
	Job Security	-.035	.029	-.124	-1.211	.228	.574	1.741
	Mentoring	.035	.035	.126	1.009	.315	.381	2.621
	Performance Appraisal	-.017	.036	-.059	-.458	.647	.358	2.797
	Selective Staffing	.003	.035	.010	.085	.933	.390	2.561
	Work Engagement	-.061	.033	-.217	-1.858	.065	.437	2.286

a. Dependent Variable: RANDOM

Appendix K Harman Single-factor Test

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	29.122	35.953	35.953	29.122	35.953	35.953
2	5.449	6.727	42.680			
3	4.197	5.182	47.862			
4	3.221	3.976	51.838			
5	2.757	3.404	55.242			
6	2.432	3.003	58.245			
7	2.142	2.644	60.889			
8	1.956	2.415	63.303			
9	1.613	1.992	65.295			
10	1.545	1.908	67.203			
11	1.431	1.767	68.970			
12	1.268	1.566	70.535			
13	1.195	1.475	72.010			
14	1.139	1.406	73.416			
15	1.079	1.332	74.748			
16	1.007	1.244	75.992			
17	.973	1.201	77.193			
18	.885	1.093	78.286			
19	.836	1.032	79.318			
20	.822	1.015	80.333			
21	.764	.943	81.275			
22	.724	.893	82.169			
23	.663	.819	82.988			
24	.648	.800	83.788			
25	.643	.794	84.582			
26	.608	.751	85.333			
27	.578	.714	86.046			
28	.544	.672	86.719			

29	.515	.636	87.355			
30	.507	.626	87.980			
31	.477	.589	88.569			
32	.460	.568	89.137			
33	.419	.517	89.654			
34	.415	.512	90.166			
35	.385	.475	90.642			
36	.373	.460	91.102			
37	.365	.451	91.552			
38	.345	.426	91.979			
39	.336	.415	92.393			
40	.316	.390	92.783			
41	.314	.388	93.171			
42	.305	.376	93.547			
43	.300	.371	93.918			
44	.277	.342	94.260			
45	.275	.340	94.600			
46	.250	.309	94.909			
47	.242	.299	95.209			
48	.226	.279	95.487			
49	.224	.277	95.764			
50	.219	.271	96.035			
51	.212	.261	96.296			
52	.196	.242	96.539			
53	.188	.232	96.771			
54	.174	.215	96.986			
55	.165	.204	97.189			
56	.163	.201	97.390			
57	.152	.188	97.578			
58	.147	.181	97.759			
59	.141	.175	97.934			
60	.137	.170	98.103			

61	.131	.161	98.265			
62	.116	.143	98.408			
63	.111	.137	98.545			
64	.108	.133	98.678			
65	.104	.129	98.807			
66	.097	.119	98.926			
67	.093	.115	99.040			
68	.089	.110	99.151			
69	.083	.103	99.254			
70	.080	.099	99.353			
71	.072	.089	99.442			
72	.070	.086	99.528			
73	.058	.072	99.599			
74	.052	.064	99.663			
75	.050	.062	99.726			
76	.045	.056	99.782			
77	.043	.053	99.834			
78	.037	.046	99.880			
79	.035	.043	99.924			
80	.034	.042	99.966			
81	.028	.034	100.000			

Extraction Method: Principal Component Analysis.

Appendix L Discriminant Validity (Cross Loading)

Items	Com	EP	ET	IWB	JS	MEN	PA	SS	WE
COM_1	0.636	0.317	0.287	0.070	0.278	0.179	0.370	0.171	0.197
COM_2	0.666	0.288	0.333	0.127	0.423	0.236	0.378	0.204	0.275
COM_3	0.769	0.501	0.450	0.290	0.364	0.282	0.561	0.332	0.373
COM_4	0.667	0.361	0.286	0.123	0.278	0.340	0.417	0.257	0.224
COM_5	0.790	0.428	0.502	0.258	0.420	0.400	0.497	0.392	0.367
COM_6	0.817	0.581	0.529	0.333	0.504	0.501	0.538	0.456	0.469
COM_7	0.648	0.486	0.473	0.272	0.400	0.454	0.553	0.450	0.439
COM_9	0.742	0.503	0.550	0.349	0.459	0.519	0.505	0.475	0.418
EP_1	0.540	0.805	0.554	0.414	0.556	0.525	0.537	0.505	0.575
EP_2	0.415	0.789	0.561	0.396	0.399	0.549	0.529	0.538	0.451
EP_3	0.608	0.836	0.600	0.430	0.511	0.526	0.599	0.553	0.494
EP_4	0.556	0.886	0.544	0.530	0.460	0.590	0.606	0.526	0.606
EP_5	0.529	0.883	0.607	0.443	0.437	0.629	0.639	0.584	0.637
EP_6	0.498	0.793	0.550	0.345	0.440	0.595	0.608	0.586	0.576
ET_1	0.575	0.547	0.868	0.273	0.470	0.582	0.579	0.599	0.452
ET_2	0.546	0.596	0.846	0.280	0.454	0.589	0.580	0.602	0.479
ET_3	0.505	0.495	0.801	0.260	0.328	0.544	0.594	0.582	0.448
ET_4	0.434	0.576	0.809	0.310	0.438	0.564	0.439	0.496	0.469
ET_5	0.559	0.636	0.853	0.366	0.493	0.664	0.563	0.609	0.585
ET_6	0.513	0.563	0.863	0.332	0.417	0.615	0.456	0.526	0.489
ET_7	0.490	0.502	0.797	0.349	0.411	0.537	0.500	0.494	0.383
ET_8	0.482	0.535	0.725	0.372	0.414	0.529	0.452	0.493	0.407
IWB_1	0.237	0.430	0.333	0.805	0.183	0.248	0.201	0.260	0.402
IWB_2	0.285	0.469	0.332	0.797	0.272	0.378	0.307	0.322	0.446
IWB_3	0.218	0.400	0.291	0.762	0.200	0.253	0.256	0.291	0.301
IWB_4	0.316	0.440	0.346	0.819	0.212	0.320	0.366	0.316	0.392
IWB_5	0.373	0.442	0.315	0.757	0.170	0.302	0.341	0.272	0.429
IWB_6	0.266	0.369	0.242	0.821	0.164	0.210	0.229	0.191	0.351
IWB_7	0.322	0.419	0.348	0.853	0.185	0.267	0.269	0.273	0.358
IWB_8	0.269	0.396	0.303	0.843	0.151	0.215	0.219	0.247	0.347
IWB_9	0.285	0.385	0.319	0.847	0.150	0.208	0.206	0.257	0.315
JS_1	0.420	0.517	0.463	0.119	0.798	0.480	0.414	0.442	0.497
JS_2	0.453	0.357	0.408	0.212	0.820	0.322	0.345	0.307	0.287
JS_3	0.557	0.474	0.483	0.240	0.843	0.392	0.434	0.407	0.392
JS_4	0.383	0.431	0.328	0.188	0.770	0.363	0.345	0.403	0.405
MEN_1	0.450	0.550	0.531	0.242	0.319	0.644	0.530	0.525	0.370
MEN_2	0.491	0.621	0.643	0.228	0.477	0.807	0.532	0.581	0.483
MEN_3	0.451	0.609	0.628	0.296	0.376	0.776	0.555	0.570	0.462
MEN_4	0.390	0.304	0.366	0.232	0.336	0.537	0.347	0.322	0.341

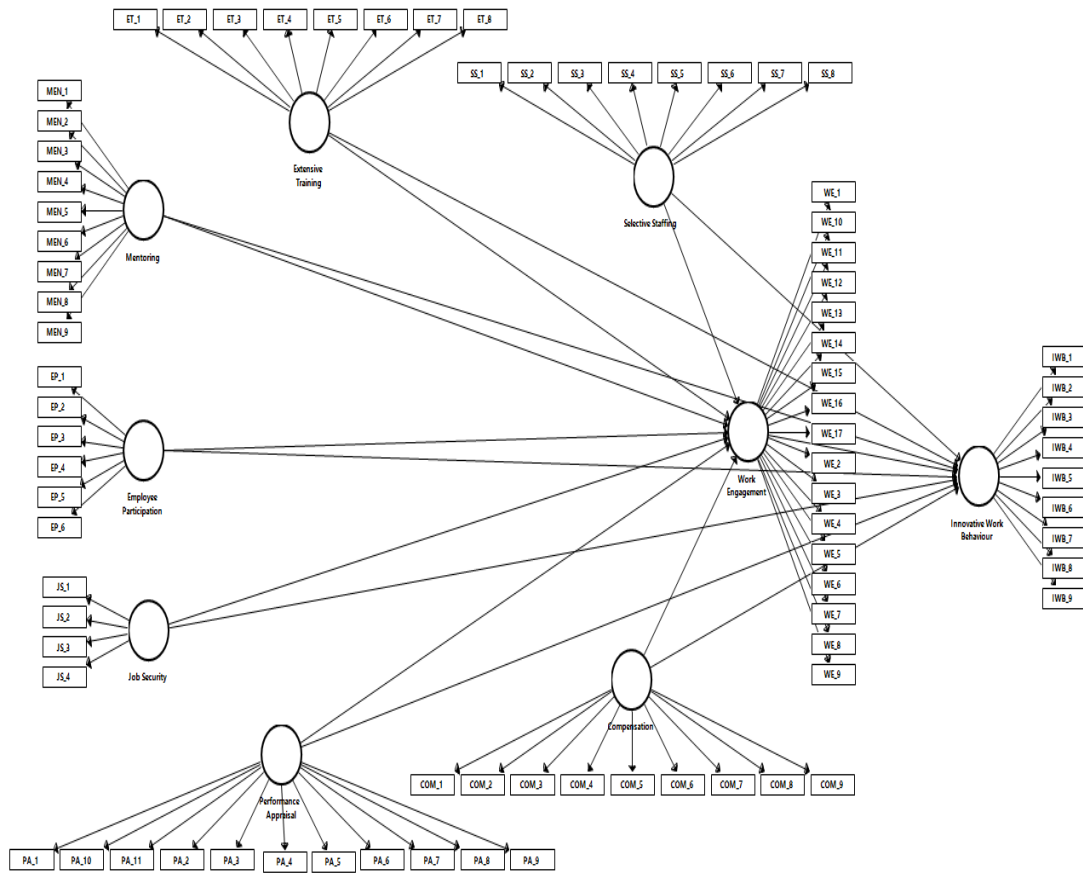
MEN_5	0.386	0.502	0.445	0.198	0.412	0.738	0.445	0.445	0.563
MEN_6	0.449	0.538	0.602	0.278	0.371	0.833	0.463	0.493	0.521
MEN_7	0.416	0.562	0.566	0.274	0.385	0.870	0.417	0.509	0.540
MEN_8	0.440	0.589	0.623	0.283	0.387	0.897	0.449	0.577	0.569
MEN_9	0.350	0.493	0.534	0.289	0.378	0.839	0.355	0.518	0.494
PA_1	0.461	0.499	0.435	0.240	0.331	0.345	0.775	0.450	0.377
PA_10	0.529	0.519	0.424	0.335	0.365	0.426	0.712	0.460	0.404
PA_11	0.414	0.310	0.431	0.138	0.247	0.301	0.551	0.295	0.196
PA_2	0.513	0.577	0.522	0.189	0.328	0.501	0.808	0.590	0.388
PA_3	0.562	0.588	0.513	0.172	0.384	0.494	0.838	0.608	0.519
PA_4	0.527	0.613	0.485	0.262	0.385	0.458	0.858	0.576	0.497
PA_5	0.515	0.483	0.460	0.224	0.354	0.377	0.769	0.488	0.434
PA_6	0.576	0.562	0.438	0.278	0.460	0.487	0.820	0.538	0.466
PA_7	0.567	0.534	0.549	0.277	0.475	0.501	0.699	0.533	0.403
PA_8	0.501	0.534	0.485	0.303	0.315	0.403	0.730	0.459	0.382
PA_9	0.531	0.603	0.583	0.295	0.342	0.517	0.774	0.497	0.466
SS_1	0.466	0.495	0.616	0.272	0.500	0.492	0.580	0.821	0.501
SS_2	0.342	0.542	0.430	0.240	0.420	0.522	0.472	0.802	0.528
SS_3	0.372	0.510	0.495	0.258	0.365	0.530	0.505	0.853	0.509
SS_4	0.376	0.485	0.467	0.248	0.336	0.561	0.531	0.823	0.472
SS_5	0.370	0.368	0.503	0.176	0.343	0.384	0.442	0.632	0.405
SS_6	0.455	0.427	0.555	0.172	0.319	0.428	0.503	0.644	0.312
SS_7	0.316	0.538	0.489	0.342	0.325	0.497	0.487	0.797	0.499
SS_8	0.500	0.625	0.602	0.296	0.395	0.552	0.567	0.736	0.523
WE_1	0.513	0.573	0.566	0.359	0.374	0.598	0.545	0.580	0.781
WE_10	0.443	0.588	0.534	0.389	0.372	0.544	0.506	0.527	0.837
WE_12	0.172	0.315	0.327	0.346	0.266	0.325	0.289	0.378	0.625
WE_15	0.324	0.460	0.437	0.505	0.394	0.349	0.338	0.477	0.678
WE_16	0.458	0.517	0.469	0.342	0.478	0.426	0.465	0.402	0.770
WE_17	0.219	0.344	0.277	0.354	0.241	0.242	0.253	0.361	0.580
WE_2	0.424	0.585	0.459	0.380	0.405	0.514	0.455	0.521	0.855
WE_3	0.442	0.521	0.414	0.302	0.376	0.416	0.413	0.395	0.792
WE_4	0.458	0.623	0.510	0.383	0.431	0.630	0.489	0.570	0.864
WE_5	0.449	0.625	0.497	0.357	0.448	0.607	0.472	0.525	0.907
WE_6	0.285	0.357	0.333	0.227	0.247	0.441	0.390	0.452	0.603
WE_7	0.506	0.614	0.467	0.352	0.450	0.552	0.520	0.551	0.838
WE_8	0.404	0.459	0.325	0.304	0.407	0.467	0.372	0.425	0.741
WE_9	0.311	0.524	0.427	0.347	0.436	0.514	0.364	0.438	0.810

Appendix M Descriptive Analysis For Each Indicator

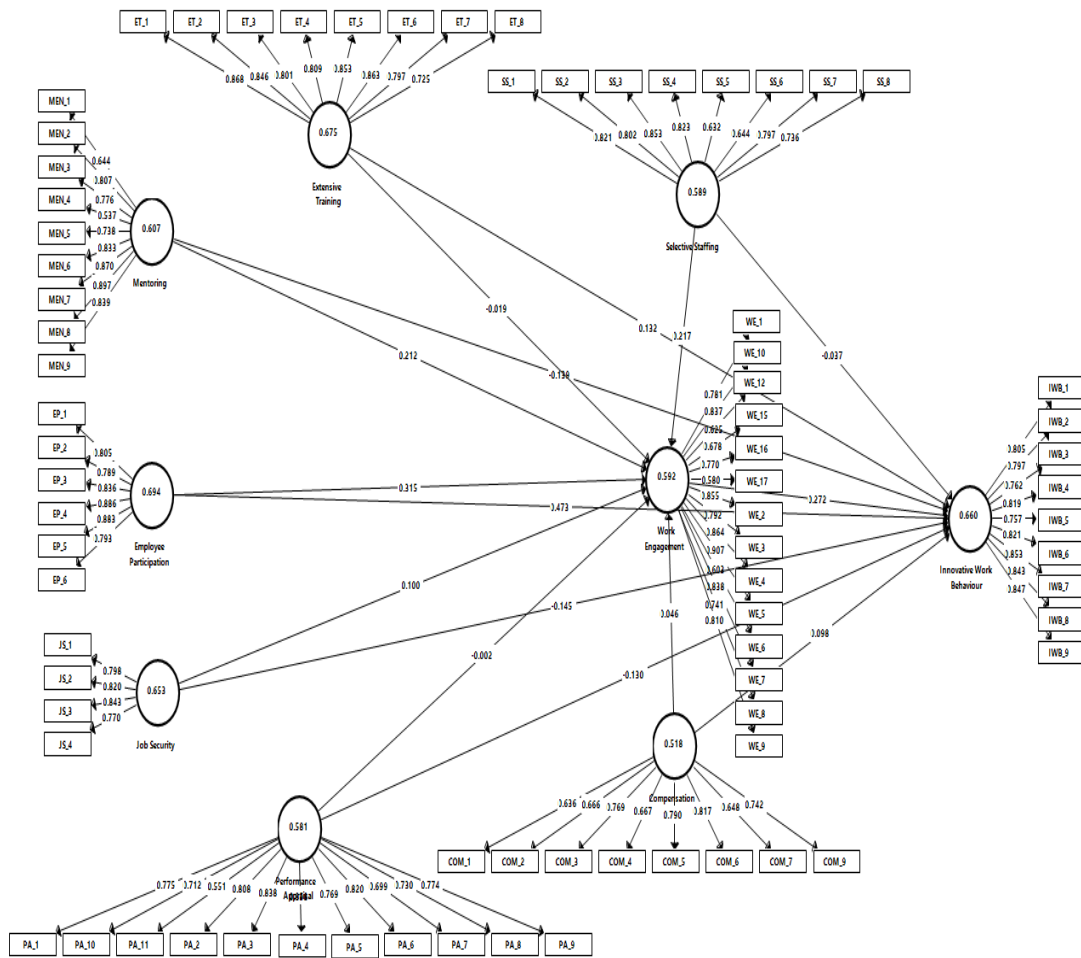
Constructs	Indicator	N	Minimum	Maximum	Mean	Std. Deviation
Selective Staffing	SS_1	170	1.00	5.00	3.7529	0.84833
	SS_2	170	1.00	5.00	4.0059	0.89375
	SS_3	170	1.00	5.00	3.9412	0.94653
	SS_4	170	1.00	5.00	3.7765	0.92149
	SS_5	170	1.00	5.00	4.0294	0.85952
	SS_6	170	1.00	5.00	3.2235	1.04770
	SS_7	170	1.00	5.00	3.7588	0.86726
	SS_8	170	1.00	5.00	3.8647	0.86308
Mean = 3.7941						
Extensive Training	ET_1	170	1.00	5.00	3.6118	1.02159
	ET_2	170	1.00	5.00	3.4824	0.94977
	ET_3	170	1.00	5.00	3.5176	0.96828
	ET_4	170	1.00	5.00	3.8000	0.93328
	ET_5	170	1.00	5.00	3.4059	1.02338
	ET_6	170	1.00	5.00	3.4647	0.97994
	ET_7	170	1.00	5.00	3.4706	1.00987
	ET_8	170	1.00	5.00	3.5353	0.98596
Mean = 3.536						
Mentoring	MEN_1	170	1.00	5.00	3.4765	0.98030
	MEN_2	170	1.00	5.00	3.6059	1.02222
	MEN_3	170	1.00	5.00	3.4412	1.06563
	MEN_4	170	1.00	5.00	2.8118	1.17160
	MEN_5	170	1.00	5.00	3.3471	1.02202
	MEN_6	170	1.00	5.00	3.3824	1.02671
	MEN_7	170	1.00	5.00	3.7353	1.02365
	MEN_8	170	1.00	5.00	3.6529	1.01621
	MEN_9	170	1.00	5.00	3.8176	1.01861
Mean = 3.475						
Job Security	JS_1	170	1.00	5.00	3.7176	1.04470
	JS_2	170	1.00	5.00	3.4824	1.14728
	JS_3	170	1.00	5.00	3.5059	1.10001
	JS_4	170	1.00	5.00	3.4412	1.18149
Mean = 3.537						
Employee Participation	EP_1	170	1.00	5.00	3.4765	0.97424
	EP_2	170	1.00	5.00	3.8882	0.83870
	EP_3	170	1.00	5.00	3.6765	0.94589
	EP_4	170	1.00	5.00	3.4824	0.99242
	EP_5	170	1.00	5.00	3.6294	0.96585
	EP_6	170	1.00	5.00	3.8059	0.83770
Mean = 3.660						
Performance Appraisal	PA_1	170	1.00	5.00	3.7118	0.96346
	PA_2	170	1.00	5.00	3.6941	0.96106
	PA_3	170	1.00	5.00	3.7647	0.85861
	PA_4	170	1.00	5.00	3.7000	0.91568
	PA_5	170	1.00	5.00	3.5588	0.93553
	PA_6	170	1.00	5.00	3.5941	0.91985
	PA_7	170	1.00	5.00	3.1471	1.08055
Mean = 3.564						

	PA_8	170	1.00	5.00	3.3000	0.97210
	PA_9	170	1.00	5.00	3.7353	0.83236
	PA_10	170	1.00	5.00	3.4353	1.04849
	PA_11	170	1.00	5.00	3.5588	0.97880
Compensation	COM_1	170	1.00	5.00	2.9647	0.99641
	COM_2	170	1.00	5.00	3.1941	1.13209
	COM_3	170	1.00	5.00	3.2941	1.02424
	COM_4	170	1.00	5.00	2.9118	0.93479
Mean = 3.101	COM_5	170	1.00	5.00	3.0882	0.97809
	COM_6	170	1.00	5.00	3.2882	1.03454
	COM_7	170	1.00	5.00	3.5588	1.00858
	COM_8	170	1.00	5.00	2.9000	1.04711
	COM_9	170	1.00	5.00	2.7059	1.09678
Work Engagement	WE_1	170	1.00	5.00	3.6706	1.02499
	WE_2	170	1.00	5.00	3.8235	0.96294
	WE_3	170	1.00	5.00	3.8941	0.93611
	WE_4	170	1.00	5.00	3.6706	0.97165
	WE_5	170	1.00	5.00	3.8529	0.93998
	WE_6	170	1.00	5.00	3.3882	1.00406
Mean = 3.669	WE_7	170	1.00	5.00	3.7059	0.92722
	WE_8	170	1.00	5.00	3.3824	0.97346
	WE_9	170	1.00	5.00	3.8882	0.89996
	WE_10	170	1.00	5.00	3.9882	0.89699
	WE_11	170	1.00	5.00	3.1529	1.06594
	WE_12	170	1.00	5.00	3.6353	1.05860
	WE_13	170	1.00	5.00	3.9529	0.92187
	WE_14	170	1.00	5.00	3.1529	1.06038
	WE_15	170	1.00	5.00	3.8235	0.93804
	WE_16	170	1.00	5.00	3.5882	1.00642
	WE_17	170	1.00	5.00	3.7941	0.90297
Innovative Work Behaviour	IWB_1	170	1.00	5.00	3.7118	0.72519
	IWB_2	170	2.00	5.00	3.7588	0.68419
	IWB_3	170	1.00	5.00	3.6882	0.72355
	IWB_4	170	1.00	5.00	3.7294	0.79775
	IWB_5	170	1.00	5.00	3.6412	0.83245
Mean = 3.652	IWB_6	170	1.00	5.00	3.5235	0.85106
	IWB_7	170	1.00	5.00	3.5647	0.79118
	IWB_8	170	1.00	5.00	3.6235	0.76887
	IWB_9	170	1.00	5.00	3.6235	0.83527

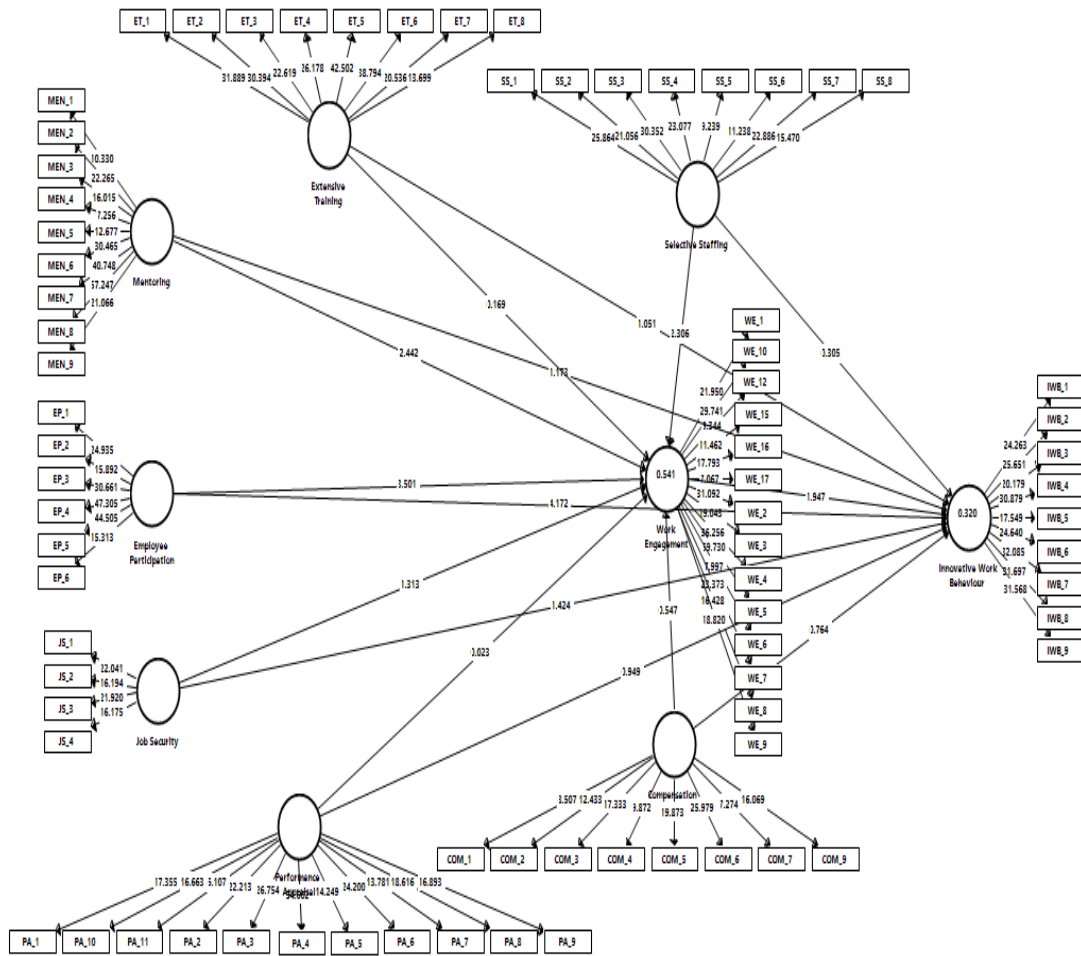
Appendix N Research Model



Appendix O Measurement Model Output



Appendix P Structural Model Output



LIST OF PUBLICATIONS

Indexed Journal

1. **Husin, N. H.**, Abu Mansor, N. N., Yus Kelana, B. W., and Sondoh Jr., S. L. (2021). Employee Participation and Innovative Work Behaviour: The Mediation Effect of Work Engagement. *International Journal of Academic Research in Business and Social Sciences*, 11(7), 1043–1055. <http://dx.doi.org/10.6007/IJARBSS/v11-i7/10571>. **(Indexed by ERA)**.
2. **Husin, N. H.**, Abu Mansor, N. N., Yus Kelana, B. W. (2021). The Influence of High-Performance Work Systems (HPWS) On Innovative Work Behaviour Through Work Engagement. *Journal of Contemporary Issues in Business and Government Vol. 27, (2)*, pp. 5408-5424. doi: 10.47750/cibg.2021.27.02.548. **(Indexed by WOS)**.
3. **Husin, N. H.**, Abu Mansor, N. N., Yus Kelana, B. W. (2021). Critical Success Factors of High-Performance Work Systems (HPWS) Practices: Findings from Malaysian SMEs. *Journal of Contemporary Issues in Business and Government Vol. 27, (2)*, pp. 5396-5407. doi: 10.47750/cibg.2021.27.02.547 **(Indexed by WOS)**.