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**THE INFLUENCE OF PERSONALITY, PERSON-ENVIRONMENT FIT,
AND WORK ENGAGEMENT ON ADAPTIVE PERFORMANCE
AMONG NURSES IN MALAYSIAN PUBLIC HOSPITALS**

ATHIFAH NAJWANI BINTI SHAHIDAN



**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
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AMONG NURSES IN MALAYSIAN PUBLIC HOSPITALS**



ATHIFAH NAJWANI BINTI SHAHIDAN

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Universiti Utara Malaysia

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Kolej Perniagaan
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Universiti Utara Malaysia

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Tandatangan
(Signature)

Pemeriksa Luar
(External Examiner)

: **Assoc. Prof. Dr. Siti Aisyah Abdul Rahman Panatik
(UTM)**

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: **Dr. Bidayatul Akmal Mustafa Kamil**

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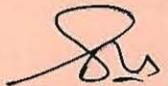
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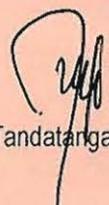
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Nama Penyelia/Penyelia-penyelia
(Name of Supervisor/Supervisors) : Dr. Siti Norasyikin Abdul Hamid


Tandatangan

Assoc. Prof. Dr. Fais Ahmad


Tandatangan



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Abstract

Currently, performance and reputation of public hospitals' employees specifically nurses has become a central issue for the developing countries including Malaysia. However, to maintain employee's performance in today's work environment is so challenging due to many changes occur within the organization. Critically, globalization became a major contributor to organizational change especially in healthcare sector. Hence, adaptive performance has become an important issue for the nurses especially in critical unit like Emergency Department (ED) as they are facing with uncertainty and serious working condition. Thus, nurse's ability to cope and adapt fast with the changes in working environment can increase their performance as well as reduce patient's complaint. Therefore, this study intends to recognize factors contribute to enhance nurses' adaptive performance. Specifically, this study examines the relationship between personality-traits (PT), person environment (PE) fit, work engagement (WE), and adaptive performance (AP). The study will also determine the role of WE as a plausible mediating variable between PT, PE fit and AP. PT in this study was measure using Big Five Personality Traits which are agreeableness (AG), conscientiousness (CC), emotional stability (ES), extraversion (EX) and openness to experience (OE). Meanwhile, PE fit, in this study was measured using three dimensions; person-group (PG) fit, person-job (PJ) fit, and person-supervisor (PS) fit. Besides, a mediator of WE used vigor, dedication and absorption while AP measured as unidimensional in this study. Total 638 data set of questionnaires were distributed among nurses at ED in twelve Malaysia public hospitals and 430 set was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The statistical results of this study indicate that three dimensions of PT (AG, CC, and OE) and two dimensions of PE fit (PG fit and PJ fit) were found to be related to AP. Meanwhile, the study revealed that CC, ES, and EX (for PT) and PJ fit and PS fit (for PE fit) were related to WE. The result supports for positive significant relationship between WE and AP. The finding also found that WE mediates the relationship between three dimensions of PT (CC, ES, and EX) and two dimensions of PE fit (PJ fit and PS fit) to AP. Based on the findings, public hospitals' administrator should give more focus on nurse' traits and individual fit to boost their work engagement as well as enhancing their adaptive performance. Finally, the theoretical and practical contributions as well as limitations and recommendations for future research are also discussed in this thesis.

Keywords: adaptive performance, personality traits, person-environment fit, work engagement, nurses.

Abstrak

Pada masa ini, prestasi dan reputasi kakitangan hospital awam khususnya jururawat telah menjadi isu utama bagi negara-negara membangun termasuk Malaysia. Walau bagaimanapun, untuk mengekalkan prestasi pekerja di persekitaran tempat kerja hari ini sangat mencabar kerana banyak perubahan telah berlaku di dalam organisasi. Secara kritis, isu globalisasi menjadi penyumbang utama kepada perubahan organisasi terutamanya dalam sektor kesihatan. Oleh itu, prestasi penyesuaian telah menjadi isu penting bagi jururawat terutamanya dalam unit kritikal seperti Jabatan Kecemasan (ED) kerana mereka menghadapi ketidakpastian dan keadaan yang serius. Oleh itu, keupayaan jururawat untuk mengatasi dan menyesuaikan diri dengan cepat terhadap perubahan dalam persekitaran kerja boleh meningkatkan prestasi mereka serta mengurangkan aduan pesakit. Oleh itu, kajian ini bertujuan untuk mengenal pasti faktor yang menyumbang kepada peningkatan prestasi penyesuaian jururawat. Secara khususnya, kajian ini meneliti hubungan antara ciri personaliti (PT), keserasian individu dengan persekitaran (PE), keterlibatan kerja (WE), dan prestasi penyesuaian (AP). Kajian ini juga akan mengkaji peranan WE sebagai pemboleh ubah pengantara yang wajar antara PT, PE dan AP. PT dalam kajian ini diukur menggunakan *Big Five Personality Traits* iaitu kesetujuan (AG), ketelitian (CC), kestabilan emosi (ES), *extraversion* (EX) dan keterbukaan kepada pengalaman (OE). Sementara itu, keserasian PE dalam kajian ini diukur menggunakan tiga dimensi; keserasian individu dengan kumpulan (PG), keserasian individu dengan kerja (PJ), dan keserasian individu dengan penyelia (PS). Selain itu, pemboleh ubah perantara WE menggunakan kecergasan, dedikasi dan keasyikan bekerja, manakala AP diukur sebagai unidimensi dalam kajian ini. 638 set data soal kaji selidik telah diedarkan di kalangan jururawat di ED di dua belas hospital awam Malaysia dan 430 set telah dianalisa menggunakan *Partial Least Squares Structural Equation Modeling* (PLS-SEM). Keputusan statistik kajian ini mendapati bahawa tiga dimensi PT (AG, CC, dan OE) dan dua dimensi keserasian PE (PG dan PJ) berkait dengan AP. Sementara itu, kajian menunjukkan bahawa CC, ES, dan EX (untuk PT) dan keserasian PJ dan PS (untuk keserasian PE) berkait dengan WE. Keputusan statistik menyokong hubungan positif yang signifikan antara WE dan AP. Penemuan ini juga mendapati bahawa WE mengantara tiga dimensi PT (CC, ES, dan EX) dan dua dimensi keserasian PE (keserasian PJ dan PS) dengan AP. Berdasarkan keputusan, pentadbir hospital awam perlu memberikan lebih tumpuan kepada personaliti jururawat dan keserasian mereka untuk meningkatkan keterlibatan kerja serta meningkatkan prestasi penyesuaian mereka. Akhirnya, sumbangan teoretikal dan praktikal serta batasan dan cadangan untuk penyelidikan di masa hadapan juga dibincangkan dalam tesis ini.

Kata kunci: prestasi penyesuaian, ciri-ciri keperibadian, keserasian individu dengan persekitaran, keterlibatan kerja, jururawat.

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List of Abbreviations

AG	Agreeableness
AHA	American Hospital Association
ANA	Nurses Association
AP	Adaptive performance
AVE	Average Variance Extracted
CC	Conscientiousness
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
DA	Demands-Abilities
EFA	Exploratory Factor Analysis
ES	Emotional Stability
EX	Extraversion
HDI	Human Development Index
HEI	Higher Education Institution
HTMT	Heterotrait-Monotrait
ICN	The International Council of Nurses
KMO	Kaiser-Meyer-Olkin
KSAs	Knowledge, Skills, And Abilities
LMX	Leader-Members Exchange
MMA	Malaysian Medical Association
MOH	Ministry of Health
NS	Needs-Supplies
OE	Openness to experience
PCB	Public Complaint Bureau
PE	Person-Environment
PG	Person-group
PJ	Person-job
PO	Person-organization

PS	Person-supervisor
PT	Personality Traits
SEM	Structural Equation Modeling
SET	Social Exchange Theory
SISPAA	Sistem Pengurusan Aduan Awam
SOP	Standard of Procedure
SPSS	Statistical Package Social Science
SRMR	Root Mean Square Residual
SRMR	Standardized Root Mean Residual
TAT	Trait Activation Theory
TLI	Tucker-Lewis Index
TOP	Theory of Performance
UNSD	United Nation Statistic Department
UWES	Utrecht Work Engagement Scale
VE	Variance Extracted
VIF	Variance Inflation Factor
WE	Work engagement
WHO	World Health Organization
χ^2/df	Chi-Square/Degree of Freedom

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Interestingly, the performance and reputation of public hospitals' employees have become a central issue for developing countries (Negussie & Berehe, 2016). This is because the stability of a country's health level is needed to lead developing countries to be at a similar position as developed countries by 2020, particularly Malaysia. In addition, according to the United Nation Statistic Department (UNSD), an important criterion to any country being listed as a developed country is the measurement of its Human Development Index (HDI), which is life expectancy measuring the people's health and wellbeing. Based on the Human Development Data (1990-2015), Malaysia's HDI was ranked at 59th place in 2015 and is still left behind compared to other developed countries. Thus, in achieving this mission by 2020, the Malaysian government has to put serious attention on their health care sector particularly in the context of improving the service performance of healthcare staffs.

In the attempt of successfully achieving the mission, the government has allocated a huge budget for the healthcare sector compared to the other sectors (11th Malaysia Plan). It has been proved that the government's budget for Malaysia's Ministry of Health (MOH) has shown an increase over the years. For example, in 2017 MoH was given RM 25 billion as compared to RM 23.31 billion that was given in 2015 (Health Fact MoH, 2017). These figures show significant support given from the

government to the health care sector in its attempt to improvise their standard of service delivery. However, the health care sector still cannot avoid receiving high complaints regarding staff's performance as compared to other sectors (Public Complaint Bureau, 2017). Therefore, the Malaysia health care sector is an important sector to be highlighted in maintaining performance and quality of service, with special attention for Malaysian nurses in the public hospitals.

However, maintaining employees' performance in the current workplace setting is very challenging due to issue corresponding to globalization and modernization. Whereby, organizations are facing dynamic and constant change of working environments. Arguably, living in the era of modernization is considerably challenging for organizations as they have to accept and adapt to the change simultaneously (Josefy, Kuban, Ireland, & Hitt, 2015). Therefore, it is essential for workers in the current era to adapt with these changes, although, the demand for adaptive workers are required on continuous basis (Hair, Wolfinbarger, Money, Samouel & Page, 2015) as the ability and high tolerance of adaptive employees to deal with uncertainty and dynamic organization's environment (O'Connell, McNeely, & Hall, 2008). Realizing the importance of adaptive workers in the current workplace, academicians and practitioners are giving considerable attention to understand and improve adaptability in the work environment (Pulakos et al., 2000).

Apparently, employees working in the health care sector also cannot avoid today's challenging working situations, specifically for the Emergency Department's (ED) employees. This is because they are the first unit to be referred to in any critical situation involving healthcare such as trauma and accident cases. Thus, they must

always be prepared to handle any uncertainties or new situations involving the society at any time needed. Amongst the challenges are; unexplored diseases (e.g Zika Virus, Ebola and Influenza), changes in society's lifestyle towards beauty conscious (e.g the dumping of illegal beauty and health supplement may harm consumer's life), and changes in eating habit (e.g preference to fast food contributes to obesity and food poisoning). Therefore, these changes have further resulted in additional responsibilities for the ED's employees to deal with it.

Moreover, the changes may further create more challenges in their work environment due to the differences between their normal practices in comparison to their routine work. For instance, technology advancement among employees is growing rapidly and persist to modify the nature of work formerly (Forman, King, & Lyttinen, 2014), which adds to another advancement and uncertain workplace condition to the employees. Hence, urging them to learn the different and new methods relatively to accomplish their tasks. Similarly, technological advancement can create a new challenge to all public hospitals employees such as learning how to operate advanced medical equipment and machines and dealing with new medication systems. Thus, it is important for all public hospital's employees especially the ED's staff to prepare themselves wisely to further handle these challenges in order to maintain their overall work performance.

On the other hand, ED's staff not only have to deal with several changes in their workplace but also with the high number of patients visiting at one time. This is due to the fact that public hospitals are 24 hours' operating centers where patients are treated every time they get admission and inexpensive charges incurred to patients as

compared to private hospitals. Thus, with the high number of patients getting admitted in the hospitals, ultimately creates a lot of work load for the employees especially in managing all patients with inadequate resources; either personnel, accommodation or medical equipment (Mac Phee et al., 2017; Atefi et al., 2014). In regards to this, they cannot neglect from being criticized by the patients due to mistreatment cases and performance complaints (Weigl et al, 2016). Hence, the ability of ED's staff to handle chaos, work creatively and find an alternative solution with limited resources is becoming highly important to well maintain their performance.

Critically, it has been experienced that public hospitals' employees are not well prepared and their performance lapse to cover all the patients' need and further leads to mistreatment (Gaytandjieva, Groot & Pavlova, 2013). Thus, this may have resulted in complaints received from dissatisfying patients towards the staff's performance. Similarly, a massive number of reports have been seen in the media about the worst services given by the nurses working in public hospitals (Ministry of Health, 2017). On the other hand, the inability of public hospital's employees to perform under difficult and uncertain work environment may result in their low performance as reported by mass media.

Conclusively, as the performance of employees is the key indicator of customer's evaluation towards their services as well as an overall evaluation towards the organization (Menguc, Auh, Katsikeas & Jung, 2016), therefore it is pertinent to conduct a study pertaining to nurses' adaptive performance in Malaysias' public hospitals, especially in the ED sector. Apparently, nurses' Personality Traits and their

Person-Environment (PE) fit are two crucial factors to be studied to ensure they can perform well in a critical working environment. With the presence of work engagement as a mediator, this study may also help to boost nurses' adaptive performance as well as to reduce the number of patients' complaining about their performance.

1.2 Problem Statement

Apparently, as stated by the fourth edition of Health at a Glance Asia/Pacific (2016), the performance of the public workforce in today's challenging environment is one of the important indicators to achieve health care service's quality standard (World Health Organization, 2017). However, lack of improvement has been seen in the public hospital's employees' performance due to the inability of employees to deal with emergency situations (Barnard, Woods, Noskin, Kricke, & Cella, 2016) specifically nurses. Supported by the latest finding by Nastasa, & Farcas (2015), doctors and nurses who fail to adapt fast in the hospitals will have an affect towards their adaptive performance. Additionally, lack of adaptive performance has been observed among nurses who tackle emergency situations due to hardly any change and adaptation to uncertainty and environmental changes (Jundt et al, 2015) specifically in the Malaysian context.

Consistent with the above discussion, as written in a nursing report on the reality of Malaysian nurses in Malaysia public hospitals, "*Changes are taking place in nursing practice. However, nurses are hardly planning for such change*" (Nursing Education in Malaysia, 2010, p.25). The report clearly shows that failure to cope with the

changes and act fast in uncertainty at the workplace is an indicator of weak adaptive performance, which may further have resulted in delay in the time of work process (Gaytandjieva, et. al, 2013). Plausibly, according to Dr. Ravindran Naidu, president of Malaysian Medical Association (MMA), a massive media report has revealed the dissatisfaction among patients towards service delivery provided by Malaysia public hospitals, specifically regarding waiting time issue (News Strait Times, 2017).

Apparently, according to a public survey, the statistic revealed that 40% of respondents feeling dissatisfied about public hospital's service were due to prolonged waits, which is approximately about 4 hours (Malay Mail Online Survey, 2017). Meanwhile, based on the Standard of Procedure (SOP) set by MOH, the promising waiting time is a maximum of 90 minutes per person to get treatment. Additionally, the research has found a positive relationship between waiting time and patient's evaluation towards public hospitals services (Manaf, Hazilah, & Phang, 2009) as they noticed the inability of public hospital's employees to deliver prompt action in a critical situation. Thus, this issue becomes a reason for the increasing number of complaints among dissatisfied patients.

Consistently, an average number of 7000 targeted to MOH was based on poor services or communication skills among employees specifically nurses, long waiting time for treatment and insufficient equipment in Malaysia public hospitals (News Strait Times, 2017). As a consequent, according to former Deputy Health Minister, Datuk Seri Dr. Hilmi Yahaya, about RM20 million budget has been allocated by the government in 2017 to overcome the performance issue. However, nurses' performance remains questionable, especially in public hospitals. Moreover, as

stated in the report published by Malaysia Public Complaint Bureau (PCB), the highest complaints received from the clients were based on the dissatisfaction of the public sector's staff performance, especially the healthcare sector which is at the 2nd ranking (PCB,2017).

With this regard, SISPAA (Sistem Pengurusan Aduan Awam) also known as Public Complaint Management System; a new system created to collect public complaints revealed that MOH ranked in the top 3, receiving the highest number of complaints among Malaysia's ministries from the last years successively. Surprisingly, from 2013 to 2017, the Ministry of Health was ranked at the second place out of 25 ministries in Malaysia consecutively. Similarly, the State Health Department was also listed among the top 10 receiving The Highest Complaint among Malaysia Government Agencies. Table 1.1 shows the latest report by PCB for the period of January to 31 October 2017.

Table 1.1
Top 10 Highest Complaints of Federal Government Agencies

Bil	Agency	Received
1.	Royal Malaysia Police	274
2.	State Health Department	222
3.	State Education Department	200

Source: Printed System SISPAA from 10 November 2017

As stated in the table above, it is clearly stated that the State Health Department is facing serious issues regarding customer complaints since it has been ranked 2nd

among the 10 highest complaints of federal government agencies. Below Table 1.2 shows the list of complaints based on the category.

Table 1.2
Categories of Complaints Received from 1 January – 31 October 2017

Bil.	Category	Total					
		Minist %	State	%	Total	%	
1.	Unsatisfactory performance	636	22.9	310	16.3	946	20.2
2.	Failure to follow procedure	453	16.3	362	19.0	815	17.4
3.	Failure to satisfy customers'	445	16.0	307	16.1	752	16.1
	Total	2,777	100	1,906	100	4,683	100

Source: Printed System SISPAAs on 10 November 2017

Table 1.2 shows that the category of complaints received by PCB regarding the public service sector in Malaysia. The highest number of complaints was about bad staff performance. Therefore, it can be concluded that most of the complaints received were due to the employee's performance. Interestingly, nurses are the clinical groups that suffer from customer complaints regarding their inappropriate performance (Traynor et al., 2013), specifically nurses in ED. Perhaps, nurses play a pivotal boundary-spanning role (Ashill, Carruthers & Krisjanous 2005) as they have direct contact with patients and link to all hospital's environment. Thus, it shows how important their role and responsibility are, which can significantly drag a patient's evaluation toward service delivery in hospitals (Flinkman et al, 2008).

Critically, from year to year, ED of any public hospitals has reached to highest number of patient's admission each day as compared to other departments (Country Health Plan, 2011-2015). Therefore, with limited resources and a high number of patients to ED each day, it will further have caused to mistreatment (Ibrahim, Liong,

Bakar, Ahmad, & Najmuddin, 2017). Mistreatment cases will bring about a bad impact, not only to employees but also to the hospital's reputation as a whole. Therefore, there is a need to understand the relationship between adaptive performance of hospital's employees, particularly among the nurses and how they deal creatively under limited resources in emergency situations. This is important because even after many initiatives applied, still, the number of complaints by patients are very high for the emergency department (Ibrahim et al, 2017).

Even though the health care sector is one of the fastest growing industry among other service sectors (US Bureau of Labor Statistic, 2017), however, many issues bring a great challenge on sustaining the strength of Malaysia healthcare system to give the best services to their patients as stated in the main objective of MOH (Malaysia Country Health Plan 2011-2015). Concerning about the challenging job of today's workforce specifically nurses' in public hospitals, this study thus tries to propose a clear concept of individual adaptive performance that highlights an employee's capability to adapt with the rapidly changing environment and ability to deliver prompt action under limited resources and difficulty. Based on the previous study, individual differences, skills and knowledge, and the environment could be the factors that influence individual adaptive performance (William & Waldo, 2010).

In regards to nurses' job performance, individual differences, such as personality traits is relevant to be studied (Huang, Ryan, Zabel, Palmer, 2014), as it was one propitious variable which has been recommended by previous researchers (e.g. Huang et al, 2014; Judge et al., 2001; Jones, 2006). In addition, various individual personalities can be considered to measure individual differences (Dall, Houston, &

McNamara, 2004). Similarly, adaptive performance is a collection of personality qualities that depict people who remain healthy and continue to perform well under a range of stressful conditions (Bartone et al, 2008). Therefore, portrays similarity to the nurses' job in the emergency department which requires them to perform well even in critical situations.

Besides, several studies reveal personality as a significant factor that affects employees' job performance (Hersan & Thomas, 2005; Hertz and Donovan, 2000). It is also being argued that the Big Five personality traits might be useful in predicting effective work performance in many professions (Riggio & Taylor, 2000). However, despite several studies, the past literature has limited number of studies to explain the relationship between Big Five personality traits and adaptive performance among worker, as it is still a new facet of job performance (Bhatti, Battour, Ismail & Sundram, 2014), specifically among nurses' performance.

Even though there are limited studies to explain the relationship between personality and performance (Yeh et al, 2016; Geukes et al, 2017), however, the findings in past studies found mix finding results for each dimension of Big Five traits (Huang et al, 2014). In addition, despite several studies that were conducted in the marketing and psychology field (Poropat, 2009), only a few studies have conceptually explained the relationship between personality and nursing profession (Kennedy, Waters, & Curtis, 2014; Taj, & Soleymani, 2016). With regard to these, previous researchers still fail to address the adaptive performance problem in relation with nurse' personality traits, and this area of knowledge is still unexplored much in the past studies. Thus, there is a need to empirically examine the relationship between personality and AP

among nurses which will further help to contribute knowledge in the existing literature.

Other than personality, another factor that may contribute to enhancing AP among nurses is how an employee fit in with their working environment. This can be explained as the Person-Environment (PE) fit. Arguably, as suggested by William & Waldo (2010), knowledge, skill, ability (KSAs) and environment are other contributors to enhance AP. Meanwhile, KSAs are important criteria to measure PE fit. Obviously, a nurse's job requires individual's knowledge, skill, and ability (KSAs), to deal with the patients and also the emergency situations (environment). Therefore, a nurse must obey the Standard of Professional Nursing Practice which requires their KSA to perform their work (ANA, 2010).

Similarly, LePine, Colquitt, and Erez (2000) agreed that organizations in rapidly changing environments have three elements to enhance their employee's performance which is enhancing the knowledge, skills, and capabilities of their employees. Both findings by William & Waldo (2010) and LePine et al (2000) shed a light towards the important of KSA, especially KSA that is well matched with work environment on relationship with AP, particularly among professionals and skilled workers, such as nurses. Even though there are a lot of studies that has been conducted pertaining to PE fit and work outcome, however, there are limited studies examining the bivariate relations between PE fit and work outcomes (Abdul Hamid, 2013), especially on AP as it was considered a new facet of job performance. Thus, this situation left a knowledge gap in the existing literature to be filled especially in the nursing profession.

In addition, the concept of PE fit and to what extent each dimension contributes to the person-environment adaptation is less clear (Wahl et al., 2012). Without a clear understanding of the interactive relationship between employees and their environments, successful interventions that allow nurses to well perform in the workplace are still uncertain. The dimensions of the PE fit's variable contain the element of the work environment such as matching well with group, supervisors, and job requirement which shows the three important dimensions to be studied. In regards to nurses, Person-Job (PJ) fit is used due to the fact that nurses must fit with the job's demand while Person-Group (PG) fit is used because of the compulsory requirement that nurses' must fit with their group (ED). In addition, Person-Supervisor (PS) fit is used to study on nurses' compatibility with their supervisors which is matron or sister. Thus, these three fits are rational to be studied in the nurses' context in the ED of Malaysia public hospitals.

Even though personality and employees' KSAs may help to improve employee's performance in a difficult working place, enhancing employee's engagement level can also result in an increasing level of employee's performance (Anitha, 2014). This is because, previous studies have shown the significant relationship between work engagement and employee's performance (Bhuvanaiah & Raya, 2015). Arguably, the degree of work engagement is one of the motivational indicators which is positively associated with job performance (Dubbelt, Rispens, & Demerouti, 2016). Even though previous studies have found that the working environment is a stressor to employees, (Panchal et al, 2015; Lottrup et al, 2013) especially nurses in the ED, however, by having strong work engagement, they can perform any task given

wholeheartedly and go beyond their normal work's routine (Schaufeli & Bakker, 2004; May, Gilson, & Harter, 2004).

Similarly, previous studies have shown a positive outcome in terms of employee's performance with the presence of work engagement as a mediator (Salanova & Schaufeli, 2008). Recently, even though work engagement has been proved as an important mediator in the relationship between antecedents and employee outcomes, however, there is still limited knowledge revealing the process that mediates the relationship between these two constructs (Spiegelaere, Van Gyes, De Witte, Niesen, & Van Hootegem, 2014). Therefore, the current study is designed to fill this gap by assuming that work engagement may play a significant role as a mediator for personality traits and PE Fit to adaptive performance.

Moreover, previous studies (e.g. Abdul Hamid, 2013; Agarwal et al., 2012; Karatepe, 2013; Vincent-Höper et al., 2012; Sulea et al., 2012, 2011; Ng & Tay, 2010; Koyunco et al., 2006; Saks, 2006) found that work engagement can act as a reasonable mediator variable of another two constructs. Similarly, they found the support that works engagement significantly mediated the relationship between the antecedents and work outcomes. In addition, past literatures have also tried to examine the correlation between personality traits and adaptive performance among public hospital nurses (Naami et al., 2014), however, findings remain questionable and also lack of studies have seen to find the mediating effect of work engagement.

In addition, even though work engagement is considered as one of the significant intervening variables that may enhance the performance of employees (Macey et al.,

2009; Mone & London, 2010). However, the level of engagement in Malaysia remains unsatisfied (Aon's Trends Global Employee Engagement Report, 2017). The report revealed that Malaysia's employee engagement level become the lowest among other Asia countries. Surprisingly, very little research was conducted on the mediating effect of work engagement among various professions, especially nurses (Othman & Nasurdin, 2012; Keyko, 2014). Thus, creating a knowledge gap in understanding the mediating effect of work engagement in enhancing worker's performance in terms of AP, specifically in the nursing profession in public hospitals. Thus, this study attempted to fill the literature gap by including work engagement as a mediator between two different variables (personality with adaptive performance, and PE fit with adaptive performance) in one single study among nurses in the ED of Malaysia public hospitals.

Most importantly, the main contribution of this study is to apply the Theory of Performance (TOP) by Champbell 1993, which is the underpinning theory to support the current framework as enhancing worker's performance. Where together, other support theories of Trait Activation Theory (TAT) in explaining the relationship of personality traits and Social Exchange Theory (SET) and to explain the relationship of PE fit with work engagement and adaptive performance in a single study. Therefore, the current framework, by supporting these three theories could provide a clearer perspective on the factors that support adaptive performance.

Conclusively, to the best of the researcher's knowledge, no study has integrated the personality traits, PE fit, work engagement and adaptive performance in a single study with the combination of three theories as mentioned above. Therefore, the

current study's framework attempts to shed light on the employee's personality and their PE fit to improve nurses' adaptive performance at work, since there is a gap in the knowledge of existing literature pertaining to the nurse's adaptive performance in the context of Eastern countries, such as Malaysia.

1.3 Research Questions

Based on the problem statement, this research leads to seven research questions;

1. Is there any relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance among nurses in Malaysia public hospitals?
2. Is there any relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance among nurses in Malaysia public hospitals?
3. Is there any relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Work Engagement among nurses in Malaysia public hospitals?
4. Is there any relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Work Engagement among nurses in Malaysia public hospitals?

5. Is there any relationship between Work Engagement and Adaptive Performance among nurses in Malaysia public hospitals?
6. Does Work Engagement mediate the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance?
7. Does Work Engagement mediate the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance?

1.4 Research Objectives

This research aims to achieve the following objectives

1. To examine the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance among nurses in Malaysia public hospitals.
2. To investigate the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance among nurses in Malaysia public hospitals.
3. To determine the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability,

Extraversion and Openness to Experience) and Work Engagement among nurses in Malaysia public hospitals.

4. To examine the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Work Engagement among nurses in Malaysia public hospitals.
5. To investigate the relationship between Work Engagement and Adaptive Performance among nurses in Malaysia public hospitals.
6. To examine the mediating role of work engagement on the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance.
7. To determine the mediating role of Work Engagement on the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance.

1.5 Scope of Research

The study focuses on Malaysia public healthcare sector, which is public hospitals. Arguably, US Bureau of Labor Statistic (2017) stated that healthcare sector is one of the fastest growing industry among service sectors, which require more attention, specifically to improve the service performance among employees. Thus, this study

was solely focus on adaptive performance of nurses in Emergency Department (ED) of Malaysia public hospitals.

The data collection is limited to twelves ED of main public hospitals located in each Peninsular states of Malaysia within three months of study duration. This is stand on the basis of every critical cases of patients will be referred to ED of main public hospital in each states; as they are main center which all critical cases will be treated. Also, it is fully equipped with specialist and medical equipment. Therefore, the ED of main public hospitals in each states of Malaysia have greater number of patients visit per day as well as the busiest working place among other departments. Thus, match with the objective of the study to investigate the adaptive performance of nurses in critical and challenging workplace.

1.6 Significance of the Study

This study has highlighted both theoretical and practical contributions as follows;

1.6.1 Theoretical Contribution

The current study aims to study the factors that affect adaptive performance among nurses in public hospitals. A review of literature and the findings of current studies enabled the researcher to enrich the literature on adaptive performance to specifically integrate a number of independent variables which are Big Five personality traits and PE fit including its three dimensions. The aforementioned factors influence adaptive performance in the context of public hospitals of Malaysia based on one underpinning theory, i.e., theory of performance (TOP), and two supporting theories,

i.e., Trait Activation Theory (TAT) and Social Exchange Theory (SET) to support all the variables and their influence on adaptive performance through the mediating role of work engagement.

Distinctively, this study examines the mediating role of work engagement in the relationship among the variables of Big Five personality traits and PE fit factors. The research is conducted because personality traits and PE fit factors including their dimensions not commonly directly affect adaptive performance and influence through work engagement. Furthermore, contribution to the existing knowledge of literature is contributed by current research model with the support of Theory of Performance (TOP), Trait Activation Theory (TAT) and Social Exchange Theory (SET).

Therefore, the aforementioned reason is the cause of the missing link between independent variables and adaptive performance. Accordingly, this study provides the evidence on the mediating role of work engagement in the relationship between independent variables (Personality and PE fit) and adaptive performance.

1.6.2 Practical Contribution

On the practical aspect, this study will provide a number of insights into big five personality traits and PE fit factors, which are vital for increasing the work engagement and eventually lead to the improvement of adaptive performance in public hospitals of Malaysia. These factors will aid the leaders (e.g., top management, hospital management, Ministry of Health) to resolve these prevailing independent factors from public hospitals to increase the performance and manage

the employees more effectively to achieve the main objective which is to reduce patient's complaints regarding staff performance especially nurses.

However, nurses are responsible to satisfy patients in routine as well as in emergency situation. This study is also helpful for the policymakers, health sectors, service sectors and to other stakeholders as it will provide a fundamental knowledge to improve employees' performance specifically adaptive performance.

Moreover, to the best of researcher knowledge, due to limited number of empirical research on adaptive performance of nurses in Malaysia's health care context, this study is anticipated to inspire other researchers and can broaden up the opportunities for further research initiatives. Therefore, this study possibly will be used as the strategic instrument for managing employees.

1.7 Definition of Key Terms

The definitions of each concept involved in the present study are presented as follows:

- i) **Adaptive Performance (AP)** refer to proficiency with which an individual alters his or her behavior in response to the demands of a new task, event, situation, or environmental constraints (Pulakos et al,2002)
- ii) **Personality Traits (PT)** refer to the labels presented by Norman (1963) which are extraversion, emotional stability, agreeableness, conscientiousness

and openness to experience, subsequently have been simply as the “Big Five”.

- **Agreeableness (AG)** refers to a tendency to be compassionate toward others (Greenberg and Baron, 2007). A person who has high level of agreeableness is posses with cooperative, helpful, friendly, and can be trusted.
- **Conscientiousness (CC)** described as the tendency to show self-discipline and strive for competence and achievement (Greenberg and Baron, 2007)
- **Emotional stability (ES)** defined as the opposite of neuroticism. It is composed of self-assuredness and absence of anxiety, depression, and other negative emotionality (Gerber, Huber, Doherty, Dowling, Raso, et al., 2011, p. 696).
- **Extraversion (EX)** implies of an energetic approach to the social and material world and includes traits such as sociability, activity, assertiveness, and positive emotionality (John & Srivastava, 1999)
- **Openness to experience (OE)** describes extent to which individuals are curious, imaginative, amenable to new ideas and willing to learn (Barrick and Mount, 1991; Goldberg, 1990).

iii) **Person Environment (PE) fit** refers to the congruence between an individual's abilities and the work environment demands (Kristof,1996)

- **Person-group (PG) fit** refers to congruence of employees' abilities (knowledge, skills, and abilities) with their team members' demands (Kristof,1996). Group can be classified either departments, units, or divisions of an organization. Work group member for this study involved emergency department unit in public hospitals.

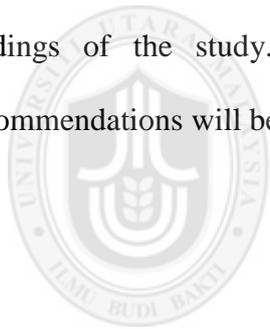
- **Person-job (PJ) fit** refer to demand-ability fit where is knowledge, skill and ability of each employee are fit with job's demand (Edwards,1991).

- **Person-supervisor (PS) fit** refers to congruence of employees' abilities (knowledge, skills, and abilities) with their supervisor's demand (Kristof,1996). Supervisor level for the respondent in this study involved sister and matron position.

iv) **Work engagement (WE)** definition based on Schaufeli et al. (2002) defined engagement as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.

1.8 Organization of Study

This thesis was organized into five chapters. Chapter 1 provides an explanation about the introduction of the study, problem statement, research questions, research objectives, significance of study, and definitions of key terms. Chapter 2 reviews the concepts of the variables, relationship among the variables, and the literature of the previous studies on personalities, PE fit, work engagement, and adaptive performance. Chapter 3 explains the methodological aspects of the study such as the design of the study, population and sample, sampling frames, research framework, instrument development, response format, questionnaire design, research hypotheses, and the results of the pilot study. Chapter 4 will report the data analysis process and findings of the study. Lastly, the discussions, implications, limitations, and recommendations will be discussed in Chapter 5 after data collection and analysis.



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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review chapter has been carried out to justify the research problems addressed in this study. The main focus of this study is to investigate about personality traits, PE fit, work engagement and adaptive performance. Based on Theory of Performance, Trait Activation Theory and Social Exchange Theory, the framework of the study including several variables has been laid down. Moreover, framework consists of independent variables which are Big Five Personality Traits and Person-Environment fit where mediating variable is work engagement and finally the dependent variable which is adaptive performance.

2.2 Adaptive Performance (AP)

Adaptive performance, as a new construct developed for job performance has gained notable attention among academic scholars and practitioners as it able to ameliorate the concept of job performance particularly in uncertain, change and critical jobs such as fireman, army and nursing in today's work setting (Jundt, Shoss, & Huang, 2015). Similarly, effective adaptive performance indicates the ability of employees to efficiently deal with uncertainty and unpredictable work situations, act fast with the change occur in work place and manage stressful work environment (Campbell, 1999; Pulakos, Arad, Donovan, & Plamondon, 2000). Hence, it requires fast

adaptable and high creativity employees to react and make prompt decisions when facing with any uncertainty and emergency.

Moreover, adaptability has been recognized as a crucial performance indicator (Hesketh & Neal, 1999; Pulakos, Arad, Donovan, & Plamondon, 2000). Realizing the importance of adaptability for today's employee, numerous researchers have discussed adaptation in different phenomena such as individual, team, and organizational levels. Whereas, other authors have focused on the nature of individual differences in adaptability and also as implications for human resource; recruiting and training (Ilgen & Pulakos, 1999; Smith, Ford, & Kozlowski, 1997).

Previously, according to Campbell (1993), Theory of Performance categorized performance into two facets which are contextual and task performance (Christian et al, 2011). Similarly, job performance also conceptualized with two dimensions of individual performance which are; task performance (refers to in-role behavior; performance of duty or task given) and contextual performance (refers to extra role behavior; performance beyond of the task given) (Borman & Motowidlo, 1993; Campbell, 1999). However, due to environmental changes as well as the nature of work changes, this resulted in amendment of performance model, known as adaptive performance (Shoss et al, 2012).

Moreover, other studies also suggested that adaptive performance is important, perhaps separated from the component of job performance (Allworth & Hesketh, 1996; Campbell, 1999; Hesketh, Allworth, & Considine, 1996; Hesketh & Neal,

1999; Ilgen & Pulakos, 1999; London & Mone, 1999; Murphy & Jackson, 1999; Pulakos et al., 2000, 2002, 2006). Therefore, adaptive performance is a new component of job performance which play significant role in today's work environment; differ from task and contextual performance.

Additionally, Hesketh and Allworth (1999) were the first scholars to introduce the concept of adaptive performance by introducing a new aspect under job performance domain other than previous two performances' concept (Charbonnier, 2012). On the other side, Murphy and Jackson (1999) linked to the role flexibility while London and Mone (1999) stressed the importance of employee's capabilities to deal and experience new things in their job's nature. Moreover, other researchers also highlighted the diversity of adaptive performance in work environment (Allworth & Hesketh, 1996; Hesketh & Neal, 1999; Hollenbeck, LePine, & Ilgen, 1996; Ilgen, 1994; London & Mone, 1999; Murphy & Jackson, 1999). Thus, the concept of adaptive performance created a challenge to understand and measure in various contexts of study.

Fortunately, Pulakos et al. (2000) contributed in adaptive performance by removing ambiguity part of the this concept and also Pulakos was the first scholar to introduce a global model of adaptive performance by developing eight taxonomy of adaptive performance which are; Handling emergencies and crisis situations, Handling stress in the workforce, Creative problem solving, Dealing with uncertain and unpredictable work situations, Learning and manipulating new technology, task, and procedures, Demonstrating interpersonal adaptability, Demonstrating cultural

adaptability, and Demonstrating physically oriented adaptability (Voirin & Roussel, 2012).

Other than that, adaptive performance has been classified among individual's job behavior that able to face unexpected or changing demand in working environment (e.g., Hesketh & Neal, 1999; Johnson, 2001; Pulakos, Arad, Donovan, & Plamondon, 2000; Baard, Rench, & Kozlowski, 2013). On the other hand, adaptive performance can be described as an emergent process which individuals can interact through cognitive and behavioral goal-direct action to deal with the environment's demand (Maynard et al., 2015). However, most of the researchers agreed to adopt a definition suggested by Allworth and Hesketh (1999) which stated that adaptation occurs in a novel and complex environment (e.g., Mumford, Baughman, Threlfall, Uhlman, & Costanza, 1993) or establishing new work configurations for non-routine works (Chan, 1998; Kozlowski & Klein, 2000) like nurse's job.

Therefore, the idea of adaptive performance's concept can be understood as "an individual's ability to adapt to dynamic work situations" (Hesketh & Neal, 1999). Considerably, by adopting Pulakos et al.'s (2000) famous definition, adaptive performance can be defined as "adjusting individual's behavior as meeting current environment work demand, event, or any new situation in any working place". Similarly, Dorsey et al. (2006) defined adaptive performance as "an effective change in reaction to a changed circumstance and uncertainty". Since the conceptual discussion for adaptive performance is belong to the field under job performance's domain, a consistent and fix definition to understand adaptability in work place is difficult to interpret in the current literature (Stokes, Schneider & Lyons, 2010).

However, a study by William and Waldo (2010) found new insight and contributed new knowledge in understanding adaptive performance's definition. They introduced three factors that contribute to adaptive performance which are; individual differences, skills and knowledge and lastly the environment. Moreover, these three factors seem to be the crucial requirement for all workers to perform well in today's workforce. Meanwhile, adaptive performance achieved in that environment which can constrain or facilitate individual adaptive performance (Mueller, Johnathan, & Swartout, 2009). However, not all employees have the ability to adapt with the change even current work is frequently characterized by altered tasks; where the ability of employees to deal with new or changed task is highly needed (Jundt et al., 2015). Hence, this create crucial need for each employer and organization to enhance adaptability at workplace, which is relatively a new way to adopt changes, since it helps employees to adapt fast in any uncertain work environment.

Therefore, due to importance of adaptability in today's workplace, especially employees working in critical units like nurses in public hospitals, previous studies have discussed about adaptation in workplace (e.g., see Ilgen & Pulakos, 1999; London & Mone, 1999; Gaytandjieva, et al, 2013; Hameed, 2016) as it is closely related to the employee's performance. Similarly, many researchers argue the vital role of adaptability to employees' performance in this modern and globalization era (Pulakos et al, 2000). Furthermore, the concept of adaptive performance is highly relevant to firms like trauma and emergency department at public hospital which faced complex and volatile conditions in working place, more than in their job scope.

As a component of overall employee performance, adaptive performance refers to the ability of an individual to change his or her behavior to meet the demands of a new environment. The concept is relevant to firms that face especially complex and volatile business conditions. Research and practice have been hampered by a general lack of a widely available, psychometrically sound, multidimensional scale of adaptive performance that is applicable across a wide range of job contexts. (Voinar, & Roussel, 2012). Certain characteristics inherent in the work context, like uncertainty, complexity, inconsistency, and interdependence, have resulted a doubt on the sufficiency of traditional measurement of employee's performance, which is more focusing on the task completion as highlighted in job descriptions (Ilgen & Pulakos, 1999; Murphy & Jackson, 1999). Thus, employee's ability to adapt fast with all the changes and uncertainty occurs in their workplace is highly recommended. Inability to cope and adapt fast with the changes will further resulted low employee's performance (Gaytandjieva, et al, 2013).

Arguably, high-quality service and motivated workers are the major source of health care performance system (Mutale et al., 2013) because patient complaints towards staff's performance are one of the crucial indicator of hospital service quality (Xiong et al, 2016). However, delivering best service to patients are very challenging because nowadays they are more educated and well aware. In other word, health care service quality is difficult to define and measure than any other sector (Mosadeghrad, 2014) since it involved the direct evaluation of staff's performance from patient's view. Thus, health care performance especially in public hospitals is depends on patient's evaluation towards the staff's performance.

In addition, nurses' job also has the close interaction with the patients as they are responsible to human's life (The ICN Code of Ethics for Nurses, 2012). Although, the presence of nurses in public hospitals is critically essential in overall hospital's operation, however, the ratio number of nurses available to the number of patient in Malaysia is only 1:309, while standard set by WHO is 1:200 (Malaysia Health Fact, 2017). Surprisingly, the total number of nurses working at ED in Malaysia healthcare sector is only 2,480 (1,583 public hospitals and 897 in public hospitals) giving the total ratio of 0.88 per 10,000 populations (Malaysia Healthcare Establishments & Workforce Statistics, 2010). Thus, the statistic shows the limited number of nurses available in public hospitals especially in ED, which received highest number of patients daily. In other word, if nurses fully equipped with adaptive performance, they will give fast response to any situation and know how to deal wisely with patients in stressful environment without delay in time.

Conclusively, adaptive performance is chosen as the dependent variable for this study and also in current study the definition of adaptive performance has adopted from by Pulakos et al. (2000) since it is most used in the literature and also relevant to this study's perspective which defined as "the ability of an individual modifies his or her behavior to response to the demands of a new task, event, situation, or any environmental constraints". This operational definition is most related to the respondent of this study which is nurse in emergency department of public hospitals due to their responsibility to deal with so many changes in their working environment, thus, their ability to cope with these changes may contribute to their performance.

2.3 Big Five Personality Traits (PT)

Nowadays, working environment is strongly competitive and managing human resources has become more complex. Moreover, personality aspect of employees is a part of employees' work outcome, and everything related to employee is considered as crucial aspect to drive organization's competitive advantage (Anitha, 2014). While, personality of individual is closely related to person's behavior and actions, hence, Mondak (2010) agreed that personality is a biologically influenced and maintained psychological trait which may trigger to someone's behavior. On a similar ground, past study by Allport (1937) defined personality as "the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment".

Meanwhile, a study by McCrae and Costa (1994) described personality traits as "inherently dynamic dispositions that interact with the opportunities and challenges of the moment". Previous studies agreed that personality is inheritable and quite stable over long time (McCrae & Costa, 1994; Mondak, 2010). Additionally, Big Five personality traits has been used as its ability to constitute a taxonomy of human personality thoroughly, also validated by past empirical evidence (Digman, 1990; Goldberg, 1993; McCrae and Costa, 1996; O'Connor et al, 2002) and with comprehensive analysis for the specific job's requirements such as nurses (Robertson & Kinder, 1993; Tett, Jackson, & Rothstein, 1991).

Arguably, nurses' jobs involved emotional and stress management as they need to show their pleasant behavior to patients (Chen et al., 2008) which represent the application of personality traits in any situation. For the better understanding about

the personality taxonomy systematically, table below shows the timeline and scholars' contribution towards the study of personality traits.

Table 2.1
Big Five Personality Trait's Timeline

YEAR	SCHOLAR	CONTRIBUTION
1932	McDougall	He is among the earliest scholar that give a light to taxonomy of personality. He started to propose the idea by introducing five factors of broad personality included intellect, character, temperament, disposition and temper.
1943 to 1948	Cattell	He finally built a more complex personality trait taxonomy including 16 factors and strongly believed that personality traits would predict an individual's inner and outer behavior in certain environments.
1947	Eysenck	He added other two important dimensions in personality taxonomy which are extraversion/introversion and neuroticism/emotional stability. Later, in 1970 he improvised this trait by added another dimension; psychoticism.
1949	Fiske	He continued this taxonomy and found only four factors which are social adaptability, emotional control, conformity and inquiring intellect.
1961	Tupes and Christal	They restudied both taxonomy of personality published by Cattell and Fiske and finalized with five factors of urgency, emotional stability, agreeableness, dependability and culture.
1963	Norman	Even though past literature found many personality's taxonomy and grouped them with different factors and names, however, the labels presented by Norman became most popular in the personality literature. He grouped the traits of extraversion, emotional stability, agreeableness, conscientiousness and culture which referred as "Norman's Big Five" However, among these five traits, culture became the most difficult to identify.
1976	Lewis Goldberg	Later on, he was the first scholar who named the personality term which is "Big Five Personality Traits" (Srivastava, 2008). This trait contained comprehensive set

of personality dimensions who cover broad individual's behavior and enduring dispositions that shape how people encounter to the stimuli in the real world (Gerber, Huber, Doherty, Dowling, Raso, et al., 2011). Five dimensions of personality substituted in this Big Five Personality Traits are openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (John & Srivastava, 1999)

Hence, due to its validity and wide acceptance, the big five have been extensively utilized in recent organizational and other applied research (e.g. Barrick and Mount, 1991; Hurtz and Donovan, 2000; Judge et al., 1999; Judge et al., 2002; Salgado, 1997). Meta-analytic reviews have suggested that measures of certain personality traits, such as conscientiousness, dependability, agreeableness, and extraversion, are reasonably good predictors of employee's outcome in various occupational groups (Barrick & Mount, 1991; Hough, et al, 1990). Therefore, current study will empirically investigate the effect of personality traits on employee's outcome (adaptive performance and work engagement) of Malaysian public hospitals through work engagement based on several theories.

To conclude, Big Five Personality Traits with five personality traits' dimensions is well known taxonomy of personality as they comprised with five broad different types of personality under one domain. Similarly, Barrick et al., (2001) argued that Big Five Personality Traits were most frequently used in meta-analyses studies. Thus, as this trait is well established in personality literature, the present study has selected it as the independent variable to investigate its relationship to adaptive performance using work engagement as a mediator. All five personality traits are

different and consists of unique characteristics. Next sub section will further elaborate all dimensions of Big Five Personality as discussed above.

2.3.1 Agreeableness (AG)

According to John & Srivastava (1999) agreeableness is a prosocial and communal oriented person which comply with other traits of altruism, tender-mindedness, trust, and modesty. Furthermore, agreeableness person also always to avoid a conflict with others (Gerber, Huber, Doherty, Dowling, Raso, et al., 2011; Mondak & Halperin, 2008). Arguably, Colquitt (2009) stated that agreeableness persons are very understanding and supportive. Moreover, they are also can be trusted and caring to others (Digman, 1990). Ivancevich et al., (2008) too characterized agreeable people as courteous, forgiving nature, kind-hearted as well as caring. In other word, this group of people can be classified as an easy going personalities as they are very cooperative, helpful persons and can get along with others' easily. Thus, they become a good team worker when they are working in a group.

2.3.2 Conscientiousness (CC)

It can be described as systematic, planning, organizing well-mannered and self-managed person and following norms and rules (John & Srivastava, 1999). In addition, conscientious people are also characterized by “dutifulness, norm compliance and achievement striving” (Gerber, Huber, Doherty, Dowling, Raso, et al., 2011, p. 696). Moreover, Colquitt (2009) also agreed that this kind of personality is well organized, trustworthy and dependent type person. Costa & McCrae (1992)

also recognized six dimensions under conscientiousness which are competence, dutifulness, achievement orientation, deliberation, order and self-discipline.

2.3.3 Emotional stability (ES)

Emotional stability can be understood as the ability of a person to control and manage their emotion from any negative kind of feelings. In Big Five traits, this trait also known as neuroticism whereas, neuroticism is the reverse side of emotional stability (Costa & Mc Crae, 1985) and explains which individual is constituting with negative side of emotion and feeling like moody, anxious and being so emotional (Colquitt, 2009). Contrarily, emotionally stable persons are more calm and relax because they can handle their stress easily (Ivancevich et al., 2008). Thus, for nurse's context of study, emotional stability is more accurate to be used as their work entail to be in stable emotion when dealing with the patients.

2.3.4 Extraversion (EX)

This trait is easily can be known as people-oriented type individual since they are sociable person. In the similar vein, John and Srivastava (1999) agreed that extravert individual possess other personality traits like sociability, assertiveness, and positive emotionality. Additionally, a study by Ivancevich et al. (2008) revealed that this type of people is jolly, happy and social in nature. Moreover, Costa & McCrae, (1992) characterized extravert person as talkative, outgoing, and have high enthusiasm when performing a work. They also concluded that extraversion consist with six dimensions which are assertiveness, warmth, sociability, activity, eagerness and positive emotions.

2.3.5 Openness to experience (OE)

This trait can be described as the easiness of an individual's to deal with any new changes or experience new things in their life, for instance: this type of person has high level of curiosity, innovativeness and creative thinking (Colquitt, 2009). Thus, having curiosity will excite a person to explore and experience new things (Costa & McCrae, 1992). Moreover, according to Ivancevich et al., (2008) openness to experience individual normally are risk taker person as they are always ready to face any challenges. Costa & McCrae, (1992) characterized this type of personality with six dimensions of fantasy, aesthetic sense, feelings, actions, ideas, and values.

Conclusively, with regards to this study's perspective, Big Five Personality Traits proposed by Lewis Goldberg (1976) is relevant to be studied among nurses' context in ED of Malaysia public hospitals as previous studies suggested that individual personality can influence employee's outcome such as performance and work engagement (Huang et al, 2014). Therefore, this study applies personality as independent variable to investigate the relationship to nurse's adaptive performance through mediating effect of work engagement.

2.4 Person Environment (PE) fit

The origin of PE fit's time line was started since Plato's republic era, when he assigned work to the people based on their personal attributes (Tinsley, 2000). PE fit idea and concept might be originated from well-known biologist; Charles Darwin (1859). He published his brilliant idea about Origin of the Species and made the well-known concept of organism and environment fit. In addition, Darwin's famous

theory with his proposal “survival of the fittest” is a concept that he co-opted from Herbert Spencer, one of evolutionary psychologist.

According to Schneider (2001), the paradigm of PE fit is centered to Kurt Lewin’s (1935) widely known social psychological formulation of $B = f(P, E)$ which meaning behavior is a function of person and environment. Thus, based on this equation it is clearly explained that person and environment become the factors that can influence person’s behavior. In other word, an individual will react based on their personal attribute and situation they are facing. Similarly, the purpose of using PE fit as independent variable is to study how person (nurses) and environment (emergency department) fit each other and either it will impact on their adaptive performance.

PE fit has become a famous topic among both academic researchers and industry practitioners, since it showed tremendous growth in literature from time to time (e.g, Lauver & Kristof-Brown, 2001; Kristof-Brown et al., 2005; Bardi et al., 2009; Ahmad, 2010; Ahmad, 2012, Iplik et al., 2011; Abdul Hamid, 2013; Su et al, 2015). PE fit’s general definition is referring to Kristof-Brown et al. (2005); the match between an individual and their environment. In addition, PE fit study also claimed to be the recent growing research interest as it showed significant effect to positive outcome like employees’ engagement, turnover intention, commitment and performance (Abdul Hamid, 2013; Lauver & Kristof-Brown, 2001; Kristof-Brown et al., 2005).

Generally, fit's meaning is refer to compatibility (Cable & Parsons, 2001) or a congruence (O.Reilly et al., 1991) between an individual's difference (e.g. values, skills, knowledge, beliefs, personality traits or preferences) (Jee & Kristof-Brown, 2012; Cools & Van den Broeck, 2007) with any environmental subject like organization, group or task. Thus, fit is the compatibility or congruence between a person and their environment or employees and their working place. Arguably, PE fit also known as a reciprocal process and mutual relationship whereby, "*people shape their environments and environments shape people*" (Rounds & Tracey, 1990).

Additionally, the earliest scholars explicit the concept of PE fit were Munchinsky and Monahan (1987) by categorized PE fit into two forms; supplementary fit and complementary fit. Supplementary fit occurs when an individual's characteristics supplements and are similar to the other individuals or environment's components (Kristof, 1996). For instance, employee is considered to have supplementary fit when she/he having similar personal characteristics like personality, interests, and values to other employees (Jee & Kristof-Brown, 2012) and match with their work environment.

Arguably, Kristof-Brown et al. (2005) agreed that different concept of different fit dimensions cannot represent overall PE fit role because both fit (supplementary fit and complementary fit) have different meaning. Thus, it will be confusing to a group them together as one PE fit domain. For instance, supplementary fit represents the match between individual's values, personality, and goals with their work environment while complementary fit represents the individual's ability match with

their work environment's demands (Demand-Ability fit) and organizational effort in meeting employees' needs (Need-Supply fit). To add, Kristof-Brown et al. (2005) defined NS fit as the match between organization or environment supplies (e.g. financial and psychological resources) and the individual's needs (e.g rewards, and benefits). Therefore, since both fits have the different meanings and concept, so could not be used to describe the role of whole PE fit in one single study.

Hence, it can be concluded that PE fit is divided into two forms of fit, which are supplementary fit and complementary fit. Further, extended to Kristoff's contribution, the complementary fit is divided into two main demands-abilities fit (DA fit) and needs-supplies fit (NS fit). This contribution brings to complete definition of complementary fit where involves two form of reciprocal relationship; an employee to an organization (DA fit) and an organization to an employee (NS fit).

However, for the purpose of current study, DA fit was used as the main concept of PE fit. This is reasonable for the characteristics of the respondent in this study; nurses who must possess specific KSAs to conduct their job. First criteria of nurses' job acquire them to have specific skill to do a specific medical treatment to patients. Secondly, specific knowledge is also needed especially when they are dealing with medicine description and any disease symptom, they need to prescribe patient well based on right knowledge. Lastly, the ability (physically and mentally) of each nurses to deal with different cases of patient is strongly required as each cases is not same. Therefore, as the nurses possessed specific KSAs in their daily work, they could effectively fulfill their work environment's demand. Therefore, the

complementary DA fit was best suited with the respondent of this study as compared to NS fit.

Realizing the importance of DA fit in an organization, a few studies are available in the literature showing the relationship between of PE DA fit and employees' outcomes (Abdul Hamid, 2013; Hoffman & Woehr, 2006) specifically employees' engagement and performance. Most of the scholars focused on the impact of congruence between a person and their environment in term of supplementary fit (e.g. Kristof-Brown, 2000; Sekiguchi, 2007; Mohamed, 2009; Ji, 2006; Iplik et al., 2011). Additionally, PJ fit is known to be the only well documented of DA fit research (Abdul Hamid, 2013). Therefore, it is essential to study the DA fit of the other PE fit's dimensions also in a single study.

Other than that, as stated in fit theory, work environment's fit consists of five main domains, which are vocation or profession (PV fit), organization (PO fit), job (PJ fit), group (PG fit), and supervisor (PS fit) (Kristof, 1996). However, previous studies show the abundant of PE fit study that concentrated on PO fit and PJ fit only (Abdul Hamid, 2013), and only few studies were investigated the other PE's dimensions in one single study (Kristof-Brown et al., 2005a; Sekiguchi, 2004). Arguably, Iplik et al. (2011), Vogel and Feldman (2009), Ahmad (2012), and Cable & Edwards (2004) suggested that each type of fit dimensions should be represented in one framework in a single study to represent all the relationship between each PE fit's dimensions and the outcomes. Therefore, this study is focusing on three (PJ fit, PG fit, and PS fit) out of five dimensions of PE fit based on the suitability of the respondent, which is nurses in ED of public hospitals. In regards to this, PJ fit is used

to study due to nurses must fit with the job's demand while PG fit is used due to nurses' must fit with their group which is emergency department's team. In addition, PS fit is to study on nurses' compatibility with their supervisor which is matron or sister. Thus, these three fit are rational to be studied in nurses' context in ED of Malaysia public hospitals.

However, the other two dimensions of PE fit (Person-organization fit and Person-vocation fit) is not appropriate to study in nurse's context especially in ED. Person-organization (PO) fit is to study individual match to the organization. In this study context, all nurses are 'blue collar' employees who work at public hospitals, hence they are well known about organization culture, thus no issue on organization fit to any qualified nurse who are already working in public sector. To be added, PO fit may be rational to be included if the respondent of the study is all nurses from both public and private sector, thus the result may indicate valuable finding as the nurses are in different sectors. Therefore, PO fit not relevant to this study setting as all nurses (respondent to be studied) are in public sector.

Similarly, person-vocation (PV) fit also not rational for respondent in this study due to PV fit is the compatibility of individual with their profession. Apparently, nursing is a profession which they apply for since in their first high education level same like teacher profession. Thus, to involve in this profession, an individual already known about their career path since beginning. Unlike other profession like manager, business person or admin officer, they don't have any idea of what their future career when they are still in university level. Therefore, PV fit not related to study in this research setting.

Critically, data from U.S. Bureau of Labor Statistics 2016 revealed worldwide issue of shortage skilled nurses and health professionals. This meaning shortage of skilled work force with adequate KSAs in professional job like nursing. Above all, American Hospital Association (AHA) which is under Commission on Workforce for Hospitals and Health Systems recognized that the key to maintain their performance is to get the right candidate at the right place to overcome the issue of nurses. Therefore, as to place right person to right place, person environment (PE) fit plays significant role as it generally conceptualizes the concept of individual match with their workplace environment. PE fit dimensions involved in this study are person-job (PJ) fit, person-group (PG) fit and person-supervisor (PS) fit.

In addition, it is argued as PE fit is one of the key variable in sustaining a flexible and perpetrated workforce (Bowen et al., 1991; Kristof, 1996) like nursing (high work commitment) as abilities of individual must meet work environment's demand (Munchinsky & Monahan, 1987). Thus, PE fit is another important variable to be included in current study as it ability to examine the different individual capability in term of KSAs with their demand of work environment; job (patient), supervisor (matron and sister), group (emergency department team worker). On the other hand, when nurses' capability is congruence with their work environment's demand, they are well prepared to face any unexpected situation as they possess with adequate KSAs. Thus, may further resulted to enhance their performance in uncertain work environment as such enhancing their adaptive performance.

In short, all of three PE fit' dimensions as explained above give important impact to nurses' performance since it influences to prepare a healthy working environment in

less stress even at critical work place like emergency department. The logic comes from the basis that all three dimensions in PE fit theory is interconnected to each other and supported by previous study (Cable & Edwards, 2004; Iplik et al, 2011; Vogel & Feldman, 2009; Ahmad, 2012). Therefore, this study proposes to investigate the relationship between PE fit's three dimensions (PJ fit, PG fit and PS fit) on adaptive performance using engagement as a mediator. The next paragraph explain the three dimensions of PE fit.

2.4.1 Person-group (PG) fit

Second dimension in PE fit is Person-group (PG) fit. PG fit is defined as “the compatibility between the individual employee and the other team mate”. According to Werbel and Johnson (2001), PG fit refers to “the congruence between an individual and their teamwork”. Team worker can be defined as “a group of person that working in same departments, unit, regions, or divisions within an organization”. In addition, for the purpose of this study, group refer to emergency department in public hospitals.

Even though PE fit become a famous topic in recent years, the studies about PG fit dimension is still limited in the last few decades as compared to the other fit dimensions (Abdul Hamid, 2013). This is because it became a new fit under PE fit and recently received a lot of attention from fit scholars (Kristof-Brown et al., 2005). A study by Vogel and Feldman (2009) found that PG fit has positive influence on individual behavior that gives positive outcome to team or group. Therefore, the selection to include PG fit under PE fit's dimension in this study is very relevant as

the nurses in this study involved in same critical working group which is emergency department. Hence, the purpose of the current study is to investigate the effect of PG fit to employees' outcome, specifically adaptive performance.

Besides, group work is based on team based structure concept which introduced the concept of task decentralization, meaning that the group of worker will be divided into small groups to perform specific given tasks. This resulted in high productivity by reducing the work time and increase job efficiency as one team is responsible for specific task (Burch & Anderson, 2004). Therefore, it further resulted in high individual performance because of job specification of team workers. In line with current study perspective, task decentralization transpires in emergency department when it is divided in three zones which are, red, yellow and green based on critical situation of the patient. Thus, in this study all three zones have been selected. Members of emergency department for all three zones considered as one group for this study's perspective. Thus, the match between an individual (nurse) to group (emergency department) and the effect on their adaptive performance will be examined as stated in the objective of the study.

Indeed, similar to PJ fit, PG fit is also divided into two forms; supplementary fit and complementary fit. Additionally, many studies had concentrated on the supplementary fit in these two forms of PG by examined the similarity of individual characteristics among team workers (Abdul Hamid, 2013). According to Werbel & Johnson (2001), this type of congruence refers to the homogeneity of members which explains that each individual in the same team has same characteristics and personality. Hence, homogeneity of members has the tendency to represent the same

working style, thus all members can work in less conflict environment (Burch & Anderson, 2004) because they follow same working style.

However, homogeneity among team members bring less diversity and creativity in the group and further lead to low performance of whole group or department. Therefore, a team must include diversity of members who can complement each other's needs. In other word, a heterogeneity. This type gave more benefits to team members because they can complement each other (Werbel & Johnson, 2001) due to the uniqueness characteristics or features of each individual.

Thus, heterogeneity type of fit known as PG DA fit because each group members possess diversity of KSAs that vary from each other in the same team. Arguably by previous studies by Stevens and Campion (1994) and Kristof-Brown et al. (2005), KSAs become a crucial element for team effectiveness as vary KSAs can lead to various problem solving skill, thus can act as conflict avoidance; can benefit their group to perform very well. Therefore, this study opts to investigate person and group match in term of PG DA fit as it is closely related to employee's KSAs.

2.4.2 Person-job (PJ) fit

PJ fit became the most well-known of PE fit dimension, thus it received a lot of attention from fit scholars (Iplik et al., 2011; Sekiguchi, 2007; Adkins et al., 1994; Edwards, 1991; Kristof-Brown, 2000). PJ fit means the match between an "individual abilities and their job demands" (Kristof, 1996; Cable & DeRue, 2002; Iplik et al., 2011). Thus, this definition is closely related to DA fit rather than NS fit since it measures "how individual abilities meet the demands of a work

environment” (Munchinsky & Monahan, 1987). Therefore, PJ fit in current study refers to complimentary fit which represents the extend of congruence between an individual’s KSAs with their job’s requirements.

Furthermore, based on Kristoff’s idea, Edwards (1991) shed the light to PJ fit literature as he introduced PJ fit into two different conceptualizations which are PJ DA fit and PJ NS fit. PJ DA fit defined as the match between employees’ KSAs with their job demand while PJ NS fit defined “the match between the employee’s needs and preferences that fit by the job performed” (Edwards, 1991). Employees who possess with this DA fit will work wholeheartedly and may yield to high job performance because of their posses with adequate KSAs to perform their work (Werbel & Johnson, 2001).

In addition, most PJ fit studies focused on PJ DA fit, especially in the context of employees’ selection in human resource management (Abdul Hamid, 2013). This is because the employer prefers individuals with a complete package of knowledge, skills, and abilities (KSA’s) to fulfill the job’s demands (Caldwell & O’Reilly, 1990; O’Reilly et al., 1991; Saks & Ashforth, 1997). Also, KSA’s is strong elements needed to employee to perform well (Kim & Ployhart, 2014) Therefore, this study attempts to study PJ in term of DA fit rather than NS fit as this study examines either PJ fit (employee’s KSAs) under PE fit’s dimension have impact on employees’ adaptive performance.

Furthermore, the reason for using PJ DA fit in current study is due to the respondents; nurses. Nurses are group of employees classified as professional group

(Maben et al, 2006) since the job requirement for them require specialized certificate registered with nursing board. The professionals group of employees need to equip themselves with KSAs for their career enhancement (e.g salary increment, promotion). Thus, they acquire KSAs (PJ DA fit elements) to achieve this purpose. Therefore, the current study concentrates on PJ DA fit to measure the effect of PE fit on adaptive performance and work engagement among nurses. Specifically, the PJ fit refers to the match between employees' KSAs and their job requirements.

2.4.3 Person-supervisor (PS) fit

Third dimension of PE fit in this study is person-supervisor (PS) fit also known as person-person (PP) fit. Generally, PS fit describes a dyad relationship of one individual to others in same environment (Kristof-Brown et al., 2005) like colleagues, subordinate or manager. However, for this study, the relationship between employee and supervisor will be used to understand PS fit dimension. Therefore, PS fit can be described as “the match between an individual and their supervisor” (Kristof-Brown et al., 2005).

Furthermore, the time line of PS fit study started with the theory of leader-members exchange (LMX) by Graen (1976). LMX theorists give deep focus in exchange relationships between a leader and follower on how to care and sustain their relationship when working together in same environment (Dansereau et al., 1975). Furthermore, according to Ellemers, De Gilder and Haslam (2004), great quality of LMX relationship can create harmonious working environment because of sharing same values and understanding with team members. Thus, it provides a platform for

employees and employer to reduce a gap and experiences high emotional attachment among them.

Study about PS fit in term of DA fit is crucial in ensuring the efficiency of employee-supervisor relationship. This is because PS DA fit represent the fit of employees' KSAs with their supervisor's requirement and expectation (Kristof-Brown et al., 2005). Similarly, when employees equipped with suitable KSAs, it will create the satisfaction to supervisor's side as the employees only need minimum supervision. Thus, create easy going working environment and harmonious relationship in the work place as PS fit shows how the employee match requirement of their supervisor (DA fit) or shares same value with their supervisor (supplementary fit). Hence, this study highlights the interaction between nurse and their supervisor (matron or sister) which can represent their DA fit elements.

2.5 Work Engagement (WE)

Researchers have recognized that work engagement among employee was being a famous topic nowadays. It became important and attractive to consultation firm and among popular business media. Employee engagement towards his/her work was a popular concept in industry since two decades ago where it was extensively discussed among managers, consultants, and policy makers (Anitha, 2013). Lately, academicians became interested to know further about the concept and to what extend it is. This is can be seen by the rising number studies that try to approach different concept of employee engagement to other scope like work, job and organization engagement (Welch, 2011). Arguably, Kahn (1990) was first person

who explained the work engagement as the “harnessing of organizational members’ selves to their work roles”. Then, he was stated that “engagement must come from the people employed and able to express themselves physically, cognitively, and emotionally” to perform any given or voluntary task.

Recently, there is increasing number of studies investigated about engagement (Aggarwal et al., 2007). Previous scholars also struggling to define engagement with different term and conceptualized the real meaning of engagement. For instance, Kahn (1990) use a term of job engagement, while Aggarwal et al., (2012) and Schaufeli et al., (2002) use a term of work engagement and Anitha (2013) use a term of employee engagement in their studies. Even though they are using the different term to conceptualized the engagement meaning, actually the concept of engagement is still same as it involves how energetic, enthusiastic, and emotionally detached of individual to their work toward completing the task given successfully (Bakker & Demerouti, 2008). Thus, this study attempt to use a term of the work engagement as used by Schaufeli et al. (2002) since it is direct forward to explain the engagement toward the work task.

Most of the firms believed that engagement is a one of the competitive advantage tool and thus, it has been shown to its ability to solve complicating firm problems like the ability to increase the employee’s work performance and productivity even in financial deficit (Macey & -Schneider, 2008; Macey et al., 2009). Kahn’s (1990) developed grounded theory of engagement and disengagement by stated that engaged employee is the continuous expression of individual’s preferred self and the ability to promote and develop a connection to other people surround them. While

for disengagement, Kahn was examined it to be the opposition of individual and their preferred self-behaviors, which is promote a low degree of overall connectedness, absence of emotional aspect, and possess a passive attitude.

In short, based on Shuck and Wollard (2010), Kahn expressed all of these as the emotional, social and physical aspect of engagement which human being involved in their workforce by physically and emotionally; this give them an experience of work. Kahn (1990) also stated that important criteria to understand both engagement and disengagement at working place are by three criteria which are; meaningfulness (positive sense of individual self in their job performance), safety (the ability of individual's self to show their self-image, status, or career without any fear and threat) and availability (the physical, emotional, and psychological readiness to complete work).

Additionally, Schaufeli et al. (2002) define work engagement by characterized it with three dimensions; vigor, dedication and absorption. Vigor refers to “a high level of energy, exhibiting mental resilience and high investment of effort” while working dedication refers to “feeling strongly involved in one's work and experiencing a sense of importance, enthusiasm towards their job” and absorption refer to “being fully concentrated on, easy and happily engrossed in one's work” (Schaufeli et al., 2002). In other word, engaged individuals possess high level of energy and having enthusiasm feeling towards their work. In line with discussion, Schaufeli et al. (2002) also gave the new shade to engagement definition as he introduced it in opposite side and named it as burnout. Therefore, burnout is easily defined as any reverse form of engagement.

So it implies that if employees are engaged to their work, means they fulfill these three criteria (vigor, dedication and absorption) will perform well even in any difficult situation while if they are dis-engaged then they feel easy with their work due to loss of the sense of engagement. Possibly, engaged employee will feel positive when they perform their work, thus they are willing to contribute to intellectual effort, portray positive emotions and bring meaningful connections to each other (Alfes et al, 2010).

Furthermore, all three dimensions of work engagement are the main criteria for measuring the work engagement level (Kahn, 1990; Schaufeli et al., 2002; Sonnentag, 2003). Thus, to assess the level of work engagement, each individual must have all of these three main criteria. In other words, if measuring a single dimension of work engagement, it would not represent the meaning of work engagement as a whole which is one of the main research interests. As the purpose of the study is concerned, it is important to each nurse in nursing job to have high level of work engagement when performing their role.

In addition, the model shows the formative construct of Work Engagement which dimensions representing vigor, absorption, and dedication come from the UWES instrument (Schaufeli and Bakker, 2003). Model specification establishes a measurement model that captures expected relationships between indicators and their respective construct (MacKenzie et al., 2011). Constructs can have one or more dimensions; multi-dimensional constructs are those with conceptually distinguishable subdimensions. As a result, it is concluded that work engagement is meaningful above and beyond its component parts and, when measured as a single

construct, explains a wider variety of potential outcomes than would any single component or sub-set of its components (Cenfetelli & Bassilier, 2009).

Moreover, the performance outcomes of engagement practices have found high in work productivity (Akhtar, Boustani, Tsivrikos, Premuzic, 2014) and yield positive outcome with customer service and team work (Westover & Taylor, 2010), as such in nursing profession, where service delivery to patient and working in group become the nature of their job. Critically, nurses' job is familiar with emotional job due to constantly exposed to patient's illness and death, which lead nurses to emotional instability and change of attitude while performing their role and responsibility (Tourigny et al., 2013). Thus, having high level of engagement in nurse's job is very important to ensure they can still deal with any difficulty and work full heartedly.

Besides, past literature (Abdul Hamid, 2013; Karatepe, 2013; Agarwal et al., 2012; Sulea et al., 2012; Vincent-Höper et al., 2012; Schaufeli & Bakker, 2004; Sonnentag, 2003, Saks, 2006; Koyunco et al., 2006) pertaining to the mediation effect of work engagement has assessed the work engagement as a single variable and based on the limited researcher's knowledge, none of the studies above focused on the mediation effect of single dimensions of work engagement or in separate form. Therefore, it is reasonable and significant to combine all three dimensions in a single variable of work engagement to test the mediation effect on the relationship to other variable like Big Five personality, PE Fit and adaptive performance.

2.6 Relationship between Variables

This section contains further discussion about relationship of each variable involves in current study. For instance, the relationship between all independent variables of Big Five personality (AG, CC, ES, EX and OE) and PE fit (PJ fit, PG fit and PS fit), WE, and AP. Next, based on the relationship between the variables and previous literature, the reasonable hypotheses were formed in each sub section.

2.6.1 Big Five personality traits (PT) and adaptive performance (AP)

Recently, adaptive performance construct is getting more attention from scholars to understand this new performance's facet as it suits with current working environment. Consistent with definition by Pulakos et al. (2000), adaptive performance is "altering behavior to meet the demands of the environment, event, or new situation". Therefore, adaptive performance could be a part of change in employee's behavior and can execute changes to improve work condition (LePine & Van Dyne, 2001), it can be the changes of task accomplishment (Morrison & Phelps, 1999).

As referring to definition by Pulakos et al (2000), 'altering behavior' bring a close meaning to adjusting the attitude when performing a role by adapting suitable personality in the workplace. Thus, this study proposed to use personality traits based on the definition of adaptive performance. Additionally, to support this, recent studies clearly recognized the important need to investigate the relationship between personality and adaptive performance (Huang, Ryan & Zebel, 2014; Naami, Behzadia, Parisaa & Charkhabib, 2014; Yang & Hwang, 2014). However, so far the

literature is still silent to expose the important of this relationship and its effect to employee's outcome like individual's performance (Naami et al, 2014). Hence, this study endeavors to fill the literature gap by investigating the connection between personality (by using Big Five Personality Traits and all its dimensions) and adaptive performance with theoretical contribution of work engagement as a mediator in a single study.

However, one of personality trait which is conscientiousness might not be the best antecedent of job performance because meta-analysis found that other personality traits (achievement, dependability, order, and cautiousness) may become the predictors to performance rather than conscientiousness because conscientiousness is a broad personality type (Dudley et al., 2006). Thus, there are previous empirical data that reveals other personality type also related to job performance. However, only few studies found the relationship between personality type by using Big Five Personality Traits and Adaptive Performance. Therefore, this study proposes to fill the literature gap by conducting this study prior to adaptive performance specifically.

While, among all the five traits, two traits; emotional stability and extraversion were received constant attention in most trait theories (e.g., Cattell, Eber, & Tatsuoka, 1970; Eysenck, 1970), as both traits presented strong effect to performance outcome (Magnus, Diener, Fujita, & Pavot, 1993). Consistent with this finding, Eysenck (1985) also agreed that extraversion and emotional stability covered most of the variation in personality traits. Whereas, study conducted by Chang, Connelly and Geeza (2012) revealed that emotional stability appears to be nothing more than extraversion.

These two traits; emotional stability and extraversion has more significant relationship to adaptation rather than other three traits due to the logical base of human's evolution concept. As proposed by Darwin's theory, each species has to deal with adaptation in environmental changes, thus, extraversion and emotional stability are strongly related to this situation when extrovert person easily interact with new environment, while neuroticism (opposite side of emotional stability) initiates the attentive detection for forthcoming danger (Nettle, 2006). Even though evolutionary concept and adaptive performance concept is not related to each other, but as to explain the importance of these two traits towards new environment changes, this evolutionary concept can be informative to explain this rational (Huang et al, 2014).

Moreover, the findings of past literature gave inconsistent results for each Big Five personality traits (Huang et al, 2014). For instance, Allworth and Hesketh (1999) revealed important finding that none of this five traits were individually significant to adaptive performance. While, some other studies found adaptive performance relationship with openness and emotional stability (Griffin and Hesketh, 2003; LePine, 2003; LePine et al., 2000; Pulakos et al., 2002). Other than that, LePine et al. (2000) found negative relationship of conscientiousness to adaptive performance, whereas, LePine (2003) found positive relationship of conscientiousness to adaptive performance after he deleted the "achievement" aspect from conscientiousness trait.

Past literature also focused on reliability and range of big five model and its influence to various job components and outcomes (Barrick & Mount, 1991; Mount & Barrick, 1998). Thus, the diversity of relationships has been formed such as Rothmann and

Coetzer (2003) studied the relationship among the big five dimensions and job performance while, Bakker et al. (2006) investigated the relationship between big five dimensions and employee's burnout. Next, Nikolaou, Tomprou and Vakola (2007) examined the relationship between big five dimensions and psychological contract inducements followed by Ehigie et al. (2012) examined the relationship and influence of big-five dimensions and emotional intelligence to the employee's performance.

Besides the knowledge gap exist in current literature of adaptive performance, mixed findings has led to inconsistent result in previous studies give direction to the researcher to investigate about effect of big five personality traits on the adaptive performance. Because the findings on personality traits are inconclusive in nature (Allworth & Hesketh, 1999; Pulakos et al., 2002; Neal, Yeo, Koy, & Xiao, 2012). Consistent with past literature, the relationship between personality and adaptive performance examined by Hameed (2016) found that by using emotional labor as moderator of manager in hotel sector at Pakistan, three out of five dimensions of personality (openness to experience, conscientiousness and extraversion) are found positive relationship with adaptive performance while the other two traits are negatively connected to adaptive performance.

A meta-analysis of 71 independent by Huang et al. (2014) explained that both emotional stability and extraversion have significant relationship to adaptive performance whereas openness to experience does not contribute to the prediction of adaptive performance. On the other side, a study by Naami et al. (2014) regarding personality aspects of adaptive performance among governmental hospitals nurses

found significant relationship between adaptive performance and self-efficacy and openness to experience.

In addition, due to the basis that performance as the set of personality traits that contribute to effectiveness in organization (Allworth & Hesketh, 1996; Campbell, 1999). Similarly, the concept of adaptive performance focus on the employee's behavior which able to response or anticipate with the changes in one's job (Jundt et al., 2015). For instance, as openness to experience is related to ability to find alternative and creative solution in critical situation as such in emergency cases. Other traits like conscientiousness; well planned and systematic trait that always in ready state to face any uncertainty, agreeableness; always be positive in any difficult situation may help to face any difficulty calmly, and extraversion; energetic and friendly trait that may help nurse to deal with difficult patient in chaos time. Therefore, Big Five personality traits (with five personality dimensions) act as independent variable in this study.

Moreover, individual difference such as personality (Big Five) is reasonable variable to study because each dimensions relates to concept of adaptive performance and nursing job, which considered as critical job types same like firemen, army, and police. Thus, personality can affect the worker's attitude in workplace because they are dealing with different working conditions where emergency cases are unpredictable and unexpected particularly the nurses who are dealing with the patients have more probability of getting severe illness, suffering, and death (Le Blanc et al, 2001). Unlike other employees that perform routine jobs like administration staff, which less dealing with emergency and uncertainty in their

work place. Thus, it is important to each employee in critical job to have certain personality traits like emotional stability that can help them to deal and adapt fast in any circumstances.

Additionally, since past literature found mix findings and inconsistency results of each dimension of Big Five personality traits and adaptive performance in different context of study. For instance, a recent study by Hameed (2016) reveals that female staff in Pakistan health care found that among five traits only three (openness to experience, conscientiousness and extraversion) showed positive relationship to adaptive performance while other two are negative. Since the relevance of specific personality factors varies from performance types and field of job (Vinchur, Schippmann, Switzer, & Roth, 1998). Therefore, these findings motivated the researcher to examine the effect in the context of Malaysian public hospitals particularly the nurses working in emergency department to improve overall performance. Conclusively, this study attempt to identify which big five personality traits that may predict adaptive performance in nursing jobs in the context of emergency department at Malaysia's public hospitals. Next paragraph will discuss further on each Big Five Personality's dimensions with relationship to adaptive performance as well as hypotheses development.

2.6.1.1 Agreeableness (AG) and adaptive performance (AP)

Agreeableness trait is related to one's interpersonal interactions which effect to adaptation aspect in individual's environment especially in large group (Nettle, 2006). That is why, a person with high agreeableness may experience adaptive

advantage especially when they are in cooperative relationships and building supportive networking with other person in their environment. Arguably, Huang et al. (2014) explored agreeableness's effect on the interpersonal aspects of adaptability in Pulakos et al. (2000) model.

According to Tobin et al. (2000) agreeable individuals are cooperative, easy to get along with others, considerate, obedient and adaptable. Based on criteria of agreeable trait, it can be assumed that this type of individuals is easy to manage and can work effectively in one group, thus can give positive effect to the performance. However, Barrick and Mount (1991) indicated that even though if an individual is easy to deal with and working well in one group, this criterion is still unacceptable to judge overall effect of their performance.

Meanwhile, another meta-analysis studied by Mount et al. (1998) reveals that agreeable is positively related to interpersonal interactions also found by Brown et al. (2002) that empathy influence the behavior in order to help others (for instance: customer, client or colleague) and by doing this they get personal satisfaction. Similarly, in perspective of current study, this trait has significant relationship with performance because respondents (nurses) of current study are dealing with critical patients in public hospitals. Other than that, Zellar and Perrewe (2001) also agreed that individuals with high agreeableness gets more emotional support from their team and can achieve the objectives successfully.

Furthermore, Bonzionelos (2003) also found a connection between agreeableness and tendency to concern for others. In addition, nursing job cannot be separated from

characteristic of care because this is a core job description of the nurse. Therefore, high level agreeable individuals act naturally in a very good manner especially when dealing with needed people. Thus these type of persons considered as good at adaptability because they react according to the situations without any delay. Hence, based on the above discussion and past literature, the hypothesis for this relationship has been developed as below:

H1: There is a positive significant relationship between Agreeableness and Adaptive Performance.

2.6.1.2 Conscientiousness (CC) and adaptive performance (AP)

This trait associated with long-term planning and goal resulted to an individual's success in a certain environment. Realizing the importance of conscientiousness have high influence on individuals to achieve their aims (Barrick, Mount, & Li, 2013; Denissen & Penke, 2008). Thus we can assume that great conscientious employees constantly extend their attempt in their work place, even respond to changes and keep searching for available chances to improve their performance. In fact, Pulakos et al. (2002) also discovered that one of conscientiousness aspect which is achievement orientation influence employees to support changes and consequently lead to positive work outcomes.

In addition, Barrick et al. (2013) stated that uncertain work environment trigger to limit the positive effect of conscientiousness due to limited response received in that kind of environment. Moreover, LePine et al. (2000) found that systematic and orderly persons are inflexible to deal with unpredictable changes. Thus, due to

limited data availability, researcher cannot perceive overall positive effect of conscientiousness on adaptive performance as it depends on other factors as well.

Furthermore, conscientiousness individuals are dependable, trustworthy and result oriented (Digman, 1990). Therefore, Costa and McCrae (1992) identified that high conscientiousness individuals are highly efficient, dutiful, high liability and well structured. In addition, meta-analytic research found that conscientiousness is very unique personality trait as it is only trait that generalize different occupations (Barrick & Mount, 1991). Thus, conscientiousness has positive relationship with job performance (Vinchur et al., 1998) since they are achievement oriented person. \

According to Brown et al. (2002) highlighted that conscientiousness employee has preference to strive hard to solve a problem and try so hard to achieve customer's satisfaction. Rothmann & Coetzer (2003) canonical analysis also found that conscientiousness has significant relationship with task performance and also creativity. Meanwhile, Avi Besser & Shackelford (2007) noted the relationship between conscientious and tendency to plan and expedite work which urge them to allocate extra time and effort for task completion. Bowling and Eschleman (2010) too stated that high conscientious employees easy to deal with stress, thus they do not involve in counterproductive behavior.

Therefore, conscientious individuals are result oriented person, responsible, self-managed and high competent, thus, these criteria influence them to perform well on the given task and give high performance on their work. Hence, employee who equipped with personal's preferences like responsibility, meticulousness, and well

self-managed usually perform well in any given task and in any situation. Furthermore, result oriented aspect motivates them to adapt comfortably with their work. Therefore, based on that basis, it can be hypothesized that:

H2: There is a positive significant relationship between Conscientiousness and Adaptive Performance.

2.6.1.3 Emotional stability (ES) and adaptive performance (AP)

Emotional stability also known as Neuroticism (opposite form). As the name indicates, emotional stability based on positive behavior like being calm, able to control feelings and emotions, motivated etc. Besides, emotional stable individuals act in a respective manner in any harsh or critical situation because they have a good control over their emotions. Moreover, the unstable individuals tend to engage in any negative way (Gallagher, 1990) and avoid self-regulation (Carver, Sutton, & Scheier, 2000; Elliot & Thrash, 2002) which is mal-adaptive when facing unstable task environments. Therefore, being emotionally stable influences victorious adaptation and the readiness to face with any unpredictable changes in the work environment.

In fact, emotional stability has positive relationship to few adaptive performance mechanisms for instance; training and development (Vasilopoulos, Cucina, & Hunter, 2007), training a new tasks or contexts (Blume et al., 2010), team work (Barrick, Mount, & Judge, 2001), dealing with workplace stress (Liu, Wang, Zhan, & Shi, 2009), as well as adjusting to new work's contexts (Ali, Van der Zee, & Sanders, 2003; Brooks & DuBois, 1995).

Furthermore, a study by Boyes and French (2010), emotional stable persons tend to face more effective task-focused coping rather than emotion-focused coping when they are dealing with stressful task given in difficult situations. Moreover, Pulakos et al. (2002) agreed that this personality trait has big tendency to relate with adaptive performance because such individuals stay calm and are master-minded in every challenge and arduousness. Additionally, they found support for this relationship where, personality aspects and job performance was found insignificant, however they found strong relationship formed for emotional stability and conscientiousness (Barrick & Mount, 1991; Tett, Jackson, & Rothstein, 1991).

Moreover, Rothmann and Coetzer (2003) found negative relationship between neurotic personality dimension and managerial performance. This meaning, this type of person cannot cope with uncertainty and obviously not adaptable type (Tews & Glomb, 2003). On the other side, emotionally unstable individuals' spent most of their time to think about negative aspects and complete their tasks in less time. Hence, this type of employees is not time efficient and delay their work in most of the cases, which gives bad impact on their performance. However, Bakker et al. (2006) stated that emotionally stable employees always avoid from frustration and can face any difficult situation as adaptive performance concept. Therefore, based on the literature, the following hypothesis has been developed between emotional stability and adaptive performance:

H3: There is a positive significant relationship between Emotional Stability and Adaptive Performance.

2.6.1.4 Extraversion (EX) and adaptive performance (AP)

Third trait is Extraversion which is related to reward seeker kind of person (Nettle, 2006). Extravert tend to adopt orientation approach and involved in possible challenge even in stressful situations (Elliot & Thrash, 2002). Moreover, extraverted employees prefer to face the challenges rather avoiding them but depends on their preference to adapt or change as suggested by concept of adaptive performance (Chiaburu, Oh, Berry, Li, & Gardner, 2011).

Personality and organizational psychologists made differentiation between two aspects of extraversion (DeYoung, Quilty, & Peterson, 2007) which are ambition (power exposure need) and sociability (social exposure need) (Hough & Ones, 2001). Therefore, individuals who need to maintain their status and power (ambition) will lead them to adjust with environmental changes (Huang, et al 2014). It implies that individual become socially active to do networking and get more attention from public even they have to change their own attitude and preferences.

Moreover, extraverts type individuals are more talkative, sociable and expressive, therefore these characteristics help them to experience positive emotions (Barrick & Mount, 2005). However, studies found that extraversion can anticipate performance in several jobs but it not able to imprecise on all assumptions (Barrick & Mount, 1991). Later, Vinchur et al. (1998) found that extraversion could be considered a justifiable performance's predictor. Concurrently, study by Clark and Watson (1991) highlighted that extravert's individuals are associated with creativity and task performance, thus it is similar to adaptive performance concept; work creatively under uncertainty.

According to Littlepage et al. (1995), employees who are extravert in nature can actively participate in the group work as compare to low scored extrovert type. Although, Thomas et al. (1996) found that high level of extraversion has positive attitude in team participation and this is due to the fact that sociability characteristic can easily interact and mix around as they are friendly kind of persons. However, extravert's individuals can control their emotions easily because they be fond of working with others and keep themselves involved in social interactions. This criterion is very crucial in nursing job as they have to control their emotion when dealing with number of different patient's (Judge et al., 2007).

In line with last paragraph findings, thus it can be concluding that extraverts people has positivism and energy characteristics that may assist them to become finer adaptive performers due to high level of motivation and experiences lower level of fatigue. Thus, their behavior helps them to face the challenging conditions more easily. Therefore, based on the past literature and above discussion, the following hypotheses has been developed:

H4: There is a positive significant relationship between Extraversion and Adaptive Performance.

2.6.1.5 Openness to experience (OE) and adaptive performance (AP)

Openness to experience (OE), has been explained as a readiness to develop creative method as to solve problems and seek the variety of possible solutions. According to Howard & Howard (1995), a person with high openness to experience have great interests, open-minded type and adopt originality. Even though most of the meta-

analytic research did not supply adequate prove about openness to experience and job performance (Barrick et al., 2001). Moreover, Crant and Bateman (2000) found that openness to experience has positive relationship with proactive personality; able to identify new opportunities, take initiative action and show persistency to change (Crant, 2000). Since proactive is a type of personality that closely related to adaptive performance criteria, thus same goes to openness to experience trait.

Furthermore, Costa and McCrae (1992) identified that this type of individuals are willing to learn new things and their intellectual curiosity urge them to explore more about surroundings, thus become more adaptable to environment. Notably, Caspi et al. (2005) also see the correlation between adaptability and openness to experience as these type of personalities are posses with creative, imaginative, able to learn quickly and insightful. Similarly, Lepine et al. (2000) revealed a positive relationship between openness personality and adaptability among decision maker decisions in critical situations.

According to Rothmann and Coetzer (2003) agreed that openness to experience is associated with creativity and task performance. Hence, creativity aspect is also considered as one of eight adaptive performance dimensions proposed by Pulakos (2000). This type of personality is easy to adapt with changes as they are always ready to face new and unexplored things (Nettle, 2006). For instance, previous studies revealed it has relation with adjustment to a new environment (e.g., school life to college life; Kurtz, Puher & Cross, 2012; and the acceptance of expatriate adjustment to new workplace; Albrecht, Dilchert, Deller, & Paulus, 2014).

Therefore, we predict that openness to experience have relationship with adaptive performance. Thus, the hypothesis for this relationship as below:

H5: There is a positive significant relationship between Openness to Experience and Adaptive Performance.

2.6.2 Person Environment (PE) fit and adaptive performance (AP)

The past studies on PE fit were exist before many decades and scholars are doing continuous struggles to conceptualize specific employees' fit in their work environment. While, this is to ensure that more specific types of fit can be categorized to specific employees' fit elements with their work context like fit with the job, fit with team members and fit with supervisors. Although, past literature focus on conceptualization of single PE fit dimension and elements, therefore, there is lack of knowledge that validates the multidimensional conceptualization of fit (Kristof-Brown et al., 2005) especially the recent outcome like adaptive performance.

PE fit theories propose the interactive relationship between a person and environment which requires a certain level of adaption (Lawton, 1990), however, the role of objective and perceived aspects of P-E fit and the extent to which each contributes to the person-environment interaction is less understandable (Wahl et al., 2012), particularly in today challenging work environment. Consequently, without a clear understanding of the interactive relationship among people and their environment, employees to work well in uncertainty situation like emergency department has not been explained properly in the literature.

Even though all these four types of fit (PJ, PO, PG, and PS fits) have significant relationship to work outcomes (e.g., job satisfaction, performance, and turnover intentions (e.g, Verquer et al., 2003; Abdul Hamid, 2013) and behavioral outcomes (Hoffman & Woehr, 2006). However, it is not easy to capture which fit concept is form more crucial to differentiate individual's fit with respect to conceptualization, measurement, and analytical approaches (Kristof-Brown et al. 2005).

Generally, PE fit is a reciprocal relationship and ongoing process (Rounds & Tracey, 1990). Thus, the multidimensional construct of PE fit is related to each other in a unique manner. However, several past studies analyzed each dimension of PE fit separately (Herdman & Carlson, 2009), thus, limited knowledge is available to understand the simultaneous effect of the multi dimensions of PE fit outcomes (Oh et al., 2014). Consistently, Cable and Edwards (2004) also stated that PE fit impacts employee outcomes either directly or indirectly.

Since the theory and research exhibit that PE fit is multidimensional construct, thus it is essential to investigate all or major dimensions of PE fit concurrently to understand the respective importance of different forms of PE fit (Jansen & Kristof-Brown, 2006; Van Vianen et al., 2011). However, in this study, we only consider three out of four PE Fit dimensions and excludes PO Fit, since the study objective and unit of analysis are only individuals. Secondly, because of the nature of respondent's job is same either they work in private or public hospitals. Thus, to study PO Fit in current study context is not relevant for the respondents. While, as discussed in PE fit literature, this study involves in three dimensions of PE fit

variables which are PJ fit, PG fit and PS fit. Therefore, next paragraphs will discuss further about each dimensions of PE Fit with relationship to adaptive performance.

2.6.2.1 Person-group (PG) fit and adaptive performance (AP)

PG fit which explains that each employee cannot avoid working with other employees in same department or work place. Thus, it is very crucial for every employee to possess group fit match with their individual fit to ensure about their excellent performance. Additionally, job satisfaction measurement includes items that refer to team member's satisfaction (e.g., Warr, Cook, & Wall, 1979), because, team members can be considered as a part of one's job as they need to face them every day to complete their work. Thus, if their team worker perceived same characteristic like them then they are easy to work together as they share same values. Similarly, Locke (1976) also stated that employees feel more comfortable to work with their team members which share same values and ultimately leads to job satisfaction.

Besides, there is a positive co-relation among team workers and performance, therefore, it can be assumed that PG fit may relates to employee performance in term of their adaptive performance in current study perspective. Moreover, a person who share similar values may give better performance because they can predict coworker's behavior (Adkins et al., 1996). Additionally, research denotes that PG fit has positive correlation with job performance (Kristof-Brown et al., 2005) as well as with adaptive performance because it is also under job performance's domain. Thus, based on the past literature, following hypothesis has been developed:

Hypothesis 6: There is a positive significant relationship between PG fit and Adaptive Performance.

2.6.2.2 Person-job (PJ) fit and adaptive performance (AP)

Person-job (PJ) fit is related to job performance because it depends on appropriate skills and competencies of each employee while performing their particular job (e.g., Bartram, 2005; Campbell, McCloy, Oppler, & Sager, 1993) and these characteristics (competencies and skills) are included under PJ fit dimension. However, Kristof-Brown et al. (2005) found in meta-analysis that there is no correlation between PJ fit and job performance. In addition, Greguras and Diefendorff (2009) also revealed that PO fit nor PJ fit were significantly correlated with overall job performance. This finding is also similar with Kristof Brown et al. (2005) findings. Thus, the match between individual and their job's demand is not enough to consider them as good performer.

However, PJ fit theoretically assumes positive relation with job attitudes (Edwards, 1991; Ostroff, Shin, & Kinicki, 2005) as job perception should be related to attitude of the job (Kristof-Brown et al., 2005). Moreover, there are growing number of scholars who are interested to examine the relationship between PJ fit and work outcome as they found the reasonable findings between these two constructs. For instance, a study by KristofBrown et al. (2005) found positive correlation between PJ fit with job satisfaction and organizational commitment because when employees' KSAs met all job requirements then employees can easily gain satisfaction and gave full commitment.

Interestingly, past studies conducted also fail to conclude consensus research finding between the relationship of PJ fit and job performance since there are inconclusive results (Edwards, 1991; Cable & DeRue, 2002). Also, a meta-analysis study conducted by Kristof-Brown et al., (2005) found that no relation between PJ fit and job performance. This inconsistency in findings might be described by the exclusion of essential variables in their studies (Edwards, 1991).

Moreover, it seems that PJ fit is a not important antecedents of job performance (Shrout & Bolger, 2002). This aspect only focuses on significant correlation between PJ fit and job performance, however, theoretical arguments and results suggested that few psychological and motivational factors mediates the relationship between PJ fit and job performance. Thus, this study tries to use work engagement as a mediator to explain these inconsistent results of past studies.

The concept of adaptive performance in current study's perspective is similar when nurse's KSAs meet the job requirement and they achieve satisfaction in their job. Which, later will further resulted to their excellent performance even when they are working in critical and uncertain situation like emergency department. Similarly, employees with adequate skills and abilities match the job's requirements and anticipated to accomplish their jobs effectively (Bartram, 2005; Campbell et al., 1993; Hunter & Hunter, 1984). Therefore, it is assumed that PJ fit have a significant relationship to adaptive performance. The hypothesis has been developed as per below:

Hypothesis 7: There is a positive and significant relationship between PJ fit and Adaptive Performance

2.6.2.3 Person-supervisor (PS) fit and adaptive performance (AP)

Person Supervisor fit (PS fit) which demonstrate that PG and PS fit are the two famous fit dimensions and explains more about interaction between persons (Greguras & Diefendorff, 2009). The other two fits dimensions (PJ and PO fit) focuses on non-human capital for instance; job requirement and organization's demand. Thus, PJ fit and PO fit approach more focus on organizational behavior concepts like contextual and task performance (in role and extra role behavior). Furthermore, these fits portray a middle point of consensus between global models of PE fit (Herdman & Carlson, 2009; Jansen & Kristof-Brown, 2005) and specific and distinct models of PE fit (Edwards, 2001; Harrison, 2007).

Moreover, according to Su, Murdock & Rounds (2015) employees can affect changes in their daily work experience by changing their routine tasks or changing the nature of their relationships with other worker. To add, supervisor also can play a role as team worker as they are working together in same work place. Thus, the interaction between one individual to their superior or supervisor also may have affected to their performance.

Interestingly, a study by Oh, Guay, Kim, Harold, Lee, Heo and Shin (2014) highlighted that PS fit become an important fit dimension for job performance because of the hierarchal aspect lies particularly in Asian countries. The reason behind is; employees are expected to obey their supervisors for their own benefits

(Hofstede, 1991; House et al., 2004; Shao et al., 2013) of promotion and future career planning. In current study perspective, nurses working in public hospitals are considered as “blue collar” workers and found involved in certain regulation at their work. For instance, if something happens during their work then they cannot report directly to their superior, which means they have to follow the level of hierarchy starting from their supervisor.

In line with discussion, it is proved that the relationship between employee and their supervisors played an important role to enhance performance indicator because employee’s work got evaluated by their supervisors. Therefore, maintaining a good relationship and having same consensus will make their work easy. As this study focus on DA fit to measure PS fit, thus the ability of employee to fulfill and meet the supervisor’s demand is the indicator of this dimension. For instance; having a good relationship with supervisor is a main predictor of job performance because employee always need strong support and guidance from their supervisor to deal with any difficulty or challenging situation. Therefore, based on the above discussion, the following hypothesis has been developed:

Hypothesis 8: There is a positive and significant relationship between PS fit and Adaptive Performance.

2.6.3 Big Five personality traits (PT) and work engagement (WE)

Recently, growing number of studies have found the scholarly discussion between personality and work engagement. According to Saks (2006), work engagement has found to give positive effect on number of performance indicators. However,

previous studies indicated that more than 70% of employees are not engaged in their work (Gallup Employee Engagement survey; 2011). Therefore, there is a need to investigate both practical and theoretical significance to understand potential factors that can contribute to individuals' work engagement (Robertson & Cooper, 2010). Thus, this study will try to enhance the knowledge of existing literature by contributing in Big Five Personality Traits to employee's work engagement.

Moreover, there are number of studies who investigated the antecedents of work engagement (Anitha, 2013) and examined several types of personality traits possessed by different level of engaged employees, unfortunately, there are lack of studies on deep understanding of a diverse range of personality traits (Petrides & Furnham, 2003). For instance, meta-analysis on work engagement conducted by Halbesleben's (2010) found that only few studies have reported the effects of narrow traits and the discussion of each trait has not been explained deeply.

Moreover, as stated by Woods and Sofat (2013), engagement is a transitory state (not fix variable that may fluctuate over time) while personality traits like Big Five is instable state (Langelaan, Bakker, van Doornen, & Schaufeli, 2006). This means that constant traits represents the long-term propensity to generalize influence that the way how people think, behave and feel (Funder, 2001). Therefore, it should be analyzed deeply that which personality trait give strong influence on employee outcomes. Thus, in current study perspective, it will be examined that which personality of nurses give high impact to their work engagement as well as on their adaptive performance.

Theoretically this study is based on stable traits and transitory states as recommended by past literature. The studies proved that personality traits can influence employee's outcomes through mediating motivational variable or transitory variables like work engagement (e.g., Barrick, Mount, & Strauss, 1993; Eysenck, 1982; Judge & Ilies, 2002; Kanfer, 1990). Therefore, the researcher adopts this theoretical reasoning in current study to use work engagement as mediator.

Moreover, findings of meta-analysis by Alarcon, Eschleman and Bowling (2009) showed a significant relationship among all dimensions of personality and burnout; which is reverse mode of engagement. Furthermore, Swider and Zimmerman (2010) also did meta-analysis study to examine the connection between personality, burnout and work outcomes, however, they found that personality has significant relationship with burnout. Therefore, it has been confirming that certain personality traits have a reflection to engagement because of the behavioral characteristics as engagement's definition contain a part of activation and energy (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

Furthermore, it has been identified that all traits of personality do not influence engagement based on job types. For instance, Kim et al. (2009) found negative association with neuroticism and only conscientiousness was found significant. However, the other three traits were found insignificant with work engagement. Similarly, Macey and Schneider (2008) also agreed that conscientiousness is associated with engagement because such persons are hardworking and dedicated.

In addition, not only conscientiousness but emotional stability also found to be among two special antecedents of job engagement (Inceoglu & Warr, 2012). As discussed earlier, emotional stability is a reverse form of neuroticism. Therefore, work engagement is characterized by low level of neuroticism and high level of extraversion (Langelaan, Bakke, Doornen and Schaufeli, 2006).

A study by Langelaan et al. (2006) also examined that relationship between Eysenck's Big Two (emotional stability and extraversion) and work engagement are found both positive and negative. So, Langelaan et al. (2006) revealed that engaged employees possess high positive affect (good feeling) and low negative affect (bad feeling). In line with discussion, negative affect was found positively associated with neuroticism and negatively related to extraversion (Schaufeli & Bakker, 2004). Similarly, Inceoglu and Warr (2011) found that low levels of neuroticism and high levels of extraversion predicts employee engagement because neurotic and extraverted individuals are more experienced, vigor towards work engagement (Brief & Weiss, 2002). Additionally, individual with high level in neuroticism and low level in extraversion, agreeableness and conscientiousness experience burnout and engage in eccentric behaviors (Swider & Zimmerman, 2010).

Similarly, according to Wefald, Reichard and Serrano (2011) stated that conscientiousness and extraversion, agreeableness are the antecedents of work engagement. Arguably, Kim, Shin and Umbreit (2007) also suggested that agreeableness is equal to extraversion in term of their importance especially when it involve to professional job like nursing profession. Even though, it just generally

related to work engagement but its relationship with self-efficacy emphasize its applicability to the hospitality sector (Kim et al., 2007: 2009).

Overall, these two variables which are Big Five and work engagement has mutual relationship of high extraversion, agreeableness, openness, emotional stability and conscientiousness that gives high level of work engagement (Akhtar, Boustani, Tsivrikos, Premuzic, 2014). Even though, there are inconsistencies result about personality factors but past literature agreed that all factors of Big Five could predict work engagement (Akhtar et al, 2014).

However, the relationship of each dimensions of Big Five Personality Traits is inconclusive in nature and mixed findings has been observed between each to another trait in past literature. Therefore, it is less presentable to present the relationship under each dimension as separate division. Thus, we discuss it in this one section (no sub topic) and we make the hypotheses to conclude all the relationship of all Big Five Personality Traits and Work Engagement are as below:

Hypothesis 9: There is a positive significant relationship between Agreeableness and Work Engagement

Hypothesis 10: There is a positive significant relationship between Conscientiousness and Work Engagement

Hypothesis 11: There is positive significant relationship between Emotional Stability and Work Engagement

Hypothesis 12: There is a positive significant relationship between Extraversion and work engagement.

Hypothesis 13: There is a positive significant relationship between Openness to Experience and Work Engagement.

2.6.4 Person Environment (PE) fit and work engagement (WE)

PE fit has found to be a strong contributor toward employee's outcome (Oh, Guay, Kim, Harold, Lee, Heo & Shin, 2013), however, only few studies identified the effect of PE fit dimensions on the work engagement (e.g. Beer, Rothmann & Mostert, 2016; Lu, Wang, Lu, Du, & Bakker, 2014; Manson & Carr, 2011). Moreover, all these studies have concentrated only on the relationship between PJ fit and work engagement and neglected the other PE fit's dimensions like PS fit, PG fit and PO fit.

A recent study by Abdul Hamid (2013) on the effect of PE fit dimensions on work engagement found that only three out of five dimensions of PE fit (PO fit, PJ fit, and PS fit) are positively related to work engagement. Similarly, a study by Manson and Carr (2011) found that PJ fit had a positive influence on individual outcomes. Furthermore, both studies found Demand-Ability (DA fit) which is also known as specific requirement to perform well in a particular job. In other word, employees who equipped with adequate KSAs will feel easy to perform work and feel engaged with their work. Similarly, Brunetto, Shriberg, Farr-Wharton, Shacklock, Newman, and Dienger (2013) also found a significant relationship between employees' KSAs

and their work outcome. Therefore, PE fit dimensions in term of Demands-Abilities fit enhance employee's work engagement.

A past study by Scroggins's (2008) found meaningful work related to self-concept-job fit. To add, self-concept-job fit is a part of PJ fit model and meaningfulness is a part of work engagement (Kahn, 1990). Thus, both variables were found associated with PE fit and work engagement. This argument was also agreed by May et al. (2004), he found that relationships build at work place gives notable impact on meaningfulness; a part of engagement's construct. Even though self-concept-job fit and PJ fit were different concepts, however it is still under new PE fit dimensions (Scroggins, 2008) that may lead to work engagement. This finding explained that high KSAs' employees experience high level of meaningfulness at work as they are fit with their jobs. This further may have resulted to increase in their work engagement level since they are fully motivated when performing their task.

Other than that, by examining the Field Theory of Lewin (1951), it gives the understanding about interaction between a person (employee) and their environment (work place) which lead to certain behavior and outcome. In addition, this theory argued that the norm of human being will react towards the environment in which they are involved. Apparently, positive work environment leads to positive employee's behavior and performance outcome. On the other side, Social Exchange Theory (SET) also gives best explanation in this relationship between these two variables. As linking SET in relationship between PE fit and work engagement, it explains that employee tend to engaged well in their work when they perceive well fit from their working environment, because, SET stand from a reciprocal

relationship between PE Fit and work engagement. It implies that high the level employees matched to their environment fit, more they will get engaged.

Further, in current study, fit between the person and work environment is measured in term of DA fit. It implies that when employees perceived with PE Fit dimensions (organization, job, group, and supervisor) they can demonstrate a high level of work engagement because requirements at work is well matched. For instance, employees who fit with their job's requirements are highly skilled in performing their job, one of the reason is; when a person fit with their supervisor can collaborate well with less conflict because they can meet with his/her supervisor requirements. Thus, it results in increase of work engagement level because each aspect of working requirements (job, group and supervisor's requirements) are well matched with KSAs that help them to increase their performance.

In association between PE Fit and work engagement in current study, this study considered nurses as a respondent. Nursing job is dealing with people which come from either patients or their coworker. For instance, for PJ fit it involved the relationship between a nurse and patient as in their job's description. For PG fit, it involved a relationship between a nurse and emergency department while for PS fi it includes a relationship between a nurse and their sister or matron. Therefore, when a nurse in emergency department having enough KSAs during a work, they will perform well as they are possessing with engagement bond to each person within their working environment. Precisely, when employees build a good relationship with any person or individual within the organization, their work engagement reaches to high level (Anitha, 2013).

Considerably, theoretical justification suggested that PE fit influence employee's outcomes by fulfilling their needs (Arthur, Bell, Villado & Doverspike, 2006). Need fulfillment includes: job satisfaction, job commitment and job engagement which results in favorable attitude of employees. However, this theoretical assumption remains largely unproven and received mix findings in the literature (Greguras & Diefendorff, 2009). Therefore, this study will try to fill the gap in the existing literature by using work engagement as a mediator between employees' fit outcome in term of adaptive performance.

In a study by Grugeras and Diefendorff (2009) suggested that future research should explore more possible mediators in relationship between each and various types of PE fit's dimensions and employee outcome. Thus, based on previous studies recommendations, this study has considered work engagement as a mediator to study the relationship between PE Fit and adaptive performance among nurses working in the emergency department.

In addition, supported by the concept proposed by Lewin's (1951) theory and Social Exchange Theory, it is hypothesized that PE fit dimensions may have significant impact to work engagement. Therefore, it is strongly believed that these two variable have significant relationship. Thus, based on the above discussion and past literature, the following hypothesis has been developed to examine the relationship between PE fit dimensions and work engagement:

Hypothesis 14: There is a positive significant relationship between PG fit and Work Engagement

Hypothesis 15: There is a positive significant relationship between PJ fit and Work Engagement

Hypothesis 16: There is a positive significant relationship between PS fit and Work Engagement

2.6.5 Work engagement (WE) and adaptive performance (AP)

Engaged employee is associated with a job that comply with self-investment, energy, and passion which increase the job performance in both roles; in-role and extra-role performance (Kahn, 1990). As mentioned earlier, engagement is a part of motivational aspect, therefore, it is related to persistency and intensity to lead employee's task performance (Ashforth & Humphrey, 1995; Burke, 2008; Kanfer, 1990; Rich et al., 2010). Highly engaged employees found motivated and focused on their given tasks, therefore, it is estimated that engagement has positive relationship with task performance.

Engagement also act as an indicator of the level of employee's willingness to exhibit discretionary effort in order to assist the employer (Erickson, 2005). Thus, in the context of nurses working in emergency departments of public hospitals, they always perform extra role and go beyond their job scope as they are working in critical unit. Moreover, the main objective of their work is to save the patient's life. Therefore, they have to perform their work with full devotion and put discretionary efforts to succor the organization in the large context including assist the people within the organization (Rich et al., 2010).

Furthermore, engagement concept is differing from other traditional attitudes because it is aligned with motivation's aspect, which strongly correlated with both task and contextual performance (Macey & Schneider, 2008). This is due to logic that engaged employees undergo a high level of connection to their tasks even in any difficult situation like trauma and emergency, thus will proceed to high levels of performance including adaptive performance.

Consistent with past literature findings that motivation (engagement) is a relationship between behavior and performance (Barrick, Stewart, & Piotrowski, 2002; Judge & Ilies, 2002). Despite, the main issues regarding engagement and behavior are still not address properly (Bakker et al., 2011). On the other side, engagement is not always a reason for high performance, also, high performance is not always depending on the input of employees work engagement. That is why, the context can affect that which type of behavior is possible to affect the outcome (Parker & Griffin, 2011). Additionally, even though past literatures revealed the essential linkage between engagement and performance, however, only few studies have investigated on how employees adapt and which engagement's processes can direct them to great performance (Jundt et al., 2015).

In addition, Griffin, Neal and Parker (2007) introduced an integration model of performance that combines many performance concepts and relates behavior to the requirements of the task environment especially in uncertainty and unpredictable situations. Furthermore, this model recognizes two work environment's features; uncertainty and interdependence which effect certain behaviors to contribute in overall performance. Therefore, based on the model suggested by Griffin et al.

(2007), individuals will perform based on the high or low level of uncertainty. Usually, employees perform their tasks well with low uncertainty because they used to do it as a routine work, whereas, when there is high level of uncertainty, they be inclined to low level of performance due to new changes occur in their task and effect their performance.

Moreover, there are two types of behavior that needed to respond to uncertain environment which are adaptively and proactivity (Griffin et al, 2007). Adaptively required to respond and adjust one's behavior with any changes in the environment (Pulakos, Arad, Donovan, & Plamondon, 2000), while, proactivity required to anticipate and self-initiating change (Crant, 2000). Therefore, based on the idea of Griffin et al. (2007), the connection between work engagement and performance of employees under uncertainty working environment can be tested. Therefore, Pulakos et al. (2000) suggested that adaptability of employees to work under any circumstances and to ensure their performance is still on high position. Thus, linking this concept with the help of engagement is expected to enhance nurses' adaptive performance in emergency department of Malaysian public hospitals.

Despite the well-known concept of work engagement and its ability to give positive performance outcome, there is still a lack of empirical investigation on work engagement (Saks, 2006; Shuck & Wollard, 2010). However, only few qualitative and quantitative studies examined the relationship between work engagement and organization performance (Bakker & Demerouti, 2008). Thus, there is a need to conduct an empirical study to examine the relationship in the context of different

organizations (Kim, Kolb & Kim, 2012) including public organization in health care sector.

In addition, the gap between organizations' interest towards work engagement and academic scholars in understanding this relationship provides justification to conduct more study relating work engagement and performance (Torraco, 2005) especially adaptive performance since it was still new and unexplored. Even though adaptive performance brings high impact to employee's performance especially in today's working environment, unfortunately, as found in past literature, there is still a restricted number of studies investigated the relationship between work engagement and adaptive performance. This is due to adaptive performance is the newest construct of job performance, thus most past studies available investigated the relationship between work engagement and job or task performance and very few studied adaptive performances.

Therefore, this study will try to fill the gap in the existing literature and enhance the knowledge by examining the relationship between work engagement and adaptive performance in public health care's perspective. Hence, based on the above discussion, the study hypothesized the relationship between work engagement and adaptive performance as follows:

Hypothesis 17: There is a positive significant relationship between Work Engagement and Adaptive Performance.

2.7 The Mediating Effect of Work Engagement

In meta-analysis, recent studies found that engagement function as a mediator between key antecedents and consequences particularly in job performance (Christian, Garza & Slaughter, 2011). This clearly shows the ability of work engagement to work as mediator between any two relevant constructs. However, particular issues remain unsolved even have relatively important implications, for instance; engagement has faced the issue of inconsistency in definition and operationalization (Macey & Schneider, 2008). Therefore, still there is a confusion that whether engagement can be differentiated from other constructs conceptually and empirically (Dalal, Brummel, Wee, & Thomas, 2008; Newman & Harrison, 2008).

Moreover, according to Newman & Harrison (2008), several studies are imprecise and ambiguity about the gradual value of engagement as a predictor of behavior. While, Macey and Schneider (2008) stressed that “the relationships among potential antecedents and consequences of engagement have not been rigorously conceptualized and less studied”, thus resulted insufficient understanding about work engagement. Also, studies revealed that engagement act as a motivational variable, hence it should direct to high levels of employee’s performance (Kahn, 1990; Rich et al., 2010; Schaufeli et al., 2002). Although it is obviously clarified the crucial point of engagement as mediator to employee’s outcome, however still inadequate number of empirical research applicable to the antecedents and consequences of work engagement (Karatepe, 2013)

Based on above justification, that distal antecedents used in previous studies giving impact to other psychological factors that may impact to job performance (e.g., Barrick, Mount, & Strauss, 1993; Hackman & Oldham, 1980; Kanfer, 1990; Piccolo & Colquitt, 2006). This idea is a main principle of theory of engagement proposed by Kahn's (1990), which is based on notion of critical psychological states rather than physical states. However, scarce research reveals about the ability of psychological factor to mediate the relations between PE fit and employee outcomes (Greguras & Diefendorff, 2009) specifically work engagement in current research.

Furthermore, Kahn (1990) the father of engagement taxonomy presented that both individual and organizational factors have significant impact to psychological experience of work, thus further influenced to work behavior. Based on his idea, Macey and Schneider (2008) classified several factors that can give impact to individual's motivation to work beyond their work role and gave splendid performance. Additionally, according to Christian et al., (2011), job characteristics, leadership and personality traits have directly related to work engagement and indirectly related with performance. This comes with the basis from previous research of work engagement related to job characteristics theory (Hackman & Oldham, 1980), charismatic leadership (Bass & Avolio, 1990), and personality (Macey & Schneider, 2008). Based on the above discussion, the study has strong reasoning to use Big Five Personality Traits (personality perspective) and PE fit (job characteristic and leadership perspective) as two independent variables to study direct relationship with work engagement and indirect relationship with adaptive performance.

Furthermore, work engagement has considered as a mediator variable in current study and also found significantly associated with employees' outcome like turnover intention, job performance, organizational commitment and others. Similarly, Saks (2006) also examined that work engagement mediates two constructs; antecedents and consequences. This finding supported that work engagement could be a potential and relevant mediating variable to enhance employees' positive behavior in workplace and the findings of past literature showed significant relationship between the antecedents and the outcome when it mediated by work engagement.

In similar vein, Saks (2006) also conducted additional regression analysis to examine the mediating effect of the antecedents and the consequences of work engagement. He found that the effect of antecedents on consequences were dropped when the engagement measures were controlled. Additionally, Bakker and Demerouti (2008) also proved that work engagement can be a mediator between two variables by developing a new model and found that job and personal resources could predict work engagement, as well as resulted to in-role performance, extra-role performance, creativity, and financial turnover (Bakker & Demerouti, 2008). Based on these important findings, the overall conclusion is work engagement mediates the relationship of two variables.

Thus, in current study context, work engagement could be used as the mediator between Personality Traits and PE Fit to employees' performance (adaptive performance). Concurrently, only few empirical studies showed that engagement has proved to have high influence to enhance individual employee's performance (Smythe, 2008; Walters, 2008; Chang, 2006; Crawford, 2006; Echols, 2005; Tasker,

2004; Tritch, 2003), however, limited studies has found the mediating role of work engagement between any other two variables. Although, previous studies examined the bivariate relationships between PE fit and employee outcomes (e.g., performance), however, few studies have identified the process in which PE fit relates to these outcomes (Greguras & Diefendorff, 2009). Therefore, there is a need to identify the suitable variable that can act as a part of process of PE Fit in relationship with work outcome.

However, it is hypothesized that employees who possess correct personality and adequate fit match with their work environment requirements will get engage easily with the work even in difficult situations, thus perform extra role and work beyond their job scope. Therefore, engaged employees proved to have a positive work outcome in term of performance even when they are working with full dedication.

Conclusively, based on the past literature and above discussion, it has been noted that engaged employees have willingness to perform well in any uncertain work place environment. Thus, it shows that work engagement is reasonable to mediate the relationship between two constructs like personality traits (with five dimensions) and PE fit (with three dimensions) to employees' adaptive performance. Therefore, two separate hypotheses with separate sub dimensions has been developed to justify the mediating effect of work engagement on the relationship between personality traits and PE fit to employees' adaptive performance.

The hypotheses for variable of Personality Traits dimensions are:

Hypothesis 18: Work engagement mediates the relationship between Agreeableness and Adaptive Performance.

Hypothesis 19: Work engagement mediates the relationship between Conscientiousness and Adaptive Performance.

Hypothesis 20: Work engagement mediates the relationship between Emotional Stability and Adaptive Performance.

Hypothesis 21: Work engagement mediates the relationship between Extraversion and Adaptive Performance.

Hypothesis 22: Work engagement mediates the relationship between Openness to Experience and Adaptive Performance.

The hypotheses for variable of PE fit dimensions are:

Hypothesis 23: Work engagement mediates the relationship between PG fit and Adaptive Performance.

Hypothesis 24: Work engagement mediates the relationship between PF fit and Adaptive Performance

Hypothesis 25: Work engagement mediates the relationship between PS fit and Adaptive Performance.

2.8 Related Theories of Current Study

This study has been supported by three theories which are Theory of Performance (TOP), Trait Activation Theory (TAT) and Social Exchange Theory (SET). TOP will act as underpinning theory while the other two; TAT and SET are the supporting theories for current study. Details and association about all theories with the variables has been discuss in next sub sections.

2.8.1 Theory of Performance (TOP)

During the past of 25 years, scholars have put serious attention to clarify and extending the concept of job performance proposed by Campbell in 1990. Despite the extensive usage of job performance as a one of outcome's measurement in empirical research, however the effort of performance concept clarification is still insufficient (Sonnetag & Frese, 2001). Hence, year by year one can witness arising interest in expanding a definition and concept of performance due to several changes in job nature (Ilgen & Pulakos, 1999) specifically changes in individual's job's scope. However, still Campbell's work on 1990 become a strong basis in explanation of literature on the structure and content of performance in current studies (Dugguh, & Ayaga, 2014).

As stated by Champbell (1990), performance is highly important in individual's level, thus it become a core concept for work and organizational outcome. This is due to the need of high performer within each organization to achieve their target and to stay in competitive advantage's market (Sonnetag & Frese, 2001). Lower performer may not be supported in reaching the organization goals and can be

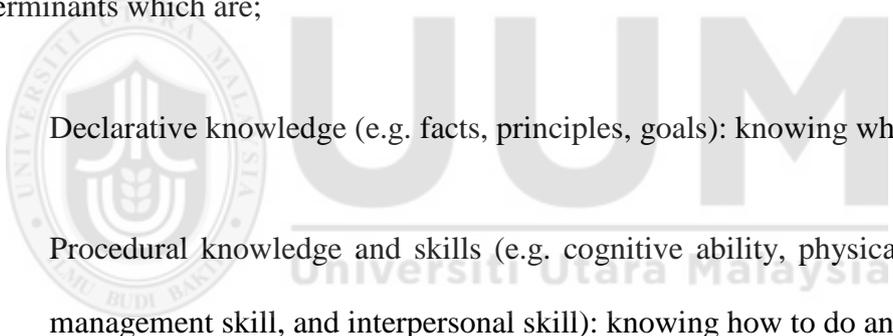
considered as personal failure. Thus, due to the important of individual performance to positive company's outcome, individual performance is mainly treated as a dependent variable in various field of studies (Sonnetag & Frese, 2001). With this regards, organization's performance is started from individual's performance followed by group's performance then to organization's performance as a whole. Hence, due to the importance of individual performance suggested by Champbell (1990) and supported by past literature, the unit analysis in current study also choose to measure the adaptive performance in individual (a nurse) rather than organization.

Further, Champbell (1990) conceptualized a performance's concept by differentiated between an action (i.e., worker's behavior in workplace) and an outcome (i.e., result of the individual's behavior) of performance (Campbell, 1990; McCloy, Oppler, & Sager, 1993; Kanfer, 1990; Roe, 1999). Arguably, performance cannot be measured by the action itself but must be implied together with judgmental and evaluative processes (Ilgen & Schneider, 1991; Motowidlo, Borman, & Schmit, 1997). Additionally, according to Campbell et al. (1993), performance is actually "what the organization hires one to do, and do well". This means only specific action is needed to specific task, thus, not all behaviors are required to experience a good performance but only the behavior which pertinent to organizational goals.

In addition, only certain behaviors can be scaled, and measured, which is considered as a constitute performance (Campbell et al., 1993). Consistently, as definition of performance define by Champbell (1990) is 'behavior'; which is in term of action of employees in their work place. Thus, in this study, certain behavior of nurses at their workplace like the how they serve the patients under critical situation were

constituted to their performance's measurement. This includes how they behave in their work place as their behavior portray their personality. Thus, current study proposes to use Big Five Personality Traits (as a component of behavior), while work engagement and adaptive performance (as a component of outcome) to measure nurses' individual performance in emergency department of Malaysia public hospitals.

Similarly, Campbell's model also clearly distinguished between performance components, determinants and predictors of these determinants. Similarly, Campbell (1990) proposed that individual differences on performance is based on these three determinants which are;

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- i. Declarative knowledge (e.g. facts, principles, goals): knowing what to do
 - ii. Procedural knowledge and skills (e.g. cognitive ability, physical skill, self-management skill, and interpersonal skill): knowing how to do and
 - iii. Motivation (refer to three choices of behaviors; choice to expend effort, choice of level of effort to expend, and choice to maintain the expenditure of the effort's level).

In addition, Campbell's work proposed that procedural knowledge and skills which comprised of cognitive ability variables, have an effect on task knowledge, task skills, and task ability. On the other word, these elements are significantly related to KSAs of employees. The continuity of Champbell's ideas has added PE fit as another independent variable in this study from the basis of employee's knowledge,

skill and ability (KSAs) as one of the main predictors to performance, and also agreed by Motowidlo et al. (1997). Meanwhile, KSAs measurements for current study is based on Demand Ability (DA) fit for all dimensions in PE fit variable.

Due to this, current study has tried to examine the relationship between PE fit (in term of DA fit; study of KSAs of employee) and employee performance but measured as adaptive performance since it is also present in performance domain even in a new division. With these regards, the KSAs has predicted to have significant relationship to employee's performance. Thus, to measure employee's KSAs, the variable of PE fit become reasonable to be studied, therefore, become one of independent variable for this study.

Furthermore, based on motivation aspect proposed by Campbell (1990), again there is a limitation of his model when he does not make particular explanation about motivation's predictors (Campbell et al., 1996). However, Sonnentag, Volmer and Spsychala (2010) revealed the importance of motivation and performance outcome by stated that any motivational constructs (i.e engagement) that relate to performance can be categorized under individual differences perspectives. So based on this idea, work engagement is predicted to have relationship with performance, therefore work engagement act as a mediator in current study while adaptive performance act as dependent variable.

Other than that, Campbell (1990) also conceptualized job performance as a multidimensional construct, which meaning it consist more than one type of behavior. Clearly, he introduced an eight factor model of performance which can be

matched to all types of job including nursing job. Eight factors are mentioned as below:

- i. Task specific behaviors: behaviors of one individual that relates to one's job.
- ii. Non-task specific behaviors: behaviors of an individual which requires beyond of one's responsibility, extra role behavior.
- iii. Written and oral communication tasks: refer to formal and informal oral and written presentations of one's job.
- iv. Effort: refer to what extent of one's willingness to commit themselves in job completion.
- v. Personal discipline: refer to one's willingness to obey the rule and regulation in their work.
- vi. Helps out the groups and his or her colleagues: refer to willingness of one's individual to work in group or team.
- vii. Supervisory or leadership component: refer to ability of one's to supervise o being supervised by other.
- viii. Managerial: refer to ability of one's individual to manage themselves, team, organization and their job.

Based on eight factors that may contributed to one's performance proposed by Campbell (1990), two factors which are non-task specific behavior and effort are also closely related to work engagement, which is the willingness of employee to perform extra role behavior and deliver more discretionary action without hoping for any reward. Consistently, as stated by Campbell (1990), individual performance not only determined by behavior and outcome only, but may effected by other factors also. Therefore, these two factors are assumed to have effect on enhancing one's performance in their workplace. Hence, the element of work engagement is reasonable to be as a mediator in current study as to investigate the mediating role of work engagement in enhancing employee's performance.

Furthermore, according to Borman & Motowidlo (1997) as respond to Campbell's work, as to easy understand the theory of performance are by referring to three different general perspectives which are; i) an individual differences perspective which involved in individual characteristics (e.g., ability, personality), ii) a situational perspective which focuses on situational aspects (e.g., environment, work place), and, iii) a performance regulation perspective (e.g., performance process). Though, Campbell et al. (1996) also assumed the existence of interactions among these three types of performance perspectives, but he does not specify them in detail. Moreover, Campbell (1990) largely neglected a situational perspective to be as predictors of performance in his developed model (Hesketh & Neal, 1999) while it is become so important in today's working environment that faced challenges and changes.

Latest, this well-established theory of job performance in current study; adaptive performance is relying on dramatic change in today's work environment as compared to previous time. Arguably, health care organizations and nursing job's nature as a whole also undergoing dramatic changes (Fairbrother, Chiarella, & Braithwaite, 2015). Thus, performance measurement in turbulent workplace like emergency department may also different from the measurement of job performance.

In addition, as highlighted by Borman & Motowidlo (1997) on the essential part of situational perspective in Champbell's theory, working environment is important factor that may contribute to performance. For instance; when employees deal with difficult situation or high uncertainty environment, they may face a difficulty to perform well as compared to less uncertainty environment (Ilgen & Pulakos, 1999). Due to this, to tackle with any uncertainty in working place, employee has to equip them self with adequate skill, knowledge and ability to ensure that they are ready to perform in any unpredictable situation. Thus, due to important of measurement in today's working environment, the new notion of performance which is adaptive performance has been introduced to Champbell's job performance's model.

In addition, due to globalization and modernization issue, it has become a catchy word to describe today's business view. The competition in market place become more advance and wider since it involved unlimited barrier for each other. Likewise, in health care sector it is also facing the changes when new disease become uncontrollable due to globalization. Similarly, technology advancement also give impact to work's nature, particularly the usage of computer and information systems in replacing former work system. For example, nurses nowadays should know that

how to use new medical equipment, machine, and system to increase work's efficiency. Furthermore, as pointed out by Hesketh and Neal (1999), the usage of technology in work processes neglected the traditional views of performance as performance is conceptualized by behavior which is self-controlled by the individuals (Campbell, 1990) and not by other external factor like technology.

Moreover, today individuals have the willingness and the ability to adapt fast in continuous learning process to accomplish their tasks successfully. Past study by Campbell (1999), Hesketh and Neal (1999) and London and Mone (1999) suggested to involve learning construct in performance concept. Finally, Pulakos, Arad, Donavan and Plamondon (2000) proposed 'adaptive performance' as a new concept of by adding learning criteria as a major performance construct.

Thus, the new facet of performance also known as adaptive performance derived from the Champbell (1990) to match with current working environment. This is due to Campbell (1990) early taxonomy of work performance excluded the notion of adaptive performance. Hence, the concept of adaptability has become debatable and numerous authors refer to same concept by using different terms. For instance, Hesketh and Neal (1999) referred to adaptive performance, Murphy and Iackson (1999) describe as role flexibility and London and Mone (1999) discussed it as the proficiency of integrating new learning experiences.

As a consequence of diversity of term and concept discussed, Pulakos et al. (2000) shed a light into adaptive performance literature by presented an eight-dimensional taxonomy of adaptive performance as "handling emergencies or crisis situations,

handling work stress, solving problems creatively, dealing with uncertain and unpredictable work situations, learning work tasks, technologies and procedures, demonstrating interpersonal adaptability demonstrating cultural adaptability, and demonstrating physically oriented adaptability”.

All adaptive performance’s dimensions were observed to be existed in various types of jobs (Pulakos et al., 2000) including nursing profession. Similar to both task and contextual performance, adaptive performance also considered as multidimensional construct. Thus, future research is encouraged to examine the antecedents and consequences of adaptive performance, also to improvised the taxonomy of adaptive performance as suggested by Pulakos and friends (Sonnentag et al, 2010).

As stated by Champbell, three perspectives represent different approaches of performance phenomenon. However, some researchers often to combine two or more approaches in their performance’ studies. Similarly, Mitchell (1997) combined the individual differences and situational perspectives in his study. From this basis, in current study, the researcher focused on an individual differences perspective which explain about individual characteristics (Big Five Personality Traits) and a situational perspective that focus on situational aspects (PE Fit) as a predictor to performance and measured as adaptive performance by using engagement (motivation perspective) as a mediator.

Theoretically, TOP became an underpinning theory for this study because it gave strong foundation to each variable of current study and gave the understanding of conceptual framework. However, as recommended by Pulakos (2000), TOP

extended to adaptive performance model to match with current working place specifically in public hospitals. As to yield high individual performer, organizations have to select potential individuals based on their abilities, experiences and personality to adapt fast in changing and advance working environment.

Hence, the proposed framework of current study using all variables of Big Five Personality traits, PE fit, work engagement and adaptive performance derived from TOP as suggested by Campbell et al. (1990, 1993). Based on his suggestion, all variables; dependent, independent and mediating variable involves in current study are based on Champbell's ideas and concept of job performance. However, as to study current workforce, the element of adaptive performance is injected to previous performance's model and theory.

2.8.2 Trait Activation Theory (TAT)

TAT's concept is based on individual's personality and performance, which trait activation integrated by three theories which are trait theory, theory of situationism, and personality-job fit theory (Tett, Simonet, Walser & Brown, 2013). Based on trait theory and situationism theory, personality psychologist has different thought and debate regarding trait-situation-behavior (Tett & Guterman, 2000). Therefore, trait theorists suggested that behavior's prediction can be analyzed through consistent personalities depending on the situations. It implies that a person's behavior is dependable on the situation they are facing with his/her personalities.

However, situationism disagreed with these thought because they believed that personalities as consistent and fix construct and cannot be changed by situation. On

the other side, Situationists argued that only the situation (not include personality) influenced someone's behavior. Currently, almost all personality psychologists agreed and supported trait theorist perspective, where both person (personality) and situation influenced individual behavior; therefore, the primary debate no longer exists (Fleeson & Nofle, 2009).

On the other side, other combination of theories involved in TAT is Personality-Job fit theory which based on wide concept of Person-Environment fit, certain environments are matched with certain personality characteristics of a person held (Tett et al, 2013). Thus, selecting and hiring a potential worker who has best fit will produce great outcome in job performance. Therefore, it is clearly stated that personality-job fit theory is also depending on an interactional model; the interaction between personality-situation got influenced to person's behavior (Chatman, 1989).

Clearly, TAT is derived from specific model of job performance with extended view of other theories like trait, situationism and personality-job fit theory. Generally, based on Tett and Burner (2003) trait activation is "the process by which individuals express their traits when presented with trait-relevant situational cues". The situational cues including either organization, social and/or task cues. Furthermore, these cues can stimulate personality traits which are related to job and organizational outcome (i.e., work engagement and job performance).

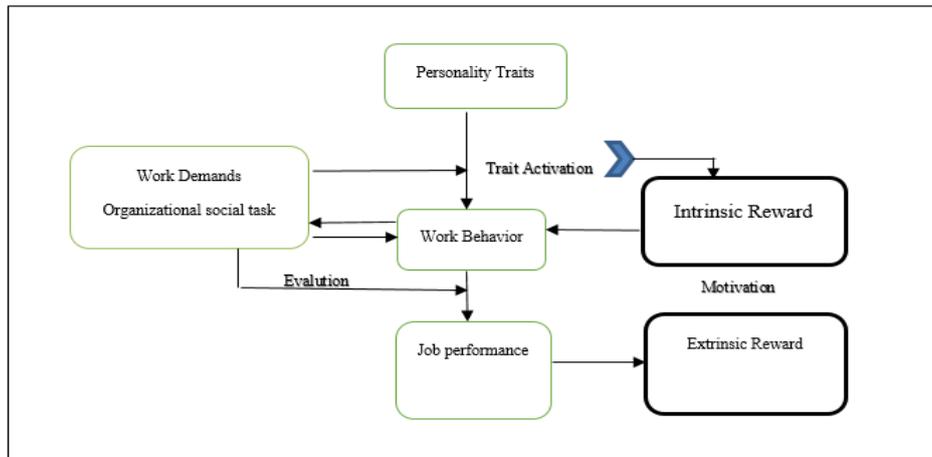
In addition, the concept lying on trait activation can be traced back on early 1938 which Henry Murray explained as situations that 'press' individuals to portray the traits (Tett & Burnett, 2003). In short, Tett, et al (2013) concluded the key concept

in understanding the trait activation theory with the best quotes from famous personality scholar Eysenck (1985), which explains that "trait and situation are the two sides of the same coin and cannot be separated from each other" and other scholar Kenrick and Funder (1988), explained "traits influence behavior only in relevant situations for instance anxiety come up only in situations when the person finds threatening".

Moreover, according to Tett and Burnett (2003), trait-based model of job performance explained about TAT which suggested three core principles which are;

- i. Traits are expressed in work behavior as responses to trait-relevant situational cues; (performance outcome of employee as a result from the personality-situation)
- ii. Sources of trait-relevant cues can be grouped into three broad categories or levels: task (work nature), social (team member), and organizational (department); and
- iii. Trait expressive work behavior is distinct from job performance.

Figure 2.1 below shows the whole explanation about TAT as suggested by Tett and Burnett (2003)



Source: Tett and Burnett's (2003)

Figure 2.1 Personality Trait-Based Model of Job Performance

Based on TAT, it is suggested that employees derive intrinsic satisfaction from a situation (work environment) to express their distinctive personality traits. Meanwhile, the theory specifies that only particular situations where the personality traits are reasonable to job (i.e., traits expression based on the job's condition), "activating the trait" will direct to greater job performance and ensuing increased extrinsic rewards; pay, bonus and other benefits. However, motivation aspect in the framework also including engagement part as engagement itself is in the intrinsic form. Thus, based on this idea, it explains well the relationship between personality, engagement and performance.

In a nutshell, "people want to work where they are rewarded for being themselves" (Tett et al, 2013), means that a worker specifically nurse will perform well if they are free to become who they are and do not have to change the norm who they are just to

fulfill the job's requirement. When firm give them space and freedom to become who they are without have to alter their personality, they will easily engage with the work because they used to do the work in similar way as they are, thus it also will help in their work performance as engaging with work, perform work wholeheartedly.

TAT stand an argument for distinct behavior among employees which is either influenced by a trait depending on the situation or based on the trait only. However, according to Judge & Zapata (2015) found that trait-relevant situations produce better performance than situations that are trait-irrelevant. For instance, one of the personality trait; extraversion, is associated with sociability and seek out the companionship. With regard to the respondent of this study, the nurses are performing work tasks associates with people (patients), one might assume that trait activation will result in good job performance. However, if extraversion is activated on the job nature dealing with the presence of machine or equipment, job performance may suffer because of nature of job don't require the sociability interaction among persons.

Since limited studies has investigated about TAT, scholars agreed that TAT have inconsistent findings in study of personality and work behavior; performance (Chen, Kirkman, Kim, Farh & Tangirala, 2010). According to Jiang, Wang and Zhou (2009) other personality traits like agreeableness may be strong factor to performance in job nature like to help other such as nurses in public hospitals, but agreeableness is less predictive in job performance like occupation of information technology analyst. This is because they cannot cooperate with each other since they need more

independent job for analysis work. Similarly, the theory has been used to explain why extraverted person seem to perform well in certain occupations (i.e., salesman) which involve high level of social interaction (Barrick & Mount, 1991).

In addition, TAT also assist an organization to recognize how workers got motivated by the rewards offered based on their individual traits (e.g., introverts; don't get motivated by the rewards which involves public recognition like personal holiday trip, while, extraverts get attracted by the reward like group holiday trip). Thus, introverts and extroverts' individual's preference varies based on their personality traits.

Therefore, trait theory is a psychological manner incorporate with identifying the personality traits. Likewise, constantly stable of individual differences described general pre-dispositions or predictable regular thinking's pattern and experiencing common emotions which can influence one's behavior (Allport, 1927). On the other words, when individual possess right personality in their working place will portray the correct behavior because they fulfill the job requirement easily. For instance, emotional stability is one of the crucial personality need in nursing job. Individual with high emotional stability will handle and cope with critical situation in emergency department very well as compared to individual with lack of emotional stability trait. Hence, by having emotional stability trait will help them to remain engage with their work even in difficult situation, thus may further resulted to good performance as well.

Conclusively, as suggested by Costa and McCrae (1997), the most established set of personality traits' categorization is known as Big Five personality traits is reasonable to be used to study behavior of employees in their work place. In short, TAT give strong theoretical support to the relationship among Big Five Personality (component of traits), Person-Environment fit (situational component), Work Engagement and Adaptive Performance (employee's outcome in term of behavior component). In other word, the main key concept of TAT which is based on three component of trait-situation-behavior that explain well about the personality of the nurses (trait) working in emergency department (situation) and their performance outcome (behavior).

2.8.3 Social Exchange Theory (SET)

Social exchange theory (SET) was become the most common and established theory used in engagement's studies (Cropanzano and Mitchell 2005; Rhoades and Eisenberger 2002). Similarly, according to Saks (2006), SET is considered the tough and solid theoretical support in understanding engagement's concept. In current study, SET explained the role of work engagement as a mediator to study the relationship between PE fit dimensions (PG fit, PJ fit and PS fit) and adaptive performance. All of these three dimensions of PE fit has the relationship between an individual to other person in the workplace. For instance, PJ fit involved between the relationship of person (nurse) and job (patient). Similarly, PG fit involves between person (nurse) and group (emergency department team member) as well as PS fit which involve in the relationship between person (nurse) and supervisor (matron or sister).

SET story line started from Thibaut and Kelley (1959), Kelley and Thibaut (1978), Homans (1961) and Rusbult (1983). In the early stage, George Homans (1961) published a work of "Social Behavior as Exchange" (Stafford & Laura, 2008). He explained social exchange as "the exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons". In addition, Homans' work stressed about individual behavior and interaction with one another. He also agreed that SET was a theory which based on "reinforcement principles". However, Emerson (1976) argue the credibility of exchange as a theory, thus he proposed exchange is a framework rather than stand as a theory. However, Emerson and Blau have consensus on similar perspective and they focused on the power of the relationship when exchange process takes a part.

In addition, Homans uses the concepts of individualism to explain exchange processes (Lawler & Edward, 2001). This is match with the scope of the study and the respondent which are individuals. Arguably, individual tend to focus on their own self-interest which known as central property of social exchange (Lawler, Edward, Thye & Shane, 1999). This is the simplest forms of interaction when two persons have something with same interest and they decide to exchange the value up to some extent. Therefore, based on Homans's concept, this theory explained better in exchange of relationship between one people to another. For instance, between a nurse and a supervisor relationship exchange that explains about how they exchange their self-interest.

Similarly, a nurse self-interest may be towards getting good performance evaluation from their supervisor and supervisor's self-interest towards the employee might be in

term of their ability to perform a work with minimum supervision. Therefore, they will form a good relationship, which impact to high level of engagement as they are easy to work together. As a result of this, it may further result to good performance even in difficult environment since they gain support to each other.

In addition, the process of social exchange contributes to individual's personal satisfaction when they perceive worth and fair returns for their expenditures (Burns, 1973). Consistent with this study, when an individual has satisfied relationship with each other and in the mutual relationship; win-win situation, they will feel engage and can work together very well, thus may further resulted to better performance.

Furthermore, to understand well regarding the engagement of employees in organizations, Saks's (2006) study serves the best for this purpose. He used one of the component in SET to explain that SET stands for reciprocal interdependence state. In his study, he noticed when individuals receive any reward (extrinsic or intrinsic) or satisfying resources from their organization, they feel honored to repay the organization, by offering their highest level of engagement (Saks, 2006). This means, more engaged they are, more amount of cognitive, emotional, and physical resources they will offer when performing their task.

Therefore, this explanation is best described an engagement as a reciprocal relationship between two parties. In addition, the basis of SET is, "people make social decisions due to the perceived costs and benefits" (Cropanzano & Mitchell, 2005). Additionally, according to (Ethugala, 2011), human's make evaluation

towards any relationship when influenced by the benefit they get from the relationship.

Thus, SET gives a theoretical foundation to clarify the causes on why employees make decision either to engage more or get less engage or not to get engage at all on their job and either to give performance of their work whole heartedly or just perfunctory. In the side of Kahn's (1990) about the definition of engagement, employees feel urge to show a progress and hard work because to have satisfied performance due to their need for repayment of the resources that they already received from the firm.

Unfortunately, when the firm fails to provide them with all the required resources, employees ignore and disengage themselves from the firm. For instance, when organization place a nurse to work with unfamiliar job scope (PJ Fit), wrong department (PG fit) or unethical supervisor (PS fit), they will become less motivated, this will yield to disengage with their work as well as cannot perform well. Therefore, the cognitive, emotional and physical resources that an individual bring together have an impact on their work performance due to lack of engagement. Specifically, will effect to adaptive performance since it is not just to perform a task but to being adapt and deal with harsh condition.

Finally, SET provides a clear landscape to theoretical explanation on why employees place themselves within organization; either fully or partly engaged in their job and the organization. In short, when employees receive comfortable resources (harmonious working environment and good relationship with each other) in their

working place, they tend to repay the organization by offering high levels of engagement and contributes by giving best performance. Thus, this theory occupied the relationship of PE Fit, employee engagement and performance.

2.9 Summary

This section provides the review of past literatures about the context of the study, underpinning theories and variables to be used in this study. Also, the discussion about hypotheses development. Next chapter will discuss about the development of proposed framework and research methodology used to answer the research objectives.



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This study aims to determine the relationship between Personality Traits and Person Environment fit with adaptive performance using the mediating role of work engagement. There are five dimensions that measured personality traits namely Agreeableness, Conscientiousness, Extraversion, Emotional Stability and Openness to Experience (known as the Big Five). There are also three dimensions in PE fit which are; (PJ fit), (PG fit) and (PS fit). Work engagement as a mediator variable consisted of three dimensions, which were vigor, dedication, and absorption. Whereas, adaptive performance work as dependent variable This study was conducted quantitatively and it used statistical instrument to analyze its data.

The research methodology provides a design on how to gather the data and analyzed it using specific method. In this chapter, further information and details about research design, population, sample and sampling procedures, data collection method, variables and measurement, reliability and validity, data analysis techniques will be explored as well as ended with the summary of the chapter.

3.2 Research Framework

Based on the literature review discussed previously and suggestions by several studies, this study has developed a research framework. Big Five Personality Traits and PE Fit has been included as independent variables in current study. Other than that, Work Engagement acted as a mediating variable and Adaptive Performance is a dependent variable of current study. In short, the study variables build a relationship and converted into the theoretical framework to obtain the results according to the current study objectives. The research framework for current study is shows as below:

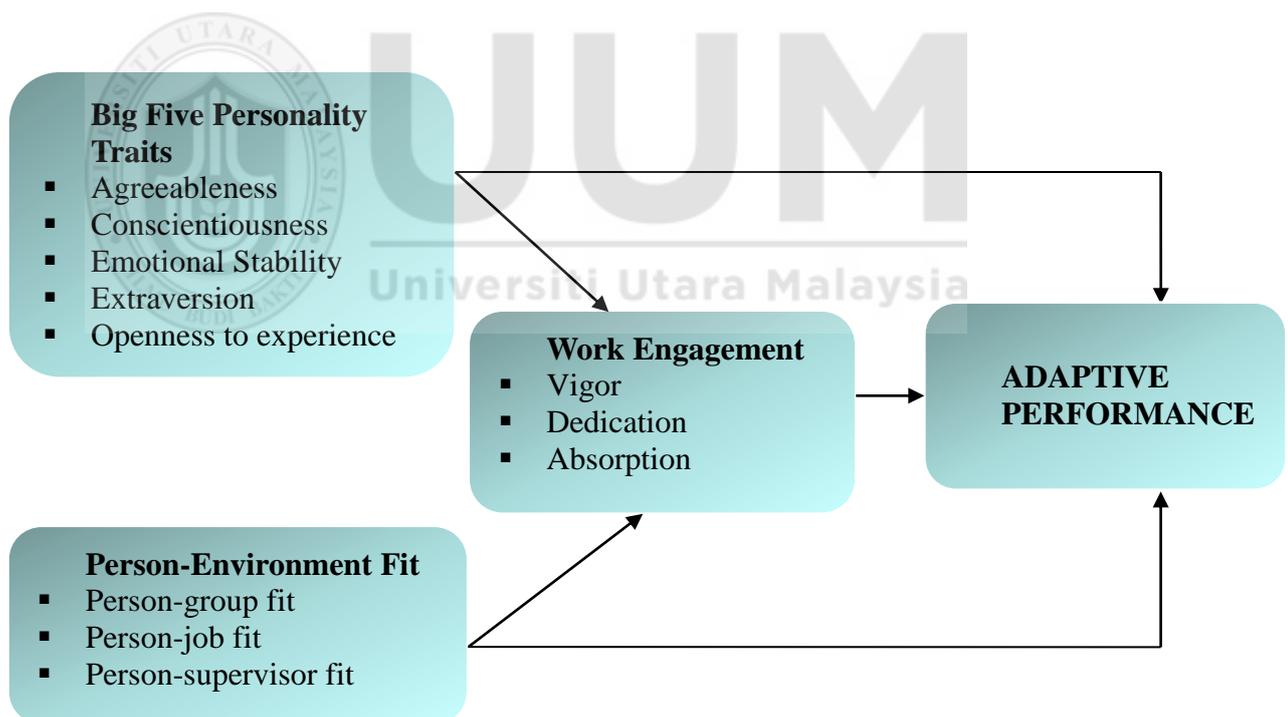


Figure 3.1
Research Framework

3.3 Summary of Research Hypotheses

Table 3.1 shows the summary of hypotheses that were formulated for the present study as below:

Table 3.1
Research Hypotheses

Main Hypothesis	Sub-main / Hypothesis
Research Objective 1:	
To examine the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance among nurses in Malaysia public hospitals.	<p>Hypothesis 1: There is a positive significant relationship between agreeableness and adaptive performance</p> <p>Hypothesis 2: There is a positive significant relationship between conscientiousness and adaptive performance</p> <p>Hypothesis 3: There is a positive significant relationship between emotional stability and adaptive performance</p> <p>Hypothesis 4: There is a positive significant relationship between extraversion and adaptive performance</p> <p>Hypothesis 5: There is a positive significant relationship between openness to experience and adaptive performance.</p>
Research Objective 2:	
To investigate the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance among nurses in Malaysia public hospitals.	<p>Hypothesis 6: There is a positive significant relationship between PG fit and adaptive performance.</p> <p>Hypothesis 7: There is a positive significant relationship between PJ fit and adaptive performance.</p> <p>Hypothesis 8: There is a positive significant relationship between PS fit and adaptive performance.</p>
Research Objective 3:	
To determine the relationship between Big Five Personality Traits' dimensions (Agreeableness,	<p>Hypothesis 9: There is a positive significant relationship between agreeableness and work engagement</p> <p>Hypothesis 10: There is a positive significant relationship between conscientiousness and work engagement</p>

Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Work Engagement among nurses in Malaysia public hospitals.

Hypothesis 11: There is a positive significant relationship between emotional stability and work engagement

Hypothesis 12: There is a positive significant relationship between extraversion and work engagement.

Hypothesis 13: There is a positive significant relationship between openness to experience and work engagement.

Research Objective 4:

To examine the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Work Engagement among nurses in Malaysia public hospitals.

Hypothesis 14: There is a positive significant relationship between PG fit and work engagement.

Hypothesis 15: There is a positive significant relationship between PJ fit and work engagement

Hypothesis 16: There is a positive significant relationship between PS fit and work engagement

Research Objective 5:

To investigate the relationship between Work Engagement and Adaptive Performance among nurses in Malaysia public hospitals.

Hypothesis 17: There is a positive significant relationship between work engagement and adaptive performance.

Research Objective 6:

To examine the mediating role of work engagement on the relationship between Big Five Personality Traits' dimensions (Agreeableness, Conscientiousness, Emotional Stability, Extraversion and Openness to Experience) and Adaptive Performance.

Hypothesis 18: Work engagement mediates the relationship between agreeableness and adaptive performance.

Hypothesis 19: Work engagement mediates the relationship between conscientiousness and adaptive performance.

Hypothesis 20: Work engagement mediates the relationship between emotional stability and adaptive performance.

Hypothesis 21: Work engagement mediates the relationship between extraversion and adaptive performance.

Hypothesis 22: Work engagement mediates the relationship between and openness to experience adaptive performance.

Research Objective 7:

To determine the mediating role of Work Engagement on the relationship between Person Environment fit's dimensions (Person Group fit, Person Job fit and Person Supervisor fit) and Adaptive Performance.

Hypothesis 23: Work engagement mediates the relationship between PG fit and adaptive performance.

Hypothesis 24: Work engagement mediates the relationship between PJ fit and adaptive performance

Hypothesis 25: Work engagement mediates the relationship between PS fit and adaptive performance

3.4 Research Design

According to Sarantakos (1998), research methodology is “*the theory of the methods*” which means the base on how to conduct academic research. In addition, according to Ghauri & Grønhaug (2010), the research design depends on the type of study (qualitative, quantitative or mixed method) which based on the type of research problem to be answered. However, all methods are different based on the nature of data. For example, the qualitative method depends on the data containing sentences, symbols, words, observations, and photos while quantitative method mostly refers to data containing numbers (Cooper, Schindler, & Sun, 2006).

Additionally, based on the research paradigm viewpoint, the epistemology of the research classified the study as positivism which is quantitative in nature (Bogdan & Biklen, 2003). This is because some theories are involved to generate hypotheses. Other than that, the study is positivism which involved with investigating the causal relationship (Schwandt, 2001). With the above regards, this study is in the quantitative method which in nature is suitable to measure the relationship between personalities, work engagement and adaptive performance of nurses in the

emergency department of public hospitals. Furthermore, the quantitative method has the ability to examine the possible causes and effects of behavior and attitudes (Cooper & Schindler, 2006; Gall, Borg, & Gall, 1996). Thus, it is a suitable method to investigate the cause and effect of certain variables based on the objectives of the study.

Lastly, the current study involves the use of questionnaires for data collection technique as well as statistical analysis. The cross-sectional strategy is used to find out the insights of the respondents, whereby the data of the current study will be collected to answer the research questions. Thus, to achieve objectives of the study, questionnaire survey method has been selected for current research as recommended by (Myers, 2013; Veal, 2005; Hair, Ringle, & Sarstedt, 2011).

3.5 Population and Sampling Technique

The population of the study must be clearly identified before the process of sampling starts. As suggested by Sekaran (2009) who defines that “*population relates to the overall group of people or organization which might be the interest to the researcher*”. Hence, the target population of this study is nurses who are working at the emergency department without highlighting the distinction on the gender type and the basis of their scale or grades.

Total nurses’ population in Malaysia health sector was 102,564 and giving the number of 66,227 nurses working in public hospitals. Thus, this giving the ratio of 1: 309 for a patient to nurses respectively (Ministry of Health, Health Fact 2017). The

unit of analysis selected for the current study are the individuals particularly the nurses working in the emergency department of Peninsular Malaysia public hospitals. The reason for selecting this population stands on the fact that nurses who are dealing with uncertainty and critical working environment are very fit to study the individual adaptive performance. Below Table 3.2 provides the list of public hospitals and the respondents involved in this study:

Table 3.2
Population of Nurses Working in ED of Malaysian Public hospitals

	State	Public Hospital	No. of Nurses in ED
1	Perlis	Hospital Tuanku Fauziah, Kangar	23
2	Kedah	Hospital Sultanah Bahiyah Alor Setar	46
3	Penang	Hospital Pulau Pinang	34
4	Perak	Hospital Raja Permaisuri Bainun, Ipoh	39
5	Selangor	Hospital Tengku Ampuan Rahimah, Klang	89
6	Kuala Lumpur	Hospital Kuala Lumpur	198
7	Pahang	Hospital Tengku Ampuan Afzan, Kuantan	43
8	Neg.Sembilan	Hospital Tuanku Ja'afar Seremban	23
9	Johor	Hospital Sultanah Aminah, Johor Bahru	30
10	Melaka	Hospital Melaka, Jln Mufti Hj Khalil	42
11	Kelantan	Hospital Raja Perempuan Zainab II, K.Bharu	35
12	Terengganu	Hospital Sultanah Nur Zahirah, KTerengganu	36
Total Population of 12 Hospitals			638

Source: Human Resource Department, Ministry of Health, 2017

3.5.1 Sample Size

Choosing the correct sample size is the essential part in the research method as it can affect the result and the achievement in any research method. Furthermore, the sample size could be identified by using a statistical way or by using the rule of thumb (Aaker, Kumar, & Day, 2009). Thus, selecting the right sample is very vital part since it is an impossible thing to collect data in each part of the whole population. This is because of very costly, time constraint and inadequate personnel to assist in data collection procedure. Due to this unavoidable reasons, Cooper et al. (2006) and Zikmund et al. (2010) suggested using the sampling technique in data collection procedure which focuses on the targeted population only rather than whole study population. Apparently, using the right sample from targeted population will be resulted to be more consistent and high reliability for the research's result (Sekaran,2003).

In addition, the emergency department in public hospitals has three zones based on the patient's condition. The emergency zones consist of green, yellow and red based on light treatment, semi critical-treatment, and urgent critical treatment respectively. All the emergency department's nurse's work in shift and all of them will be rotated to all zones. Therefore, all of the nurses have vast experience of working in different emergency zones, which makes them easy to differentiate the level of stress working in different zones, especially in red zone, because, red zone area is considered as the most critical zone; required prompt action and urgent treatment, even delay in one second could risk patient life. In addition, all the nurses working in shift rotation for all three zones. Therefore, for the purpose of this study, all zones in emergency

department (yellow, green and red) will involve in this study due to this department is a critical unit in the public hospitals.

Furthermore, the selection of one main public hospital to each state's purpose is because when there is a critical and urgent treatment to the patients, they will refer to the nearest emergency department at the public hospital in their area. However, the only main public hospital in each state provided better equipment and enough specialist doctors for a critical case. Thus, the main public hospital within the state becomes the main reference other than district public hospitals in the state.

Other than that, the selection of the respondent's is due to several reasons. Firstly, the sample was acceptable as the nature of a nurse's job was involved directly with emergency and uncertainty situation as it fit the concept of adaptive performance itself; critical unit's employee. Secondly, nurses are the key person that responsible and have direct contact with patients and faced with uncertainty happens in their workplace (emergency department). Unlike other health professions like doctors and matrons, nurses will directly have to treat and serve the patients with regards to the doctor's advice and matron's guidance. Thirdly, the reason why nurses in public hospitals have been selected for the current study because there are a lot of complaints regarding their performance. Critically, with the passage of time, it has been reported that the Ministry of Health ranked as top 3 of The Highest Complaint among Malaysia Ministries received by Public Complaint Biro (PCB).

Besides, selecting an appropriate sample from the targeted population is important to ensure consistency and reliability of results in the study (Sekaran, 2003). Moreover, according to Krejcie and Morgan (1970), the best sample size for the statistical analysis would be at least 242 if the population is greater than 600 and less than 650. Furthermore, the sample size was selected based on the expected percentage rate of non-response likewise it was stated that the response rate was 88.5% by (Kaur, Sambasivan, & Kumar, 2013) and 86.3% by (Othman & Nasuridin, 2012) of nurses working in public hospitals of Malaysia.

Since the estimated non-response rate in nurses is about 13.7%, therefore, more sample size is needed to ensure the number of the returned questionnaire is more than 242. Reasonably, a bigger number of sample size is needed to keep away from the possibility of non-response bias (Sekaran, 2003). Thus, to secure the number of non-response bias, another 60 has been added to the sample size, hence, then it has increased from 242 to 302 respondents from the total population of 638 nurses in all twelve states. Similarly, Hair et al. (2011, 2014) also recommended about minimum sample size for PLS-SEM analysis must be around 200 respondents, which no maximum number as the greater will bring the best result. Thus, the required sample size of this research is more than 242 which is 302; serve the best for further statistical analysis.

3.5.2 Sampling Technique

The analysis revolves around individual employees. The targeted population for gathering data was the nurses at the emergency department in all public hospitals at

Peninsular Malaysia. There are 139 public hospitals in Malaysia which each state in Malaysia was provided with at least one public hospital (Ministry of Health, 2017). For example, in Perlis there is only one public hospital provided which known as Hospital Besar Tunku Fauziah whereas in Kedah there are nine public hospitals provided. However, for the purpose of this study, only main public hospital at each state will be considered as sample population because the critical cases will only refer to main public hospitals of the particular state as they are fully equipped with medical equipment's and fully equipped with the facility of rooms as well.

Due to the huge number of public hospitals available in Malaysia, this study proposes to use a stratified sampling with prportionate technique. This meaning, the total of twelve emergency departments of twelve public hospitals in each state of Peninsular Malaysia were selected as the sample for this study. In line with this reason, Berenson et al. (2009) also agreed that the cluster probability sampling technique is the best way to use as to represent the sample when the study's population is scattered and separated geographically. Beneficially, this technique is cost and time efficient as compared to simple random sampling. In addition, in cluster probability sampling technique, there are several clusters will be created by dividing the total units in a frame, which each cluster should be represented the population of the study.

After organizing area, proportionate sampling was done with multi-stage sampling. At first stage, researcher selected Malaysia country as a population then segregate the regions based on twelve states of Peninsular Malaysia as mentioned in Table 3.3.

In the third step, among twelve (12) states, total number of nurses working in the emergency department of the public hospitals has been listed down which are 638 nurses. Further, nurses working in the emergency department of head quarter in each state has been segregated based on the available secondary data and also by calling several hospitals to confirm the nurse's population working in the emergency department.

According to Allen et al., (2002), groups selected for the study must equal probability or with probability proportional sampling. Therefore, the present study chooses to use a multi-stage sampling method to gather the required number for data analysis. Table 3.3 below shows the explanation in details.

Table 3.3
Stratified sampling with proportionate technique

S. No	States	Total Nurses in ED	Total Population	Sample	Req. Sample size	Required sample from each state
1	Perlis	23	638	3.61%	302	11
2	Kedah	46	638	7.21%	302	22
3	Penang	34	638	5.33%	302	16
4	Perak	39	638	6.11%	302	18
5	Selangor	89	638	13.95%	302	42
6	Kuala Lumpur	198	638	31.0%	302	93
7	Pahang	43	638	6.74%	302	20
8	Negeri Sembilan	23	638	3.61%	302	12
9	Johor	30	638	4.70%	302	14
10	Melaka	42	638	6.58%	302	20
11	Kelantan	35	638	5.49%	302	17
12	Terengganu	36	638	5.64%	302	17

3.6 Instrument Development

A structured questionnaire will be used as the main research instrument for this study. The questionnaire has several advantages over other types of instruments. For instance; it enables the researcher to collect more data from respondents efficiently as it is also a cost-effective technique to collect the data from different cities or area, also, it requires less effort to collect data and can be quick and easy for analysis (Wilkinson & Birmingham, 2003). Moreover, standardized answers from respondents can be obtained easily (Hair, 2007; Sekaran, 2006).

The survey questionnaires consist of two main components. The first section comprised demographic information about the respondents of this study (the nurses) while the second section contains several questions based on all the variables involved in this study with the measurement by Likert-type scale items. Additionally, Likert Scale is designed to investigate to what extent the respondents agree or disagree with the mentioned statement (Sekaran, 2003). Additionally, the instrument was divided into four main variables with several dimensions, which are adaptive performance (dependent variable), Big Five personality traits (independent variable), person-environment fit (independent variable), and work engagement (mediating variable). Next sub-section below shows the details of the items involved in the current study.

3.6.1 Dependent Variable

Adaptive performance scale of measurement was adopted from eight items developed by Pulakos et al. (2000) through Job Adaptability Inventory and adapted

from the previous study by Hameed (2016) using 15 items used to assess all dimensions of adaptive performance. However, after content validity by three experts, a little amendment has been made to item no 1,7,11,14 and 15, which found to be double-barreled questions. Thus, those five items have been amended to separate items, therefore it becomes 20 items at final. The Cronbach alpha value from the previous study by Hameed (2016) is 0.98. and measurements are depicted in Table 3.4.

Table 3.4
Operational Definition and Items for Adaptive Performance

Variable	Operational Definition	Items
Adaptive Performance	Adjusting one's behavior to meet the demands of a new situation (Pulakos et al., 2000) with dimensions of the ability to solve problem and handle emergency, stress, unpredictable work situations, demonstrate cultural, interpersonal and physical adaptability, and ability to learn new	<ol style="list-style-type: none"> 1. Remain composed when faced with difficult circumstances. 2. Remain cool when faced with difficult circumstances. 3. Do not overact to unexpected situations. 4. Manage frustration well by working towards a solution, rather than blaming others. 5. Develop innovative methods of obtaining resources to get the job done. 6. Turns problems upside-down and inside-out to find fresh, new approaches. 7. Generate innovative ideas to solve complex problems. 8. Readily in response to unexpected changes. 9. Easily change gears in response to unexpected changes. 10. Willing to react even in uncertainty. 11. Take effective action, even when the situation is not clear. 12. Demonstrate enthusiasm for learning new skills and technology.

task and
technology.

13. Quickly learns new ways to perform previously unlearned tasks.
 14. Proficiently learns new ways to perform previously unlearned tasks.
 15. Volunteers to attend training that will prepare self for new skills needed at work.
 16. Open-minded when dealing with others.
 17. Works well with people with different personalities.
 18. Develops effective relationships with people with different personalities.
 19. Demonstrates keen insight of others' behavior to work effectively with them.
 20. Adjusts own behavior to be able to work more effectively with others.
-

Source: Pulakos et al., (2000), Hameed (2016)

3.6.2 Independent Variables

The independent variables for this study are the Big Five Personality Traits (PT) and Person-Environment (PE) fit. The description regarding these two variables was discussed in the section below.

3.6.2.1 Big Five Personality Traits

The personality inventory is adopted from the Big Five factors developed by Costa and McCrae (1992), and adapted from the previous study by Yang & Hwang (2014) with five dimensions, 20 items in all. Table 3.5 shows the details about the measurement of the variable of the current study. The Cronbach alpha is 0.68 to 0.88.

Table 3.5

Operational Definition and Items for Big Five Personality Traits

Variable	Operational Definition	Items
Big Five Personality Traits	Personality traits can be understood as “inherently dynamic dispositions that interact with the opportunities and challenges of the moment” (McCrae & Costa, 1994, p. 175)	i. Agreeableness
		A1: I do my best to help others A2: I get along well with others A3: I see other people’s point of view A4: I am considerate A5: Most of my friends like me
		ii. Conscientiousness
		C1: I am conscientious of my work C2: I am always looking for grow opportunity C3: I try to do my best in everything that I do C4: I am methodical
		iii. Extraversion
		E1: I am a leader E2: I am persuasive E3: I am self-motivated E4: I am energetic E5: I like to talk to people
		iv. Emotional Stability
		ES1: I handle pressure well ES2: I am good-tempered ES3: I rarely feel depressed
		v. Openness to Experience
		OE1: I like to try new things OE2: I take a holistic approach OE3: I am a creative person

Source: Costa and McCrae (1992), Yang and Hwang (2014)

3.6.2.2 Person-Environment (PE) fit

The variable used in this study was measured by using three dimensions, namely PJ fit, PG fit, and PS fit. These three dimensions also were adapted from previous studies and further discussion about this will be discussed on the next sub-section as below.

3.6.2.2.1 Person-job (PG) fit

In this study, the PJ fit instrument was adopted from two sources. The first source from Lauver and Kristof-Brown's study (2001) which had used only three out of five items and the second source is from Cable and DeRue (2002) which had to use two items. Thus, to measure PJ fit in this study, a total five items will be used.

Additionally, the reason why only three items from Lauver and Kristof-Brown (2001) is used that these three items refer to study employee's skills and abilities which fit the job's requirements. In addition, since this study is an attempt to study about DA fit which contains KSAs (knowledge, skill, and ability) element, however, the other item of the knowledge was not included in Lauver and Kristof-Brown's study (2001). Thus, this study adopted the instrument by Cable and DeRue (2002) which refer training and education as a part of knowledge element. The previous study conducted by Abdul Hamid (2013) shows Cronbach alpha by 0.89. Table 3.6 represents the details of all items in measuring PJ fit.

Table 3.6
Operational Definition and Items for Person-Job Fit

Variable	Operational Definition	Items
Person-job fit	Employees' perceived their competencies (knowledge, skills, and abilities) congruence with the demands of the job.	<ul style="list-style-type: none"> i. My abilities fit the demands of my job. ii. I have the right abilities to perform in my job. iii. There is a good match between the requirement of my job and my skills. iv. The match is very good between the demands of my job and my personal skills. v. My training is a good fit with the requirements of my job. vi. My personal education provide a good match with the demands that my job places on me.

Sources: Lauver and Kristof-Brown (2001), Cable and DeRue (2002)

3.6.2.2.2 Person-group (PG) fit

PG fit in this study refer to a nurse fit for the other emergency department's team members. PG fit in this study used items from two sources which are; Hutcheson (1999) and Cable and DeRue (2002). In addition, Hutcheson's (1999) instrument also adapted from Cable and Judge (1996) instrument, but their instrument more focused to measure person-organization fit. A little amendment has been made which is by changing the word, "job" to "work" in each of the three items. However, since Hutcheson's (1999) instrument only measured the elements of skills and abilities but did not contain the element of knowledge as required to measure DA fit, thus this

study adapted the instrument to measure the knowledge from Cable and DeRue (2002). The previous study conducted by Abdul Hamid (2013) showed Cronbach alpha by 0.848. The details of the items are presented in Table 3.7.

Table 3.7
Operational Definition and Items for Person-Group Fit

Variable	Operational Definition	Items
Person-group fit	Compatibility between an individual's knowledge, skills and abilities, and his or her work group members' demands.	<ul style="list-style-type: none"> i. I possess the abilities needed to contribute to my immediate work group. ii. I believe my skills “match” those required by my immediate work group. iii. The match is very good between the demands of my work group members and my personal skills. iv. My training is a good fit with the requirements of my work group members. v. My education provide a good match with the demands of my work group members.

Sources: Hutcheson (1999), Cable and De Rue (2002)

3.6.2.2.3 Person-supervisor (PS) fit

PS fit has very limited studies in previous literature specifically in DA fit measurement. Hence, the instrument of the PS fit was adapted based on the previous available demands-abilities fit research (e.g. Schoon, 2008; DeRue & Morgeson, 2007; Kennedy, 2005; Kennedy & Huff, 2005; Greguras & Diefendorff, 2009; Yuhung, 2005; Salvaggio, 2003; Vogel & Feldman, 2009). All of these studies used

the original instrument by Cable and Judge (1996) and Cable and De Rue (2002) and they made amendment based on their study's perspective.

Therefore, this study proposes to make some amendment to the instruments of PJ DA fit by Lauver and Kristof-Brown (2001) and Cable and DeRue (2002) to measure PS D-A fit. Three out of the five items developed by Lauver and Kristof-Brown (2001) were used in measuring individuals' skills and abilities as it is a part of KSAs element (Edwards, 1991). Next three items of Cable and DeRue (2002) will be used to capture the element of employees' knowledge required by supervisor.

The previous study conducted by Abdul Hamid (2013) showed the Cronbach alpha by 0.840. To add, little amendment has been made which is by changing the word, "job" to "work" in each of the six items. The details of the items are shown in Table 3.8.

Table 3.8
Operational Definition and Items for Person-Supervisor Fit

Variable	Operational Definition	Items
Person-supervisor fit	Employees' perceived their individual's knowledge, skills and abilities congruence with his or her supervisor's demands.	<ul style="list-style-type: none"> i. My abilities fit the demands of my supervisor. ii. I have the right abilities for doing my supervisor's order. iii. There is a good match between the requirement of my supervisor and my skills.

-
- iv. The match is very good between the demands of my supervisor and my personal skills.
 - v. My training is a good fit with the requirements of my supervisor.
 - vi. My personal education provides a good match with the demands that my supervisor places on me.
-

Sources: Lauver and Kristof- Brown (2001), Cable and DeRue (2002)

3.6.3 Mediating Variable

To study the mediating effect of work engagement, this study proposes to use the Utrecht Work Engagement Scale (UWES) developed by Schaufeli et al. (2002). It contains 17 items which comprised three dimensions; vigor, dedication, and absorption. The internal consistency (reliability) for these three work engagement dimensions have been successfully reported in past studies by Abdul Hamid (2013) with the acceptable Cronbach's alpha value ranged from 0.911 for vigor, 0.812 for dedication, and 0.845 for absorption. The items are shown in Table 3.9.

Table 3.9
Operational Definition and Items for Work Engagement

Variable	Operational Definition	Items
Work Engagement	High levels of energy, enthusiastic, and emotionally detach on their work role.	
i) Vigor	Presenting high level of energy, resilience, and effort towards job accomplishment.	i. At my work, I feel that I am bursting with energy.

- ii. At my job, I feel strong and vigorous.
 - iii. When I get up in the morning, I feel like going to work.
 - iv. I can continue working for very long periods at a time.
 - v. At my job, I am very resilient, mentally.
 - vi. At my work I always persevere, even when things do not go well.
- ii) Dedication Display a sense of important, enthusiasm, encouragement, and pride towards the job.
- i. I find the work that I do full of meaning and purpose.
 - ii. I am enthusiastic about my job.
 - iii. My job inspires me.
 - iv. I am proud of the work that I do.
 - v. To me, my job is challenging.
- iii) Absorption Sense of fully concentrated, emotionally detach and happily engrossed in one's work.
- i. Time flies when I'm working.
 - ii. When I am working, I forget everything else around me.
 - iii. I feel happy when I am working intensely.
 - iv. I am immersed in my work.
 - v. I get carried away when I'm working.
 - vi. It is difficult to detach myself from my job.

Source: Schaufeli et al. (2002)

In short, a total of 74 items for a questionnaire has been developed for this study. Table 3.10 below shows the list of items used including all four variables involved in this study.

Table 3.10
Measurement of the study

Constructs	Items
INDEPENDENT VARIABLE	
Personality Traits (Big Five)	20
Agreeableness	5
Conscientiousness	4
Emotional stability	3
Extraversion	5
Openness to experience	3
Person Environment (PE) fit	17
Person-job fit	6
Person-group fit	5
Person-supervisor fit	6
MEDIATING VARIABLE	
Work Engagement	17
Vigor	6
Dedication	5
Absorption	6
DEPENDENT VARIABLE	
Adaptive Performance	20

3.7 Response Format

A review of the selected constructs reveals that the optimum scale that can be used with them is an interval. Interval scales enable respondents to show their level of agreement or disagreement about the given statements and situation. These scales have been used extensively to measure business concepts such as attitudes, feelings,

perceptions, values, and opinions (Hair, 2007). In this study, the multiple-item of Likert scales are used to measure research variables because it is an appropriate interval scale that measures behavioral variables. Moreover, Peter (1979) also indicated that the multiple-item scale increases the reliability and validity of the scales.

Due to these points, the researcher chooses to use a seven-point Likert-scale in this study, as this is the most preferred methods of scaling in the social science as well as in the behavioral sciences research (Chomeya, 2010). The objective of a 7-point Likert scale is to give respondents with more options to choose and to have the best choice of the variability towards their attitudes and feelings (Hinkin, 1995). The first reason of using 7 Likert scales is supported by the study of Chomeya (2010), stated that the 7-point Likert scales has a tendency to provide values of discrimination and reliability that are greater and accurate than 5 points Likert scales. In addition, the coefficient is higher than the 5 Likert scale (Chomeya, 2010). Hence, the Likert scale is convenient to use and have high reliability as compared to other scales (Dumas, 1999). In addition, several studies have agreed that seven-point scale is the most preferred one because it can avoid from the respondent's confusion (Solnet, 2006; Fornell, 1992). Hence, for this study, researcher used 7 point Likert-scale, whereas "(1 = strongly disagree; 2 = Disagree; 3 = somewhat disagree; 4 = either agree or disagree (Neutral); 5 = somewhat agree; 6 = Agree; 7 = strongly agree)".

3.8 Questionnaire Design

All questions and instructions are in a dual language which consists of English and Bahasa Melayu for a better understanding based on nurse's preference. The questionnaires were translated to Bahasa Melayu by English Centre at Uni. Utara Malaysia and verified by experts for the content validity.

The questionnaire comprised of four parts and contained the items. The description of the four parts is presented in Table 3.11 and a sample of the questionnaire is provided in Appendix A.

Table 3.11
The Questionnaire Design

Questionnaire Part	Descriptions
PART A	Demographic profile of respondent regarding gender, age, education level, duration of service, marital status and grade.
PART B	Consists of questions measuring dependent variable which is adaptive performance.
PART C	Consists of questions measuring independent variable of personality traits; extraversion, agreeableness, emotional stability, conscientiousness, and openness to experience. Last but not least of independent variable include in this study is PE fit which contains three dimensions; person-job fit, person-group fit and person-supervisor fit.
PART D	Consists of questions measuring work engagement which comprises three dimensions, namely vigor, dedication, and absorption

3.9 Data Collection Procedures

The unit of analysis of the current study are individuals (nurses working in public hospitals of Malaysia). All the information regarding their strengths and weaknesses was not disclosed to anyone. The distribution of the questionnaire followed the general procedure. Moreover, this study used the survey method in collecting data and a set of questionnaire was developed and designed into a booklet. The booklet was then distributed to the nurses in the emergency department at public hospitals in Malaysia.

Before a letter of permission can be sent to each Director of the hospitals, the researcher has to apply permission to conduct the study from the Ministry of Health (MOH) through the online application. About two months were taken for the approval since the application must go through several processes and the proposal has been evaluated by MOH board to see the relevance of the study to MOH. After the online application has been approved, a request-for-permission letter that mentioned the purpose of the study has been sent to the Clinical Research Center (CRC) of each twelve public hospitals before the actual data collection was conducted. The data collection procedure started with getting permission from the Head of Nurse in ED of each public hospitals. There were a total of twelve main public hospitals in each state of Peninsular Malaysia were selected for the study.

Overall, a total of 430 out of 638 questionnaires were filled and returned by the staff nurses in public hospitals situated in the twelve states in Malaysia Peninsular. 638 questionnaires were distributed to the nurses with the help from matron/sisters as a representative in each ED. The matron/sister distributed the questionnaires to all the

ED's nurses in the hospital based on their working shift. This method applied due to hospitals' regulation that does not allow an outsider to personally interrupt the emergency department's operation hour. Therefore, the help from matron used for the data collection process. Each questionnaire attached together with a cover letter which explained the purpose of the study, and the confidentiality of the data. After the questionnaires were completed, the matron returned the questionnaires to the researcher for further analysis.

3.10 Pilot Study

The validity and reliability of the instrument can be verified by conducting a pilot test (Bryman & Bell, 2011). The size of the population for the pilot test normally ranges from 25- 100 respondents (Cooper & Schindler, 2003). Thus, for this study 60 nurses working at ED in two public hospitals (Hospital Jitra and Hospital Sg. Petani) were chosen as the respondents for the pilot study. Out of 60 sets of questionnaires distributed to the respondents, 52 (86.67%) were returned and used for reliability test. The 52 returned questionnaires used in this pilot study were not included in the actual data of analysis as it was collected in different hospitals to avoid biases. The Cronbach's Alpha was used in measuring the reliability of the instruments.

Table 3.12 indicates the results of the reliability test conducted on the 52 respondents. All variables reported having acceptable reliability values as the variables had a reliability value more than 0.60 (Hair et al., 2010). The personality-traits dimensions, person-environment fit dimensions, and work engagement dimensions reported high scale of reliability ranged from 0.769 to 0.910. On the

other hand, adaptive performance reported Cronbach's Alpha value of 0.935. Besides, all instruments (without any adjustment on the items) were used in the data collection.

Table 3.12
Reliability Results

Constructs	Items	Cronbach alpha
INDEPENDENT VARIABLE		
Personality Traits (Big Five)	20	
Agreeableness	5	0.852
Conscientiousness	4	0.899
Emotional Stability	3	0.881
Extraversion	5	0.810
Openness to Experience	3	0.891
Person Environment (PE) fit	17	
Person-job fit	6	0.797
Person-group fit	5	0.810
Person-supervisor fit	6	0.851
MEDIATING VARIABLE		
Work Engagement	17	0.862
Vigor	6	0.910
Dedication	5	0.769
Absorption	6	0.815
DEPENDENT VARIABLE		
Adaptive Performance	20	0.935

3.11 Statistical Analysis Procedures

Data that received from respondents will be coded into Statistical Package for the Social Science (SPSS). Data will be examined through preliminary analysis to ensure data used represented the situation investigated for this study. Later data will be loaded into Structural Equation Modeling using Partial Least Squares (SEM-PLS).

Furthermore, to fulfill the aim to meet the research questions and the objectives of the study, SEM (called path analysis) is an appropriate system to examine multiple relationship effects like direct and indirect effect when use mediation (Resampling bootstrapping technique). Thus, researchers attempt to use Smart PLS (SEM) due to some relevant arguments.

Firstly, it is most accepted and recognized technique in management and social sciences research which is recommended by different researchers (e.g. Henseler et al., 2009; Hair et al., 2014: 2016). Secondly, it has well known and received recognition from trusted academic scholars (Hair et al., 2012; Ringle et al., 2015). Thirdly, it is most essential for theories testing (Hair et al., 2014; Hair et al., 2013). Fourthly, it was recommended by many researchers that PLS-SEM is most suitable for Prediction-oriented models or extension of existing theory (Hair et al., 2011; Henseler et al., 2009). Fifthly, it can be conveniently applied to minimum sample size and measurement scales (Hair et al., 2014). Sixthly, PLS-SEM was employed because when theory is not well developed; then researchers mostly prefer PLS-SEM over CB-SEM, because of their approach to answering the research questions (Hair et al., 2014). Seventhly, PLS-SEM has the capability to even estimate the models which consist of one-and two-item scales as compared to other statistical software's (Hair et al., 2014).

Meanwhile, according to Hair et al. (2014), PLS-SEM provides evaluation for a sequence of the individual regression formula. Similarly, PLS-SEM method is to check the outcomes and, therefore, it has delivered extra trustworthiness, as it allows

for the requirements and examining of complicated path models and can also apply to small sample size (Hair et al., 2014). Hence this study has several relationship effects such as direct effect and an indirect effect by including mediation. Therefore, this study used partial least squares to assess the reliability and validity as far as testing the structural model in line with the recommendation of Ringle et al., (2015), Chin et al., (2003) and Hair et al., (2014). Eventually, this study applied the following steps of Henseler et al. (2009) for conducting the (PLS-SEM) path analysis. It is described into two models, first is the measurement model and the second is the structural model to test the direct and indirect effect to answer the objectives of the study.

3.12 Summary

This chapter has presented the methodology of the study. It covers the processes of conducting the study starting from the design of the study, population and sampling frame, research framework, instrument development, research hypotheses. At the end of this chapter, the data collection and statistical analysis procedures were also explained. The next chapters will present the main study's data analysis and results which responded to the study's objectives and hypotheses.

CHAPTER FOUR

RESULTS

4.1 Introduction

The main aim of this chapter is to present the results of the statistical analyses of the key variables incorporated in the conceptual model. Firstly, the results of initial data screening and preliminary analyses are presented. Such data screening and preliminary analyses include assessment of missing values, common method variance, normality and multi collinearity tests. Secondly, descriptive statistics of key and demographic variables are presented. Thirdly, using PLS-SEM, the measurement and structural models' results are presented.

4.2 Response rate

According to Jobber (1989), response rate is defined as the percentage of total questionnaires mailed that were returned by respondents. Overall, a total of 430 out of 638 questionnaires were filled and returned by the staff nurses in public hospitals situated in the twelve states in Malaysia Peninsular. To achieve this response rate, researcher built a good relationship in the first visit with all matrons/sisters in twelve hospitals listed. In addition, several emails, WhatsApp messages, phone call, and short message service (*sms*) were sent to follow up and as a gentle reminder to them to help in collecting and returning answered questionnaire.

However, 7 out of 437 copies were unusable because a significant part of those copies was not fully completed because some participants exhibited uncooperative attitudes. In all, the survey produced 430 valid copies representing 67.4% valid response rate which is considered adequate for analysis. Table 4.1 summarises the response rate.

Table 4.1
Response Rate of the Questionnaires

Response	Frequency rate
No. of distributed questionnaires	638
Returned questionnaires	437
Returned but unusable questionnaires	7
Returned and usable questionnaires	430
Questionnaires not returned	201
Response rate	68.5%
Valid response rate	67.4%

According to Hair, Black, Babin, and Anderson (2010), the present response rate is sufficient because the tool of analysis for the current study is PLS-SEM, which requires a minimum of 30 participants (Chin, 1998b; Hair, Hult, Ringle, & Sarstedt, 2017). Thus, a total of 430 returned and useable questionnaires for the current study are adequate for analysis. Moreover, Lindner and Wingenbach (2002) suggested that a minimum response rate of 50% is adequate for surveys. The present study attained 68.5% response rate and 67.4% valid response rate. Therefore, the present response rate is satisfactory. The next sub-section presents the results of the preliminary analyses

4.3 Data screening and preliminary analysis

Prior to initial data screening, all the 430 valid questionnaires were coded into the statistical packages for social sciences (SPSS). Initial data screening is very crucial in any multivariate analysis because it helps researchers to identify any possible violations of the assumptions of multivariate techniques of data analysis (Hair et al., 2017). Additionally, initial data screening helps researchers to understand and appraise the data collected for further analysis. The following preliminary data analyses were performed: (1) missing value analysis, (2) assessment of outliers, (3) non-response bias, (4) common method variance, (5) normality test, and (6) multicollinearity test (Hair, Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007). Next is assessment of missing values.

4.3.1 Assessment of missing value

Missing values are the variables without complete information regarding them in a set of data (Tabachnick & Fidell, 2007). The present study considered randomly missing data among the data set as missing values. Researchers have argued that overlooking cases with missing values could have a serious impact on quantitative research, which can lead to biased estimates of parameters, loss of information, decreased statistical power, increased standard errors, and weakened generalizability of findings (Dong & Peng, 2013; Schlomer, Bauman & Card, 2010). In the present study, percentage of missing values is obtained by dividing the total number of randomly missing values for the entire dataset by total number of data points multiplied by 100.

Statistically, Schafer (1999) and Schafer and Graham (2002) asserted that a missing rate of 5% or less is of no importance in multivariate analysis, while Bennett (2001) stated that when missing value is more than 10%, the results of subsequent statistical analyses may be invalid and biased. On their part, Little and Rubin (2014) stated that mean substitution is the best method of replacing missing values if the total percentage of missing data is 5% or less. Mean substitution refers to replacement of all missing data in a variable by the mean (value) of that variable. Hence, in the present study, randomly missing values were replaced using mean substitution. Table 4.2 presents the result of missing values.

Table 4.2
Total and percentage of missing values

Latent Variables	Number of Missing Values
Agreeableness	10
Conscientiousness	10
Emotional stability	9
Extraversion	4
Openness to experience	4
Person-group fit	18
Person-job fit	18
Person-supervisor fit	23
Vigor	15
Dedication	10
Absorption	8
Adaptive performance	87
Total Percentage	216 out of 32250 data points 0.67%

Note: Percentage of missing values is calculated by dividing the total number of missing values by total number of data points multiplied by 100.

According to Schafer (1999) and Schafer and Graham (2002), a missing rate of 5% or less is of no importance in multivariate analysis. Therefore, 0.67% missing data in the present study is less than 5% and would be ignored in the present study. The next sub-section presents assessment of non-response bias.

4.3.2 Assessment of Non-Response Bias

Lambert and Harrington (1990) described non-response bias as the differences in the answers between non-respondents and respondents or between those who respond quickly and those who respond late after a specified period. Non-response causes an increase in the standard errors of estimates since the sample size observed is reduced from that originally sought (Sarndal & Lundstrom, 2005). Also, according to Lewis, Hardy and Snaith (2013), non-response bias can result in misleading or inaccurate findings.

To estimate the possibility of non-response bias, Armstrong and Overton (1977) suggested a time-trend extrapolation approach which entails comparing the early and late respondents. In the present study, participants were divided into two groups, those who responded within the first 30 days (April-May 2018; early respondents) and those who responded after 30 days (after May 2018; late respondents). Of 430 valid cases, 378 participants (88%) responded within 30 days after the distribution of the questionnaire while the remaining 52, representing 12%, responded after 30 days (**Refer Table 4.3**).

Statistically, a time-trend extrapolation approach entails conducting an independent samples t-test to detect any possible non-response bias in datasets and Levene's test for equality of variance provides a guide to extrapolation approach (**Refer Appendix D**). Levene's test is an inferential statistic used to assess the equality of variances for two or more groups. Levene's test assumes that variances of the populations from which different samples are drawn are equal (Levene, 1960). Table 4.3 presents results of independent samples t-test to determine non-response rate.

Table 4.3
Result of Non-Response Bias

Groups		N	Mean	Std. Deviation	Std. Error Mean	Levene's Test for Equality of Variances	
						t-value	Sig.
AG	Early Responses	378	5.7434	.72166	.03712	.626	.429
	Late Responses	52	5.8911	.79291	.10996		
CC	Early Responses	378	5.6544	.72057	.03706	.063	.802
	Late Responses	52	5.8052	.81500	.11302		
EX	Early Responses	378	5.5184	.74823	.03848	1.466	.227
	Late Responses	52	5.5321	.89949	.12474		
ES	Early Responses	378	5.3581	.83802	.04310	2.501	.115
	Late Responses	52	5.5000	1.03848	.14401		
OE	Early Responses	378	5.5061	.80365	.04134	1.306	.254
	Late Responses	52	5.5256	.95280	.13213		
PJ	Early Responses	378	5.6607	.68092	.03502	1.082	.299
	Late Responses	52	5.7019	.77778	.10786		

	Responses						
PG	Early Responses	378	5.5980	.68955	.03547	1.226	.269
	Late Responses	52	5.6269	.80101	.11108		
PS	Early Responses	378	5.5784	.70108	.03606	2.910	.089
	Late Responses	52	5.6506	.90343	.12528		
DD	Early Responses	378	5.7313	.71123	.03658	.187	.666
	Late Responses	52	5.8651	.75682	.10495		
AB	Early Responses	378	5.4502	.83615	.04301	1.673	.197
	Late Responses	52	5.4679	.98188	.13616		
AP	Early Responses	378	5.4855	.65869	.03388	.059	.808
	Late Responses	52	5.5361	.70205	.09736		
VI	Early Responses	378	5.4011	.77472	.03985	.243	.622
	Late Responses	52	5.4389	.88941	.12334		

Note: AG – Agreeableness, CC – Conscientiousness, ES – Emotional stability, EX – Extraversion, OE – Openness to experience, AP – Adaptive Performance, WE – Work Engagement, PG- Person-group fit, PJ – Person-job fit, PS– Person-supervisor fit, DD- Dedication, AB- Absorption, VI-Vigor

The result of independent samples t-test in Table 4.3 indicated that the equal variance of significant values for each construct is greater than 0.05 significance level of Levene’s test for equality of variances (Levene, 1960; Pallant, 2010). Since there were no significant differences between early and late respondents, the assumption of equal variances was not violated. The next sub-section presents analysis of common method variance.

4.3.3 Assessment of common method variance

Common method variance (CMV), also known as mono method bias, refers to variance that is attributable to the measurement method rather than to the construct of interest (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). Common method variance is a major concern when self-reported surveys are used (Podsakoff et al., 2012). CMV poses a significant threat to validity, thereby resulting in systematic measurement errors that can either inflate or deflate the observed relationships between constructs (Chang, Witteloostuijn, & Eden, 2010).

To minimize the effect of CMV in this study, both procedural and statistical remedies as suggested by Podsakoff, MacKenzie, and Podsakoff (2012) were applied. Firstly, expert opinions were received through content validity of the scales to avoid vague concepts in the questionnaire (Podsakoff et al., 2003, 2012). Similarly, the researcher allowed the respondent's anonymity in the questionnaire (Podsakoff et al., 2012). Additionally, the researcher assured the respondents that their answers would be kept confidential and they should answer the questions as honestly as possible and there are no right or wrong answers.

Secondly, Harman's single-factor test was conducted using SPSS, un-rotated exploratory factor analysis. The findings showed that no single factor accounted for more than 50% of the variance. The result yielded 15 distinct factors, with total variance explained/extracted cumulative of 64.589% of the variance. Only 17.644% of the total variance was accounted for by a single factor which is less than 50%

(Refer Appendix D) indicating the absence of common method bias in this study (Podsakoff et al., 2012). Therefore, common method bias is not a problem in the present study. The next sub-section ascertains the normality of data distribution.

4.3.4 Normality test

Normality deals with the nature of data distribution for an individual construct and its association with normal distribution (Tabachnick & Fidell, 2007). It is important to note that in social sciences, data collected from the field may fail to follow a multivariate normal distribution (Hair et al., 2012; Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Overlooking the key assumption of multivariate normal distribution could reduce the statistical power of the analysis (Hair et al., 2014a).

To ensure that normality assumption is not violated in the present study, skewness and kurtosis statistics were computed. Skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution or dataset is symmetric if it looks the same to the left and right of the center point. On the other hand, Kurtosis is a measure of whether the data are heavy-tailed or light-tailed relative to a normal distribution.

Thereby, datasets with high kurtosis tend to have heavy tails, while data sets with low kurtosis tend to have light tails. Kline (2011) suggested that the key normality assumption is considered violated when the skewness exceeds ± 3 and kurtosis is greater than ± 10 . Table 4.4 shows the results for the normality test based on skewness and kurtosis.

Table 4.4
Descriptive Statistics of Normality Test (N = 430)

Constructs	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Agreeableness	-.865	0.118	1.121	0.235
Conscientiousness	-.756	0.118	2.461	0.235
Extraversion	-.640	0.118	1.051	0.235
Emotional stability	-.699	0.118	0.417	0.235
Openness to experience	-.437	0.118	0.553	0.235
Person-job fit	-.888	0.118	1.689	0.235
Person-group fit	-.747	0.118	1.335	0.235
Person-supervisor fit	-.780	0.118	1.393	0.235
Vigor	-.837	0.118	1.470	0.235
Dedication	-.763	0.118	0.749	0.235
Absorption	-.779	0.118	1.283	0.235
Adaptive performance	-.822	0.118	1.142	0.235

As shown in Table 4.4, the key condition for normality has been met. Specifically, the normality test demonstrated that none of the items in the dataset has a skewness and kurtosis statistics greater than ± 3 and ± 10 , respectively. To reconfirm that normality problem is not applicable to the present data, graphical approach was employed to determine the distribution of the data collected.

Figure 4.1 and Figure 4.2 below present the normality curve and the normality probability plot (P-P Plots), respectively.

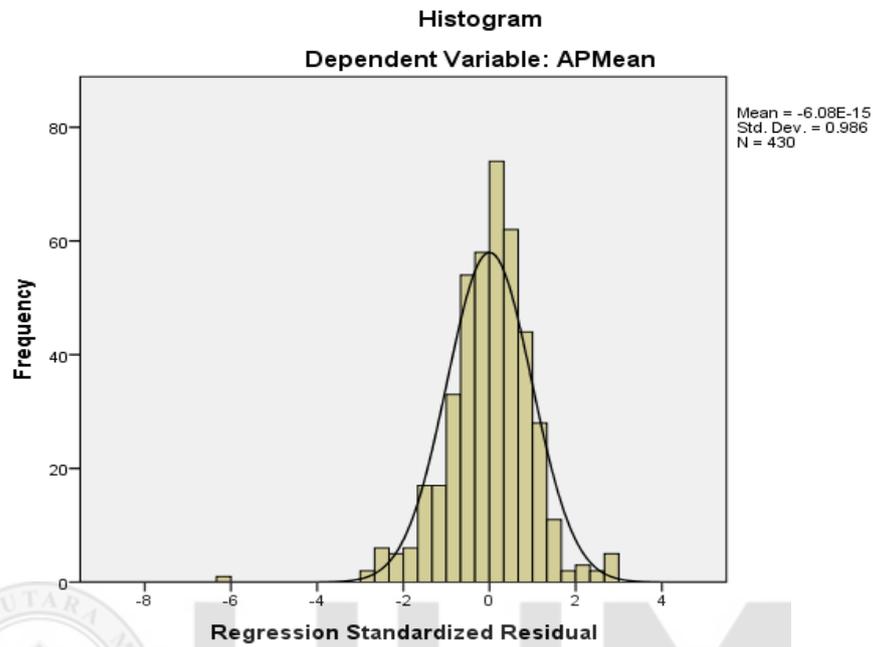


Figure 4.1. Normality Curve

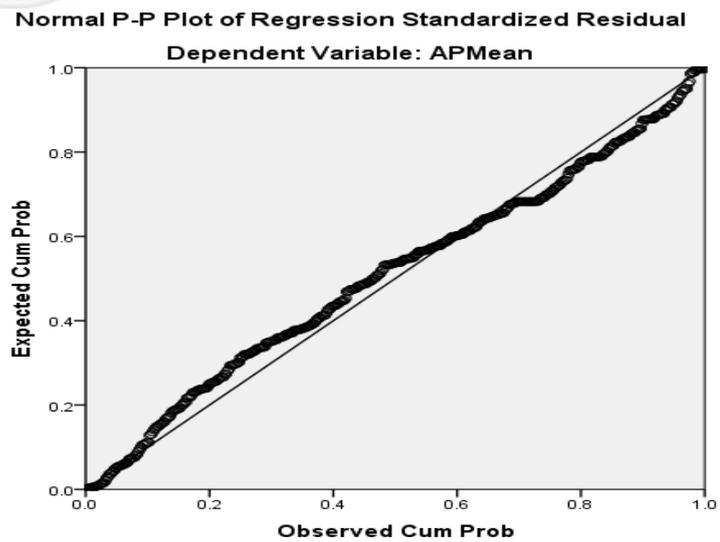


Figure 4.2. Normality Probability Curve

As depicted in Figures 4.1 and 4.2, the data collected for this study is consistent with normal distribution curve. Therefore, it can be concluded that the key assumption of multivariate normal distribution has been satisfied. The present study screens for multi collinearity in the next sub-section

4.3.5 Multicollinearity test

Multicollinearity (also collinearity) refers to a situation in which one or more exogenous latent constructs become highly correlated. The presence of multicollinearity among the exogenous latent constructs can substantially distort the estimates of regression coefficients and their statistical significance tests (Hair, Black, Babin, Anderson, & Tatham, 2006).

Additionally, multicollinearity makes it difficult to determine the individual contribution of independent variables on the dependent variables and may be present when there is unacceptably high correlation among the independent variables (Hair, Black, Babin, & Anderson, 2010; Keith, 2014).

In the present study, variance inflation factor (VIF) and tolerance values were employed to test collinearity. VIF is a means to measure how much the variance of an estimated regression coefficient increases if the predictors are correlated while tolerance value is an indicator of multicollinearity. The present study agreed with Hair, Ringle and Sarstedt (2011) that multicollinearity is a concern if the tolerance value is less than 0.20. On the other hand, literatures have suggested maximum VIF values of 5 (Hair, Ringle, & Sarstedt, 2011; O'Brien, 2007; Rogerson, 2001) and 10

(Hair, Anderson, Tatham, & Black, 1995). Table 4.5 shows the tolerance and VIF values.

Table 4.5
Tolerance and Variance Inflation Factors (VIF)

Constructs	Tolerance	VIF
Agreeableness	.323	3.098
Conscientiousness	.281	3.563
Extraversion	.225	4.438
Emotional stability	.363	2.757
Openness to experience	.316	3.168
Person-job fit	.291	4.243
Person-group fit	.289	4.305
Person-supervisor fit	.262	3.819
Vigor	.308	3.249
Dedication	.279	3.581
Absorption	.489	2.045

From Table 4.5, all variance inflated factor (VIF) values are lower than the suggested thresholds value of 5 (O'Brien, 2007; Rogerson, 2001) and 10 (Mooi & Sarstedt, 2014). In fact, the tolerance values in Table 4.5 ranged from 0.225 to 0.489, which is higher than 0.10 (Tabachnick & Fidell, 2001) and 0.20 (Menard, 1995), as the case may be. Therefore, the key assumption of multicollinearity has not been violated in the present study. Having satisfied requirements for screening, the next sub-section presents descriptive statistics of study variables.

4.3.6 Assessment of Outliers

According to Hair et al (2010), in order to identify and treat outliers, multivariate analysis should be used. In addition, it is suggested that assessment of outliers in a

data set can help researcher to check the extreme value scores, which is may affect the findings of the study (Hair et al., 2010). As recommended by Tabachnick and Fidell (2013), Mahalanobis (D2) measurement by Mahalanobis (1948) was applied in this study to detect and treat multivariate outliers. Conclusively, by treating multivariate outliers, it is automatically treating univariate outliers too (Hair et al., 2010).

Hence, Mahalanobis, D2 was computed using linear regression methods in SPSS version 23, followed by the computation of the Chi-square value. In this study 74 items were adapted and adopted, therefore, 73 represent the degree of freedom in Chi-square table with $p < 0.05$; so the standard is 93.95 (Tabachnick & Fidell, 2013).

This means that any figure with a D2 of 93.95 or higher is a multivariate outlier and should be removed from the data set. Following Tabachnick and Fidell's (2013) criterion for detecting outliers, none of the case was identified as multivariate outlier. As stated in data set, the maximum value was 58.00.

4.4 Descriptive statistics

Descriptive statistics for the continuous variables were based on a seven-point Likert scale computed mainly for mean and standard deviation, while other descriptive statistics for the categorical variables included frequencies and percentages. The essence of descriptive statistics is to summarize and present the raw data collected in a clear and understandable manner (Hanneman, Kposowa, & Riddle, 2013).

4.4.1 Descriptive statistics of study variables

The researcher made use of descriptive statistics to provide a general overview of the latent variables. Each item in the questionnaire administered was rated on a seven-point Likert scale ranging from 1 = “strongly disagree” to 7 = “strongly agree” for all the variables. Accordingly, the mean and standard deviation of the constructs were determined to reflect their levels as shown in Table 4.6.

Table 4.6
Descriptive Statistics of the Study Variables (N=430)

Constructs	N	Mean	Std. Deviation
Agreeableness	430	5.7613	0.73125
Conscientiousness	430	5.6726	0.73326
Extraversion	430	5.5201	0.76693
Emotional stability	430	5.3752	0.86458
Openness to experience	430	5.5084	0.82191
Person-job fit	430	5.6657	0.69249
Person-group fit	430	5.6015	0.70300
Person-supervisor fit	430	5.5872	0.72769
Vigor	430	5.4057	0.78844
Dedication	430	5.7475	0.71731
Absorption	430	5.4523	0.85384
Adaptive Performance	430	5.4916	0.66344

As shown in Table 4.6, the mean of all the study variables ranged from 5.375 to 5.761, which suggest the participants’ level of agreement on all the variables is far above average. Also, the standard deviation values for all the study variables are impressive. The next sub-section presents the demographic profiles of the study participants.

4.4.2 Demographic profile of respondents

Table 4.7 shows the demographic profile of the participants.

Table 4.7

Demographic Profile of the Participants

Samples Description	Frequency	Percent
Gender		
Male	21	4.9
Female	409	95.1
Total	430	100.0
Age		
21-30	189	44.0
31-40	186	43.3
41-50	45	10.5
51 and Above	10	2.3
Total	430	100.0
Status		
Married	312	72.6
Single	108	25.1
Divorced	10	2.3
Total	430	100.0
Education		
Certificate	11	2.6
Diploma	394	91.6
Bachelor's degree	25	5.8
Total	430	100.0
Grade		
U29	356	82.8
U32	69	16.0
U36	4	.9
U41	1	.2
Total	430	100.0
Position		
Sister	37	8.6
Staff Nurse	393	91.4
Total	430	100.0

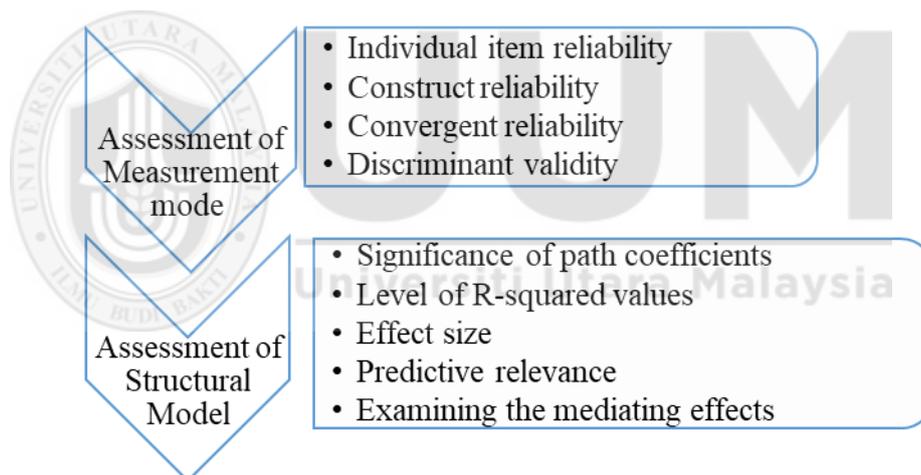
Tenure		
<1	5	1.2
1-5	155	36.0
6-10	107	24.9
11-15	95	22.1
16-20	30	7.0
21-25	27	6.3
>25	11	2.6
Total	430	100.0

In terms of gender, males constituted 4.9% of the sample while females accounted for 95.1%. The gender distribution is in consonance with the general notion that nursing is perceived as a female-dominated profession. Based on Table 4.6, 87% of the participants aged from 21- 40 years. The age distribution implies that most participants are young adults who are fully aware of their jobs and have vigour to attain maximum productivity. The sample is a good representation of the working population in Malaysia.

With regards to marital status, 72% of the participants are married while 91% of the nurses obtained Diploma in Nursing. However, in terms of grade level, 82% of the Nurses who filled the questionnaires are on grade level U29 and majority of these Nurses have attained the position of Staff Nurse (91%). Regarding the length of service of the participants, 36% of the Nurses have spent from 1 to 5 years in the various hospitals, 107 nurses have spent from 6-10 years, while 95 nurses have spent 11-15 years. The length of service recorded is an indication that a good number of the participants have the requisite job experience. The next section presents the main results of the analysis.

4.5 Assessment of PLS path modeling

Hair, Ringle, and Sarstedt (2013) and Hair et al. (2017) recommended a two-step process in the assessment of PLS-SEM. The approach involves determination of the measurement model and structural model. According to Henseler, Ringle, and Sinkovics (2009), testing the structural model may be meaningless unless the measurement model has been evaluated. Therefore, the present study assessed the measurement model before the structural model to determine the extent to which the data collected fits the model. Figure 4.3 summarises the process.



Source: Henseler et al. (2009).

Figure 4.3
Two-Step Process for the Assessment of PLS-SEM

4.5.1 Assessment of measurement model

Assessment of the measurement model involves examination of reliability and validity of the measures (Hair et al., 2013, 2017). Reliability is defined as the consistency or

stability of the measure/scale each time it is administered and usually ascertained at the individual item level and construct level (Hays & Revicki, 2005). On the other hand, validity tests assess how well an instrument measures an exact concept it is designed to measure (Sekaran & Bougie, 2010). The present study appraised individual item reliability, internal consistency reliability, discriminant validity, and convergent validity (Hair et al., 2017). Table 4.8 presents the result of measurement model.

Table 4.8
Result of Measurement Model (Reliability)

Constructs	Item	Loading	Cronbach's Alpha (CA)	Composite Reliability (CR)	Ave. Variance Extracted (AVE)
Adaptive Performance	AP1	0.649	0.957	0.961	0.567
	AP2	0.664			
	AP3	0.734			
	AP4	0.748			
	AP5	0.759			
	AP6	0.778			
	AP7	0.777			
	AP8	0.775			
	AP10	0.587			
	AP11	0.633			
	AP12	0.772			
	AP13	0.790			
	AP14	0.772			
	AP15	0.763			
	AP16	0.822			
	AP17	0.805			
	AP18	0.811			
	AP19	0.810			
	AP20	0.808			
	Agreeableness	BFP2			
BFP3		0.916			
BFP4		0.910			
BFP5		0.771			
BFP6		0.864			
Conscientiousness	BFP7	0.888	0.889	0.923	0.751
	BFP8	0.870			
	BFP9	0.844			
	BFP11	0.909			
Extraversion	BFP11	0.909	0.902	0.939	0.836

	BFP12	0.936			
	BFP13	0.897			
Emotional stability	BFP15	0.863	0.839	0.903	0.756
	BFP16	0.887			
	BFP17	0.858			
Openness to experience	BFP18	0.862	0.873	0.922	0.798
	BFP19	0.921			
	BFP20	0.895			
Person-job fit	PEF2	0.908	0.910	0.937	0.788
	PEF3	0.927			
	PEF4	0.877			
	PEF6	0.837			
Person-group fit	PEF7	0.843	0.914	0.940	0.796
	PEF9	0.922			
	PEF10	0.912			
	PEF11	0.890			
Person-supervisor fit	PEF12	0.899	0.927	0.948	0.820
	PEF13	0.919			
	PEF14	0.920			
	PEF16	0.884			
Vigor	WE1	0.818	0.906	0.927	0.681
	WE2	0.839			
	WE3	0.850			
	WE4	0.752			
	WE5	0.878			
	WE6	0.807			
Dedication	WE7	0.850	0.920	0.940	0.758
	WE8	0.897			
	WE9	0.914			
	WE10	0.897			
	WE11	0.789			
Absorption	WE13	0.835	0.889	0.919	0.694
	WE14	0.790			
	WE15	0.886			
	WE16	0.795			
	WE17	0.854			

According to Hair et al. (2014, 2017), satisfactory construct reliability is attained when the composite reliability index is 0.70 or higher. Table 4.8 shows that the composite reliability index values range from 0.903 to 0.961.

Also, recently Hair, Hult, Ringle, and Sarstedt (2017) stated that when the AVE value of 0.50 is achieved in any construct, researchers may retain items with loadings less than 0.7, but where AVE of 0.50 is not achieved, researchers are to retain items with a minimum loading of 0.70. The present study retained items with loadings greater than 0.50 since all the AVE values are greater than 0.50.

In addition, the model shows the formative construct of Work Engagement which dimensions representing vigor, absorption, and dedication come from the UWES instrument (Schaufeli and Bakker, 2003). Model specification establishes a measurement model that captures expected relationships between indicators and their respective construct (MacKenzie et al., 2011). Constructs can have one or more dimensions; multi-dimensional constructs are those with conceptually distinguishable subdimensions.

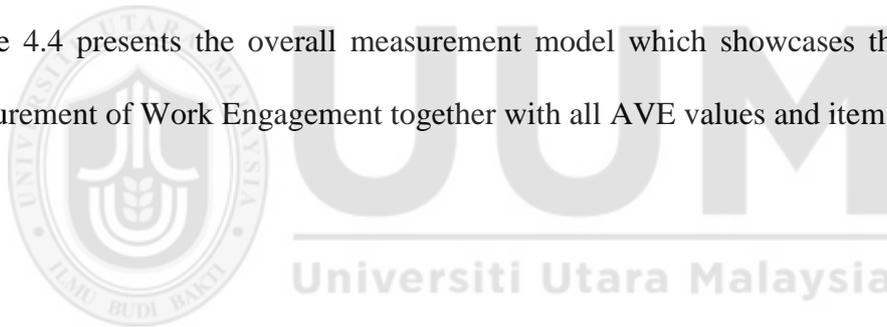
Formative constructs are constructs whose sub-dimensions comprise defining and independent characteristics, such that changing one sub dimension would fundamentally alter the concept defined in the construct, and formative measures offer an approach to conceptualization of diverse and disparate observations (MacKenzie et al., 2011; Cenfetelli and Bassillier, 2009).

Meanwhile, reflective constructs are those whose sub-dimensions comprise manifestations of that construct, such that removing one would not necessarily alter the underlying meaning of the construct (MacKenzie et al., 2011). Understanding the nature of the construct dimensionality enables the researcher to select appropriate

measurement and analysis techniques to enhance validity.

Work engagement was modeled as a multi-order, formative construct comprising first-order, reflectively-measured constructs of vigor, dedication, absorption. Formative measurement for work engagement was recommended and validated by Cenfetelli and Bassilier (2009). As a result, it is concluded that work engagement is meaningful above and beyond its component parts and, when measured as a single construct, explains a wider variety of potential outcomes than would any single component or sub-set of its components.

Figure 4.4 presents the overall measurement model which showcases the formative measurement of Work Engagement together with all AVE values and item loadings.



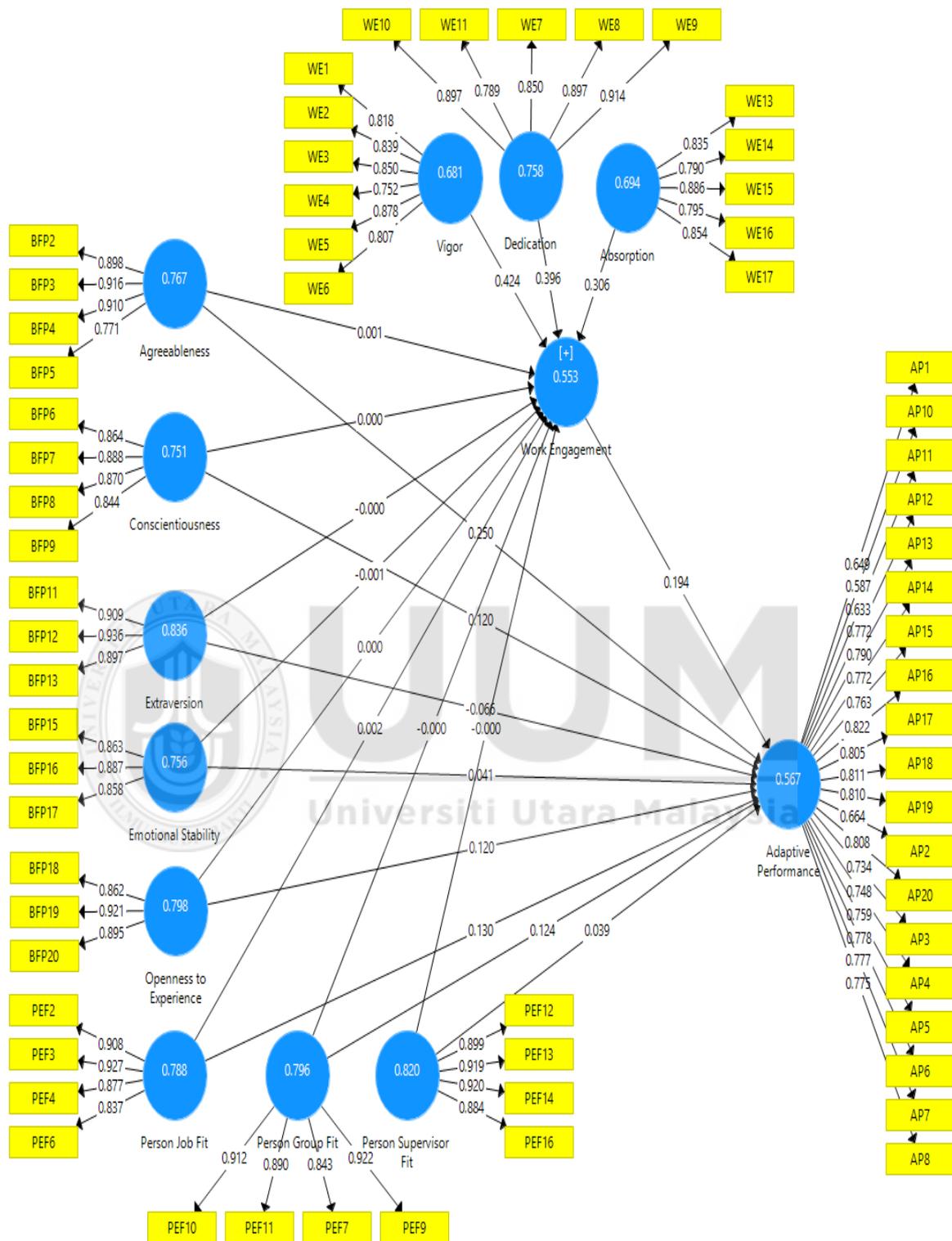


Figure 4.4 Overall Measurement Model of the Study

4.5.1.1 Individual item reliability

Individual item reliability was evaluated based on standardized loadings for all the latent constructs (Chin, 2010; Hair et al., 2014). Recently, scholars have stated that if the average variance extracted (AVE) attains a minimum of 0.50, then items loadings below 0.70 can be retained (Hair, Hult, Ringle, & Sarstedt, 2017). Therefore, the present study accepted the recent recommendations by retaining items with loadings slightly below 0.70, provided the construct minimum AVE value is 0.50 (Hair, Hult, Ringle, & Sarstedt, 2017). The AVE values for all the constructs in the present study are greater than 0.50. Table 4.8 presents evidence that the individual item and construct reliability have been found to be acceptable.

4.5.1.2 Construct reliability

Internal consistency reliability can be ascertained at either the individual indicator level or at a given construct level (Chin, 2010). Internal consistency reliability is a way to gauge how well a test or survey is measuring what it is meant to measure and can be evaluated by either Cronbach's alpha or composite reliability (CR). Composite reliability is obtained by combining all the true score variances and covariance in the composite of indicator variables related to constructs, and by dividing this sum by the total variance in the composite (Chin, 2010).

In this study, CR coefficient and Cronbach's alpha were chosen to determine the internal consistency reliability of the constructs. According to Hair et al. (2011) and Hair et al. (2014), satisfactory construct reliability is established when the composite reliability index is 0.70 or higher. Table 4.8 shows that the composite reliability

indices of all latent constructs were between 0.903 and 0.961. This suggests that satisfactory construct validity has been achieved. Also, a closer look at the Cronbach's alpha results for all the variables indicate acceptable values as well. The Cronbach's alpha for adaptive performance, agreeableness, conscientiousness, extraversion, emotional stability, openness to experience, person-job fit, person-group fit, person-supervisor fit, vigour, dedication, and absorption are 0.957, 0.897, 0.889, 0.902, 0.839, 0.873, 0.910, 0.914, 0.927, 0.906, 0.920, and 0.889, respectively indicating satisfactory Cronbach's alpha values (**Refer Table 4.8**).

4.5.1.3 Convergent validity

Convergent validity means the degree to which two or more measures of the same theoretical construct assessed by different methods agree (Papoutsakis, 2008). Convergent validity is established if two similar constructs correspond with one another and it can be ascertained using average variance extracted (Hair et al., 2017). Average variance extracted (AVE) is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error (Fornell & Larcker, 1981). In other words, AVE criterion is defined as the grand mean value of the squared loadings of the indicators associated with the construct. An AVE value of at least 0.5 or higher indicates that a latent variable explains more than half of the variance of its indicators on average and therefore it is considered sufficient (Hair et al., 2013, 2017).

In the present study, average variance extracted (AVE) was employed to examine the convergent validity of each latent construct. The AVE values as shown in Table 4.8

ranged from 0.567 to 0.836, higher than the recommended threshold of 0.50. Therefore, it can be concluded that adequate convergent validity has been attained in the present study.

4.5.1.4 Discriminant validity

Discriminant validity means the degree to which one theoretical construct differs from another (Duarte & Raposo, 2010). The present study established discriminant validity using Fornell-Larcker criterion and HTMT ratio. Fornell-Larcker criterion compares the square root of AVEs (the diagonal entries) with the correlations between constructs (the off-diagonal entries) (Fornell & Larcker, 1981; Roldan & Sanchez-Franco, 2012). Roldan and Sanchez-Franco (2012) stated that adequate discriminant validity is achieved if the diagonal elements are significantly greater than the off-diagonal elements in the corresponding rows and columns.

On the other hand, heterotrait-monotrait (HTMT) ratio has been developed to estimate the correlation between constructs (Henseler et al., 2015). Practically, HTMT is normally compared with a predetermined threshold. If the HTMT value is higher than the predetermined threshold, one can deduce that there is lack of discriminant validity. However, the exact predetermined threshold is a debatable matter. According to Henseler, Ringle, and Sarstedt (2015, p. 121), the question is: “when is a correlation close to one”? However, researchers have proposed a value of 0.85 (Clark & Watson, 1995; Kline, 2011). On the other hand, Teo, Srivastava, and Jiang (2008) as cited in Henseler, Ringle, and Sarstedt (2015), and Gold, Malhotra,

and Segars (2001) suggested HTMT value 0.90. Table 4.9 presents result of the Fornell-Larcker criterion.

Table 4.9
Discriminant Validity – (Fornell and Larcker Criterion)

	AB	AP	AG	CC	DD	ES	EX	OE	PG	PJ	PS	VG
AB	0.833											
AP	0.538	0.753										
AG	0.510	0.728	0.876									
CC	0.504	0.710	0.762	0.867								
DD	0.611	0.701	0.657	0.700	0.871							
ES	0.503	0.606	0.637	0.605	0.569	0.869						
EX	0.543	0.674	0.699	0.755	0.704	0.711	0.914					
OE	0.556	0.662	0.621	0.692	0.623	0.718	0.746	0.893				
PG	0.543	0.717	0.666	0.689	0.743	0.568	0.721	0.662	0.892			
PJ	0.578	0.732	0.708	0.709	0.774	0.568	0.728	0.642	0.847	0.888		
PS	0.567	0.682	0.648	0.647	0.715	0.569	0.694	0.625	0.833	0.783	0.906	
VG	0.650	0.687	0.622	0.657	0.746	0.654	0.702	0.638	0.684	0.709	0.687	0.825

(Note: Diagonal elements are the square roots of the variance shared between the constructs and their measures (AVE) while off-diagonal elements are the correlations among constructs).

Table 4.9 shows that adequate discriminant validity has been established in the present study because the square roots of AVEs are greater than the correlations between constructs (Roldan & Sanchez-Franco, 2012). To reconfirm the discriminant validity of the constructs, HTMT ratio was computed because it is considered as more reliable than Fornell-Larcker criterion (Henseler, Ringle, & Sarstedt, 2015). Table 4.10 shows the HTMT results.

Table 4.10
Discriminant validity (HTMT ratio)

	AB	AP	AG	CC	DD	ES	EX	OE	PG	PJ	PS	VG
AB												
AP	0.577											
AG	0.566	0.781										
CC	0.557	0.768	0.854									
DD	0.662	0.744	0.725	0.776								
ES	0.581	0.673	0.731	0.698	0.642							
EX	0.601	0.723	0.779	0.844	0.771	0.814						
OE	0.629	0.724	0.705	0.785	0.693	0.839	0.840					
PG	0.595	0.764	0.737	0.765	0.809	0.644	0.795	0.742				
PJ	0.635	0.784	0.786	0.788	0.847	0.646	0.803	0.720	0.830			
PS	0.618	0.721	0.712	0.713	0.773	0.641	0.759	0.695	0.806	0.853		
VG	0.720	0.736	0.686	0.728	0.805	0.748	0.772	0.714	0.746	0.774	0.745	

Table 4.10 demonstrates that discriminant validity is achieved because the highest correlation found is between conscientiousness and agreeableness 0.854, which is within the conventional yardsticks of 0.90 (Teo, Srivastava, & Jiang, 2008; Henseler, Ringle, & Sarstedt, 2015). Therefore, the results of the measurement model indicate that all the constructs achieved sufficient reliability and validity. Hence, the next section presents evaluation of the structural model.

4.6 Structural model evaluation

4.6.1 Assessment of significance of the structural model

Structural model, also known as the inner model shows the relationships among the latent constructs (Chin, 1998; Hair et al., 2014). According to Hair et al. (2014), the essence of the structural model is to evaluate the predictive abilities and the interrelationships (paths) between the latent constructs. Drawing from PLS-SEM literature, the structural model was evaluated based on the following criteria: the significance of the structural path coefficients, coefficient of determination (R^2), the effect size (f^2) and predictive relevance of the model (Q^2).

Following Hair et al.'s. (2017) recommendations, bootstrapping procedure with 5000 bootstrap samples and 430 cases were used to evaluate the significance of the path coefficients to generate beta values, standard errors, t -values and p -values of the estimate to determine the precision of the PLS model. Also, to evaluate the fit of the present model, Henseler et al. (2014) recommended the fit index standardized root mean square residual (SRMR). The SRMR is an absolute measure of fit and is defined as the standardized difference between the observed correlation and the predicted correlation. An SRMR value below 0.08 indicates that a PLS path model provides a sufficient fit, while zero value of SRMR suggests a perfect model fit.

Consequently, the present study evaluated the fit of the model by computing standardized root mean square residual (SRMR). The model generated SRMR values of 0.05 (**Refer Appendix B**). According to Henseler, Hubona and Ray (2016), the

SRMR value obtained is within acceptable standards, less than 0.08. Therefore, the present model has adequate model fit. Further, to test the relationships of the structural model, the significance level is set at $p < 0.01$, and $p < 0.05$ (1-tailed) (Hair et al., 2010). Figure 4.5 presents the structural model graph.

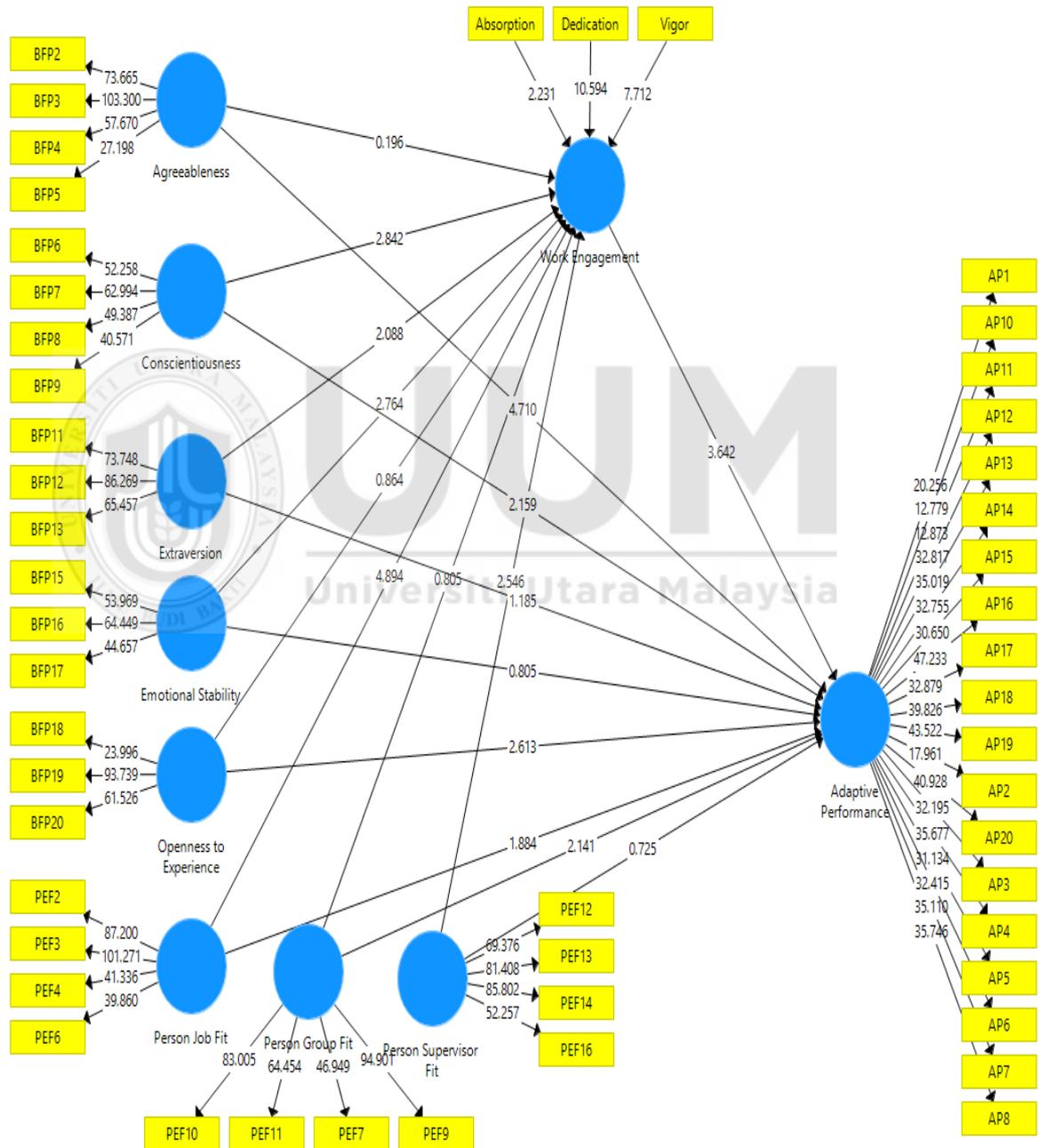


Figure 4.5 Overall Structural Model of the Study

Figure 4.5 shows the structural relationships among the variables and the strengths of the hypotheses for direct and indirect (mediating) effect models.

4.6.2 Hypotheses of the direct effects

Concerning the significance of the structural path, 11 out of 15 hypotheses that were formulated and tested for direct effects were statistically significant at 95% confidence interval (CI) while others were not. Table 4.11 presents the results.

Table 4.11
Results of Structural Model Assessment (Direct Effects)

Hypotheses	Relations	Std. Beta	Std. Error	t-values	p-values	Confidence Intervals		Decisions
						LCL	UCL	
H1	AG->AP	0.252	0.054	4.710	0.000***	0.157	0.335	Supported
H2	CC->AP	0.111	0.052	2.159	0.016**	0.029	0.202	Supported
H3	ES->AP	0.040	0.050	0.805	0.211	-0.042	0.125	Not supported
H4	EX->AP	-0.072	0.061	1.185	0.118	-0.181	0.023	Not supported
H5	OE->AP	0.127	0.049	2.613	0.005***	0.038	0.203	Supported
H6	PG->AP	0.116	0.054	2.141	0.016**	0.025	0.205	Supported
H7	PJ->AP	0.123	0.065	1.884	0.030**	0.009	0.229	Supported
H8	PS->AP	0.039	0.054	0.725	0.234	-0.045	0.133	Not supported
H9	AG->WE	0.011	0.056	0.196	0.422	-0.077	0.100	Not supported
H10	CC->WE	0.144	0.051	2.842	0.002***	0.061	0.227	Supported
H11	ES->WE	0.133	0.048	2.764	0.003***	0.056	0.216	Supported
H12	EX->WE	0.119	0.057	2.088	0.019**	0.026	0.208	Supported
H13	OE->WE	0.041	0.048	0.864	0.194	-0.043	0.115	Not supported
H14	PG->WE	0.061	0.075	0.805	0.211	-0.065	0.180	Not supported
H15	PJ->WE	0.310	0.063	4.894	0.000***	0.210	0.413	Supported
H16	PS->WE	0.178	0.070	2.546	0.006***	0.059	0.286	Supported
H17	WE->AP	0.214	0.059	3.642	0.000***	0.104	0.298	Supported

Note: *** Significant at 1%, ** Significant at 5%

AG – Agreeableness, AP – Adaptive Performance, WE – Work Engagement, CC – Conscientiousness, ES – Emotional stability, EX – Extraversion, OE – Openness to experience, PG fit – Person-group fit, PJ fit – Person-job fit, PS fit – Person-supervisor fit

Based on the table 4.11 above, H1 until H5 reported the relationship between five dimensions of independent variable which is Personality Traits and adaptive performance. Further, H6, H7 and H8 reported the relationship between three dimensions of PE Fit and adaptive performance. Meanwhile, H9 to H13 reported the relationship between Personality Traits and work engagement followed by H14 to H16 which reported the relationship between PE Fit and work engagement. Next, H17 reported the direct relationship between mediator of work engagement and adaptive performance. Lastly, H18 to H25 reported mediating effect of work engagement with relationship between both independent variables and adaptive performance.

H1 anticipated a positive relationship between agreeableness and adaptive performance. As shown in Table 4.11, agreeableness has a significant and positive relationship on adaptive performance ($\beta = 0.252$; $t=4.710$; $p < 0.01$; lower level = 0.157, upper level = 0.335). Statistically, H1 was supported. Further, H2 hypothesized that conscientiousness is positively related to adaptive performance. Thus, the results support H2 ($\beta = 0.111$; $t=2.159$; $p < 0.05$; lower level = 0.029, upper level = 0.202). However, emotional stability did not report a positive relationship with adaptive performance ($\beta = 0.040$; $t=0.805$; $p > 0.05$; lower level = -0.042, upper level = 0.125). Hence H3 was not supported. Similarly, the positive relationship postulated between extraversion and adaptive performance was statistically insignificant ($\beta = -0.072$; $t=1.185$; $p > 0.01$; lower level = -0.181, upper level = 0.023). Thus, H4 was not supported. Nevertheless, the findings of the present study indicate a positive relationship between openness to experience and adaptive

performance ($\beta = 0.127$; $t=2.613$; $p < 0.01$; lower level = 0.038, upper level =0.203).

Therefore, H5 was supported.

Also, the present study envisaged a significant and positive relationship between PG fit and adaptive performance and the results were statistically significant ($\beta = 0.116$; $t=2.141$; $p < 0.05$; lower level = 0.025, upper level =0.205). Therefore, H6 was supported. In addition, the researcher examined the relationship between PJ fit and adaptive performance. The results also show a significant and positive relationship ($\beta = 0.123$; $t=1.884$; $p < 0.05$; lower level = 0.009, upper level =0.229). Therefore, the results support H7. However, regarding H8, the researcher envisaged a positive relationship between PS fit and adaptive performance, but the hypothesis was not supported ($\beta = 0.039$; $t=0.725$; $p > 0.05$; lower level = -0.045, upper level =0.133),

Next, H9 was not supported due to positive relationship envisaged between agreeableness and work engagement was not significant ($\beta = 0.011$; $t=0.196$; $p > 0.1$; lower level = -0.077, upper level =0.100). Meanwhile, H10 envisaged a positive correlation between conscientiousness and work engagement as the statistics support H10 ($\beta = 0.144$; $t=2.842$; $p < 0.01$; lower level = 0.061, upper level =0.227). Also, emotional stability demonstrated a positive and significant relationship with employee work engagement ($\beta = 0.133$; $t=2.764$; $p < 0.01$; lower level = 0.056, upper level =0.216) which indicates support for H11. Similarly, Table 4.11 indicates a significant and positive relationship between extraversion and work engagement ($\beta = 0.119$; $t=2.088$; $p < 0.05$; lower level = 0.026, upper level =0.208). Hence, H12 was supported. However, the proposed positive relationship between openness to

experience and work engagement was not supported ($\beta = 0.041$; $t=0.864$; $p>0.05$; lower level = -0.043 , upper level = 0.115). Hence, H13 was not significant.

Further, contrary to expectations, H14 which hypothesized a positive relationship between PG fit and work engagement was not supported ($\beta = 0.061$; $t=0.805$; $p>0.05$; lower level = -0.065 , upper level = 0.180). However, the positive relationship between PJ fit and work engagement was supported H15 ($\beta = 0.310$; $t=4.894$; $p < 0.01$; lower level = 0.210 , upper level = 0.413). Also, the positive relationship between PS fit and work engagement was supported ($\beta = 0.178$; $t=2.546$; $p < 0.01$; lower level = 0.059 , upper level = 0.286), lending support to H16.

Last but not the least, the researcher examined the relationship between work engagement and adaptive performance. The results indicate a significant and positive relationship ($\beta = 0.214$; $t=3.642$; $p < 0.01$; lower level = 0.104 , upper level = 0.298), supporting H17. Coefficient of determination (R^2) is presented next.

4.6.3 Coefficients of determination (R^2)

R-squared value indicates how well the independent variables predict the dependent variable. In other words, R^2 is the proportion of variance in the endogenous variables that can be explained by the predictors (exogenous) variables (Hair et al., 2010). R-squared value ranges from 0 to 1 (Hair et al., 2010). When R^2 value is close to 0 (or 0%) it indicates a weak level and when the R^2 value is close to 0.5 (or 50%), it indicates a moderate level. On the other hand, R^2 value close to 1 (or 100%) indicates a strong level (Wegner, 2011).

The more R-squared value is towards one (1), the bigger the percentages of variance explained. Furthermore, Cohen (1988) recommended that R-squared values should be evaluated thus: 0.26 as substantial, 0.13 as moderate and 0.02 as weak while Falk and Miller (1992) recommended 0.10 (or 10%) as a minimum acceptable R^2 value. Table 4.12 presents the R-squared values of the model.

Table 4.12
Variance Explained (Coefficient of Determination)

Constructs	R-Square
Adaptive Performance	0.682
Work Engagement	0.746

Table 4.12 indicates that the independent variables explained 68.2% and 74.6% of the variances of adaptive performance, and work engagement, respectively. Following Cohen's (1988) criteria, the model presents acceptable levels of R^2 values considered as substantial.

4.6.4 Assessment of the effect size (f^2)

Effect size (f^2) shows the effect of independent variable on the dependent variable(s) by means of changes in the R-squared (Chin, 1998). It is the strength of the relationship between two variables (Kotrlík, Atherton, Williams, & Jabor, 2011).

The f^2 is expressed using the following formula (Cohen, 1988).

$$Effect\ size(f^2) = \frac{R^2_{Included} - R^2_{Excluded}}{1 - R^2_{Included}} \quad (4.1)$$

Equation 4.1:

Whereas:

f^2 = effect size

R^2 incl. = R-squared included

R^2 excl. = R-squared excluded

1 = constant

R^2 -included is the value of R-squared of the dependent variable when independent variable is included and R^2 -excluded is the value of R-squared of the dependent variable when an independent variable is excluded from the model (Cohen, 1988). According to Cohen (1988), f^2 values of 0.02, 0.15 and 0.35 should be interpreted as small, medium, and large effect sizes, respectively. Table 4.13 presents the strength of the effect of exogenous variables on endogenous latent variables.

Table 4.13
Effect Sizes for the PLS Main Model

Constructs	Adaptive Performance	Effect Size	Work Engagement	Effect Size
AG	0.066	Small	0.000	None
CC	0.011	None	0.024	Small
ES	0.002	None	0.027	Small
EX	0.004	None	0.015	None
OE	0.017	None	0.002	None
PG	0.008	None	0.003	None
PJ	0.010	None	0.085	Small
PS	0.001	None	0.034	Small
WE	0.037	Small		

Based on Cohen's (1988) guidelines, the effect sizes of the exogenous latent variables on work engagement and adaptive performance have been shown in Table 4.13.

4.6.5 Predictive relevance (Q^2)

The present study applied Stone-Geisser test of predictive relevance using blindfolding technique (Geisser, 1974; Stone, 1974). Blindfolding is a sample re-use technique, which allows users to calculate Stone-Geisser's Q^2 value, which represents an evaluation criterion for the cross-validated predictive relevance of the PLS path model (Geisser, 1974; Stone, 1974).

When Q^2 value is greater than zero, its explanatory latent variable exhibits predictive relevance (Chin, 1988). However, Hair et al. (2014) set three criteria for assessing Q^2 (i) Q^2 of 0.02, demonstrates that the model has small predictive relevance, (ii) Q^2 of 0.15 demonstrates that the model has medium predictive relevance, and (iii) Q^2 of 0.35 demonstrates that the model has large predictive relevance. In the present study, Table 4.13 in the column labelled 1-SSE/SSO showed the results of the Q^2 test for all endogenous latent variables were above zero.

Table 4.14
Predictive Relevance (Q^2)

Constructs	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Adaptive Performance	8,170.00	5,246.67	0.358
Work Engagement	1,290.00	612.723	0.525

Table 4.14 shows that both adaptive performance and work engagement recorded values within the range of large predictive relevance. All the Q^2 values are positive and greater than zero (Chin, 1998; Tenenhaus, 1999). Therefore, the model has a satisfactory predictive relevance.

4.6.6 Testing mediating effect

To test the mediating effect, bootstrapping technique of estimating indirect effects in mediation models was observed (Hayes, 2013; Preacher & Hayes, 2004, 2008). Bootstrapping represents a non-parametric resampling procedure that does not impose the assumption of normality on the sampling distribution (Preacher & Hayes, 2008). Bootstrapping approach is considered in this study because it provides “higher levels of statistical power compared with the Sobel’s test” (Spector & Jex, 1998, p. 223).

Firstly, the researcher assessed the path coefficients to test the direct effect model (H1-H17) and mediating variables (Hypotheses 18-25). Secondly, to determine the significant estimates of the mediating (indirect) effect, a percentile bootstrap was employed at 2.5% lower level and 97.5% upper level of confidence interval (Williams & MacKinnon, 2008). When a confidence interval for a mediated relationship does not contain zero (meaning both symbols are the same), this means that the indirect effect is significantly different from zero with 97.5% confidence level and there is mediation. Table 4.15 presents the mediating effect results.

Table 4.15

Result of Indirect Effect Model (Mediation Model)

Hypotheses	Relationships	Std. Beta	Std. Error	t-values	p-values	Confidence Intervals		Decisions
						2.50%	97.50%	
H18	AG->WE->AP	0.002	0.013	0.174	0.862	-0.022	0.028	Not Mediated
H19	CC->WE->AP	0.031	0.014	2.179	0.030**	0.009	0.065	Mediated
H20	ES->WE->AP	0.028	0.014	2.027	0.043**	0.006	0.062	Mediated
H21	EX->WE->AP	0.025	0.013	1.971	0.049**	0.004	0.055	Mediated
H22	OE->WE->AP	0.009	0.011	0.772	0.441	-0.010	0.035	Not Mediated
H23	PGF->WE->AP	0.013	0.018	0.718	0.473	-0.020	0.052	Not Mediated
H24	PJF->WE->AP	0.066	0.023	2.845	0.005***	0.029	0.114	Mediated
H25	PSF->WE->AP	0.038	0.019	2.008	0.045**	0.008	0.083	Mediated

Note: *** Significant at 1%, ** Significant at 5%

AG – Agreeableness, AP – Adaptive Performance, WE – Work Engagement, CC – Conscientiousness, ES – Emotional stability, EX – Extraversion, OE – Openness to experience, PG fit- Person-group fit, PJ fit – Person-job fit, PS fit – Person-supervisor fit.

H18 predicted that work engagement would mediate the positive relationship between agreeableness and adaptive performance. Result demonstrates that work engagement did not mediate the predicted positive relationship ($\beta = 0.002$; t -value=0.174; Lower level= -0.022; Upper level= 0.028). This implies that the intervention of work engagement may not increase a positive relationship between agreeableness and adaptive performance. Hence, Hypothesis 18 was not supported. However, Hypothesis 19 which envisaged a significant role of work engagement in the relationship between conscientiousness and adaptive performance was supported ($\beta = 0.031$; t -value=2.179; Lower level= -0.009; Upper level= 0.065). Hence, H19 was supported.

Also, H20 hypothesized that work engagement would mediate the positive relationship between emotional stability and adaptive performance. Results in Table 4.14 demonstrate that mediation took place ($\beta= 0.028$; $t\text{-value}=2.027$; Lower level= 0.006 ; Upper level= 0.062). Therefore, H20 was mediated. Similarly, results indicate that work engagement mediated the positive relationship between extraversion and adaptive performance ($\beta=0.025$; $t\text{-value}=1.971$; Lower level= 0.004 ; Upper level= 0.055), supporting H21.

Meanwhile, Table 4.14 shows that H22, which predicted that work engagement would mediate the positive relationship between openness to experience and adaptive performance did not hold ($\beta=0.009$; $t\text{-value}=-0.772$; Lower level= -0.010 ; Upper level= 0.035). Also, H23 was not supported as the statistics were not significant ($\beta=0.013$; $t\text{-value}=-0.718$; Lower level= -0.020 ; Upper level= 0.052). Moreover, H24 and H25 were mediated as shown in Table 4.15.

4.6.7 Summary of the findings

In the previous sections of this chapter, the results of structural model for direct, and indirect hypotheses have been presented. Table 4.16 provides the summary of the results.

Table 4.16
Summary of Hypotheses Testing

Hypotheses	Relationships	Decisions
H1	AG and AP	Supported
H2	CC and AP	Supported
H3	ES and AP	Not supported
H4	EX and AP	Not supported
H5	OE and AP	Supported
H6	PG fit and AP	Supported
H7	PJ fit and AP	Supported
H8	PS fit and AP	Not supported
H9	AG and WE	Not supported
H10	CC and WE	Supported
H11	ES and WE	Supported
H12	EX and WE	Supported
H13	OE and WE	Not supported
H14	PG fit and WE	Not supported
H15	PJ fit and WE	Supported
H16	PS fit and WE	Supported
H17	WE and AP	Supported
H18	WE mediates the relationship between AG and AP	Not mediated
H19	WE mediates the relationship between CC and AP	Mediated
H20	WE mediates the relationship between ES and AP	Mediated
H21	WE mediates the relationship between EX and AP	Mediated
H22	WE mediates the relationship between OE and AP	Not Mediated
H23	WE mediates the relationship between PG fit and AP	Not Mediated
H24	WE mediates the relationship between PJ fit and AP	Mediated
H25	WE mediates the relationship between PS fit and AP	Mediated

Note:

AG – Agreeableness, AP – Adaptive Performance, WE – Work Engagement, CC –Conscientiousness, ES – Emotional stability, EX – Extraversion, OE – Openness to experience, PG fit- Person-group fit, PJ fit – Person-job fit, PS fit – Person-supervisor fit.

4.7 Chapter Summary

This chapter presented the results of the present study. Firstly, results of the preliminary analyses were presented and considered satisfactory. Secondly, the measurement model assessment revealed adequate constructs reliability and validity. In assessing the structural model, a total of 17 hypotheses were formulated to test the direct relationships among the variables. Furthermore, indirect effect model demonstrated that five out of eight mediating hypotheses mediated. The next chapter discusses findings of the study, research implications, limitations of study, future research directions and concluding part of the study.



CHAPTER FIVE

DISCUSSIONS AND CONCLUSIONS

5.1 Introduction

This chapter has six sections. Aside from this introductory section, the second section deals with the recapitulation of the research findings. The third section discusses the findings which linked to theories, extant research and the relevant context in Malaysian public hospitals, especially in the Emergency Departments (ED). In addition, this section has seven subsections to align with the objectives of the study, each subsection discussing the relationship between the variables under examination on the basis of each research objective. The fourth sections explain the implications of the study comprising theoretical and practical implications. The fifth section discusses the limitations of the study and suggestions for future studies, while the last section concludes the study.

5.2 Recapitulation of the Study Findings

This study was conducted on staff nurses in twelve recognized main public hospitals in twelve states in Malaysia, which is Peninsular Malaysia. A total number of 638 of questionnaires distributed and 430 staff nurses effectively responded to the administered questionnaires. This study asked seven research questions. In order to provide answers to the questions, seven objectives were equally set in the first chapter of this study.

The first objective is to examine the relationship between Personality Traits'(PT) dimensions (AG, CC, ES, EX and OE) and adaptive performance (AP) of nurses in Malaysia public hospitals. The second objective seeks to determine the relationship between PE fit (PG fit, PJ fit, and PS fit) and AP of nurses in Malaysia public hospitals. The third objective is to investigate the relationship between PT's dimensions (AG, CC, ES, EX, and OE) and work engagement (WE) of nurses in Malaysia public hospitals. The fourth one is to examine the relationship between PE fit (PG fit, PJ fit and PS fit) and WE of nurses in Malaysia public hospitals.

The fifth one investigates the relationship between WE and AP of nurses in Malaysia public hospitals. The sixth one seeks to examine the mediating role of WE on the relationship between PT dimensions (AG, CC, ES, EX and OE) and AP. The last objective, which is objective number seven is to determine the mediating role of WE on the relationship between PE fit (PG fit, PJ fit, and PS fit) and AP.

In order to achieve these objectives, the total number of twenty-five (25) hypotheses were formulated. Specifically, in responding to the first objective, five (5) hypotheses comprising H1, H2, H3, H4, and H5 were formulated based on the Big Five Personality Traits' dimensions (AG, CC, ES, EX, and OE) of the objective respectively. As presented in Table 4.11, the study found positive significant relationships between three out of five dimensions (AG, CC, and OE) with AP, while the remaining two (ES and EX) are not significant. This implies that agreeableness, conscientiousness, and openness to experience tend to influence the adaptive performance (AP) of nurses.

In responding to Objective 2, significant positive relationships were found between two dimensions of PE fit, which are; PG fit and PJ fit with the AP as indicated in Table 4.11. This shows that the person-group fit and person-job fit are capable of enhancing the adaptive performance of nurses in Malaysian public hospitals.

As regards the objective 3 of this study, the outcome of the statistical result in Table 4.11 revealed positive significant relationships between three (CC, ES, and EX) out of the five dimensions PT and the WE; hence, hypotheses H10, H11, and H12 are supported. The implication of this, therefore, is that consciousness, emotional stability, and extraversion have serious impacts on the work engagement of nurses.

The fourth objective of this study is also achieved. The bootstrapping result from PLS-SEM indicated positive significant relationships between two out of the three dimensions of PE Fit and WE. These two dimensions, as contained in Table 4.11 are PJ fit and PS fit. In other words, person-job fit and person-supervisor fit are vital for the actualization of work engagement of nurses in the Malaysian public hospitals.

In relation to the objective 5 of this study, the t-value in the structural model of PLS-SEM as shown in Table 4.11 indicated a significant positive relationship between the mediator of this study (WE) and the dependent variable (AP). Therefore, this study implies that the adaptive performance of the nurses in the public hospital in Malaysia tends to be influenced by their work engagement.

In respect of objective 6 of the study, the statistical result from PLS-SEM, as shown in Table 4.15, revealed that WE mediated the relationships between three out of five

dimensions of the PT comprising CC, ES, and EX, with AP of nurses in the Malaysian public hospitals. Whereas, WE do not mediate the relationship between AG and OE with AP. This implies that work engagement accounted for the reason why relationships existed between some of the personality dimensions and adaptive performance. In other words, the absence of work engagement will have an impact on the relationship between the dimensions and the adaptive performance of the nurses.

The last objective of this study is also achieved. The analysis in Table 4.15 revealed that WE mediated the relationships between the two dimensions (PJ fit and PS fit) out of the three dimensions of PE fit with the AP. Therefore, the implication of this is the existence of a relationship between PJ fit and AP in one hand, and that of PS fit and AP, on the other hand, are the result of WE. Meanwhile, WE not mediated the relationship between PG fit and AP. Thus, the AP of nurses through PJ fit, and PS fit tends to have a setback in the absence of WE.

5.3 Discussion

The following subsections discuss the findings of this study. The arrangement and organization of the subsections are in accordance with the objectives of the study.

5.3.1 Relationship between Personality Traits and Adaptive Performance

Generally, this study found PT having a positive significant relationship with AP among nurses in Malaysia public hospitals. As indicated in Table 4.11, three out of the five dimensions of PT comprising AG, CC, and OE have positive significant

relationships with the AP. Hence, three out of five hypotheses for these dimensions are supported. This implies that personality trait is a catalyst for the achievement of the adaptive performance of nurses. Therefore, the ability of nurses to effectively and efficiently deal with several medical uncertainties and unpredictable work situations is dependent on their personality traits.

From the above findings, the study implied that nurses in Malaysian public hospitals were understanding and compassionate toward others (agreeableness), showed self-discipline and strived for competence and achievement-oriented (conscientiousness), and were curious, imaginative, amenable to new ideas and willing to learn new approaches of doing thing faster and efficiently (openness to experience) could influence AP. In other words, the nurses who have any of these traits can record an appreciable adaptive performance.

To be added, past literature has revealed that most of the complaint arises are due to the nature and scope of nursing job as it is a stressful career (Karimi et al., 2014) and they are performing their duty in irregular working hours, where most of the time they have to move on their feet's for long hours (Yavas et al., 2014). Besides, their jobs entail emotional stress and they have to show their pleasant behavior to patients at any time (Chen et al., 2008). Hence, a nurse's personality traits are crucial to be highlighted in this issue in the emergency department to help the employees specifically nurses to deal under stressful condition.

As argued by Gaytandjieva et al. (2013), the inability of nurses to cope with the changes and promptly act in the event of uncertainty in the workplace indicates a

weak adaptive performance. However, the finding of this study connotes that the nurses were adaptive to their job. This study is consistent with the study of Hameed (2016) who also found three out of five dimensions of personality traits comprising openness to experience, conscientiousness, and extraversion to have a positive relationship with adaptive performance in hotel sector at Pakistan. In addition, the finding of this study has the support from Trait Activation Theory which stipulates that the behavior of an individual can be predicted through consistent personalities depending on the situations and that a person's behavior is dependable on the situation he/she is facing with his/her personalities.

From the individual dimensional point of view, this study found a positive significant relationship between agreeableness and adaptive performance of nurses. This implies that the nurses in the Malaysian public hospitals did their best to help others, got along well with others, considered the point of view of others, considerate, and liked each other in order to achieve adaptive performance. Agreeableness trait also plays an important role in a nursing job as lacking this trait may lead to misunderstanding among nurses and patients, which further affect their performance as a whole. In a similar vein, a past study by Mosagrad et al (2014) also mentioned that the performance of the service sector is depending on customer's evaluation towards the worker.

In addition, this finding also consistent with the result of Zellar and Perrew (2001) who agreed that people with a high level of agreeableness tend to be actualized the great performance due to more emotional support from their team. The positive significance of agreeableness in the personality traits component and the model of

this study, in particular, is a new development because many other previous studies have argued that agreeableness has not received adequate attention in the literature (Huang et al., 2014).

Furthermore, this study revealed a positive significant relationship between conscientiousness and adaptive performance of nurses in Malaysian public hospitals. This indicates that nurses in Malaysian public hospitals were conscientious of their work, they were always looking for an opportunity to grow, did their best in everything they engaged in, that further help them to adapt well in their job, thus increase their AP. Furthermore, Costa and McCrae (1992) also recognized six dimensions under CC, which are competence, dutifulness, achievement orientation, deliberation, order, and self-discipline. Linking to these six dimensions contained under CC trait, it is clearly shown that by having self-discipline, dutifulness, and achievement-oriented is can help to produce excellent performer in any organization, particularly in the health care sector.

Additionally, conscientiousness nurses tend to perform well in any situation as they possessed self-discipline and dutifulness characteristic in their personality, this can lead to increase their AP. With regards to CC, this finding aligns with the finding of LePine (2003) who similarly found a positive relationship between CC and AP. It is also consistent with the results of Rothmann and Coetzer (2003) and Vinchur et al. (1998) who also found that CC has a significant relationship with performance. Also, the finding of this study negates the position of Dudley et al. (2006) that CC might not be the best antecedent and predictor of performance.

Apart from CC, this study indicated that there is a significant positive relationship between openness to experience (OE) and AP of nurses in public hospitals in Malaysia. This implies that the nurses were curious in trying new things, had a holistic approach to issues, and were creative, thus can influence their AP. This finding agrees with the result of Naami et al. (2014) who concluded that OE has a positive influence on the AP of nurses in the governmental hospitals. It also aligns with the findings of Griffin and Hesketh (2003), LePine (2003), LePine et al. (2000), and Pulakos et al. (2002) who found AP as being influenced by openness trait.

In addition, OE trait is very crucial in the nursing profession as nurses need to learn many new things from time to time as technology advancement become a part of their work responsibility. For instance, nowadays, many types of modern medical equipment are based on new technology as well as new diseases found. To match with the change, this personality is so important to ensure the nurses can give the best performance under any change and circumstances in the hospital's environment. Hence, ready to learn and experience new things could offer excellent adaptive performance in the nursing job.

Furthermore, the other two traits, which are emotional stability (ES) and extraversion (EX) were found not significant in this study. Even though ES is seeming to be the relevant trait in the nursing profession because nurses are dealing with a stressful work environment; however, bringing professionalism in work is more important. This is because the nursing job is known as professional job as each nurse required to have adequate KSA before they are approved to be a qualified nurse. Similarly, according to the Malaysia Nursing Association (MNA), each nursing student has to

pass one compulsory course, which is Nursing Skills & Practice during their Diploma level. Whereby, the course's syllabus contains the specific KSAs needed to be a qualified nurse such as how to deal with an emergency when dealing with injured patients and also anger management (Development of Nursing Education in Malaysia, 2010). Thereby, they are well trained to become professional in performing their stressful task in any situation. Thus, ES is not significantly influence to AP of nurses in ED. Even though nurses may face with unstable emotion, they still can perform well due to professionalism and specific training given to them. Therefore, ES is not a significant factor towards AP among nurses in ED of Malaysia public hospitals.

Other than that, the study also found that EX is also not significantly influence AP among nurses. Whereby extrovert nurses cannot guarantee them as a good performer. Even though latest research by Wihler, Meurs, Wiesmann, Troll, and Blickle (2017) demonstrated that EX has a significant relationship with AP among nurses in German, however, that study is focusing on general nurses who work at other departments not in ED. Arguably, EX trait is closely related to the social and friendly characteristic (Costa & McCrae, 1992), however, in the context of this study which is the respondents are nurses from ED, this trait seems to be not important to ensure the performance of the nurses. This is because ED is dealing with a serious and critical condition which is social and friendly characteristic almost not applied there. For instance, unlike a nurse who works in the pediatric department, this characteristic may become essential as dealing with children required a nurse to be

cheerful and friendly to the patients. Therefore, EX is found not significant to AP as it does not affect nurses' performance in ED of Malaysia public hospitals.

In conclusion, the five personality traits, popularly known as the "Big Five," comprising agreeableness, conscientiousness, emotional stability, extraversion, and openness to experience are an essential tool for the actualization of meaningful adaptive performance of nurses. Even though the latest meta-analytic study by Huang et al. (2014) found that ES and EX traits are positive significant to AP while OE is insignificant among managerial job. However, this study found that AG, CC, and OE are found positive significant relationship to AP among nurses who work in the emergency department in Malaysia public hospitals. Therefore, based on the result of this finding, the hospital management and the government at large will achieve their aim of delivering quality health service if these three personality traits (AG, CC, and OE) are stressed to be embedded among the nurses in ED of Malaysia public hospitals.

5.3.2 Relationship between Person Environment Fit and Adaptive Performance

The second objective of this study tends to determine whether there is a relationship between PE fit and AP. In order to achieve this, three hypotheses (H6, H7, and H8) were formulated. Up to the researcher's limited knowledge, the previous studies on PE fit and AP were so limited as many studies investigate the relationship of PE fit with job performance and not in term of adaptive performance specifically.

This study shows a positive outcome of the statistical result through PLS-SEM that two out of three dimensions of PE fit have significantly related to AP, whereas the

only one which is PS fit is found not significant. As presented in Table 4.11, the t-value of the two (PG fit and PJ fit) dimensions have the t-values that exceed the standard threshold. In other words, nurses who have team compatibility by working together as a group (PG fit) and individual compatibility (PJ fit) would achieve an adaptive performance. This study also supports the finding of Kristof-Brown et al. (2005) who found PG fit as having a positive correlation with performance.

Rationally, PG fit explains on how individual fit with their group's demand. Thus, working together in the same department, which is ED can create the same understanding in term of working environment and culture. Whereby, ED is different from any other departments like pediatric, gynecology, oncology, and others. Other departments are very specific in their treatment and case because they are from the same type whereas emergency department is very complex due to mix cases will be referred to this zone before they are classifying to another department for further treatment. Arguably, nurses working at ED can be considered as working in a large team as they have three working zones which are Green, Yellow and Red zone depending on the patient's cases (Annual Report Ministry of Health, 2015). Even though they are working in a large team, they only have one interest and shared the same value, which is to save people's life.

This implies that nurses would perform creditably well if they possess a group fit that correlates with the individual fit in the hospital. If the nurses in the same hospital recognize that they have similar and positive characteristics towards their job, they would easily work together, there would be a serious team spirit and synergy in the accomplishment of their task. This would invariably lead to great adaptive

performance. Therefore, the finding of this study in this respect is consistent with the study of Kristof-Brown et al. (2005) and study by Seong et al (2012) which found positive significant relationship between PG fit and individual performance.

As presented in Table 4.11, PG fit and AP is found to have positive significant due to the reason mentioned above. With the same understanding and working culture, nurses can give best of their performance without any restriction. Understanding the culture of working in a critical zone, will create good teamwork, which is less conflict as well as enhancing their performance even in an uncertain situation. Similarly, Seong, Kristof-Brown, Park, Hong, and Shin (2012) agreed that PG fit has a positive relationship with group performance as each individual in the group shared the same value. Hence, PG fit showed a positive relationship with AP among nurses in ED.

Furthermore, as hypothesized, the empirical result of this study, as shown in Table 4.11, indicates that there is a positive significant relationship between PJ fit and AP. The implication of this is that possession of necessary skills and competence by nurses would enhance their performance in uncertainty workplace (which refer to adaptive performance). When knowledge, skills, and abilities (KSAs) of nurses met the job requirement and demand, they would derive the satisfaction that is capable of motivating them to give their full commitment, hence, the adaptive performance is enhanced. This finding supports the study of Kristof Brown et al. (2005), which also found a significant positive relationship between PJ fit and job satisfaction that ultimately leads to performance. Additionally, this finding is also consistent with previous studies which found that most of the studies of PJ fit and work outcome;

especially employee's performance was found a positive significant relationship (Afsar, Badir, & Khan, 2015).

As mentioned in Chapter One, the nursing profession is a professional job which required certain skill, knowledge, and ability (KSA). To be an official nurse, one must past specific test and training first before they are giving a serial number as a qualified nurse by Malaysia Nurse Association (Ministry of Health, 2016). This proved that any individual who has successfully become a qualified nurse must fit with their job requirements. In the scope of the emergency department, nurses are working in this area always dealing with uncertainty and critical situation, which required their KSA to become the priority to face any emergency anytime. In the other hand, without having sufficient KSAs, a nurse will fail to perform their work in ED because ED is a critical working place which deals with patient's life; even small mistake can risk to person's death. Therefore, the relationship between PJ fit and adaptive performance among nurses in the emergency department is found positive significant in this study.

However, the other finding of this study revealed that there is no significant relationship between Person Supervisor fit (PS fit) and AP of nurses in public hospitals in Malaysia. This suggests that possessing of KSAs that fit the supervisors' demand cannot influence the adaptive performance of the nurses. The strong reason for not significant for this relationship may be as a result of the educational level of the nurses. Majority of the nurses have Diploma level, which is a minimum requirement to become a nurse, and some also have a Bachelor degree certificates (Development of Nursing Education in Malaysia, 2010, pg25). Consequently, with

this level of academic qualification, nurses can discharge their responsibility with little supervision from the supervisors.

Additionally, nurses must perform their routine work based on Standard of Procedure (SOP) provided by Malaysia Nursing Board. Hence, by having a specific guideline in performing their daily work, only a little amount of supervision from the supervisor is needed. Whereby, the relationship between a nurse and the supervisor's fit is less significant to support their adaptive performance in ED. Furthermore, nurses in the emergency department are under the supervision of Matron or Sister. Meanwhile, the average number of supervisors in this department is only one or two people on duty. Thus, with a limited number of the supervisor, it is clear that staff nurses could work freely with their own or under little supervision. Having adequate personal KSAs can help them to perform a job without depending on the supervisor. Therefore, PS fit may not have much influence on their adaptive performance as they can do work on their own.

Basically, the findings of the study were supported by the Theory of Performance (TOP). Whereby, TOP suggested that individual differences on performance are based on these three determinants which are; Declarative knowledge, Procedural knowledge and skills, and Motivation (Campbell,1990). Both two determinants of employees' performance (Declarative knowledge, and Procedural knowledge and skills) are closely related to PE fit concept with apply the congruence between individual knowledge, skill, and ability (KSA) with their working environment. In other words, by having adequate KSAs, nurses could perform well in their daily task even though in a challenging working environment.

Conclusively, PE fit (PG fit and PJ fit) shows a positive significant relationship to adaptive performance among nurses in ED of Malaysia public hospitals while PS fit is found insignificant. The findings of the study also supported previous studies' findings which found the same direction between PE fit and AP. Furthermore, TOP gives strong support and clear explanation in describing the positive relation between these two variables (PE fit and AP). Thus, it is confirmed that a nurse who possesses sufficient KSAs specifically who is fit with a group (ED) and fit with the job (nursing) can perform well in the difficult workplace like ED. Therefore, PE fit in term of PG fit and PJ fit are found positive significant to AP among nurses in ED of Malaysia public hospitals. Thus, the hospital management and the government can focus more on improving nurse's performance to achieve quality health service if these two fits (PG fit and PJ fit) are stressed to be applied among the nurses in ED.

5.3.3 Relationship between Personality Traits and Work Engagement

Based on the literature, this study posed a research question in Chapter One on whether there is a relationship between PT (AG, CC, ES, EX and OE) and WE. In order to answer this research question, objective two was set in which five hypotheses (H9, H10, H11, H12, and H13) were formulated based on each dimension of the personality traits. The hypotheses were subjected to a statistical test through PLS-SEM. The outcome of the statistical test as shown in Table 4.11, revealed positive significant relationships between CC and WE; ES and WE; and EX and WE. In other words, three out of the five dimensions of personality traits are found significant whereas AG and OE are found not significantly influence WE.

Additionally, this finding supports the study of Wefald, Reichard, and Serrano (2011) which revealed that two traits namely CC and EX are related to WE. The result also in line with the finding of Akhtar et al., (2014) which stipulates that Big Five Personality and WE has a mutual relationship of high EX, ES and CC could give a high level of WE among employees. Generally, based on the findings of the study, this implies that the nurses in the public hospitals in Malaysia who are conscientiousness, emotionally stable, and extraversion are engaged in their nursing job.

Specifically, CC is found to have a positive significant relationship work engagement. As contained in Table 4.11, the t-value of CC in relation to the WE indicates a value that is more than the standard threshold. This result supported by the study of Inceoglu and Warr (2012) which found CC is a catalyst for WE. It also aligns with the arguments of Wefald, Reichard and Serrano (2011) and Macey and Schneider (2008) that CC has a link with the WE. Arising from the foregoing, conscientious nurses who are systematic, well-mannered, organized and adhere to the norms and values of their job tend to involve perfectly with their work engagement. In addition, they would be dutiful, norm complies with the norms of the job and always strive to record meaningful achievement (Gerber et al., 2011). Thus, these criteria may lead to promote work engagement among nurses. To be added, conscientiousness nurses in ED of Malaysia public sector has an impact on their work engagement. In other words, the nurses who are conscientious to work, they are always looked for growth opportunity. Therefore, they will do their best in order to

aim for the achievement of their work engagement. Hence, CC is significantly positive to WE among nurses in ED of Malaysia public hospitals.

Furthermore, this study also found a positive significant relationship between ES and WE as indicated in Table 4.11. Whereby, the nurses who are emotionally stable would achieve the job assigned to them successfully. This is because emotionally stable nurses would be able to control and manage their emotion from any negative kind of feelings emanating from any professional challenge or other constraints. As argued by Ivancevich et al. (2008), nurses who are emotionally stable would be calmer and relax because they can handle their stress easily.

Moreover, working in the emergency department is very challenging as they are dealing with patients' life and death. Any single mistake may result in the loss of a person's life. Hence, emotional stability is fully needed when dealing with a critical situation to avoid any possible mistakes to have happened. Thus, having stable emotion will help nurses especially in the emergency department to do their work with less stress and more focus, thus can promote to their WE. Therefore, they will feel engaged with their work even in a critical work environment.

Additionally, this study revealed that there is a positive significant relationship between EX and WE. This is because the statistical result from PLS-SEM bootstrapping, as indicated in Table 4.11, showed a t-value of the relationship is greater than the standard threshold. This implies that the sociability, assertiveness, and positive emotionality of nurses in the public hospital would have an influence on their WE. According to Ivancevich et al. (2008), people who are extroverts tend to

be happy, friendly, enthusiastic, and jolly in nature. Therefore, nurses with these personality traits would engage in the job effectively and efficiently.

In addition, extrovert personality is significant to WE as the individual possesses with this trait may feel less stress as they can share their feeling, problem, and difficulty with other people including their team members, supervisors or patients. Unlike an introvert individual, they tend to be isolated and always prefer to be in their own zone rather than being surrounded by people. This type of individual may keep everything inside themselves rather than share with people. Thus, they will feel less engaging in their work due to loneliness and working alone in a stressful environment.

However, the other two traits which are not significant to WE in this study are AG and OE. According to Ivancevich et al., (2008), AG individuals are characterized by agreeable people as courteous, forgiving nature, and kind-hearted. AG is insignificant with work engagement in this study context is because nurses who are working in the emergency department is always dealing with patients who are surviving their life. Patients in the emergency department normally struggling to survive against their disease regardless of focusing on the people surrounding them or who are treating them. Therefore, courteous, forgiving nature and kind-hearted characteristics in agreeableness of nurse do not apply as important to ensure they are engaged in their work because nurses are dealing to treat patient's recovery based on the procedures given by hospital and nothing involved by personal matter. Thus, the AG of nurses who work in the emergency department is not significant to work engagement.

Meanwhile, OE is also found insignificant to WE due to this trait possess with an individual with a high level of curiosity, innovativeness, and creative thinking (Colquitt, 2009). In the nursing job, nurses are well trained to follow the instructions and procedures given. They may be practicing the instruction and procedures given previously and remembering each step required until they can expert on that field. However, working at the ED is always uncertainty. When some changes required to adjust their work of Standard of Procedure (SOP) especially in a medical procedure, this will affect their nature of performing their duty as before. Therefore, it may affect on their level of WE as they have to adjust to a new way and new method to deliver their task. To master a new skill and new knowledge, it is time-consuming. Thus, nurses may face demotivated by this situation as well as affected their engagement level to their work.

5.3.4 Relationship between Person Environment Fit and Work Engagement

As indicated in Table 4.11, PE fit showed a positive significant relationship with WE among nurses in public hospitals in Malaysia. Whereby, two out of three dimensions of PE fit which are PJ fit and PS fit have a positive and significant influence on the WE, while PG fit is not significant (refer to Table 4.11). This implies that nurses in the public hospitals with a high level of knowledge, skills, and ability (KSA) that are compatible with their work environment demands (job specification and supervisor's demand) understand their job better and able to apply their KSAs in daily job routine. Thus, help them to engage their job effectively as compared to one who does not possess adequate PJ fit and PS fit.

In regards to the direct relationship between PJ fit and WE, this study found a significant positive relationship between PJ fit and WE of nurses in the Malaysian public hospital. This implies that if the KSAs of nurses is compatibility with their job demands (Kristof, 1996; Cable & DeRue, 2002; Iplik et al., 2011) it could help them to engage with their job. This finding is consistent with that of Manson and Carr (2011) who found that PJ fit having a positive influence on individual outcomes. The finding explained that employees who have a high level of KSAs that are compatible with their job demands (PJ fit) normally have a high level of engagement in their work. In other words, employees who are very skillful by possessing appreciable KSAs are capable of managing and doing their job effectively and efficiently.

The employees could make use of the KSAs in achieving their job responsibilities. Based on this, it is convenient for them to concentrate and involve in their job, hence, the level of work engagement would increase. As indicated in Table 4.7, majority of the nurses (419 in number representing 97.4 percent of the total respondents) have a diploma and bachelor degree, which shows that nurses are skilled and professional workers who can be classified as an expert in their profession. This gives them the basic and required knowledge needed for the successful execution of their duties. In this kind of situation, employees may be assisted in engaging and involving in the implementation of their job which will ultimately lead to an improvement in their level of work engagement. Invariably, employees with sufficient knowledge in the performance of their work have a tendency to achieving success in the conduct of their duty; they tend to put in his

best in the job execution. Therefore, an individual employee with KSAs that align with PJ fit greatly execute their job, hence, engage well with their job.

On the other side, the finding also found the positive significant relationship between PS fit and WE. The employees' possession of KSAs that are compatible with their work environment demand, especially supervisor's demand (PS fit) similarly gives room for employees to exercise power and control on the performance of their job, which could enhance their level of WE. The reason for this is that employees who have sufficient KSAs that meet the instruction and order of the supervisor will be permitted to handle some specific tasks. This opportunity of being recognized and assigned with responsibility will serve as a motivation to perform better and impress the supervisor. Additionally, it is essential to note that nurses will execute the assigned responsibility by the supervisor with a view to getting a high rating in the performance appraisal exercise. In order to achieve this good appraisal and assessment, the nurses would put in their best in terms of energy, effort, concentration, and involvement towards the success of the assigned responsibility.

Furthermore, according to Ellemers, et al., (2004), employees who possess KSAs that fit with the demand of the supervisor brings about three things. Firstly, promotes happiness on the part of the employees. Secondly, it encourages a harmonious working environment between the employees and the supervisor Thirdly, it leads to a positive attitude of the employees towards work. In this case, therefore, nurses tend to be happy when they have the knowledge, skills, and ability that fit with their supervisors' demand. This would promote their cordiality with the supervisors which would invariably lead to a positive attitude to work. Therefore, the finding support

and align with the previous finding by Brunetto et al. (2013) who found that supervisors have a positive effect on employee's work engagement among North America nurses.

In addition, this finding also supported by Social Exchange Theory (SET) which explained the mutual exchange of relationship between two parties can offer a high level of engagement (Saks, 2006). The mutual exchange between these two parties (nurse and supervisor) can create a good working environment, therefore can promote to a high level of engagement. Additionally, by having mutual respect and good relationship among nurses and their supervisor, they can enjoy their working environment with less conflict (Brunetto et al., 2013). Therefore, nurses who are posses with an adequate amount of KSAs can efficiently work well with their supervisor as they shared same KSAs, thus easy for them to understand their work as well as easy to feel engaged at work.

However, PG fit is found insignificant to this study. Similarly, consistent with the result of the study, a recent study by Abdul Hamid (2013) also found an insignificant relationship between PG fit and WE among engineers. Thus, this finding revealed that PG fit could not influence employees to engage with their work. Logically, individual matching with the group fit is not a reason for nurses to engage in their work because their routine daily work is not depending on the group as they are working independently and dealing with the patients under supervisor's monitor. Also, they are dependable on their job description and practice instead of depending on group members. Thus, the nurses' group fit is not significant to their work engagement level.

Furthermore, the other reason is due to nurses in ED have three different working zones (Green, Yellow, and Red) based on a patient's case. With regards to this, they are being monthly rotated depend on their working schedule. Thus, with the temporary changing working team, they will feel less engaged in the group as the duration of working time is very short, which is difficult for them to blend. Therefore, they don't feel must be engaged in their group (team members in ED) as they don't feel the group member is affected by their engagement at work.

Moreover, another reason is nurses are government servant which is their individual performance is evaluated by the supervisor and not by the team members in the group. Hence, as PG fit were not important for individual performance appraisal (Seong, et al., 2012) particularly to nurses, it may influence them not to engage themselves and to be actively involved in work. In this regard, the nurses who aim for promotion and performance evaluation realized that fitting with their job and supervisor's demands would only benefit them rather than group fit. Therefore, the nurses in this study perceived that their level of work engagement was not influenced by PG fit, but was influenced by being fit with their job (PJ fit) and supervisor's demands (PS fit).

Apparently, nurses are classified as skilled and professional's workers who pass through educational training and nursing practice and approved by Malaysia Nursing Board. As contained in Table 4.7 of this study, 97.4% of nurses had their diploma and first degree certificates in nursing. Based on this formal educational background, they have acquired the necessary KSAs needed for the successful execution of their duties and implementation of the job. Thus, the practical application of the

knowledge, skills, and ability gained by the nurses on their job is feasible. Therefore, having sufficient KSAs would assist the nurses in implementing their medical activities effectively, and this would consequently enhance their level of engagement in their work.

In addition, the statistical results of this study provide a support for Kurt Lewin's (1935) theory, which widely known social psychological formulation of $B = f(P, E)$ which mean behavior is a function of person and environment. Arising from this postulation, people who have the perception that they fit with their work environment positively have the tendency of exhibiting positive behavior. However, a negatively perceived work behavior may influence a person to react negatively towards his work or disengage totally from their work. Hence, nurses in the hospitals who have the feelings of fit to the hospital's working environment (job and supervisor) tend to show a positive attitude towards work which will invariably motivate them to engage in their various hospital activities.

Critically, Seong et al. (2012) revealed that among all PE fit dimension, PG fit is the most unexplored dimension in academic literature; thus, left a big space to be explored. In addition, the finding of this study supports the finding of Oh et al. (2013) that PE fit is a strong contributor toward employee's outcome, specifically work engagement. Similarly, Abdul Hamid (2013) revealed that only three out of five dimensions of PE fit (PO fit, PJ fit, and PS fit) are positively related to work engagement. Therefore, result from this study is consistent with the previous study which revealed that PJ fit and PS fit are positive significant to work engagement while PG fit is found insignificant among nurses in ED of Malaysia public hospitals.

Conclusively, the possession of KSAs that are compatible with the job demand and supervisor demand is imperative in the achievement of appreciable work engagement of nurses. Therefore, this should be taken into consideration by the nurses and hospital management to enhance nurse's work engagement level.

5.3.5 Relationship between Work Engagement and Adaptive Performance

The fifth objective of this study was set to examine the relationship between work engagement and the adaptive performance of nurses. The work engagement is defined from three perspectives comprising vigor, dedication, and absorption. In order to achieve the objective five, hypothesis 17 was formulated to test whether a significant relationship exists between the two variables (WE and AP). The hypothesis was subjected to the statistical test through PLS-SEM, and the result confirmed that a strong significant relationship exists between the two variables.

As presented in Table 4.11, the t-value between the two variables has one of the highest values. This implies that WE have a serious influence on the AP of nurses in the public hospital. This indicates that three criteria of vigor, dedication, and absorption among nurses during their job would have an impact on their adaptive performance. In other words, as agreed by Saks (2006), employees with a high level of work engagement would record a great performance on their job. Whereby, when nurses are highly engaged, they tend to have motivation and courage to focus on the job assigned to them, which would invariably lead to high performance. Similarly, this finding supports the position of Saks (2006), Burke (2008), Rich et al. (2010)

and Anitha (2013) that revealed work engagement is positively related with the performance of employees.

However, critically, a survey indicated that more than 87% of employees are not engaged in their work (Gallup Employee Engagement survey; 2018), which further may affect to their performance level as work engagement and performance having a positive significant relationship. According to Erickson (2005), work engagement is the part of employees' indicator to measure their willingness to work wholeheartedly and in the achievement of the organizational objective. This buttress the argument of Rich et al. (2010) that engaged employees would perform their work with a high level of devotion and put discretionary efforts to succor the organization in the large context including assisting the people within the organization. Therefore, when nurses are engaged in their work, they would perform an extra role and go beyond their job scope to achieve the desired performance.

Refers to this finding, it is fully supported by both theories; Social Exchange Theory (SET) and Theory of Performance (TOP). Whereby, SET explained the 'give and take' concept exchanged between two parties in any relationship, which means one party will give back what they take from other parties in a mutual exchange relationship. For instance, in this study context, nurses will tend to give their excellent performance to the hospitals if the hospitals can provide them with a feeling of engagement towards their work by taking care of their rights and needs. Thereby, when nurses are highly engaged with their work, they will offer excellent performance in return regardless the uncertain and challenging workplace like emergency department and vice versa; nurses will not provide a satisfying

performance if they fail to feel engaged with their work. Thus, SET explains the reason for the relationship between work engagement and adaptive performance in this study is found positive significant.

In addition, TOP also suggested that individual differences on performance are based on these three determinants which are; Declarative knowledge, Procedural knowledge and skills, and Motivation (Campbell,1990). Consistently, the third determinant of individual performance which are motivation, which refer to three choices of behaviors (choice to expend effort, choice of level of effort to expand, and choice to maintain the expenditure of the effort's level) is fully described work engagement concept, which is the willingness of employees to work and put an effort beyond their task to perform their work. In other words, if the employees feel engaged with their work, they are willing to perform work beyond their job description and in any complicated situation. Therefore, it is clearly stated that TOP support the significant positive relationship exists between work engagement and employee's adaptive performance.

To conclude, with strong support from two theories used in this study (SET and TOP) and similar findings from other previous studies, it is agreed that WE have a positive significant relationship with AP among nurses in the emergency department. Thus, the finding of the study is relevant to fill the knowledge gap in previous academic literature, specifically to nursing job in Malaysia public hospital's context. Therefore, with the initiatives and full effort to increase the work engagement level among nurses in ED, public hospitals' administrator can enhance nurses' performance up to the best level.

5.3.5.1 The Mediating Effect of Work Engagement (PT and AP)

Owing to the presupposition of Boxall (2012), he stated that a lot of knowledge remains unknown about the chain of relationships that are persistent inside the 'black box' in specifically in the management research field. Thus, employee engagement given the findings of this study could be considered a mechanism through which the 'black box' in the relationship between Personality Traits (PT) and Adaptive Performance (AP) is unpacked. The black box refers to the vague processes that frequently arise when inputs are transformed into a useful output which also defined as "gap" (Lytras, Ordonez, & de Pablos, 2008). Hence, it is described to be what is mostly unsolved (Edgar, & Geare, 2009) whereby, in the "black box", inputs are transformed into outputs without a description of what happens within.

Thereby, the sixth objective of this study is to examine the mediating effect of WE on the relationship between PT and AP. In order to achieve this objective, five hypotheses (H18, H19, H20, H21, and H22) were formulated to statistically test the existence of the mediating effect between five dimensions of PT with AP. Conceivably, the main function of mediation is to account for the reason for the existence of the relationship between one variable and the other (Hair et al., 2010).

To test the mediating effect, the bootstrapping technique of estimating indirect effects in mediation models were observed (Hayes, 2013; Preacher & Hayes, 2004, 2008). Firstly, the researcher assessed the path coefficients to test the direct effect model (H1-H17) and mediating variables (Hypotheses 18-25). Secondly, to determine the significant estimates of the mediating (indirect) effect, a percentile bootstrap was employed at 2.5% lower level and 97.5% upper level of confidence

interval (Williams & MacKinnon, 2008). When a confidence interval for a mediated relationship does not contain zero (meaning both symbols are the same), this means that the indirect effect is significantly different from zero with 97.5% confidence level and there is mediation as presented in Table 4.15.

Additionally, in a typical mediational research model, it is assumed that there is limited number of direct connection between PT and AP as adaptive performance is still new area under performance's construct (Voinin, & Roussel, 2012); rather PT, in the first place influences employee's work engagement, and consequently employee's work engagement influences the endogenous variable. Thus, this is referred to as a causal chain of effects which characterizes the connection between the exogenous variable and the endogenous variable. Thereby, it could be asserted that conscientiousness (CC), emotional stability (ES), and extraversion (EX) would not have had an influence on AP if not for the presence of WE. Thus, nurses' conscientiousness, emotional stability, and extraversion would not lead to an adaptive performance if the work engagement is lacking.

Moreover, the finding of this study reveals that conscientious employees (nurses) with their propensity to exhibit self-discipline and strive for competence towards performance (Greenberg & Baron, 2007) can intensify their efforts in performing daily work, respond to any changes and keep searching for available chances to improve their performance. Similarly, high conscientiousness in individual employees could make them highly efficient, dutiful, high liability and well structured (Costa & McCrae, 1992) and consequently become engaged employee as they love their work and enjoy working. Consistently, this reason is connected with

the fact that conscientious employee has a preference to strive hard to solve a problem and try so hard to achieve customer's satisfaction (Rothmann & Coetzer, 2003). Thereby, in the context of the study, conscientious nurses are always enjoy working which can help them to perform well with less pressure, even they are placed in a challenging and severe workplace like ED. Therefore, WE mediate the relationship between CC and AP among nurses in ED of Malaysia public hospitals.

In addition, this study also found that work engagement (WE) mediates the relationship between emotional stability (ES) and adaptive performance (AP). Similarly, the previous study shows emotional stability has a positive relationship with adaptive performance mechanisms (Vasilopoulos, Cucina, & Hunter, 2007). However, this study found that ES has an insignificant relationship to AP but significant positive relationship with WE. Thus, the findings of this study expand the knowledge base by signifying that the positive effect of emotional stability on adaptive performance could be possible through work engagement.

Apparently, emotional stable employees tend to face more effective task-focused coping rather than emotion-focused coping when they are dealing with the stressful task given in difficult situations like in ED. This is another important subset of the finding of this study, which states that emotional stable nurses with positive behavior like being calm, able to control feelings and emotions, feeling motivated (Costa & McCrae, 1992) would act in a respectful manner with the patients in any harsh or critical situation because they have a good control over their emotions. Hence, by having emotional stability during work, it will induce work engagement among

nurses as they are feel attached to their work easily and eventually stimulate their higher performance.

Furthermore, the next study's findings also indicate that extrovert nurses could not necessarily be an adaptive performer in the workplace except that if nurses become engaged. Although extrovert tends to adopt an orientation approach and involved in a possible challenge even in stressful situations (Elliot & Thrash, 2002), but the extrovert who is engaged employee has a high degree of potentiality to face the challenges rather avoiding them but depends on their preference and ability to adapt or change to enhance his performance (Chiaburu, Oh, Berry, Li, & Gardner, 2011). As the findings show that WE mediate the relationship between EX and AP, therefore, the finding found that extrovert nurses in the emergency department can become adaptive performer if they feel engaged at work. This is due to the reason of engaged extrovert has a high degree to potentially face the challenge in their workplace.

However, in the case of agreeableness (AG) and open to experience (OE), the findings of the study indicate that these two traits (AG and OE) can influence AP directly but not influence to WE directly. Meanwhile, many studies agreed that WE have been found to have a positive effect on performance indicators (Saks, 2006), however, this study found that WE is not necessarily a mediating variable for AG and OE for a relationship with AP. Apparently, agreeableness and openness to experience traits' nurses not influence them to enhance their work engagement level in the emergency department, as a result, show an insignificant relationship between both traits (AG and OE) to WE. However, both traits have a positive significant

relationship with AP. Thus, WE are found not mediate the relationship between AG and OE with AP.

Additionally, according to Costa and McCrae (1992) definition, AG trait (understanding and compassionate toward others) and OE traits (curious, imaginative, amenable to new ideas and willing to learn new approaches) are both traits that needed to become well performer especially in a new and challenging workplace like ED. However, these two traits not significant to nurses' work engagement but significant to adaptive performance. Arguably, nurses in ED have specific job specification with almost every day dealing with severe cases from various type of patients. Thus, by understanding others' feeling (being an agreeableness nurse) not affect their engagement at work as the main purpose of their job is to save people's life faster and without delay in treatment.

Furthermore, when dealing with this critical situation, nurses may hurt other's feeling or mistreat them emotionally in order to make thing done fast and safe. For example, as the main objective is to save people's life at first priority (Annual Report Department of Health, Negeri Kedah, 2015), nurses may hurt the feeling of patient's family by not allowing them to extend their visit time, in order to give patient enough rest and time to recover. In addition, sometimes, nurses also may hurt a patient's feeling and disobey the patient's demand to eat what they want or to do something against their treatment during warded. Thus, agreeableness trait in nurses in ED not significant to their work engagement, as they don't feel engaged at work when facing this kind of situation, to save patient's life, nurse sometimes have to disagree with patients.

As agreed by previous researchers, Moreland and Apker (2016) stated that miscommunication between nurse and patient would result in arising in conflict and stress among nurses during their working time. Thus, conflict and stress at the workplace will further result in the engagement at work will disappear (Travis, Lizano & Mor Barak, 2015). In other words, even though the agreeableness nurse did not engage in their work, but they are still can be a good adaptive performer because they always perform well in a challenging situation. Hence, the study found that WE do not mediate the relationship between AG and AP among nurses in ED of Malaysia public hospitals.

In addition, similar to OE trait, by being curious, imaginative, and willing to learn new approaches cannot influence nurses' work engagement but can help to enhance their adaptive performance at ED. Basically, according to Standard of Procedure (SOP) set by the nursing board, a job scope of nurses is they have to know how to operate and deal with the new advance technology machines like Magnetic Resonance Imaging (MRI), impulse rate device, and others. Therefore, having OE traits is significant to enhance their adaptive performance as in ED there is a lot of medical devices and machines; which become a medium to safe person's life. Failure to learn how to operate new machines and devices may risk a patient's life, which further resulted in weak performance among nurses.

With regards to this situation facing by nurses in ED, OE is not significant to their work engagement as they have to keep learning new thing and a new way to perform their work, which logically alters the way they work and used to it before. Thus, they will feel less engaged in their work as they have to alter and change the nature of

their work from time to time. Similarly, Bennett and Durkin (2000) also agreed that any change in the organization will affect employee psychological attachment, which engagement also a part of it. However, OE trait is highly important to nurses' adaptive performance as this trait is needed for nurses' willingness to learn new thing, new medical equipment, and devises from time to time. Thus, this study finding revealed that, even though OE is insignificant to WE, but OE is positive significant to AP. Therefore, this study found that WE did not mediate the relationship between OE and AP among nurses in ED of Malaysia public hospitals.

To be added, the findings of the study also supported by Trait Activation Theory (TAT). Generally, based on Tett and Burner (2003) trait activation is the process when individuals express their traits when trait-relevant situational cues are also presented. The situational cues, including either organization, social, and/or task cues. Furthermore, these cues can stimulate personality traits which are related to the job and organizational outcome (i.e., work engagement and job performance). Moreover, according to Tett and Burnett (2003), TAT suggested that traits are expressed in work behavior as responses to trait-relevant situational cues, whereby, performance outcome of an employee as a result from the personality-situation.

Thereby, based on TAT, it is suggested that nurses react to the situation (working environment) to express their distinctive personality traits. Meanwhile, the theory specifies that only particular situations where the personality traits are reasonable to the job (i.e., traits expression based on the job's condition), "activating the trait" will direct to greater job outcome (performance and motivation). Whereby, motivation aspect in the framework also including engagement part as the engagement itself is

in the natural form. (Tett et al, 2013). Thus, based on this idea, it explains well the relationship between personality, engagement, and performance.

However, according to Tett et al, (2013) improvised TAT theory by stressed that people want to work where they are rewarded for being themselves. This means that a worker specifically nurse will perform well if they are free to become who they are and do not have to change the norm which they are to fulfill the job's requirement. When firm gives them space and freedom to become who they are without having to alter their personality based on the situation that they are facing, they will easily engage with the work; thus it also will help them to perform well due to their willingness to do a work wholeheartedly.

With regard to this, for instance, the finding revealed that extraversion trait is found insignificant to nurse' adaptive performance. Logically, to ensure they are a part of an adaptive performer in the workplace, they have to change from being extrovert to an introvert as the finding shows extraversion is not influencing adaptive performance. However, by forcing themselves to change the nature of they are, it will affect to their performance as they have to pretend to be other and not allowed being themselves, which further resulted in working in stress and less freedom. Therefore, by giving a space for nurses to be who they are, instead of asking them to change who they are according to work's requirement, nurses will feel engage not only to work but to the hospitals overall, hence, they willing to give their best.

TAT stand an argument for distinct behavior among employees, which is either influenced by a trait depending on the situation or based on the trait only. However,

according to Judge & Zapata (2015) found that trait-relevant situations produce better performance than situations that are trait-irrelevant. For instance, one of the personality trait; extraversion, is associated with sociability and people oriented. Thus, extrovert nurses who are performing work tasks related to people (patients) might assume that trait activation will result in excellent job performance. However, if extraversion is activated on the job nature dealing with the presence of machine (not people), or when dealing with a serious working condition like ED, job performance may suffer because of nature of job don't require the sociability interaction among persons. Therefore, this is the reason why extraversion is insignificant to adaptive performance among nurses in ED. In short, it is clearly shown how TAT supports the finding of the study by explaining the relationship between personality trait, work engagement and adaptive performance among nurses in ED.

On the other side, a meta-analytic work by Christian, Garza, and Slaughter (2011), signified that engagement could serve as a mediator between key antecedents and consequences, particularly in job performance. However, the literature survey indicates the dearth of empirical research on the potential role of employee's work engagement as a mediator (Karatepe, 2013). Nevertheless, the findings of this study establish that work engagement is a mechanism through which the 'black box' in the relationship between personality traits and adaptive performance is unpacked. Therefore, this finding extends the knowledge base in the engagement and personality research field.

Conclusively, the findings found in this study is relatively a new finding as there is lack of research on the mediating effect of WE on the relationship between PT and AP, thus, enriches the body of knowledge. Nevertheless, this new finding could be further tested, especially in another context, as this will solidify the existing body of knowledge. Moreover, it could be tested that the non-mediating role of WE in the relationship between PT and AP signifies that another variable could be identified theoretically and tested empirically.

5.3.6 The Mediating Effect of Work Engagement (PE fit and AP)

The last objective of this study examined the mediating effect of work engagement on the relationship between PE fit and the AP of nurses in public hospitals in Malaysia. Consequently, three hypotheses (H23, H24, and H25) were formulated to test the mediating effect of WE to each PE fit dimensions with AP.

Apparently, AP of nurses as a result of PJ fit and PS fit is due to the existence of WE. Whereby, WE is a catalyst for the effective application of PJ fit and PS fit in the actualization of AP. Moreover, the findings of this indicate that PJ fit could influence performance through WE, because PJ fit depends on appropriate skills and competencies of each employee while performing their particular job (e.g., Bartram, 2005; Campbell, McCloy, Oppler, & Sager, 1993). Thus, when nurse' KSAs met all job requirements, then nurses can easily get engaged in their job, as well as enhance their AP. Therefore, when nurse's KSAs meet the job requirement like they mastering on how to deal with the patient and medical equipment very well, they will enjoy working with less stress, which further gets engaged in their job.

Consequently, it will lead to enhance their performance level, even when they are working in a critical and uncertain situation like ED. Thus, the finding shows that WE mediate the relationship between PJ fit and AP among nurses in ED of Malaysia public hospitals.

Likewise, based on the findings, PS fit could predict AP of nurses through nurses' engagement because of the hierarchal aspect lies in Asian countries particularly Malaysia. The reason behind is that employees are expected to obey their supervisors for their own benefits (Hofstede, 1991; House et al., 2004; Shao et al., 2013) like promotion and future career planning. In the current study perspective, nurses working in public hospitals are considered as "blue collar" workers and found involved in certain regulation at their work. For instance, if something happens during their work, they cannot report directly to their top management, which means they have to follow the level of hierarchy starting from their supervisor. Therefore, by keep maintaining a good relationship with the supervisor (Matron/Sister), they will easily engage with their work as they fit each other at work. With the same KSAs exist between nurses and a supervisor, the way to deliver their job daily become easy as they can easily understand the demand of the supervisor. With this regard, less conflict and less stress during work can enhance their work engagement level (Travis et.al, 2015), which further enhance their performance level also even in a challenging workplace setting like ED. Therefore, this study found that WE mediate the relationship between PS fit and AP among nurses in ED of Malaysia public hospitals.

In addition, the findings of WE mediate the relationship between both PJ fit and PS fit to AP is supported by Social Exchange Theory (SET). SET stated that mutual exchange between two parties that can benefit each other (Saks, 2006). The mutual exchange between these two parties (a nurse with supervisor and nurse with a patient) can create a good working environment, therefore can promote to a high level of engagement as well as an increase in performance level. Additionally, by having mutual respect and good relationship among nurses and their supervisor, they can enjoy their working environment with less conflict (Brunetto et al., 2013).

Similarly, having a good relationship with the patient when they are in working time can help them to engage at work as less conflict and stress exist. Therefore, nurses who are posses with an adequate amount of KSAs can efficiently work well because they understand the job demand (PJ fit) and their supervisor's demand (PS fit), thus easy for them to understand their work as well as easy to feel engaged at work. Therefore, it will lead to greater performance at work. With regards to SET, when nurses feel engaged with their job and supervisor, they tend to return to the organization (hospital) by performing their work wholeheartedly in a challenging situation like ED. In short, SET support the mediating effect of WE on the relationship between PJ fit and PS fit with AP among nurses in ED of Malaysia public hospitals.

However, the result shows that WE did not mediate the relationship between PG fit and AP. This finding revealed that PG fit could not influence employees to engage with their work but have an influence on employee's adaptive performance. Basically, individual compatibility with the group's demand is not a reason for nurses

to engage in their work because their work is not depending on the group but more towards independent basis and following Standard of Practice (SOP) given by the nursing board. In the other hand, even though a nurse is not fit with the group's demand, which further effect to their work engagement, they still can perform well if they follow the guideline given within their job description.

Furthermore, nurses' performance is depending on their job description and specific practice instead of depending on group members. Moreover, nurses are government servant which the career evaluation is evaluated by individual performance. Thus, PG fit was not important for individual performance evaluation (Seong et al, 2012), hence it may influence them to not engage or to actively participate in working in a team rather than individual. With this regards, nurses' group fit is not significant to their work engagement but significant to their performance. Therefore, the result of this study found that WE did not mediate the relationship between PG fit and AP among nurses in ED of Malaysia public hospitals.

Conclusively, the findings found in this study is relatively a new finding as there is lack of research on the mediating effect of WE on the relationship between PE fit and AP as AP is a new facet of job performance. Thus, the findings of the study can extend the body of knowledge in past literature with the support of SET theory. In short, this study has been conducted among nurses in ED of Malaysia public hospitals found that WE mediate the relationship between two out of three dimensions of PE fit, namely PJ fit and PS fit while PG fit is not. Therefore, H24 and H25 were supported while H23 is rejected.

5.4 Implication of the Findings

This study has contributed to the body of knowledge in many ways and its findings can be applied in practice. Summarily, the contribution and implications of this study can be classified into three categories comprising theoretical implications and practical implications. In other words, it contributes to theory, methods, and practice.

5.4.1 Theoretical Implications

This study examined the relationships between personality traits (PT), person-environment (PE) fit, work engagement (WE) and the adaptive performance (AP) of nurses in the Malaysian public hospital and provided theoretical support for the variables. The study contributes to the body of knowledge by empirically establishing that relationships exist between the variables under examination.

This study contributes theoretically by extending the study on adaptive performance to the Malaysian health sector and particularly the nursing profession. Many previous studies on adaptive performance were conducted in the countries other than Malaysia, and some were even conceptual research, hence, empirical study in this area is scarce in Malaysia.

Arising from the empirical evidence provided, this study attempted to fill in the gap in the literature by making use of WE as the mediator for two independent variables comprising PT and PE fit, and one dependent variable (AP) concurrently. This is quite rare in the literature because many previous studies (Abdul Hamid, 2013; Agarwal et al., 2012; Karatepe, 2013; Vincent-Höper et al., 2012; Sulea et al., 2012, 2011; Ng & Tay, 2010; Schaufeli & Bakker, 2004; Sonnentag, 2003; Koyunco et al.,

2006; Saks, 2006) made use of one construct or two constructs that are not really related to the ones under consideration in this study. Also, the use mediator in the field of nursing is rare as only a few studies are identifiable in the field of nursing using work engagement as a construct (Schaufeli and Bakker, 2004; Simpson, 2009; Tomic, 2010; Othman & Nasurdin, 2012; Keyko, 2014). This study, therefore, theoretically contributes to the body of knowledge by establishing that WE mediate the relationship between PT, PE fit, and AP.

Furthermore, this study uniquely makes use of the combination of Theory of Performance (TOP), Trait Activation Theory (TAT) and Social Exchange Theory (SET) to support and underpin the theoretical model of the study. Whereby, TOP became an underpinning theory which supports the whole framework, as the measurement of the dependent variable is about performance (which measure as adaptive performance). Meanwhile, TAT is supporting theory to explain the relationship between PT and PE fit with AP. Lastly, SET is another supporting theory to describe the relationship between WE and AP. In short, the ultimate findings of the study indicate that the theories used perfectly have a linkage with the study.

Moreover, the study has contributed to the body of knowledge by answering the recent call of literature (Huang, Ryan & Zebel, 2014; Naami, Behzadia, Parisaa & Charkhabib, 2014; Yang & Hwang, 2014) to examine the relationship between personality and adaptive performance. The study found the relationship between the two variables to be significant. In addition, this study has contributed to knowledge by providing a conceptual insight into the concepts of PT, PE fit, WE, and AP.

Therefore, as a conclusion, this study broadens the understanding of the concepts and makes the application of the concept is easy to understand in future research.

5.4.2 Practical Implications

The empirical findings of this study have practical implications on the hospitals, nurses, medical and nursing regulatory authorities and policymakers, and the government at large. The comprehensive discussion of these implications is presented in the subsequent subsections.

5.4.2.1 Implication to the Hospitals and its Management

This study revealed that personality traits play a significant role in the actualization of the adaptive performance of nurses. In other words, the agreeableness, conscientiousness, and openness to experience of the nurses are a catalyst for their adaptive performance. It similarly established that a relationship exists between personality traits and work engagement. The hospital management can make use of this finding in instituting friendly policies that can ignite and stimulate the traits in the nurses for the purpose of achieving effectiveness and efficiency. Consequently, attendance to emergency department matters and other related issues such as long waiting time and patients' complaints in the public hospital will be overcome.

Furthermore, the study established that there is a relationship between PE fit and the adaptive performance in one hand, and work engagement on the other hand. These findings can aid the hospital management in deploying strategies that are capable of resolving many prevailing problems from public hospitals with a view to increasing

the performance and managing the employees more effectively to achieve the main objective which is to reduce patient's complaints regarding staff performance especially nurses.

The hospital management can also use the finding in coming up with plans and strategies that will promote the knowledge, skills, and ability (KSAs) of the nurses. For instance, the management can try to implement the strategy to boost employees' KSA by matching their tasks to their specific skills, communicate effectively and provide adequate training with specific nursing practice consistently until it shows a result of improvement.

In addition, personality traits and PE fit are also recognized as essential for the achievement of performance and bring influence to work engagement. Therefore, the hospital management can make use of the finding in their nurses' recruitment criteria and put into consideration to recruit new nurses not only based on their person's fit but also individual's personality that can be evaluated through some test. It can also be used by the hospital in its training and retraining program in order to polish and enhance nurse's KSAs to be fitted well with their job, the supervisor as well as the group which refers to emergency department's team.

5.4.2.2 Implications to the Nurses

This study and its findings focus on nurses in the public hospital in the Malaysian public hospitals. The study provides several conceptual and practical insights to the nurses in the area of big five personality traits and PE fit factors, which are vital for increasing their work engagement and eventually lead to the improvement of

adaptive performance. It gives an opportunity for the nurses to discover their personality traits that are capable of improving their performance.

The study revealed that KSAs are the impetus for work engagement and performance. The nurses can make use of this finding in identifying that knowledge, skills, and abilities in being relevant in their job, and sustain and retain their job. It will also assist the potential nurses who are seeking nursing appoint to recognize the KSAs are necessary for the achievement of their aim. Nurses and potential nurse can attend training and retraining programs organized by their hospitals or other competent bodies with a view to building strong knowledge and skills required for effective and efficient performance.

5.4.2.3 Implications to Policy Makers and other Relevant Stakeholders

The nursing profession is not let loose, rather it is a regulated profession. This is because it deals with the safety of the lives of patients. The finding of this study will, therefore, be relevant to the ministry of health in Malaysia in making decisions that are relevant to the adaptive performance of nurses. This study is also helpful for the health sectors, service sectors and to other stakeholders as it will provide fundamental knowledge to improve employees' performance specifically adaptive performance.

The policymakers in the tertiary educational institutions and professional nursing bodies are not left out in founding this study useful and relevant. This is because they produce graduates of nursing for society absorption. It will provide an insight for them to produce suitable graduates who are equipped with necessary knowledge,

skills, and competence that suit the work environment and demand in the hospital setting. The universities and other tertiary institution awarding bachelor degree and diplomas in Nursing should ensure that their syllabus center on improving the general competence of the graduates in terms of knowledge, skills, and capabilities that match the profession, hospital, job, groups and supervisors' demand. Consequent upon this, tertiary educational institution should formulate programs and activities that are capable of improving the graduate KSAs that that generally fit the work environment.

Lastly, researchers and the potential researchers in the field of nursing and other related medical fields will found this study relevant. This is because its limitations give room for further research in the area.

5.5 Limitations of the Study and Suggestions for Future Studies

The significant contribution of this study to the body of knowledge; notwithstanding, the study has its limitations. The first limitation of this study is inherent in the sample used in the study. The study used nurses in the public hospital in twelve states in Malaysia. The findings of this study should not focus on ED nurses only. Instead, it should apply to other medical professionals in the hospital such as doctors, medical laboratory scientists, pharmacists, and others. Likewise, it cannot be generalized on other professionals such as the engineers, accountants, and people at the managerial levels. This is because each profession has different and distinct job descriptions.

The job description of the nurse involves taking care of the patients while other jobs may be dealing with customer or employees. Based on this coverage limitation, a future study can examine the adaptive performance of other medical professionals such as doctors, medical laboratory scientist, and pharmacists in the hospital setting. Therefore, it is recommended that future study can be expanded to a larger sample, in terms of different profession or different industry and another country. Thus, the use of a larger sample could help to generalize the study's findings.

Secondly, this study was conducted in the public hospital, hence, the results of the study cannot be generalized on the private hospitals. This is because each category of a hospital has different operations and make use of various medical facilities. For instance, the number of nurses in public hospitals may be more than private hospitals because of the high number of patients and affordable cost. Consequent upon the number of patients, the magnitude of their operation may be high; hence, they may have the adaptive performance that is different from that of the nurses operate in the private hospital with a limited number of patients. In this situation, the nurses' perception of fit and personality traits towards their hospital and performance may be different.

Thirdly, the study used a cross-sectional design which deals with data collection at one point in time. One of the limitations of cross-sectional research design is that it gives no consideration to change over time before the analysis of data. In other words, any issue or policy made after the data collection which may affect the variables under consideration will not be captured. For instance, a policy is made by government or nursing regulatory authority shortly after the data collection which

would affect the operation of the nurses would not be considered in the study. This may affect the conclusion of the study. Based on this study, it is recommended that future studies should use longitudinal design in order to capture data for a long period of time.

Fourthly, the study applied a self-reporting method in which the questionnaires in respect to the independent variables, mediating variables, and dependent variables were administered on and completed by only the nurses. This technique is prone to common method bias. According to Podsakoff et al. (2012), common method bias or variance is a major concern when self-reported surveys are used. The effect of common method bias is that it poses a significant threat to validity, thereby resulting in systematic measurement errors that can either inflate or deflate the observed relationships between constructs (Chang, Witteloostuijn, & Eden, 2010). In order to mitigate this bias, different administrative and statistical strategies were deployed by this study. As specified in Section 4.3.3 for example, the study made use of a procedural method of ensuring the elimination of bias by providing the letter of introduction to the respondents (nurses) assuring them of the confidentiality of their answers. The questions were worded in a simple way and avoided any ambiguity. No respondent was required to write his/her name or append his/her signature. From the statistical point of view, Harman's single-factor test was conducted using SPSS, unrotated exploratory factor analysis in order to reduce bias as recommended by Podsakoff et al. (2012). These techniques and procedures, notwithstanding, there may still be some element of bias.

Fifthly, the concept of PE fit in this study focused only to demands-abilities (DA) fit, thus, the needs-supplies (NS) fit not being able to describe in this study. Both DA fit and NS fit is different concept explains the different meaning. Therefore, it can be noted that different concept has a different meaning which might affect the level of PE fit. Based on this limitation, the study suggests that future researches should be conducted using different concept, either with regard to supplementary fit or needs-supplies fit. In addition, future researches could also be conducted by combining different concepts in a single study. By doing so, future studies could provide a comparison between demands-abilities fit, needs-supplies fit, and supplementary fit.

Sixthly, the study only focused on individual factors, which were an individual's personality and person-environment fit (PE fit) towards employees' adaptive performance. As the study only focused on individual factor, thus, it is recommended for future studies to investigate the effect of organizational factors, such as hospital's performance as a whole; or to combine both individual and organizational factor towards enhancing employees' performance and engagement. The combination of both factors would allow a comparison to be made towards increasing employees' adaptive performance and work engagement level.

Lastly, the variance explained (R^2) of the model of this study is another limitation. The study recorded the R^2 of 68.2% and 74.6% for adaptive performance and work engagement respectively. This implies that the variables can jointly explain the dependent variable (adaptive performance) to the tune of 68.2%, while the mediator can be explained by the independent variables to the tune of 74.6%. Therefore, there is an indication that other factors outside the model account for the remaining

balance. Invariably, a future study can expand the model of the study in order to improve the R2.

5.6 Conclusion

This study posed seven set of research questions and seven objectives. The questions have answered successfully, and the objectives have been successfully achieved. The objectives, as stated in the Chapter One of this study are (1) to examine the relationship between Personality Traits (agreeableness, conscientiousness, emotional stability, extraversion and openness to experience) and adaptive of nurses in Malaysia public hospitals, (2) to investigate the relationship between Person Environment fit (person-group fit, person-job fit and person-supervisor fit) and adaptive performance of nurses in Malaysia public hospitals, (3) to determine the relationship between Personality Traits (agreeableness, conscientiousness, emotional stability, extraversion and openness to experience) and work engagement of nurses in Malaysia public hospitals, (4) to examine the relationship between Person Environment fit (person-job fit, person-group fit and person-supervisor fit) and work engagement of nurses in Malaysia public hospitals, (5) to investigate the relationship between work engagement and adaptive performance of nurses in Malaysia public hospitals, (6) examine the mediating role of work engagement on the relationship between Personality Traits (agreeableness, conscientiousness, emotional stability, extraversion and openness to experience) and adaptive performance, and (7) to determine the mediating role of work engagement on the relationship between Person Environment fit (person-group fit, person-job fit and person-supervisor fit) and adaptive performance.

These objectives were derived from the statement of the problem presented in Chapter One. In a specific term, the study provided empirical support in the achievement of the identified gap in many ways. All the independent variables were generally found to have a significant influence on the dependent variable and mediating variable, and similarly, the mediator had a significant mediating influence on the relationship between the independent variables and dependent variable.

In the first instance, the study has empirically proved that there is a strong significant relationship between personality traits and adaptive performance. In other words, the five dimensions of personality traits have an influence on the adaptive performance of nurses. Secondly, PE fit is found to have an influence on the adaptive performance of nurses. Thirdly, the study confirmed that PT generally could influence on the work engagement of nurses. Furthermore, PE fit's dimensions are statistically found to have a great impact on the work engagement of the nurses. Also, the study lends empirical support on the relationship between work engagement and adaptive performance. Finally, the study confirmed the mediating effect of work engagement on the relationship between personality traits and adaptive performance in one hand, and the relationship between personal environment fit and adaptive performance on the other hand.

In respect of the hypothesis formulated and tested, a total number of twenty-five (25) hypotheses were formulated in the earlier chapter of this study. The hypotheses were subjected to statistical test through PLS-SEM and sixteen (16) out of the twenty-five (25) hypotheses formulated were supported. This includes H1, H2, H5, H6, H7, H10, H11, H12, H15, H16, H17, H19, H20, H21, H24, H25.

Based on the information obtained from the literature through extensive literature review, the definition of each variable was determined and dimensions for each one they were derived. Arising from this, the personality traits had five dimensions comprising AG, CC, ES, EX and OE. In the same manner, the PE fit had three dimensions consisting of PG fit, PJ fit, and PS fit. The definition of work engagement has three key elements comprising vigor, dedication, and absorption, while the adaptive performance remained unidimensional.

In respect of the methodology, the study employed a quantitative approach, cross-sectional design, and questionnaire technique in obtaining data from the nurses in the emergency section of public hospitals in twelve states in Malaysia. The questions in the questionnaire were close-ended and had a 7-point Likert scale. The data obtained were analyzed using SPSS and PLS-SEM. The SPSS was used for data capturing and screening generally. On the other hand, PLS-SEM was used for validity and reliability tests through measurement model, while the relationships between the construct and hypotheses testing were determined through bootstrapping.

The statistical results of this study indicate that three dimensions of personality traits (AG, CC, and OE) were related to adaptive performance. This implies that Agreeableness, Conscientiousness, and Openness to experience could influence the adaptive performance of the nurses. Similarly, the study revealed that CC, ES, and EX were related to work engagement. In respect of PE fit, two dimensions (PG fit and PJ fit) were found to be related to AP, while PJ fit and PS fit were related to the work engagement. The statistical results also provide support for the relationship

between WE and AP, and the mediating effect of WE on the relationships between PT with AP, and PE fit with AP.

Conclusively, this study fills the gap in the literature by answering the seven research questions posed. It also achieves the seven objectives set by testing the twenty-five hypotheses formulated. Therefore, this study contributes to knowledge, practice, and methods and has significant practical implications for different interest.



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APPENDICES

Appendix A: Questionnaire



**Pusat Pengajian
Pengurusan Perniagaan
SCHOOL OF BUSINESS MANAGEMENT**
Universiti Utara Malaysia

Dear respective respondent,
Kepada responden yang dihormati,

I am a Ph.D. scholar at Universiti Utara Malaysia. I am conducting research on “Relationship between Big Five Personality and Adaptive Performance among Nurses in Malaysia Public Hospitals”. I request you to participate in this study by answering the attached questionnaire that will only take about 10 minutes.

The questionnaire is anonymous, and your response will be used for the academic purpose only. If you have any questions or concerns about the questionnaire or about participating in this study, you may contact me at athifah2409@gmail.com , and you can also request for research findings through same email address.

Saya merupakan seorang pelajar Ph.D. di Universiti Utara Malaysia dan sedang menjalankan penyelidikan mengenai "Hubungan antara Lima Personaliti Besar dan Prestasi Penyesuaian di kalangan Jururawat Hospital Awam Malaysia". Saya memohon jasa baik anda untuk turut serta menyumbang dalam kajian ini dengan menjawab soal selidik yang dilampirkan yang hanya mengambil masa sekitar 10 minit.

Soal selidik ini tidak melibatkan nama dan maklumat peribadi anda, jawapan anda hanya akan digunakan untuk tujuan akademik sahaja. Jika anda mempunyai sebarang soalan atau kemusykilan tentang soal selidik atau mengenai penyertaan dalam kajian ini, anda boleh menghubungi saya melalui emel athifah2409@gmail.com.

Thanks for your cooperation.
Terima kasih di atas kerjasama anda.

Sincerely,
Yang ikhlas,

Athifah Najwani Shahidan
PhD (Management) Scholar
School of Business Management,
Universiti Utara Malaysia,
Sintok, 06010, Kedah Darul Aman
Phone No : 011-11342724

Dr. Siti Norasyikin Abdul Hamid (Supervisor)
PhD (Management)
School of Business Management,
Universiti Utara Malaysia,
Sintok, 06010, Kedah Darul Aman.
norasyikin@uum.edu.my

SECTION A
SEKSYEN A

Demographic information
Maklumat demografi

The following information is strictly confidential and will only be used for research purpose. I will be grateful if you could kindly fill the required information.
Maklumat berikut adalah sulit dan hanya akan digunakan untuk tujuan kajian sahaja. Saya amat berterima kasih sekiranya anda dapat memberikan maklumat berikut.

Please read the following statements and **TICK** (✓) in the appropriate box.
Sila baca kenyataan berikut dan **TANDAKAN** (✓) pada petak yang berkenaan.

1. Position / Jawatan

- a. Sister / Ketua Jururawat

b. Staff Nurse / Jururawat

2. Grade / Gred

- a. U29

b. U32

c. U36

- d. U41

3. Gender / Jantina

- b. Male / Lelaki

b. Female / Perempuan

4. Marital Status / Status Perkahwinan

- a. Married/ Berkahwin

b. Single / Belum Berkahwin

- c. Divorced/ Widow / Bercerai / Balu

5. Age Group / Kumpulan Umur

- a. 21-30

b. 31- 40

- c. 41-50

d. Above 51 / Atas 51

6. Level of Highest Education / Tahap Pendidikan Tertinggi

- a. Certificate / Sijil

b. Diploma / Diploma

- c. Bachelor Degree / Sarjana Muda

d. Master / Sarjana

7. Please TICK (✓) specific range of your tenure working in the public hospitals

Sila TANDAKAN (✓) anggaran tepat bagi tempoh bekerja di hospital awam

No. of years <i>Jumlah tahun</i>	TICK (☐) <i>TANDAKAN (☐)</i>
< 1	
1 – 5	
6 – 10	
11 – 15	
16 – 20	
21 – 25	
> 25	

**SECTION B, SECTION C, SECTION D, SECTION E:
SEKYEN B, SEKYEN C, SEKSYEN D, SELSYEN E :**

For next four sections, please read the following statements and **TICK (√)** the response that closely represents your opinion. The statements are anchored on the following 7 point Likert Scale:

Untuk keempat-empat seksyen berikutnya, sila baca pernyataan berikut dan TANDAKAN (√) pada maklum balas yang mewakili pandangan anda. Kenyataan ini adalah berdasarkan Skala Likert 7 mata berikut:

1	2	3	4	5	6	7
Strongly Disagree <i>Sangat Tidak Setuju</i>	Disagree <i>Tidak Setuju</i>	Somewhat Disagree <i>Agak Tidak Setuju</i>	Neutral <i>Berkecuali</i>	Somewhat Agree <i>Agak Setuju</i>	Agree <i>Setuju</i>	Strongly Agree <i>Sangat Setuju</i>

**SECTION B: Adaptive Performance
SEKSYEN B : Penyesuaian Prestasi**

**How do you perceive about yourself when working?
Bagaimana anda melihat diri anda semasa bekerja?**

		1	2	3	4	5	6	7
1	Remain composed when faced with difficult circumstances. <i>Kekal tersusun/teratur apabila berhadapan dengan keadaan yang sukar.</i>							
2	Remain cool when faced with difficult circumstances. <i>Kekal tenang apabila berhadapan dengan keadaan yang sukar.</i>							

3	Do not overact to unexpected situations. <i>Tidak bertindak keterlaluan terhadap situasi yang tidak dijangka.</i>																		
4	Manage frustration well by working towards a solution, rather than blaming others. <i>Mengawal kekecewaan dengan baik dengan mencari penyelesaian berbanding menyalahkan orang lain.</i>																		
5	Develop innovative methods of obtaining resources to get the job done. <i>Membangunkan kaedah yang inovatif untuk mendapatkan sumber bagi menyiapkan sesuatu pekerjaan.</i>																		
6	Turns problems upside-down and inside-out to find fresh, new approaches. <i>Mengubahsuai masalah untuk mencari penyelesaian baru dan segar</i>																		
7	Generate innovative ideas to solve complex problems. <i>Menjana idea inovatif untuk menyelesaikan masalah rumit.</i>																		
8	Readily in response to unexpected changes. <i>Sentiasa bersedia untuk menghadapi perubahan yang tidak disangka.</i>																		
9	Easily change gears in response to unexpected changes. <i>Mudah berubah untuk menghadapi perubahan yang tidak disangka</i>																		
10	Willing to react even in uncertainty. <i>Saya bersedia untuk bertindak walaupun di dalam keadaan tidak pasti.</i>																		
11	Take effective action, even when the situation is not clear. <i>Mengambil tindakan yang efektif, walaupun situasi tidak jelas.</i>																		
12	Demonstrate enthusiasm for learning new skills and technology. <i>Mempamerkan semangat untuk mempelajari kemahiran dan teknologi baru.</i>																		
13	Quickly learns new ways to perform previously unlearned tasks. <i>Cepat mempelajari kaedah baru untuk melaksanakan tugas yang tidak dipelajari sebelumnya.</i>																		
14	Proficiently learns new ways to perform previously unlearned tasks. <i>Mempelajari kaedah baru dengan mahir untuk melaksanakan tugas yang tidak dipelajari sebelumnya.</i>																		
15	Volunteers to attend training that will prepare self for new skills needed at work. <i>Menjadi sukarela untuk menghadiri latihan yang dapat memberi kemahiran baru yang diperlukan di tempat kerja.</i>																		
16	Open-minded when dealing with others. <i>Berfikiran terbuka semasa berurusan dengan orang lain</i>																		
17	Works well with people with different personalities. <i>Bekerja dengan baik dengan orang berlainan personaliti.</i>																		
18	Develops effective relationships with people with different personalities. <i>Menjalinkan hubungan efektif dengan orang berlainan personaliti.</i>																		
19	Demonstrates keen insight of others' behavior to work effectively with them.																		

	<i>Menunjukkan keserasian terhadap tingkah laku orang lain supaya boleh bekerja secara efektif dengan mereka.</i>								
20	Adjusts own behavior to be able to work more effectively with others. <i>Menyesuaikan tingkah laku diri sendiri agar boleh bekerja dengan lebih efektif dengan orang lain.</i>								

SECTION C: Big Five Personality Traits
SEKSYEN C: Lima Tret Personaliti

To what extent do you agree with the following statement?
Sejauh manakah anda bersetuju dengan kenyataan berikut?

		1	2	3	4	5	6	7
1	I do my best to help others. <i>Saya akan membuat yang terbaik untuk membantu orang lain.</i>							
2	I get along well with others. <i>Saya boleh bergaul dengan baik dengan orang lain.</i>							
3	I see other people's point of view <i>Saya menghormati pandangan orang lain.</i>							
4	I am considerate. <i>Saya seorang yang bertimbang rasa.</i>							
5	Most of my friends like me. <i>Kebanyakan rakan-rakan saya menyukai saya.</i>							
6	I am conscientious of my work. <i>Saya teliti dengan kerja saya.</i>							
7	I am always looking for grow opportunity. <i>Saya sering mencari peluang untuk berkembang.</i>							
8	I try to do my best in everything that I do. <i>Saya mencuba untuk membuat yang terbaik dalam setiap perkara yang saya lakukan.</i>							
9	I am methodical. <i>Saya seorang yang teratur.</i>							
10	I am a leader. <i>Saya seorang pemimpin.</i>							
11	I am persuasive. <i>Saya seorang yang meyakinkan.</i>							
12	I am self-motivated. <i>Saya seorang yang bermotivasi.</i>							
13	I am energetic. <i>Saya seorang yang bertenaga.</i>							
14	I like to talk to people. <i>Saya suka bercakap dengan orang.</i>							
15	I handle pressure well. <i>Saya boleh menguruskan tekanan dengan baik.</i>							
16	I am good-tempered. <i>Saya seorang yang tidak panas baran</i>							

17	I rarely feel depressed. <i>Saya jarang berasa tertekan.</i>								
18	I like to try new things. <i>Saya suka mencuba perkara baru.</i>								
19	I take a holistic approach. <i>Saya mengambil pendekatan menyeluruh.</i>								
20	I am a creative person. <i>Saya seorang yang kreatif.</i>								

SECTION D: Person Environment Fit
SEKSYEN D: Kesesuaian Diri dan Persekitaran

To what extent do you agree with the following statement?
Sejauh manakah anda setuju dengan kenyataan berikut?

		1	2	3	4	5	6	7
1	My abilities fit the demands of my job. <i>Kebolehan saya sesuai dengan keperluan pekerjaan.</i>							
2	I have the right abilities to perform my job. <i>Saya mempunyai kebolehan yang sesuai untuk melaksanakan tugas saya.</i>							
3	There is a good match between the requirement of my job and my skills. <i>Terdapat padanan yang baik antara keperluan kerja dan kemahiran saya.</i>							
4	The match is very good between the demands of my job and my personal skills. <i>Terdapat padanan yang sangat baik antara keperluan kerja dengan kemahiran peribadi saya.</i>							
5	My training is a good fit with the requirements of my job. <i>Latihan saya sangat sesuai dengan keperluan pekerjaan saya.</i>							
6	My personal education provides a good match with the demands that my job places on me. <i>Pendidikan saya memberikan padanan yang baik dengan keperluan pekerjaan saya.</i>							
7	I possess the abilities needed to contribute to my work group. <i>Saya mempunyai kemampuan yang diperlukan untuk menyumbang kepada kerja kumpulan saya.</i>							
8	I believe my skills match those required by my work group. <i>Saya percaya kebolehan saya sesuai dengan keperluan kumpulan kerja saya.</i>							
9	The match is very good between the demands of my work group members and my personal skills. <i>Terdapat padanan yang sesuai antara permintaan ahli kumpulan kerja saya dengan kemahiran saya.</i>							
10	My training fits with the requirements of my work group members. <i>Kemahiran saya sesuai dengan keperluan ahli kumpulan kerja saya.</i>							

11	My education provides a good match with the demands of my work group members. <i>Pendidikan saya berpadanan dengan keperluan ahli kumpulan kerja saya.</i>								
12	My abilities fit the demands of my supervisor. <i>Kebolehan saya sesuai dengan kehendak penyelia saya.</i>								
13	I have the right abilities for doing my supervisor's order. <i>Saya mempunyai kebolehan sesuai untuk melaksanakan arahan penyelia saya.</i>								
14	There is a good match between the requirement of my supervisor and my work's skills. <i>Terdapat padanan yang baik antara keperluan penyelia dengan kemahiran kerja saya.</i>								
15	The match is very good between the demands of my supervisor and my personal skills. <i>Terdapat padanan yang baik antara permintaan penyelia dengan kemahiran personel saya.</i>								
16	My training fits with the requirements of my supervisor. <i>Latihan saya sesuai dengan kehendak penyelia saya.</i>								
17	My personal education provides a good match with the demands that my supervisor places on me. <i>Pendidikan saya berpadanan dengan kehendak yang ditetapkan oleh penyelia saya.</i>								

SECTION E: Work Engagement
SEKSYEN E: Penglibatan Kerja

How do you perceive yourself when working?

Bagaimana anda melihat diri anda semasa bekerja?

		1	2	3	4	5	6	7
1	At my work, I feel that I am bursting with energy. <i>Semasa bekerja, saya rasa sangat bertenaga.</i>							
2	At my job, I feel strong and vigorous. <i>Semasa bekerja, saya rasa kuat dan bersemangat.</i>							
3	When I get up in the morning, I feel like going to work. <i>Semasa bangun pagi, saya rasa ingin ke tempat kerja.</i>							
4	I can continue working for very long period at a time. <i>Saya boleh terus bekerja untuk tempoh waktu yang lama.</i>							
5	At my job, I am very resilient, mentally. <i>Semasa bekerja, saya seorang yang mempunyai daya tahan secara mental.</i>							
6	At my work, I always persevere, even when things do not go well. <i>Semasa bekerja, saya sentiasa bersabar walaupun keadaan tidak berjalan lancar.</i>							
7	I find the work that I do full of meaning and purpose. <i>Saya dapati kerja yang saya lakukan, dilakukan dengan penuh bermakna dan mempunyai tujuan.</i>							

8	I am enthusiastic about my job. <i>Saya seorang yang bersemangat dengan pekerjaan saya.</i>										
9	My job inspires me. <i>Pekerjaan saya memberi inspirasi kepada saya.</i>										
10	I am proud of the work that I do. <i>Saya bangga dengan kerja yang saya lakukan.</i>										
11	To me, my job is challenging. <i>Bagi saya, pekerjaan saya adalah mencabar.</i>										
12	Time flies when I'm working. <i>Masa berlalu pantas semasa saya bekerja.</i>										
13	When I am working, I forget everything else around me. <i>Apabila saya bekerja, saya lupa tentang perkara lain di sekeliling saya.</i>										
14	I feel happy when I am working intensely. <i>Saya berasa gembira apabila saya bekerja dengan sepenuhnya.</i>										
15	I am immersed in my work. <i>Saya asyik dengan kerja saya.</i>										
16	I get carried away when I'm working. <i>Saya akan terbawa-bawa semasa bekerja.</i>										
17	It is difficult to detach myself from my job. <i>Sukar bagi saya untuk melepaskan diri saya daripada pekerjaan saya.</i>										

Any Suggestions/Comments
Cadangan / Komen

THANK YOU VERY MUCH FOR YOUR TIME AND EFFORT, IT IS GREATLY APPRECIATED.
TERIMA KASIH UNTUK MASA DAN USAHA ANDA, KERJASAMA ANDA AMATLAH DIHARGAI

Appendix B : Discriminant Validity

Discriminant Validity-Loadings and Cross Loadings

Const	Items	AP	AG	CC	EX	ES	OE	PJ	PG	PS	VG	DD	AB
AP	AP1	0.649	0.449	0.450	0.406	0.428	0.449	0.477	0.449	0.414	0.536	0.380	0.328
	AP2	0.664	0.437	0.428	0.393	0.445	0.464	0.479	0.482	0.429	0.531	0.399	0.310
	AP3	0.734	0.518	0.535	0.504	0.479	0.480	0.531	0.506	0.484	0.537	0.465	0.376
	AP4	0.748	0.574	0.539	0.511	0.510	0.467	0.561	0.553	0.499	0.547	0.531	0.381
	AP5	0.759	0.517	0.520	0.537	0.530	0.513	0.536	0.510	0.520	0.561	0.516	0.467
	AP6	0.778	0.555	0.606	0.504	0.428	0.499	0.560	0.509	0.530	0.548	0.562	0.359
	AP7	0.777	0.545	0.567	0.503	0.464	0.523	0.552	0.562	0.505	0.559	0.547	0.478
	AP8	0.775	0.523	0.506	0.497	0.422	0.490	0.553	0.539	0.537	0.543	0.562	0.478
	AP10	0.587	0.381	0.437	0.435	0.360	0.376	0.441	0.414	0.377	0.433	0.455	0.408
	AP11	0.633	0.385	0.468	0.406	0.377	0.416	0.445	0.429	0.414	0.486	0.457	0.439
	AP12	0.772	0.525	0.535	0.464	0.382	0.479	0.520	0.543	0.495	0.446	0.535	0.320
	AP13	0.790	0.586	0.571	0.534	0.468	0.557	0.589	0.584	0.552	0.504	0.556	0.417
	AP14	0.772	0.573	0.523	0.488	0.409	0.478	0.567	0.568	0.546	0.460	0.525	0.390
	AP15	0.763	0.602	0.544	0.519	0.509	0.538	0.577	0.579	0.563	0.510	0.522	0.479
	AP16	0.822	0.646	0.587	0.558	0.504	0.541	0.609	0.583	0.529	0.530	0.591	0.424
	AP17	0.805	0.624	0.604	0.593	0.482	0.537	0.606	0.600	0.562	0.522	0.602	0.444
	AP18	0.811	0.634	0.587	0.604	0.502	0.560	0.638	0.617	0.574	0.548	0.588	0.452
	AP19	0.810	0.619	0.530	0.548	0.468	0.528	0.581	0.585	0.567	0.517	0.572	0.376
	AP20	0.808	0.630	0.573	0.575	0.476	0.542	0.606	0.587	0.595	0.528	0.599	0.366
	AG	BFP2	0.672	0.898	0.675	0.615	0.544	0.535	0.627	0.578	0.570	0.587	0.596
BFP3		0.658	0.916	0.690	0.617	0.582	0.541	0.637	0.590	0.580	0.552	0.624	0.455
BFP4		0.638	0.910	0.680	0.588	0.518	0.514	0.603	0.566	0.566	0.501	0.564	0.401
BFP5		0.576	0.771	0.620	0.629	0.587	0.588	0.610	0.599	0.553	0.536	0.510	0.497
BFP6		0.587	0.682	0.864	0.676	0.569	0.600	0.608	0.565	0.562	0.592	0.601	0.495
CC	BFP7	0.647	0.647	0.888	0.631	0.510	0.627	0.639	0.603	0.572	0.584	0.623	0.461
	BFP8	0.625	0.661	0.870	0.621	0.448	0.584	0.629	0.631	0.564	0.523	0.630	0.361
	BFP9	0.600	0.651	0.844	0.691	0.570	0.587	0.580	0.590	0.545	0.579	0.574	0.427
	BFP11	0.616	0.634	0.686	0.909	0.663	0.660	0.660	0.637	0.619	0.643	0.625	0.495
EX	BFP12	0.636	0.662	0.726	0.936	0.658	0.733	0.689	0.678	0.658	0.657	0.663	0.513
	BFP13	0.595	0.621	0.658	0.897	0.630	0.652	0.648	0.663	0.627	0.627	0.644	0.479
	BFP15	0.592	0.642	0.581	0.717	0.863	0.660	0.552	0.588	0.561	0.551	0.541	0.421
ES	BFP16	0.519	0.524	0.520	0.561	0.887	0.581	0.482	0.473	0.497	0.595	0.489	0.416
	BFP17	0.461	0.485	0.470	0.567	0.858	0.631	0.439	0.410	0.416	0.559	0.447	0.479

OE	BFP18	0.579	0.523	0.605	0.660	0.597	0.862	0.561	0.580	0.536	0.543	0.584	0.473
	BFP19	0.614	0.590	0.643	0.688	0.658	0.921	0.588	0.611	0.579	0.591	0.561	0.474
	BFP20	0.581	0.551	0.606	0.651	0.668	0.895	0.571	0.583	0.559	0.576	0.525	0.544
PJ	PEF2	0.663	0.649	0.651	0.661	0.526	0.590	0.908	0.750	0.698	0.645	0.696	0.502
	PEF3	0.669	0.628	0.636	0.694	0.524	0.582	0.927	0.772	0.721	0.673	0.712	0.540
	PEF4	0.642	0.607	0.629	0.644	0.541	0.618	0.877	0.734	0.661	0.632	0.633	0.555
	PEF6	0.625	0.631	0.600	0.583	0.421	0.487	0.837	0.754	0.699	0.565	0.707	0.454
PG	PEF7	0.649	0.580	0.619	0.609	0.461	0.592	0.756	0.843	0.685	0.592	0.669	0.440
	PEF9	0.671	0.623	0.641	0.645	0.525	0.591	0.788	0.922	0.744	0.619	0.681	0.508
	PEF10	0.620	0.586	0.603	0.666	0.518	0.588	0.750	0.912	0.761	0.621	0.655	0.498
	PEF11	0.616	0.584	0.595	0.654	0.522	0.592	0.729	0.890	0.784	0.607	0.644	0.490
PS	PEF12	0.611	0.585	0.578	0.642	0.509	0.544	0.703	0.772	0.899	0.621	0.627	0.501
	PEF13	0.617	0.615	0.592	0.620	0.504	0.569	0.703	0.771	0.919	0.619	0.638	0.495
	PEF14	0.638	0.614	0.602	0.643	0.552	0.584	0.726	0.758	0.920	0.629	0.668	0.526
	PEF16	0.602	0.534	0.571	0.610	0.494	0.565	0.702	0.718	0.884	0.619	0.657	0.532
VG	WE1	0.607	0.580	0.582	0.627	0.492	0.542	0.634	0.613	0.555	0.818	0.666	0.486
	WE2	0.632	0.584	0.624	0.647	0.513	0.551	0.671	0.653	0.620	0.839	0.720	0.535
	WE3	0.522	0.471	0.524	0.570	0.550	0.510	0.542	0.515	0.530	0.850	0.537	0.567
	WE4	0.408	0.353	0.399	0.418	0.449	0.394	0.399	0.395	0.429	0.752	0.431	0.510
	WE5	0.588	0.500	0.549	0.597	0.610	0.574	0.599	0.584	0.610	0.878	0.641	0.536
	WE6	0.618	0.567	0.553	0.593	0.609	0.569	0.635	0.596	0.632	0.807	0.665	0.586
DD	WE7	0.673	0.587	0.612	0.656	0.577	0.593	0.698	0.668	0.669	0.733	0.850	0.569
	WE8	0.614	0.567	0.611	0.649	0.512	0.564	0.669	0.666	0.632	0.708	0.897	0.582
	WE9	0.606	0.542	0.597	0.621	0.495	0.556	0.684	0.665	0.636	0.671	0.914	0.546
	WE10	0.600	0.594	0.641	0.591	0.474	0.526	0.690	0.637	0.616	0.606	0.897	0.496
	WE11	0.549	0.577	0.592	0.537	0.403	0.461	0.624	0.592	0.552	0.504	0.789	0.453
AB	WE13	0.431	0.452	0.413	0.436	0.421	0.459	0.493	0.424	0.456	0.503	0.487	0.835
	WE14	0.555	0.491	0.505	0.484	0.398	0.474	0.576	0.526	0.540	0.580	0.649	0.790
	WE15	0.470	0.462	0.450	0.485	0.476	0.495	0.500	0.497	0.509	0.594	0.542	0.886
	WE16	0.326	0.308	0.277	0.362	0.365	0.396	0.356	0.350	0.374	0.461	0.351	0.795
	WE17	0.425	0.385	0.422	0.474	0.425	0.481	0.455	0.438	0.458	0.551	0.474	0.854

Appendix C: SRMR Result

SRMR Result

	Saturated Model	Estimated Model
SRMR	0.05	0.05
d_ULS	3.263	3.263
d_G1	2.641	2.641
d_G2	2.2	2.2
Chi-Square	5,058.24	5,058.24
NFI	0.773	0.773

Appendix D: Common Method Variance

Common Method Variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.116	17.644	17.644	11.116	17.644	17.644
2	7.225	11.469	29.113	7.225	11.469	29.113
3	5.730	9.095	38.208	5.730	9.095	38.208
4	2.032	3.226	41.434	2.032	3.226	41.434
5	1.818	2.885	44.318	1.818	2.885	44.318
6	1.552	2.464	46.783	1.552	2.464	46.783
7	1.520	2.412	49.195	1.520	2.412	49.195
8	1.420	2.254	51.449	1.420	2.254	51.449
9	1.378	2.187	53.636	1.378	2.187	53.636
10	1.308	2.076	55.712	1.308	2.076	55.712
11	1.188	1.886	57.598	1.188	1.886	57.598
12	1.156	1.835	59.433	1.156	1.835	59.433
13	1.114	1.769	61.201	1.114	1.769	61.201

14	1.080	1.714	62.916	1.080	1.714	62.916
15	1.054	1.673	64.589	1.054	1.673	64.589
16	.971	1.541	66.131			
17	.948	1.505	67.636			
18	.892	1.416	69.052			
19	.871	1.382	70.434			
20	.833	1.322	71.756			
21	.831	1.318	73.074			
22	.803	1.274	74.348			
23	.751	1.192	75.540			
24	.744	1.181	76.721			
25	.689	1.093	77.814			
26	.681	1.080	78.894			
27	.659	1.047	79.941			
28	.634	1.007	80.948			
29	.610	.968	81.916			
30	.599	.951	82.866			
31	.559	.887	83.753			
32	.540	.858	84.611			
33	.534	.847	85.458			
34	.513	.814	86.272			
35	.500	.794	87.066			
36	.489	.777	87.843			
37	.470	.746	88.589			
38	.449	.713	89.301			
39	.432	.686	89.987			
40	.416	.661	90.648			
41	.404	.642	91.290			
42	.393	.623	91.913			
43	.380	.604	92.517			

44	.365	.579	93.097		
45	.352	.560	93.656		
46	.330	.524	94.180		
47	.327	.519	94.699		
48	.316	.502	95.201		
49	.302	.479	95.680		
50	.284	.452	96.132		
51	.277	.439	96.571		
52	.266	.422	96.993		
53	.236	.375	97.368		
54	.227	.360	97.728		
55	.220	.349	98.077		
56	.205	.325	98.403		
57	.200	.317	98.720		
58	.183	.290	99.010		
59	.164	.260	99.270		
60	.156	.247	99.518		
61	.138	.220	99.737		
62	.092	.146	99.883		
63	.074	.117	100.000		

Extraction Method: Principal Component Analysis.

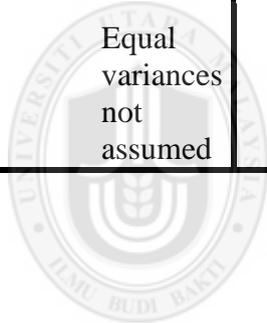
Appendix E: Independent Samples Test

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff.	95% Confidence Interval of the Difference	
									Lower	Upper
AGMean	Equal variances assumed	.626	.429	1.367	428	.172	-.14773	.10805	-.36010	.06464
	Equal variances not assumed			1.273	63.174	.208	-.14773	.11605	-.37963	.08417
CCMean	Equal variances assumed	.063	.802	1.392	428	.165	-.15083	.10834	-.36377	.06210
	Equal variances not assumed			1.268	62.461	.209	-.15083	.11894	-.38856	.08689
EXMean	Equal variances assumed	1.466	.227	-.121	428	.904	-.01374	.11356	-.23695	.20947
	Equal variances not assumed			-.105	61.097	.917	-.01374	.13054	-.27476	.24728
ESMean	Equal variances assumed	2.501	.115	1.110	428	.267	-.14195	.12784	-.39323	.10933

	Equal variances not assumed			-.944	60.481	.349	-.14195	.15032	-.44259	-.15869
OEMean	Equal variances assumed	1.306	.254	-.161	428	.872	-.01959	.12170	-.25880	-.21962
	Equal variances not assumed			-.142	61.392	.888	-.01959	.13844	-.29639	-.25721
PJMean	Equal variances assumed	1.082	.299	-.402	428	.688	-.04119	.10252	-.24270	-.16033
	Equal variances not assumed			-.363	62.228	.718	-.04119	.11340	-.26786	-.18548
PGMean	Equal variances assumed	1.226	.269	-.278	428	.781	-.02890	.10409	-.23349	-.17569
	Equal variances not assumed			-.248	61.842	.805	-.02890	.11660	-.26200	-.20420
PSMean	Equal variances assumed	2.910	.089	-.671	428	.503	-.07222	.10770	-.28390	-.13947
	Equal variances not assumed			-.554	59.745	.582	-.07222	.13037	-.33302	-.18858
DDMean	Equal variances assumed	.187	.666	1.263	428	.207	-.13386	.10602	-.34225	-.07452
	Equal variances not assumed			1.204	64.017	.233	-.13386	.11114	-.35590	-.08817

ABMean	Equal variances assumed	1.673	.197	-.140	428	.888	-.01775	.12643	-.26626	-.23075
	Equal variances not assumed			-.124	61.600	.901	-.01775	.14279	-.30323	-.26772
APMean	Equal variances assumed	.059	.808	-.516	428	.606	-.05067	.09821	-.24370	-.14237
	Equal variances not assumed			-.492	63.973	.625	-.05067	.10308	-.25660	-.15527
VGMean	Equal variances assumed	.243	.622	-.323	428	.747	-.03775	.11674	-.26720	-.19170
	Equal variances not assumed			-.291	62.111	.772	-.03775	.12962	-.29684	-.22134



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