JOB RELATED FACTORS AND MODERATING EFFECT OF FLEXIBLE WORK ARRANGEMENT ON JOB SATISFACTION AMONG MALAYSIAN OFFSHORE OUTSOURCING SUPPORT EMPLOYEES

YONG SHEE MUN (94238)

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YONG SHEE MUN

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Nama Pelajar (Name of Student)	:	**Yong Shee Mun**
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ABSTRACT

Job Satisfaction, organization performance and employee turnover intention are closely interlinked. High performance culture organizations that promote both job satisfaction and work-life balance often produce good results and have the ability to attract and retain talented employees. Job satisfaction of fixed scheduled employees in the Malaysian offshore outsourcing support is constantly challenged from working long irregular hours to fulfill global "Follow-the-sun" workflow commitment and maintaining effective communication in a temporal dispersed virtual organization. The work time demand is felt more as the temporal dispersion variance between parties in communication widens. This research was initiated with the objective of understanding employees working under such conditions and whether having good management policies such as flexible work arrangement buffer the impact and restore job satisfaction. For this quantitative survey, 306 Information Technology Outsourcing, and Business Process Outsourcing respondents, located in the MSC flagship town of Cyberjaya, were identified. The results reveal that Malaysian offshore outsourcing workers are generally satisfied with their work environment. Whilst global communication remains a temporal dispersion challenge, flexible work arrangement does not alleviate the impact of long irregular work hours; however, it promotes job satisfaction. The findings also confirm the importance of co-workers and supervisory support in mitigating the demands of work. Contrary to the belief that globalization emphasizes cost optimization and reluctance of MNCs in spending and developing resources, most respondents acknowledged that good support from their co-workers and supervisors are vital. The study highlights the critical impact of globalization and temporal dispersion on job satisfaction among fixed working arrangement employees who support Malaysian offshore outsourcing.

Keywords: Job satisfaction, Work Time Demand, Work Demand, Job Resources, Flexible Work Arrangement.

ABSTRAK

Kepuasan kerja, prestasi organisasi dan niat perolehan pekerja adalah saling berkait rapat. Budaya organisasi berprestasi tinggi menggalakkan kepuasan kerja, dan keseimbangan kerja dan kehidupan sering menghasilkan keputusan yang baik termasuk keupayaan untuk menarik dan mengekalkan pekerja yang berbakat. Kepuasan kerja dalam kalangan pekerja berjadual tetap yang menyokong penyumberan luar pesisir Malaysia sentiasa dicabar dengan waktu kerja yang panjang dan tidak teratur untuk memenuhi komitmen aliran kerja global dan juga mengekalkan komunikasi yang berkesan di antara pasukan maya yang terletak di zon masa yang berbeza. Tuntutan masa kerja bertambah apabila penyebaran zon masa di antara pihak-pihak dalam komunikasi semakin meluas. Kajian ini dikemukakan dengan objektif untuk memahami kepuasan kerja dalam kalangan pekerja yang bekerja di dalam keadaan yang sedemikian dan sama ada polisi pengurusan yang baik seperti perlaksanaan waktu kerja fleksibel memberikan kesan dan memulihkan tahap kepuasan kerja. Kajian kuantitatif ini melibatkan sebanyak 306 responden dari Penyumberan Luar Teknologi Maklumat dan Penyumberan Luar Proses Perniagaan yang terletak di bandar utama Koridor Raya Multimedia (MSC) Cyberjaya yang telah dikenal pasti. Dapatan kajian mendedahkan bahawa pekerja penyumberan luar pesisir Malaysia secara umumnya berpuas hati dengan persekitaran kerja mereka. Manakala komunikasi global kekal sebagai cabaran kerja di zon masa yang berbeza, perlaksanaan kerja fleksibel pula tidak mengurangkan kesan waktu bekerja yang panjang dan tidak teratur.Walau bagaimana pun, faktor berkenaan dapat menggalakkan kepuasan kerja. Hasil kajian juga mengesahkan kepentingan rakan sekerja dan sokongan penyeliaan dalam mengurangkan tuntutan kerja. Berbeza pula dengan kepercayaan, sebilangan besar daripada responden mengakui kepentingan sokongan yang baik daripada rakan sekerja dan penyelia mereka. Kajian ini memberi tumpuan kesan globalisasi dan cabaran bekerja di zon masa yang berbeza keatas kepuasan kerja dalam kalangan pekerja berjadual tetap yang menyokong pesisir penyumberan luar Malaysia.

Kata kunci: Kepuasan pekerja, Permintaan Zon Masa Kerja, Permintaan Kerja, Sumber Manusia, Fleksibel Kerja Penyusunan.

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LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AMOS	AMOS version 21.0
APAC	Asia Pacific
AVE	Average Variance Extracted
B2B	Business-to-Business.
B2C	Business-to-Consumer
BPO	Business Processing Outsourcing
CFI	Comparative Fit Index
CR	Composite Reliability
Cyberview	Cyberview Sdn. Bhd..
DV	Dependent Variable
EMEA	Europe, Middle East and Africa
FWA	Flexible Work Arrangement
GFI	Goodness of Fit Index
GMT	Greenwich Mean Time
GTP	Government Transformation Programme
ICT	Information, Communication and Technology
IDR	Iskandar Development Region
IFI	Incremental Fit Index
IS	Information Systems.
IT	Information Technology
ITO	Information Technology Outsourcing
IV	Independent Variables
JDI	Job Descriptive Index
JIT	Just In Time
k-economy	Knowledge economy
LF	Lower Fence
MI	Modification Indices
MNC	Multi-National Companies

MSC	Multimedia Super Corridor
MSQ	Minnesota Satisfaction Questionnaire
NCER	Northern Corridor Economic Region
NFI	Normed Fit Index
NWW	New Way of Working
OU	Operating Units
PCA	Principal Component Analysis
PDPA	Malaysia Personal Data Protection Act
POS	Perceived Organizational Support
PAF	Principal Axis Factoring
RBV	Resource Based View
RMR	Root Mean Square Residual
RMSEA	Root Mean Square - Error of Approximation
RNI	Relative Noncentrality Index
SEM	Structural Equation Modeling
SPSS	IBM SPSS statistical software
SRC	Standardized Residual Covariances
SRMR	Standardized Root Mean square Residual
TLI	Tucker Lewis Index
UF	Upper Fence
UNHCR	United Nation High Commissioner for Refugees
UUM	Universiti Utara Malaysia.
VIF	Variance Inflation Factor

CHAPTER 1 INTRODUCTION

Globalization is making the world smaller and flatter. The evolution of science, technology, communication and the desire of mankind in taking advantage of the asymmetrical world resources and economies have brought the world closer through greater trade exchange, knowledge management and culture sharing. The phenomenon of globalization has been linked with the various job related factors such as job resources and job demand and their effect on job satisfaction (Mohd Awang Idris, Dollard, & Winefield, 2011; Tromelen, 2013). Teams working in a globalized environment are spread across different geographical locations and time zones in a term referred to as spatial and temporal dispersion. King and Frost (2002) suggested three different types of dispersion. First, social dispersion refers to demographic diversity among people in dispersion. Second, temporal dispersion refers to time zone differential among people in communication and team cohesion. Third, spatial dispersion refers to the geographical distance among people in communication.

Spatial and temporal dispersion require employees supporting global operation to work odd hours in maintaining effective global communications (Olsen & Dahl, 2010; Outsource Portfolio, July 2008). Working under such condition causes stress and leads to job dissatisfaction (Harrington & Ladge, 2009; Mouraa, Orgambídez-Ramos, Gonçalvesab, 2014).

The theme of dispersion is not new. Previous studies (King & Frost, 2002; Agrifoglio & Metallo, 2010) had assessed the use of various communication channels in distributing information back and forth across time zones between different users and workplaces (Shirani, Tafti, & Affisco, 1999). Globalization with technology as its enabler using Information Communication Technology (ICT) in establishing connection among teams in virtual organization represents the fundamental driving

forces behind the existence of dispersed workers (Solomon, 2001). However, existence of critical discrepancies from the effect of globalization and temporal dispersion on job satisfaction begs concerns. Hightower & Sayeed (1996) opined that traditional teams' performances are generally higher compared to disperse teams. However, such findings were disputed by Ocker, Hiltz, Turoff, and Fjermestad (1995) and Straus (1996). Most of these studies relied on literature in identifying satisfaction level through reviewing comparative assessment between traditional and dispersed teams (Powell, Piccoli, & Ives, 2004). Few attempts were made to really identify the antecedents of these dimensions (Powell *et al.*, 2004).

In addition very little is known about spatial and temporal dispersion on an employee's socio-emotional state. Lojeski, Reilly, and Dominick (2006) asserted that in literature few contributions have been made to investigate the influence of spatial and temporal dispersion on the emotional dimension of offshoring workers in terms of their satisfaction level.

The European Working Conditions Survey carried out in the year 2000 found job related stress as the second most common work-related problem across European Union (Kivimäki, Leino-Arjas, Luukkonen, Riihimäki, Vahtera, & Kirjonen, 2002; Hoogendoorn, Van Poppel, Koes, & Bouter, 2000). Subsequent survey conducted in 2007 concurred with previous studies that changes in the content and organization of work due to globalization also resulted in an intensification of job related stress (Houtman, 2007). With certain aspects of work moving away to locations that are traditionally done centrally, workers faced with the new ways of working are forced to readjust. The resulting imbalance of work demands and the availability of resources have a dramatic effect on employee job satisfaction and in many cases resulting in

work related depression, burnout and other unfavorable outcomes (De Jonge, Dormann, & Van Vergchel, 2004).

1.1 Background

As Malaysia embraced globalization, new economic zones such as Iskandar Development Region (IDR), Northern Corridor Economic Region (NCER), Multimedia Super Corridor (MSC), and East Coast Economic Region (ECER) were setup offering world class infrastructure facilities and business friendly policies such as corporate tax incentives and ease of setting up business (ETP annual report, 2013). Coupled with English language being widely spoken and relative low operation cost in these economic zones, Malaysia has attracted significant amount of foreign direct investment especially from multi-national companies (MNCs) to offshore their operation into the country that created opportunities for employees and organizations to share knowledge, technology, social values and cultural norms (Cheng, 2004).

This phenomenon is attributed to the skilled and multilingual talent, world class infrastructure, competitive costs of business operations and a safe haven with low occurrence of natural disasters and strong government support to drive the information, communication and technology industry (The Star, July 31, 2013).Most of these offshore outsourcing support services provide low to medium value activities that complement higher value work done in the developed regions (Vestring, Rouse, Reinert, & Varma, 2005).

Based on Multi-Media Super Corridor (MSC) Malaysia annual industry report 2010 – 2013 (Figure 1.1), global sourcing in Malaysia contributed RM12.7 billion of the total sales by cluster to the Malaysia economy. This has been an increasing trend for the past years despite the challenging economic climate that impacted other clusters in

2013. According to management consulting firm AT Kearney, Malaysia was and still is ranked the world's third outsourcing destination behind India and China since 2004 with outsourcing sector contributed RM5.8bil to the nation's GDP in 2012, up 32% from 2011 (The Star, July 31, 2013). The strong growth performance in the various clusters within ICT has contributed to MSC Malaysia's compound annual growth rate (CAGR) of 23.9% over the past five years to reach RM12.06 billion in 2013 of which Shared Services and Outsourcing cluster remains the highest contributor (MDEC, 2013).

Total sales by cluster 2010-2013 (RM Million)

Year	Creative Multimedia	IHLs & Incubators	InfoTech	Global Sourcing
2010	4847	1864	12558	8018
2011	6073	1153	15363	9143
2012	6990	1440	14660	10450
2013	6390	1260	14090	12790

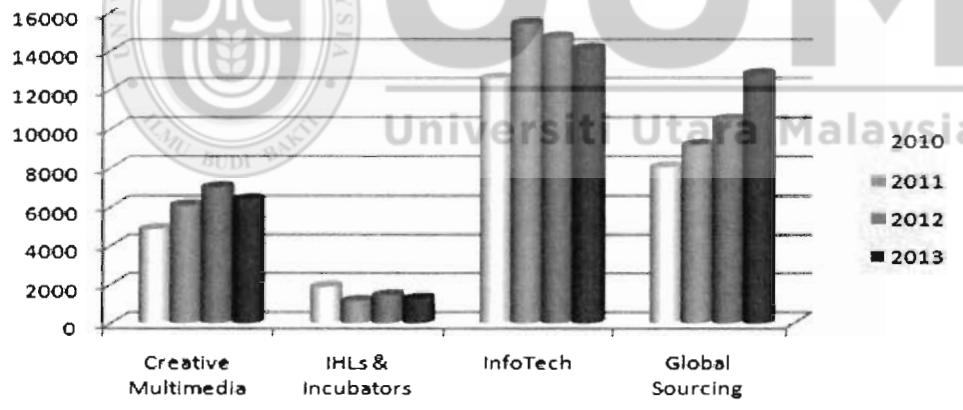


Figure 1.1
MSC annual industry report 2010 – 2013 on total sales by cluster
Source: *MDEC (2013)*

Majority of these organizations providing global sourcing support are required to operate around the clock to support their global operation covering three main regions namely Asia Pacific (APJ) region, Europe, Middle East and Africa (EMEA) region, and Americas that include North and South America (Americas) region.

Working under such environment has an impact on employee job satisfaction due to the long irregular working hours, lack of co-worker and supervisory support, cultural and communication issues (Olsen & Dahl, 2010; Outsource Portfolio, July 2008). Norizah, Hasrina, and Adnan (2011) in their study of virtual teams located in Malaysia asserted the importance of team member satisfaction as key in fostering team relationship and improve team performance. Having high job satisfaction in a workplace creates good working conditions that reduce absenteeism and staff turnover (Norizah *et al.*, 2011).

Possenriede (2012) suggested using flexible working as a solution to counter the effect of temporal dispersion challenges and improve job satisfaction. His study showed general improvement in health impairment such as sickness and absenteeism with the introduction of flexi-time and flexi-place. Past studies (Bélanger, 1999; Pinsonneault & Boisvert, 2001; Potter, 2003; Brown, 2010) supported this finding showing telecommuting as significant workplace innovation bringing perceived employee satisfaction benefits such as employee motivation, organization loyalty and retention strategy.

In an effort to improve employee job satisfaction, the Malaysian government is encouraging employers to provide Flexible Work Arrangement (FWA) in giving employees more flexibility in terms of work duration and work locations. The Prime Minister of Malaysia Datuk Seri Najib Tun Razak proposed that FWA be implemented through compressed work week, flexible hours and weekend work during his tabling of the 2014 Budget (The Star Online, November 26, 2013). Azlinzuraini, Khatijah, Ahmad Munir, Nur Diyana, Shaw, and Bown (2014) in their study of FWA found that such work-life balance policies although available in Malaysia public sector and large private firms are however minimal. In order to

increase participation in FWA, the Malaysian government had proposed tax deduction from training expenses and consultancy fees incurred by employers implementing FWA (New Straits Times, October 25, 2013).

Lehndorff (1998) opined that in global working, work schedules extend themselves on less prescribed times and that hours worked in such environment is no longer carried out on a weekly basis in what was typically known as regular working time but over an annual period. However, study done by Holmström, Ó Conchúir, Ågerfalk, and Fitzgerald (2006) contradicted these findings that temporal dispersion respondents continue to feel dissatisfied, "being behind" or "missing out" despite flexible work hours and communication technologies that enable asynchronous communication.

This study dwells deeper into the discussions and strives to understand the level of impact these factors have on employee job satisfaction in the sourcing industry in Malaysia, and the effectiveness of work-balance policies in buffering the impact and restoring employee job satisfaction.

1.2 Problem statement

Malaysia is located at the Far East 8 hours ahead of Greenwich Mean Time (GMT +8). US Central Standard Time is 6 hours behind GMT (GMT -6) (Figure 1.2). The temporal dispersion separation would mean real time communication between Malaysian offshore outsourcing teams and their counterparts in America and Europe have to take place during off working hours either in early morning or late evening.

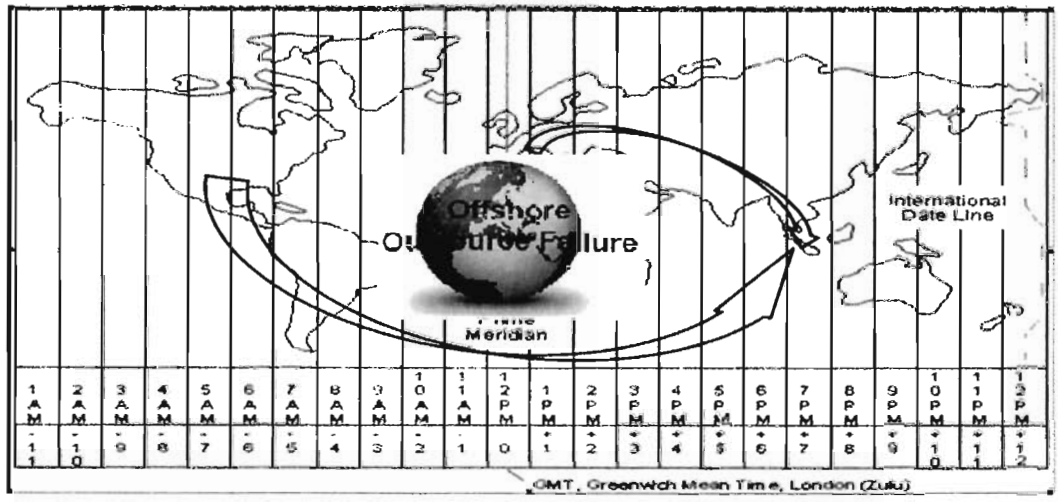


Figure 1.2
Temporal dispersion challenges affecting global team meeting
Source: Outsource Portfolio (2008)

1.2.1 Work time demand challenges on job satisfaction

For these teams, job satisfaction is constantly challenged from working long irregular hours to fulfil global orders and maintain effective communication in a temporal dispersed virtual organization (Mohd Awang Idris, Dollard, & Winefield, 2011; Wickramasinghe, 2010; Malhotra & Chadha, 2012). The work time demand is felt even more as the temporal dispersion variance between parties in communication widens (Klitmøller & Lauring, 2013).

A survey conducted by JobStreet (2012) on employee job satisfaction in Malaysia, had reported that 78% of the 1,145 respondents claimed they were not satisfied with their current job. 9% of these respondents mentioned working hours as the cause of their dissatisfaction. Overall, 62% said they would seek alternatives to restore their satisfaction if their wellbeing especially career development and work-life balance were not taken care (JobStreet, 2012). MyWorklife (2014) reported an attrition rate of over 20% for Information Technology Outsourcing (ITO) industry and Towers

Watson (2013) reported a 19% staff turnover rate for Business Process Outsourcing (BPO) compare to the general industry employee turnover rate of 13.2% in Malaysia.

1.2.2 Effect of job demand on employees' job satisfaction

One of the main impetuses of firm offshoring their operation is to optimize the cost of operation (Mcnall, Masuda, & Nicklin, 2010). Although offshoring brings new cost challenges from various cost elements in fulfilling global supply chain, these costs are offset by new processes allowing firm access to low-cost production, new technologies, and reduced manufacturing and logistics cost (Gong, 2013). In ensuring the production cost remains low, multi-national corporations are reluctant to overly commit on investing in human capital development (Mohd Awang Idris *et al.*, 2011) and opt for matrix organizational structure resulting in employees doing multiple roles. This arrangement has evidently increased the job demand of global offshore outsourcing support employees.

Working under such conditions cause workers to suffer psychology and psychosomatic ailments such as depression, exhaustion or burnout eventually leading to job dissatisfaction (Karasek, 1979; Schaubroeck & Merritt, 1997; Sobia & Yasir, 2014). Companies providing offshore outsourcing support services are equally impacted. Of the total MSC status Shared Service Organization (SSO) companies' workforce in Malaysia of approximately 65,000 personnel in 2012, 51% of the workforce was in finance and accounting sector, 36% in IT and 11% in engineering (Choong, 2014). These SSO companies generate total revenue of RM10.45bil of which RM3.62bil came from local sales and the rest from export sales (Choong, 2014). A combination of high staff attrition rate of over 20% and low staff productivity attributed by low employee satisfaction have a great impact on these

companies and the overall productivity growth of ICT industry sector (MyWorklife, 2014).

1.2.3 Resource challenges on job satisfaction

Most organizations providing offshore outsourcing support services have virtual teams spread globally to provide flexible and dynamic structures that harness competitive edge of the locations where these teams are based (Hatonen & Eriksson, 2009). Salunke (2011) opined that such arrangement can cause technology interoperability issues, virtual team and internal team misalignment.

First, teams located at different part of the world may not have the same technology e.g. mobile office communicator for online collaboration forcing teams to use a less effective way e.g. emails of communication (Klitmøller & Lauring, 2013). Second, co-workers in different virtual teams face coordination problems due to lack of trust and intercultural believes and attitudes. Supervisory support may be lacking due to different focus (Klitmøller & Lauring, 2013). Third, there is a different perspective between management and employees in terms of work engagement. Whilst management's perspective of work engagement is to seek profit and contribute to the bottom line of revenue and client satisfaction, employees' perspective of work engagement is to look for work satisfaction (Salunke, 2011). These differences limit the scope of the employee's decision-making authority and would not make any difference on their job satisfaction.

1.2.4 Workplace flexibility on job satisfaction

Globalization has now reshaped workplace temporalities making work time becoming more flexible and decentralized. Firms in their attempt to alleviate staff dissatisfaction

arising from the temporal dispersion challenges and demanding work environment introduced Flexible Work Arrangement (FWA) allowing employees the discretion of determining when, where and how long they chose to engage in work. UK was the first country to legislate flexible working under Flexible Working Regulations that was introduced in 2003 giving the right for parents of young and disabled children to apply to work flexibly. This right was extended from April 2007 to cover careers of adults (ACAS, 2014). The regulations place a duty on employers to consider requests for a range of working arrangements that includes flexi-time, home-based tele-working, job-sharing and compressed hours (ACAS, 2014).

Study carried out by Possenriede & Plantenga (2011) on 20,000 Dutch public sector employees has shown workplace flexibility is associated with sizeable increases in satisfaction with working-time fit and overall job satisfaction. However, it does not resolve the challenges of job satisfaction of fixed schedule offshore support workers working irregular extended hours completing their day job and participating in off working hour calls. This gap requires further examination.

The examination of these challenges forms the key focuses in this study.

1.3 Research questions

Based on the problem statement that has been described, the probing questions that required to be examined are:

Question 1*: How changes in job demand affects employee job satisfaction in an offshore outsourcing support work environment?*

Question 2*: What influence would time demand arising from temporal dispersion separation have on employee job satisfaction?"*

Question 3: W*hat influence of co-worker involvement and supervisory support on job satisfaction in a virtual organization setting?*

Question 4: *Would firms having flexible work arrangement policy moderate the relationship of work time demand and employee job satisfaction in Malaysian offshore outsourcing support team?*

These research questions serve as guiding questions to understand the effect of globalization and would be used in developing our research objectives, conceptual framework and formulating hypotheses of the study.

1.4 Research objectives

The research objectives of this study attempt to provide answers to the guiding questions. These objectives provide the focus in terms of scope and dimension of this research. Consequently, four objectives are established:

Objective 1: *To examine the impact of job demands on offshore outsourcing support employee job satisfaction;*

Objective 2: *To determine the impact of work time demand on job satisfaction of employee providing global offshore outsourcing support;*

Objective 3: *To examine the impact of job resources on offshore outsourcing employee job satisfaction;*

Objective 4: *To examine the moderating impact of flexible work arrangement on work time demand and offshore outsourcing employee job satisfaction.*

1.5 Scope of study

This section examines the parameters in which the study is undertaken. It provides the focus needed to carry out the research.

From an industry sub-sector stand point, the scope for this study is confined to:

- Global offshore Information Technology Outsourcing (ITO) comprise mainly of IT infrastructure services, Data Center services, IT related support activities and software development
- Business Process Outsourcing (BPO) such as administration, project management, financial services and transactional processing are some of the core activities offshored and outsourced to Malaysia.

Both ITO and BPO sub-sectors are part of the main Information Communication and Technology (ICT) sector that have become key drivers and strategic enablers of the Government Transformation Programmes (GTP) for Malaysia (Matrade, 2014).

This study was carried out at Multimedia Super Corridor (MSC) flagship town of Cyberjaya in Malaysia. The reason for selecting this location is because MSC Malaysia is a major national initiative designed to serve as a growth catalyst for Information, Communication and Technology (ICT) sector and to accelerate the country's goal of achieving developed nation status by year 2020.

As this study is on the impact of globalization, firms participated in the study were Multi-National Companies (MNCs) having Operating Units (OUs) in Cyberjaya, Malaysia providing ITO and BPO support services to a global community with presence in the major regions of Asia Pacific (APAC), Europe, Middle East and Africa (EMEA) and Americas (North and South). The reason for this selection is to

investigate to what degree is job satisfaction of MNC OUs' employees in Malaysia impacted by the byproducts of globalization especially in terms of workload and the effect of temporal dispersion.

The type of working arrangement in scope of the study is knowledge workers who are on fixed schedule or fixed work arrangement. This is because time demand of work is different between workers on shift rotation schedule and fixed work arrangement. Whilst employees doing rotational shift are expected to handover their duties at the end of their shift rotation, fixed scheduled workers are expected to complete specific assignment within certain core work hours without the option of handover to his co-worker. In addition to completing his day job, a fixed schedule worker located in the Far East is also expected to participate in evening calls for communication with distributed team members in other time zones (Tang, Chen, Xiang, & Inkpen, 2011).

Knowledge workers refer to someone who work for a living using knowledge in planning, developing, distributing, marketing or contributing to transformation and commerce of information (SearchCRM, 2015). The term is not exclusive to those working in IT fields but also people outside of IT involving in activities such as financial transactions, human resources, and document management (SearchCRM, 2015).

1.6 Significance of study

Malaysia is the third biggest offshore outsourcing country attributing RM5.8 billion of the total Information, Communication and Technology (ICT) contribution of RM113 billion towards the nation GDP in 2012 (The Star, July 31, 2013).

Failure to address the key issue of job satisfaction would have significant impact on the nation GDP where investment of RM2.5 billion Foreign Direct Investment (FDI) was drawn into MSC in 2011 (MDEC, 2011). Having an understanding of the impact would allow local authorities such as MDEC and Human Resource Department Malaysia (HRD) to formulate new socio-economic policies similar to the flexible work arrangement legislation that was introduced by the UK Government in 2003 (Woodland, Simmonds, Thornby, Fitzgerald, & Mcgee, 2003). Legislations such as Malaysian Employment Act that defines working standards can be incorporated into HR framework as governance for global offshore providers.

The development and implementation of global offshore outsourcing friendly policies can help its industry improve workforce attraction and retention strategy. Success of the industry would entice new capital inflow to the country strengthening nation growth and income.

Temporal dispersion challenge is a fairly recent phenomenon in relation to the history of mankind manifested when firms expand their operation offshore in 2000s taking advantage of an interconnected online world (New York State Department of Labor and Empire State Development, 2010). As such, the impact exacerbated by time demand of work, job demand and virtual organization support on job satisfaction have not gone through proper comprehensive empirical studies that require additional attention from both academics and practitioners (Beulen, 2012).

Having a better understanding of the impact working across different time zones would enable firms to increase the effectiveness of time zone working. This is applicable especially to countries in the Far East such as Malaysia that is most impacted by the temporal dispersion separation issues. An intellectual awareness of

the effectiveness of time zone working would help firms reduce their operation cost and enhance employee job satisfaction. This can be achieved by rationalizing their operation and global supply chain to keep onshore critical time sensitive areas and offshore those that are of less time dependent.

1.7 Definition of key terms

1.7.1 Job satisfaction

Job satisfaction refers to the intrinsic motivators of behavior such as co-worker relationship, cognitive factor such as compensation and affective factor such as sense of achievement, recognition and empowerment. It also includes extrinsic hygiene factors such as working conditions, interpersonal relations, supervision, salary and management as influencing factors and determinants of job satisfaction (Herzberg, 1966).

1.7.2 Globalization

For a better understanding of the process of globalization this study proposed to follow Hitt, Keats, and DeMarie's (1998) definition of describing globalization as a state of hyper competition of rapidly escalating competition and strategic maneuvering with extreme emphasis on price, quality and innovation.

1.7.3 Global offshore outsourcing support

For the purpose of this research, it has chosen offshore outsourcing support along the longitudinal dimension of the globe cutting across different time zones to discriminate between the various 'outsourcing' terms. Companies operating in this environment have to establish virtual governance structure in managing a diverse multinational

work force spreading across different regions and countries around the world (Figure 1.3).

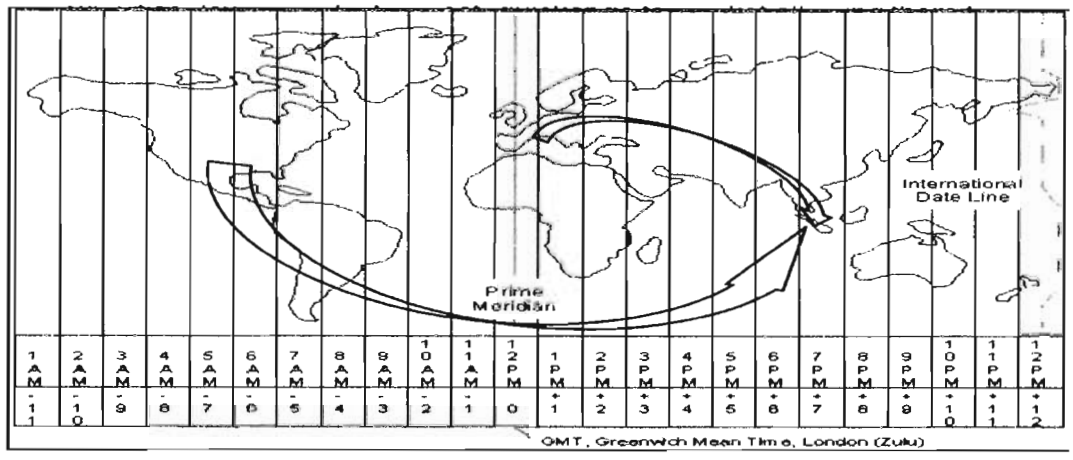


Figure 1.3
World time zones
Source: Sole (2015)

1.7.4 Job demands

For this study, we categorize Job Demand using traditional occupational stress as that involving work overload, emotional demands and role reorganization and inject findings from Karasek (1979) that without proper occupational control would result in emotional exhaustion. As demand from globalization increases, it exerts unresolved strain on global offshore outsourcing worker causing psychological and psychosomatic ailments invariably leading to depression, exhaustion and ultimately burnout. This establishes a correlated link between the pressure of work and employee job satisfaction.

1.7.5 Job resources

This study refers to Woo's (2009) suggestion that perceived organizational support is examined from three perspectives which made up of support from management, support from supervisor and co-workers support. Management supports their

employees by giving them the empowerment in performing tasks for the organization and their actions are considered actions of the organization. The actions performed by supervisors are considered as actions by the organization. Supervisor makes subordinates identify their goals, makes them achieve those goals and makes suggestions for rewards for their achievements. Organizational support should not be restricted only to organization but also support from supervisor and the employees' co-workers. The support from peers can influence employees positively which in turn would influence employees' perception of support from organization.

1.7.6 Work time demand

Working time is often referred as the time spent by an individual doing paid occupational labor. Guerts *et al.* (2009) distinguished three types of work time demand. The first is the time spent on work in accordance to the person's contractual hours. The second is the number of hours spent over and above the contractual hours. The third is term as commuting hours which is the time spent in travelling between the work place and the individual home location. These three factors are expected to have separate as well as joint effects on workers.

Epstein & Kalleberg (2001) refers work time demand to "time people spend at work (working time) supported by cultural traditions that permit and forbid work at various times and are shaped by powerful individuals and groups who have required and persuaded individuals to work according to their dictates". It suggests that employees often find difficulties in fulfilling their roles and struggle to complete their role responsibilities in light of the time available, their abilities and other constraints (Perlow, 1998).

1.7.7 Flexible work arrangement

The current description of flexible work arrangement build on employee scheduling discretion allowing employees to have the choice of determining how long, when or where they chose to engage in work (Kossek & Michel, 2011). This definition was further elaborated by Evans, Kunda, and Barley (2004) that flexible work schedules allows employees to determine when they start and stop work, how many hours they work, which days or shifts they work, or where they work. It provides an alternative work options for work to be conducted outside the temporal dispersion boundaries of a "standard" work day (Rau, 2003).

1.8 Summary

In summary, employee job satisfaction is perceived as a key issue faced by fixed schedule knowledge workers providing global offshore support services in the Far East countries such as Malaysia. Employees under this working environment are expected to work extended hours in completing their day job and attending to conference calls in the evening often sacrificing their social activities and time with their families. In addition to the extended working hours, these workers are expected to telecommute and work independently from their colleagues located at different parts of the world often faced with inter-cultural issues, lack of resources and support from their co-workers due to a combination of regional cultural diversity, time zone differences and lack of overlapping working hours.

These challenges gave rise to the research questions of what influence would a combination of job demand, work time demand and job resources have on employee

job satisfaction and would firms having flexible work arrangement policy influence the relationship of work time demand and employee job satisfaction.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In the last two decades, there had been a significant increase in offshore outsourcing to external service providers led largely by economic and more competitive price points for the same level of services (Deloitte, 2014). Beyond economic reason, these firms also use outsourcing as core strategic competencies relying on a global network of external service providers to support their corporate strategy (Kolawole & Agha, 2015). As market consumption of outsourced services expands from traditional information technology driven services to non IT services such as vertical Business Process Outsourcing (BPO), firms from traditional outsourcing support power house such as India, China, Philippines and Malaysia evolve in tandem harnessing on greater diversity of talents in the provision of services as demanded by the market (Deloitte, 2014).

Outsourcing in any form is not without risk. It exposes both firms and vendors to geopolitical and socioeconomic risks. In many cases, firms would handover key management responsibilities as part of an outsourcing transition without much consideration on the impact on their business should the strategic alliance failed (Kolawole & Agha, 2015). The lack of ongoing understanding of the global operation challenges has resulted in value leakage, service issues and talent attrition (Kolawole & Agha, 2015).

In a global organization structure, economic and competencies drivers will work only if a firm has in place the necessary process and resources to alleviate and overcome those global operation challenges. First, temporal dispersion of working across

different time zones creates work time demand from lack of overlapping working hours that impede the efficiency of offshore outsourcing (Beulen, 2012). Second, the lack of effective communication and team dynamics attributed to spatial and geographical dispersion between team members, and between individuals and their supervisors has critical effect on Team-Member Exchange (Agrifoglio & Metallo, 2010; Mohd Awang Idris *et al.*, 2011; Malhotra & Chadha, 2012). Although new communication technologies, online collaboration, document sharing and video conferencing have emerged, these technologies only increase the efficiency and not the effectiveness of global communication (Klitmøller & Lauring (2013). Klitmøller and Lauring (2013) further posited that communication challenges between teams increases exponentially with time zone differences. This in turn impacts team affective commitment and job satisfaction (Agrifoglio & Metallo, 2010, McFarlin, 2014).

It is common to hear HR professionals saying "A happy employee is a productive employee". Section 1.7.1 defines employee job satisfaction and these affective and cognitive attitudes serve as important factors that determine an organizational behavior and influence organizational performance (McFarlin, 2014; Haorei, 2012; Bockerman & Ilmakunnas, 2012).

As outsourcing sector contributed RM5.8bil to the nation's 2012 GDP (The Star, July 31, 2013), TalenCorp and the Ministry of Human Resources have made several efforts to increase the awareness of work-life balance policies in particular flexible work arrangement among employers and employees of the sector (Azlinzuraini *et al.,* 2014). Flexible work arrangement has shown to enhance job performance and employee job satisfaction (Tang *et al.,* 2011; Kramer & Chung, 2014) that hopefully

could be used in alleviating work time demand and promoting job satisfaction amongst Malaysian offshore outsourcing support employees.

This chapter shall delves deeper into the job related challenges affecting employee job satisfaction in global offshore outsourcing support environment by reviewing past literatures related to the subject areas of this study. Attention would be given to past literature discussions on the relation of job related factors with employee job satisfaction. The knowledge gained would be used as a basis for developing a study framework to examine job satisfaction among employees providing global offshore outsourcing support.

2.1.1 Impact of globalization

The business case for globalization presents an opportunity for companies to develop competitive advantages and create value that in inherently led to the formation of diverse demographic organization leveraging on multi-national workforce working as a single unit to deliver common corporate goals (Johnson, 2011). Three major arguments were put forward by Konrad (2003) for business case for diversity in a global workforce setup. Firstly is the increased globalized economy has resulted in competition for talent which requires companies to reach out and embrace a large pool of diverse workers around the world. Secondly, a diverse workforce can help companies in better understanding and anticipating diverse customer needs and thus lead to an increased market share. Thirdly, the greater diversity would result in the greater range of perspectives leading to greater innovation and problem solving through greater creativity. The fourth argument assumes that since cultural diversity is a fact of a globalized business, diversity management is the only right thing to do.

Diverse management team enhances development of alternative strategies that promote creativity and innovative competitive strategies (Johnson, 2011). Njagi (2015) in the study of 55 oil marketing companies in Kenya found a positive relation between top management, team diversity and innovation. Other researches e.g. Horwitz & Horwitz, 2007; van Knippenberg & Schippers, 2007 concurred with the positive effect of diverse management team outcomes including innovation as a result of cultural diversity.

However, past studies also acknowledged that managing geographically dispersed knowledge through the association with virtual teams can create costs and other difficulties. Several of these researchers e.g. Bassett-Jones, 2005 presented a paradoxical view as an important source of creativity and innovation as well as causing demand, co-worker conflict, misunderstandings and communication problems. The combination of high job demand and weak job resources have resulted in low morale, job dissatisfaction, burnout, absenteeism, poor quality and high employee turnover (Bassett-Jones, 2005; Medina, 2012).

Recent study by Mohd Awang Idris *et al.*, (2011), and Tang *et al.,* (2011) showed a negative correlation between globalization and job satisfaction. The study involving 308 respondents using a population-based strategy found positive relation between globalization and burnout mediated by job demands. However, the negative relation between globalization and job satisfaction is buffered by using job resources as mediator. This implies that although globalization has resulted in an increase in job demand that negatively impacted job satisfaction, the presence of job resources in the form of co-workers and supervisor support alleviated this impact. It help to foster the current study in understanding the negative impact of job demand and conversely the

positive impact of job resources on job satisfaction in a global offshore support settings.

2.1.2 Relationship between globalization and job satisfaction

Although there are empirical evidences from past studies such as Greenhaus & Beutell (1985) showing psychological health problems such as burnout syndrome, work-to-family conflict and job dissatisfaction associated with increasing work demand arising from globalization, the guiding question on the extent of job dissatisfaction among knowledge workers providing offshore outsourcing support in Malaysia remains unclear. As offshore outsourcing becomes more entrenched, the working conditions such as long irregular working hours are becoming unique issues affecting knowledge workers in the Far East more than their counterpart in the West.

In the research on the effect of globalization on employee psychological health and job satisfaction in Malaysian workplaces, Mohd Awang Idris *et al.* (2011) explored the work conditions and job satisfaction as a result of globalization impact in Malaysia. The study based on a population comprising of services, manufacturing, agricultural and forestry, construction and mining sectors. The results found a positive link between employees' health and job satisfaction, and globalization (Mohd Awang Idris *et al.*, 2011). They suggested that the pressure of globalization in Malaysia is a result from the adoption of Japanese and Western performance systems. Introduction of new and advanced technology essential to sustaining business competitiveness and executing global corporate actions such as downsizing and mergers have collectively forced employees to take on higher job demands with increased pressure that brought negative outcome on employee morale and motivation (Mohd Awang Idris *et al.*, 2011). Pelfrene, Vlerick, Moreau, Mak, Kornitzer, and De Backer (2003), and Wallis

and Dollard (2008) have found evidences that employees threatened by high world trade impacts and globalization factors such as deregulation and unpredictable markets were more likely to report poor health status, depression, fatigue and other psychological distress illness to the extreme levels. These symptoms reflect the level of job satisfaction at an organizational level. If left untreated, the consequences would be demotivated and dissatisfied workforce that impacts the performance and productivity of the company.

2.1.3 Job satisfaction and employee productivity

Review of past studies have shown global offshore outsourcing support employee job satisfaction is influenced by a combination of time factor demand caused by temporal dispersion separation and spatial effect of working in different time zones, increase in job demand due to globalization and lack of job resources attributed to co-worker support (Mohd Awang Idris *et al.*, 2011; Wickramasinghe, 2010; Gonzalez, Gasco, & Llopis, 2006; Malhotra & Chadha, 2012). Although flexible work arrangement brings relief, it does not eliminate job dissatisfaction. This is because these affective and cognitive attitudes held by an employee are derived from the various aspects of an employee work (Kalleberg, 1977; Mercer, 1997; Wright & Cropanzano, 1997; Wong, Hui, & Law, 1998). It implies that satisfaction is related to component facets rather than the whole job (Spector, 1997; Wong *et al.*, 1998). This view was supported by a study carried out in Lebanon using a sample size of 202 employees from nine commercial banks which indicate that the satisfaction with one facet might lead to satisfaction with another (Crossman & Abou-Zaki, 2003).

The effects of low job satisfaction can have far-reaching effects on company performance. Unhappy employees are more likely to report stress on the job. These

negative attitudes if not managed can spread through a workplace and affect the overall morale of the organization. Low job satisfaction coupled with low employee morale can have great impact on workplace productivity (McFarlin, 2014).

Haorei (2012) in examining employees employed in textile mills in Tamil Nadu, India found that although job satisfaction among employees varies according to their designation, it has an adverse effect on the productivity of the organization. This finding was supported by Bockerman & Ilmakunnas (2012) in their longitudinal research conducted in Finnish manufacturing plants over the period 1996–2001. Using matched data on job satisfaction from the European Community Household Panel (ECHP), they established a positive effect on productivity from an increase in ECHP job satisfaction. In the research using an instrument variables point estimate, they found that an increase in the measure of job satisfaction by one within-plant standard deviation increases value-added per hours worked in manufacturing by 6.6% (Bockerman & Ilmakunnas, 2012).

The results of the above studies show that employees do not perceive job satisfaction in a holistic view of their work. Rather, each component of an employee's work has an influence on his emotional state that consequently determines his satisfaction level. It means an employee can still feel dissatisfied if he is not contended with any part of his work. In essence, the satisfaction level of an employee has a direct influence on his and his workplace productivity.

2.1.4 Demand of work time factor

Beulen (2012) posited that working across different time zones can be an impediment in offshore outsoucing resulting in work time demand issue. These issues range from

service level demands where assignment must be completed and handed over by the start of working day in another time zone to demanding role requiring employees to work with minimum guidance and at the same time expected to deliver as a single unit with co-workers at other locations. This work time demand issues require additional attention from both academics and practitioners. Having a better understanding of the impact working in different time zones would increase effectiveness of time zone working (Beulen, 2012). It would help companies achieve cost savings and enhance employee job satisfaction by determining which aspect of operation is better kept onshore and others less work time demand dependent part of the operation can be offshored (Beulen, 2012).

Carmel (2012) in response to Beulen posited that temporal dispersion separation practices are still in their infancy and evolving. While technology may alleviate the hardship of temporal dispersion separation, it exacerbates others. This is because temporal dispersion barrier in geographical locations where there are very few overlapped working hours would create communication issues forcing the use of asynchronous media such as email (Rao, 2004). Gonzalez *et al*. (2006) have indicated that temporal dispersion barrier served as a disadvantage in circumstance where there are very few working hours overlap between customers and providers making communication difficult which requires these professionals to work extended hours in compensating for the lack of overlapping working hours. This work arrangement when sustained would have an impact on the employee job satisfaction (Gonzalez *et al*., 2006).

Although perceived as a minor problem, studies have shown that many enterprises look for providers in closer time zones that would allow remote members of a project to work simultaneously (Rao, 2004). One of the studies carried out by

Wickramasinghe (2010) involving 36 firms in offshore outsourced software development in Sri Lanka found that job satisfaction partially mediates the relationship between time demand of work and turnover intention.

Klitmøller and Lauring (2013) posited three main issues associated with virtual collaboration of teams. One, communication challenges between team members increases exponentially with time zone differences. Two, effectiveness of virtual team is often hampered by difference in communication styles leading to delay of work. Three, use of video conferences, telephones, instant messaging and other collaborative devices is often problematic due to a range of factors such as insufficient bandwidth, media limitation, software incompatibility, visual and audio interference that limits the use of technology.

2.1.4.1 Demand of work time factor on job satisfaction

In overcoming the communication issues arising from temporal dispersion separation, offshore outsourcing support workers extend their working time in meeting co-workers located at different time zone regions in the evening at the end of their work day. The irregular and uncontrolled working hours eventually drain the mental health of the workers resulting in psychology, health and social problems (Raediker *et al.*, 2006; Olsen & Dahl, 2010). These would ultimately affect the employee job satisfaction. This finding was supported by studies conducted by Rottman and Lacity (2008), and Kotlarsky, Van Fenema, and Willcocks (2008) that many companies that offshore their operations are increasingly dependent on virtual collaboration across time zones and cultures resulting in cultural differences, knowledge transfer challenges, work time demand and employee job satisfaction issues.

2.1.5 Relationships among globalization, job resources, job demand and job satisfaction

Globalization competition has intensified job demand and teams that are diverse managed. Mohd Awang Idris *et al.* (2011) found that increase in job demand coupled with reduced organizational resources caused employee dissatisfaction. This study was supported by Sengupta (2011) who revealed that employee satisfaction is closely associated with career progression, salary, interpersonal relationship, working condition, company policies, and authority. As job demand and job resources are closely related to working conditions, it would be interesting to understand whether the same job characteristics effect can be applied to workers in global offshore outsourcing environment settings.

2.1.5.1 Job resources on employee job satisfaction

Companies that practice consistent employee work engagement have shown positive relation with job resources such as co-worker, supervisor support, autonomy, and learning opportunities (Bakker & Demerouti, 2007; Schaufeli & Salanova, 2007; Sobia & Yasir, 2014). The abilities of the workers in dedicating one's efforts and abilities to the work task are driven by a combination of perceived organizational support, intrinsic motivation and extrinsic hygiene factors (Meijman & Mulder, 1998). Such environment provides the condition for successful tasks completion and for attaining work goal.

Evidence has shown that employees working in a competitive environment that is supported by abundant personal resources tend to approach their jobs with more enthusiasm and joy (Science Daily. July 20, 2011). Although job resources were mostly correlated with better job satisfaction, attention should be given to conflicts at

work, support from supervisor and education opportunities as skill discretion and relations with colleagues can be major determinants of job satisfaction (Bos, Donders, Bouwman-Brouwer, & Van der Gulden, 2009). Study carried out by Mohd Awang Idris *et al.* (2011) supported the idea that external factors influence work conditions and in turn the employee health and job satisfaction. They further suggested that globalization through low decision authority, low supervisory support and low co-worker support tends to adversely affect employees' job satisfaction (Mohd Awang Idris *et al.*, 2011).

2.1.5.2 Job demand on employee job satisfaction

Globalization has paradoxical effect on firms embracing it. With the downturn of economy in Europe and USA, more and more firms are seeking ways of lowering production costs by offshoring and outsourcing their products and services to countries located in the Far East. The downturn accelerates adoption of offshore outsourcing across Continental Europe, the Middle East, and Asia Pacific as client organizations in these regions look (often for the first time) at BPO as a credible option to reduce costs and increase business agility (Masood, 2009). Whilst this benefits the Far East economy significantly improving the standard of living and internationalizing them to the global market, the price of liberalization and globalization has resulted in greater stress and burn out syndrome suffered by knowledge workers (Malhotra & Chadha, 2012).

Harrington & Ladge (2009) posited that longer work hours, increased workloads and greater stress were among the top issues identified. As organizations began outsourcing their operation and eliminate jobs while pursuing a relentless approach towards doing more with less, employees are feeling increasingly under pressure to

cope with greater workloads and shorter elapse times without a corresponding increase in resources. Globalization has greatly contributed to these feelings on the part of global employees who are required to work longer days and being available during non-working hours (Harrington & Ladge, 2009). In addressing these challenges, they further iterate that multi-national companies need to ensure that individuals understand their employers' flexible work arrangements (Harrington & Ladge, 2009). The priority to doing this is on both the individual and the organization. As an organization, it is imperative to have flexible work arrangements but also to have it clearly communicated to their employees making sure that individuals understand their options and readily utilize those options (Harrington & Ladge, 2009).

2.1.6 Influence of flexible work arrangement

Past studies (Carlson, Grzywacz, & Kacmar, 2010; Tang *et al.*, 2011; Kramer & Chung, 2014), have acknowledged the positive effects of flexible work arrangements, job performance and job satisfaction.

However, few researches have been done on the effect of flexible work arrangement on the job satisfaction of non-shift offshore outsourcing support workers located in the Far East countries such as Malaysia. Most of these researches (Batt, Holman, & Holgrewe, 2009; Higgs, 2004) were focused on shift schedule such as the call centers and data centers that run round the clock operation rather than extended normal working hours practiced by these knowledge workers.

With globalization and mainly to improve employee job satisfaction, many multi-national companies provide flexible work arrangement such as flexible work schedules. This type of work arrangement comes under the umbrella term of

alternative work schedules which refers to compressed work schedules and flexible work schedules (Baltes, Briggs, Huff, Wright, & Neuman, 1999).

In the examination of the relationship between schedule flexibility and job satisfaction in the work and family domains, Carlson *et al.* (2010) hypothesize that workers with schedule flexibility have greater job and family related satisfaction compare to those workers without schedule flexibility. The results found that most of the hypotheses are consistently supported with a few exceptions. One exception is that contrary to the theory, job performance did not differ by schedule flexibility. This is not surprising as performance is considered as a measureable tangible delivery that is not controlled by the emotional psychology effect of an individual (Carlson *et al.*, 2010). Studies in the past have shown consistency effects of flexible work arrangements on self-rated job performance (Narayanan, 1982) compared to job satisfaction (Baltes *et al.*, 1999).

Other studies for example, Voydanoff (2004), Jijena, & Jijena (2015) and Grzywacz & Butler (2005) established a strong association between schedule flexibility and work to family conflict leading to employee performance and job satisfaction. However, these studies were disputed by Kelly, Kossek, Hammer, Durham, Bray, Chermack, *et al.* (2008) as no coherent explanation on exactly how these working time arrangements influence employee productivity. This despite the fact that firms facing intense globalization competition are giving priority on cost reduction and harmonizing working time practices, policies and standards to promote productivity, firm performance and greater sustainability over the medium to long term (Kelly *et al.*, 2008). McNall *et al.* (2010) went further to suggest re-examining these relations as his findings have shown that the flexible work arrangements and employee performance are influenced by the intensity of flexible work arrangements.

2.1.6.1 Interaction effect of flexible work arrangement and work time demand

Jijena (2012) in a cross-sectional study on the moderating effect of flexible work arrangement on the relationship between work-family enrichment (WFE) and faculty job satisfaction found moderating effect positive. The same study also showed the relevant impact of family-work enrichment on the faculty job satisfaction. Subsequent studies by Tang *et al.* (2011) and Kramer & Chung (2014) gave consistent outcome of positive moderating effect of flexible work arrangement on employee performance.

Wessel (2012) in a study of 292 respondents from a telecommunication company uncovered that flexible work arrangement does not have moderating effect on job satisfaction when job autonomy is high. It implies that individuals whose work are already highly autonomous do not benefit from flexible working in terms of job satisfaction. This finding was supported by van Baalen (2012) who recalled that people high on self-determination are already working autonomous in a way of making decisions about their work, schedule and time allocation. Having flexible working might actually have detrimental effect on their autonomy.

Yet there are other studies reported a positive moderating effect of flexible work arrangement. Präg & Mills (2014) posited that schedule flexibility has been praised as a strategy in the reconciliation of work time and family demands. This means giving workers better control in balancing their work and family lives that would lead to less work-family conflict and quality of work life indirectly referring to job satisfaction. Clark (2000) argued that individuals often transgress the domain border of work and family life that are necessary in attaining work-family balance. Having working time discretion is necessary to facilitate the reconciliation of work time demand, work-family enrichment and private social obligations.

Although these studies on moderating effect of flexible work arrangement seems conflicting, they are not and serve to complement each other in different situations and conditions. For instance, whilst Wessel and Van Baalen opined on the non effect of working time discretion on situation where an individual already has job resources in the form of high decision latitude, Präg and Mills, and Clark posited the positive moderating effect of individuals with lower job autonomy and decision latitude. In relation to the current study, individuals in offshore outsourcing support environment are expected to work independently with minimum supervisory support. For these fixed scheduled workers, performance is determined by the ability of individuals completing given tasks and responsibilities on time and less on hours when an individual is expected at the office. Given the greater decision latitude possessed by employees in offshore outsourcing industry, it would be interesting to understand whether moderating effect would have positive effect on their job satisfaction.

The other unique aspect of offshore outsourcing support in Malaysia is the work time demand from temporal dispersion challenges. Chung & Tijdens (2013) in their study on employer-centered arrangements opined that in a temporal dispersion setting, schedule flexibility enables organization to react more flexibly towards external pressures such as fluctuations in work time demand. Authors such as Blair-Loy (2009), and Schieman, Milkie, & Glavin (2009) suggested that for individuals with fixed work schedule, flexible work arrangement can become temporal havens in a 24-hour economy insuring employees from stressful blurring of the domain border of work and family-life.

These findings have given this study a purpose to further evaluate the effectiveness of flexible work arrangement in moderating the relation of work time demand on job satisfaction from an offshore outsourcing support perspective.

2.2 Underpinning theory

In attempting to understand the co-relation of work time demand, job demands, job resources and job satisfaction, this study examined the various theories that could be used as the basis of this research. This would help to:

- Ensure the terminology used in the variable is consistent with past researches in the way they are defined and applied.
- Provide better focus on the scope of the research on what's relevant and what's not
- Provide clarity on related areas that are ambiguous.

2.2.1 Social exchange theory

For this study, Social Exchange Theory (SET) is used as an overarching framework from which specific sub-theories related to the different areas of the study are referenced.

Social exchange theory that was introduced in 1958 by sociologist George Homans was chosen as it emphasizes on an exchange process of which purpose is to maximize benefits and reduce costs until risks outweigh rewards (Cook & Rice, 2003). Although research suggests that social exchange theory is an exchange of activity, tangible or otherwise and more or less rewarding or costly, between family-friendly environment and positive job-related attitudes (Sahibzada, Hammer, Neal & Kuang, 2005), it could be extended to positive organizational behavior in that citizenship behaviors could improve group performance because they help people work together (Podsakoff, Ahearne & MacKenzie, 1997).

From the research perspective, it could be used to imply a two-sided, mutually contingent and rewarding process between employees and employer involving tangible and intangible transactions or simply exchange of information. It applies aptly in organizations where employees are driven by rewards and recognition, and employers by profit.

Homans (1958) summarizes the system into three propositions.

i Success proposition

Individuals tend to repeat the action when they are rewarded for their actions.

ii Stimulus proposition

The more likely a person will respond if a particular stimulus has resulted in a reward in the past

iii Deprivation-satiation proposition

The more often in the recent past a person has received a particular reward, the less valuable any further unit of that reward becomes e.g. (Worth = Reward – Cost)

Emerson (1976) postulated that Exchange is not a theory but a framework from which other theories can converge and be compared to structural functionalism. As using SET as an overarching framework would serves the purpose of the study, three theories were referenced and converged under the framework of Social Exchange Theory framework:

- Resource based view
- Two factor theory
- Job Demand-Resource model

2.2.1.1 Resource based view

Resource-Based View (RBV) theory helps to explain the phenomenon of employing the combination of right resource strategy and human resource policies to give a firm's global competitive advantage, promoting productivity and employee job satisfaction.

The Resource-Based View was first proposed by Wernerfelt (1984) in his article "A Resource-Based View of the Firm". Although history has shown that the origins of this theory could be traced back to earlier research by Chandler (1962, 1977), and Williamson (1975), this concept was later taken up Barney (1991) and developed into the Resource-Based framework. Although Wernerfelt was not referenced, his influence can clearly be seen within the developed framework.

The Resource-Based View (RBV) posits that resources, being a firm's subset are used to attain competitive advantage that would eventually lead to superior long-term performance. This is especially so when the resources possess skills that can lead to the creation of competitive advantage. This could be sustained over a long time period to enable firms to protect against resource imitation, knowledge transfer, or goods substitution. In general, past empirical studies have shown strong support of the Resource-Based View as shown in Figure 2.1.

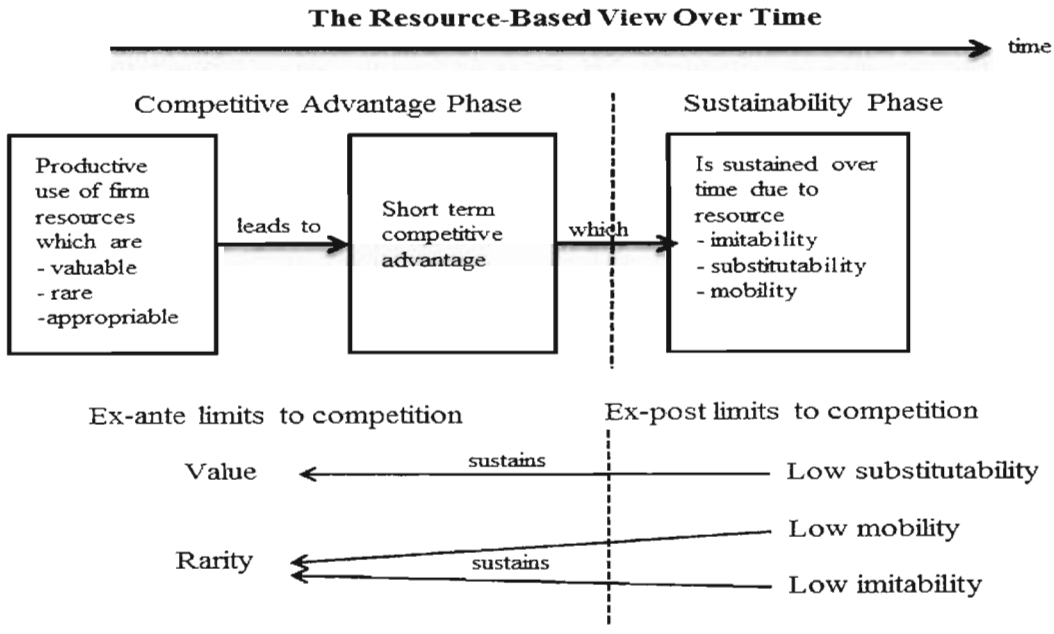


Figure 2.1
Resource-Based View (RBV) model
Source: Wade & Hulland (2004)

In the context of globalization, the use of resources in achieving the firm's competitive edge depends highly on the strategic deployment of resources in locations worldwide that would maximize the efficiency of the firm's supply chain and ensure it meets the demands of the client requirements. The asymmetrical availability of global skills and labor costs at different regions around the world have given rise to opportunities for firms such as multi-national corporations by taking advantage of this asymmetric disparity to achieve competitive edge by leveraging on niche specialized human capital at one part of the world, low cost production at other side and reduced elapse time and turnaround through the ingenious management of different time zones in meeting aggressive demands and timelines.

A typical example is Microsoft that has most of the company design work carried out by Silicon Valley software professionals located in America leaving the low value-added functions such call centers located at Bangalore, India. Others such as Dell relocate part of its operation in Malaysia, Taiwan, China, Ireland, India etc. Hewlett

Packard with its 150,000 employees are spread over 170 countries with majority of its employees outside America even though its head quarter is located at Palo Alto. Yet others like Wal-Mart turns cost of storage and inventory into its competitive advantage by employing Just In Time (JIT) delivery strategy by working closely with its supplier such as Hewlett Packard to ensure rate of goods replenishment is in line with the rate of goods sold.

These types of global processes not only require diversifying its operation worldwide, it must also be supported by the right human resource policies in order to gain a competitive advantage and sustaining the firm's superior long term performance by retaining talented and skill workers (Nazar, Sun, & Muhammad Anwar, 2014). He further posited that based on resource based view of a firm, the greatest value of resources is flexible working options and such practice is helpful in attracting, satisfying and retaining the firm's valuable resources. This opinion was supported by Becker & Gerhart (1996) who found that a developed HR system is an invisible asset that is embedded in the processes of an organization well creates value and enhances the firm's capabilities.

The importance of resource base view could guide a firm in developing the right resource strategy and human resource policies in creating a sustainable competitive edge for the firm.

2.2.1.2 Two Factor theory

In undertaking studies related to job satisfaction, Two Factor theory suggested by Frederick Hezberg (1966) was often used in determining that the quality of working life including job satisfaction. This is attributed to two main factors. The first refers to

job environment which is defined as extrinsic to the job performed. The second factor is the feelings of satisfaction which is intrinsic and related to the job itself. The strength of these two factors have on quality of working life depends on its complexity and importance (Figure 2.2).

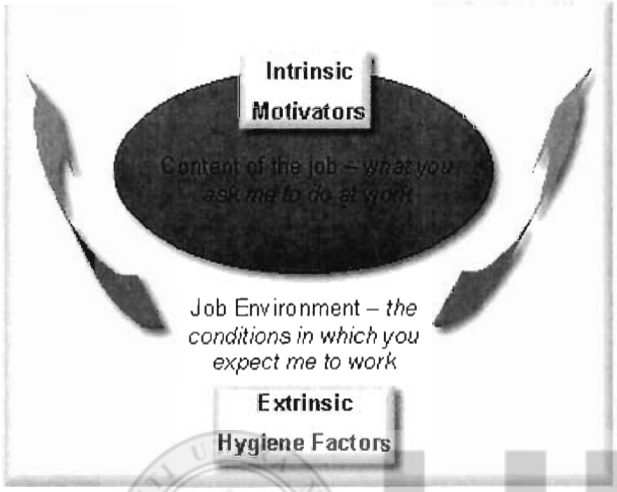


Figure 2.2
Herzberg's Two Factor theory
Source: Examstutor (2014)

Herzberg (1966) opined that both factors are equally important. However, having a good hygiene by itself would not create a positive attitude or motivation to work. In order to create that attitude, the management must enrich the content of the actual work that the employee is doing. Conversely speaking, a lack of one or the other would not create a positive quality of working life as this would cause an imbalance between the intrinsic value of the role and the extrinsic value of the environment of which the individual is subjected to.

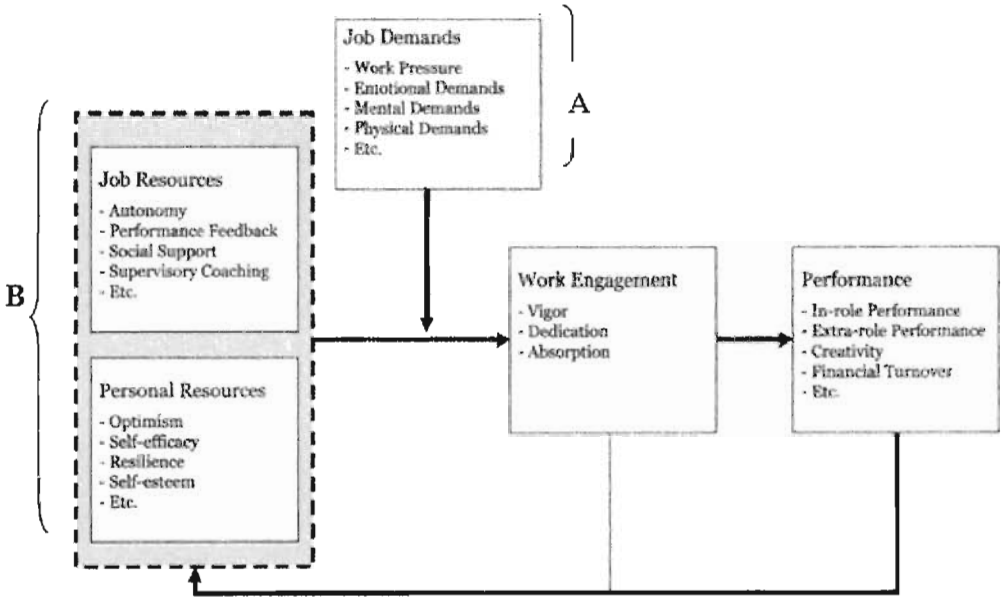
Mohd Awang Idris *et al.* (2011) has shown that job resources in the form of supervisory support, coworker support and decision authority have direct impact on job satisfaction. The results reinforce the Two Factor Theory on the impact of job environment in specific, the job resource on job satisfaction and quality of working life. The study also revealed the inverse relation between job resources and job

demands defined as psychological, emotional demands and roles conflict. It explained how a reduction in job resources would increase job demands which form the core of the intrinsic value of job satisfaction.

2.2.1.3 Job demand-resources (JD-R Model)

Job Demands-Resources (JD-R) model proposed by Bakker & Demerouti (2007) and Demerouti, Bakker, Nachreiner, and Schaufeli (2001) is a model used in predicting employee burnout, engagement, and consequently organizational performance. The JD-R model shown in Figure 2.2.3 classified two main categories of job demands and job resources. With the assumption that every occupation has its own causes of employee well-being, the model provides an underlying framework that can apply to different kinds of occupational settings, regardless of a particular resources and demands involved.

The JD-R model involves two simultaneous processes. One known as health impairment process (refer to A in Figure 2.3) suggests that high job demands increase the level of work stress exhausting the employees' mental and physical resources leading to the depletion of health and energy problems and ultimately burnout. In contrast, job resources (refer to B in Figure 2.3) is a form of motivational process e.g. autonomy, performance feedback, social support etc. that foster employee work engagement and extra-role performance.



Source: Based on Bakker & Demerouti (2007)

Figure 2.3
Job Demands-Resources (JD-R) model
Source: Bakker & Demerouti (2007)

Studies have shown that job resources buffer the impact of job demands in countering stress-reactions. Research findings by Schaufeli and Salanova, 2007, and Meijman & Mulder, 1998 confirmed that job resources particularly have motivational potential when job demands are high. JD-R health impairment process with the belief that globalization has resulted in higher job demands and expectations in term of workload, emotional demands and conflicting roles.

2.3 Summary

This chapter provides a review of literature on the influence of globalization on workers who are providing global offshore outsourcing support in the Far East region. The combination of increase in demand and temporal dispersion challenges of operating in different time zones have exerted work pressure on the employees and subsequently the employee job satisfaction. This issue could be alleviated by the

presence of co-worker support, supervisory support including empowerment to make on-the-job decision. The review of past literature showed that firms having flexible work arrangement policy has positive employee engagement that is directly link to job satisfaction and employee turnover.

This chapter also discusses the underpinning theories supporting the research. First is the Social Exchange Theory which provides an overarching framework from which three theories are referenced and converged. Second, Resource Based View (RBV) that is instrumental on how resources can be optimized to attain competitive edge of a firm. Third, intrinsic motivators and extrinsic hygiene factor of Herzberg's Two Factor theory used to determine the quality of work life. Finally, Job Demand and Resource model which is used to describe the relationship between Job Demands, Job Resources and Work Time Demand.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

In the development of the conceptual framework for this study, both research questions and objectives were used as guiding principles. These guiding principles are:

- Examine correlations of job demand, job resources, work time demand with job satisfaction in the context of globalization;
- Investigate the influence of job demand on job satisfaction;
- Examine the resource constraint of global virtual network organization on job satisfaction;
- Determine the effect of flexible work arrangement on the relationship between work time demand and overall employee satisfaction.

This chapter explains the process to establish the research framework, develop the research hypotheses, explain the operational definitions and develop the research instrument. In addition, it identifies data collection sampling technique and procedures as well as establishes data analysis techniques used in this study.

3.2 Research framework

The outcome of the literature review indicates a greater underlying problem associated with a globalized working environment for knowledge workers in the Far East (Bantel & Jackson, 1989; Horwitz & Horwitz, 2007; van Knippenberg & Schipppers, 2007). Based on the research guiding principles, review of past studies has shown that globalization has indeed contributed to an increase in job demand and

job resource challenges (Harrington & Ladge, 2009; Mohd Awang Idris *et al.*, 2011; Malhotra, S. & Chadha, O., 2012). In addition, temporal dispersion separation likewise has contributed to communication issues resulting in work time demand of the workers (Gonzalez *et al.*, 2006; Raediker *et al.*, 2006; Rottman & Lacity, 2008; Kotlarsky *et al.*, 2008; Wickramasinghe , 2010; Olsen & Dahl, 2010; Beulen, 2012). The combined effect of job demand, job resources and work time demand have asserted a strong influence on empFloyee turnover and employee job satisfaction (Williams & O'Reilly, 1998; Jehn, Neale, & Northcraft, 1999; Bassett-Jones, 2005, Mohd Awang Idris *et al.*, 2011; Šteinberga, L., & Šmite, D., 2013).

In the approach taken for the construction of the framework, this study attempts to setup the variables' relations by first leveraging on the framework developed by Mohd Awang Idris *et al.* (2011) (Figure 3.1). This framework serves as a base from which a new framework is developed. The rationale is because of several similarities between Mohd Awang Idris's study and the current study.

First, both studies examine the effect of globalization on job satisfaction via job characteristics i.e. job demand and job resources. Whilst Mohd Awang Idris's model did not establish a link between job demand and job satisfaction, this study completes the link and at the same time answer the guiding questions of whether job demand and job resources influence employee job satisfaction.

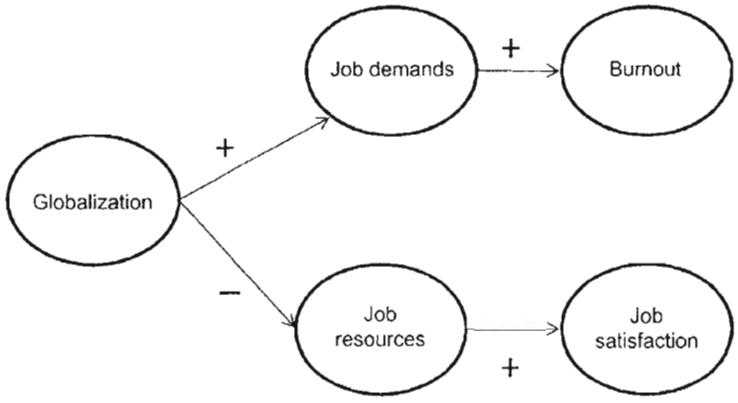


Figure 3.1
Relationship between globalization and burnout and job satisfaction through job demands and job resources
Source : Mohd Awang Idris *et al.* (2011)

Second, similar to Mohd Awang Idris's model, the current study uses JD-R model (Bakker & Demerouti, 2007) as the underpinning theory as the current study is also guided by the same job stress theory that focus on working conditions. Third, Mohd Awang Idris's study was conducted in Malaysia which is the location of the current study. Whilst Mohd Awang Idris's study focused on generic industry, this study is more specific towards offshore outsourcing support sector in the location of Cyberjaya. Regardless, having both studies carried out under the same homogeneous condition in terms of similar cultural and political climate provide for better comparison.

Figure 3.2 is a model developed by Wickramasinghe's (2010) that showed the effect of work time demand on employee job satisfaction. Using the same approach undertaken in evaluating Mohd Awang Idris's model, the researcher found similarities between Wickramasinghe's model and that of the current study. One, Wickramasinghe's study on globalization impact on offshore outsourcing IT worker is also the basis for the current study. Second, temporal dispersion challenges arising from time zone differential were examined in Wickramasinghe's study which is also

the current study's aim in answering the research question of whether work time demand influence employee job satisfaction. Thirdly, Wickramasinghe (2010) established the relation between work time demand and job satisfaction. This study further explores and determines whether having flexible work arrangement would alleviate the work time demand and increase employee job satisfaction.

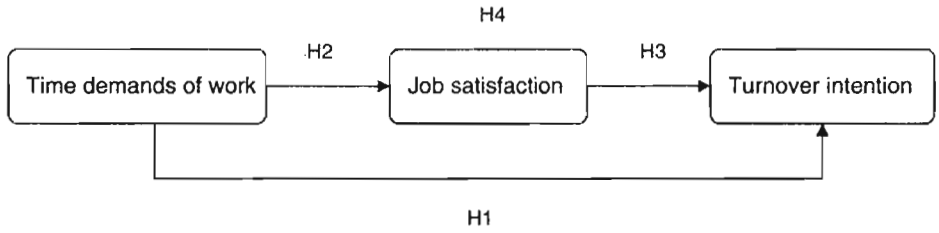


Figure 3.2
Impact of time demand of work on job satisfaction and turnover intention
Source: Wickramasinghe (2010)

Based on the above reasons, Wickramasinghe's (2010) model is adapted into the current study creating a consolidated framework comprising of job demands, job resources and work time demand as independent variables and job satisfaction as dependent variable.

The consolidated framework is constructed in the context of offshored outsourcing support environment. This framework would allow the study to fulfill the three objectives of the study:

- To determine the relations of job demand, job resources and work time demand, with job satisfaction;
- To examine the impact of job resources on employee satisfaction;
- To investigate the impact of job demand on employee satisfaction

It was found from review of past literatures that the effectiveness of flexible work arrangement in moderating the relation of work time demand on job satisfaction from

an offshore outsourcing support perspective is uncertain. This uncertainty would further be explored in this study by examining the influence of flexible work arrangement on the relation of work time demand and the overall employee satisfaction.

Resource Based View (RBV) suggested that firm's competitive edge relates to variances in firm resources that are valuable, difficult to substitute and imitate (Barney, 1991). In sustaining the competitive advantage, a firm needs more than a superior bundle of resources that would allow the firm to renew and reallocate resources to achieve business goals (Teece, Pisano, & Shuen, 1997). In other words, sustainability of the firm's competitive edge lies not only on the availability of resources but having the dynamic capability in managing these resources. Capabilities are considered the pre-eminent sources of the firm success (Galbreath, 2005). In this regards, this study views that offshore outsourcing firm with flexible work arrangement policy would provide the dynamic capability in improving work engagement and overall job satisfaction of their employees.

Utilizing RBV as the underpinning theory in the provision of the dynamic management capability towards improving the antecedents of job satisfaction and job satisfaction itself, this study leverages the model developed by Wessel (2012) by using flexible work arrangement as moderator variable between work demands and job satisfaction (Figure 3.3).

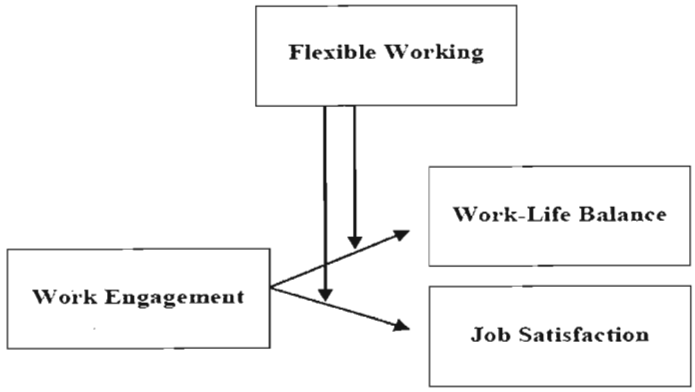


Figure 3.3
How work engagement and its influencers affect work-life balance and job satisfaction and the moderating role of flexible working
Source: Wessel (2012)

Wessel's model examined the interactional effect of flexible working with work engagement on job satisfaction. Although the study is not related to globalization, the current study would benefit from this study in two areas. First, Wessel's model has shown the moderating effect of flexible work arrangement on the relation between work engagement and job satisfaction. The use of flexible work arrangement as moderator of job satisfaction relationship is in line with the objective of the current study in examining the guiding question of whether firms having flexible work arrangement policy influence the relationship of work time demand and employee job satisfaction. The minor adaptation to Wessel's model is using work time demand as an independent variable instead of work engagement. Second, Wessel's suggestion of managing organizations paying attention on employees making a difference in the organization rhymes with the underpinning RBV theory adopted by the current study. The research on companies that have flexible working policy has similar policies practiced by offshore outsourcing support firms in the current study.

Adapting Wessel's model into the current study consolidates the study framework and completes the building block of this research conceptual framework (Figure 3.4).

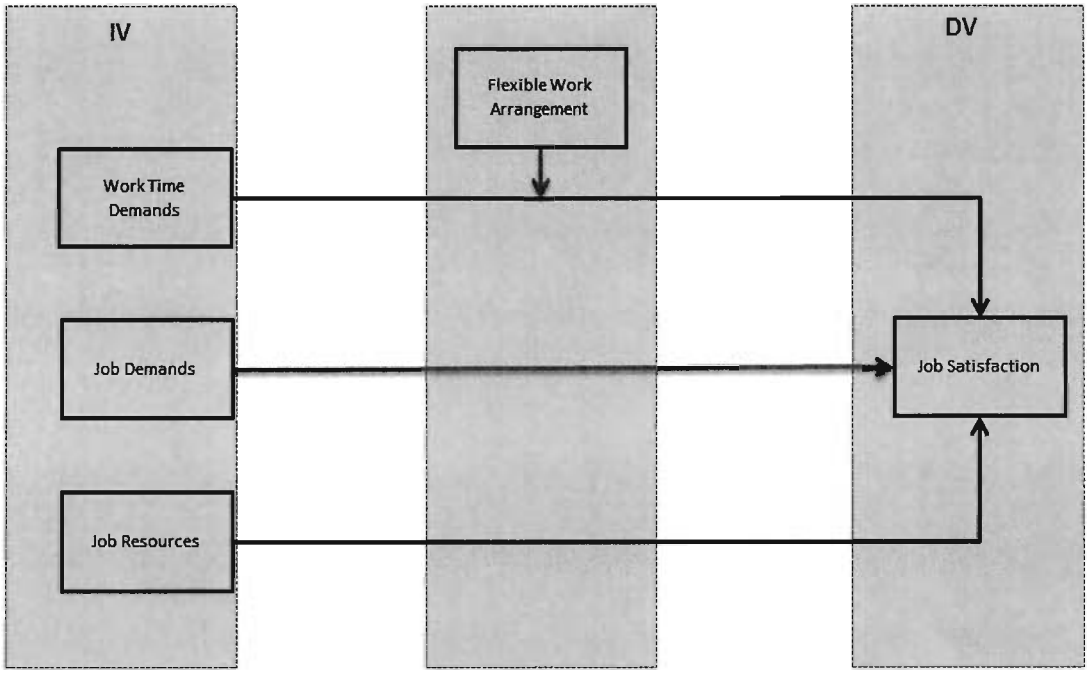


Figure 3.4
Conceptual framework

The motivation effect of these three models are driven and underpinned by Herzberg's two factor theory of intrinsic motivators and extrinsic hygiene factors that refer to the effect of the job on the employees and the work environment effect on the employee respectively. This theory is also used as the underpinning theory for the current study in determining the impact on employee job satisfaction in global offshore outsourcing support setting.

3.3 Hypotheses development

The hypotheses are formulated based on the research questions on the impact of job demands, work time demand and job resources on job satisfaction in a global offshore outsourcing support setting. The developed hypotheses would help this research in explaining and predicting the relationship of the independent variables (IVs) and their influence on the dependent variable (DV) presented in the conceptual model.

The guiding questions under section 1.4 posed the level of influence and impact of job demand and job resources have on job satisfaction. Literature review on the question of job demand found a negative influence of work overload and emotion demands on job satisfaction at the workplace (Mohd Awang Idris *et al.*, 2011; Sengupta, 2011; Malhotra & Chadha, 2012; Harrington & Ladge, 2009; Sobia & Yasir, 2014). The findings from the literature review led to the formulation of the first hypothesis:

H1: Job demand has an influence on employee job satisfaction

The second question in Section 1.4 asked about the influence of work time demand on employee job satisfaction. Findings from literature review have shown that temporal dispersion barrier from teams operating in different time zones have resulted in communication issues attributed to few overlapping working hours (Rao, 2004; Gonzalez *et al.*, 2006). This results in professionals having to work extended hours in compensating for the lack of overlapping working hours causing psychology, health and social problems (Raediker *et al.*, 2006; Olsen & Dahl, 2010) that ultimately affect employee job satisfaction (Rottman & Lacity, 2008; Kotlarsky *et al.*, 2008). These findings have given clear indication that work time demand would have significant negative impact on employee job satisfaction that would be the hypothesis for this study:

H2: Work time demand has an influence on employee job satisfaction

It was established in the literature review that companies employ good co-worker support, supervisory support and latitude empowerment have better work engagement leading to higher employee job satisfaction (Bakker & Demerouti, 2007; Schaufeli & Salanova, 2007; Meijman & Mulder, 1998; Science Daily, July 20, 2011; Bos *et al.*, 2009; Okediji, Etuk, & Anthony, 2011; Sobia & Yasir, 2014). These findings were

supported by the underpinning theory of Job Demands – Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti *et al.*, 2001) predicting employee burnout and engagement, and consequently organizational performance. The JD-R model shows that while job demands increases the level of work stress and negatively impact employee job satisfaction. However, job resources buffer the impact of job demands in countering stress-reactions thereby having a positive influence on job satisfaction. This means that whilst job demand has negative effect on job satisfaction, job resource has a positive impact on employee job satisfaction. Based on these findings from literature review, the next hypothesis was developed:

H3: Job resources have an influence on employee job satisfaction

In attempting to answer the fourth question on the type of influence firms having flexible work arrangement policy on the relation between work time demand and employee job satisfaction, the researcher sought guidance from past studies and existing theory on the subject. Literature review has shown consistent results of the positive effects of flexible work arrangements on job performance and job satisfaction (Baltes *et al.*, 1999; Carlson *et al.*, 2010; Narayanan, 1982). However, these findings were disputed for the lack of coherent theory of how these flexitime arrangement influence productivity and job satisfaction (Kelly *et al.*, 2008; McNall *et al.*, 2010). Due to the conflicting nature of the findings, the researcher referred to Resource-Based View (RBV) which articulates companies that develops its employees and utilizes its resources creatively can attain competitive edge. Companies having flexible work arrangement policy can be considered a creative way of utilizing its resources. In accordance to the theory, companies having such policy would have a positive effect on employee job satisfaction and negating the effect of work time demand. Findings from literature review have given credence to RBV. These findings

have shown positive moderating effect of flexible work arrangement on employee performance and job satisfaction (McNall *et al.*, 2010; Jijena, 2012; Wessels, 2012; Kramer & Chung, 2014).

The underpinning RBV theory using flexible work arrangement as creative way in sustaining competitive edge and outcome of the findings on the positive moderating effect of flexible work arrangement on job satisfaction have led to the formulation of the fourth hypothesis for this study:

H4: Flexible work arrangement has a positive moderating effect on the relation between work time demand and employee job satisfaction.

In summary, the hypotheses developed for this study were:

H1: Job demand has an influence on employee job satisfaction

H2: Work time demand has an influence on employee job satisfaction

H3: Job resources have an influence on employee job satisfaction

H4: Flexible work arrangement has a positive moderating effect on the relation between work time demand and employee job satisfaction.

These hypotheses mapped to the conceptual model (Figure 3.5) were tested through a sampling process and assessed for evidence using quantitative statistical test method.

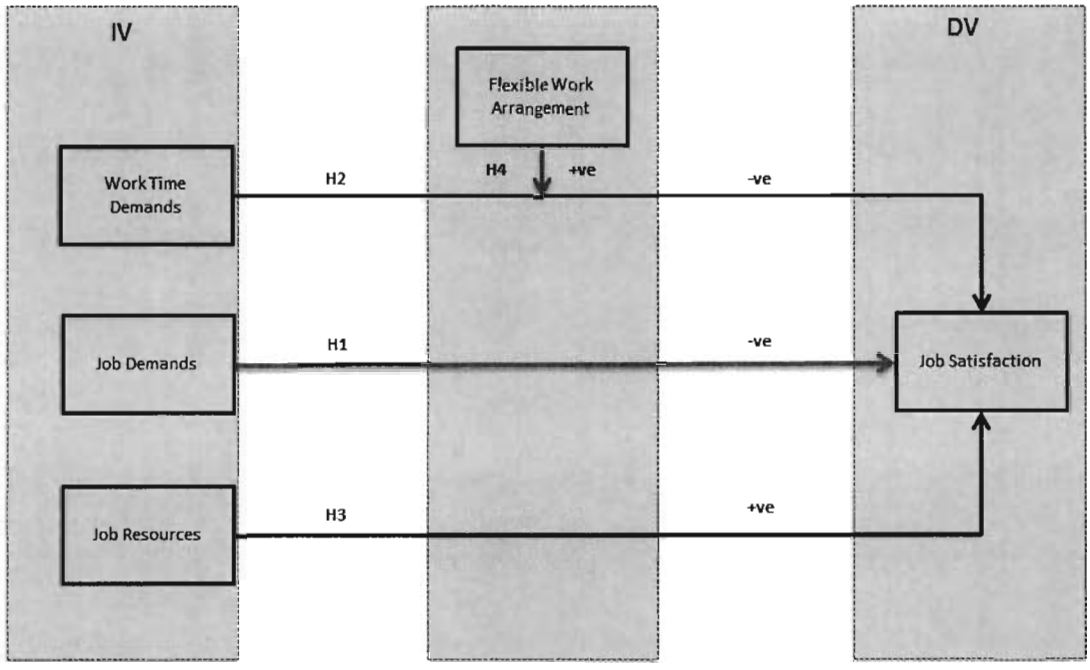


Figure 3.5
Hypotheses

3.4 Research design

The research design this study has chosen examines the independent variables and the dependent variable of the conceptual model in a coherent and logical manner. It allows the study to effectively address the identified issues arising from global offshore outsourcing support that constitutes the framework for the collection, measurement and analysis of data (Cooper & Schindler, 2008).

There is no definitive means in selecting the best research design (Davis, 1996). However, the quality of conclusions and recommendations drawn from the research outcome can be determined by having an appropriate research design (Bordens & Abbot, 2011). Survey design is the most widely used approach for business research and the best method for studying large population quickly at a relative low cost (Davis, 1996). The rationale for this is because surveys can be administered electronically, by mail, face to face or by telephone without having to physically meet

the respondents. Due to the use of electronic channels, surveys can be administered in for a wider geographical location, information can be standardized and privacy of the respondents maintained.

Survey is defined as a measurement process utilizing a measurement tool that comprise of one or a combination of questionnaire, measurement instrument, or interview schedule (Cooper & Schindler, 2008). Surveys have a central objective as determined by the relations between variables in scope of the study (Sonquist & Dunkelberg, 1977). They are used to facilitate hypotheses testing, programs evaluation, description of populations, models building, development of measurement scales and other methodological improvements in business research (Davis, 1996).

For this study, quantitative approach using survey was adopted. This is because in addition to meeting the stated objectives of this study, survey approach ensures confidentiality of respondents. This method allows respondents the freedom of when to respond to the survey within the stipulated time period. In addition, survey provides primary data that can be collected directly from respondents in cross-sectional manner.

For this study, an online internet survey was used. Survey could be conducted using electronic mail (email) or web survey (Schonlau, Fricker, & Elliott, 2002). In the case of an email, the survey instrument can be attached to the note or contained in the body of the message. Web based survey on the other hand is centrally hosted in a survey website. Survey conducted online requires lower cost, generate faster responses and wider geographic reach compare to traditional mail surveys (Schuldt & Totten, 1994).

The listing of offshore outsourcing support firms in Malaysia was obtained from MDEC (Multimedia Development Corporation Sdn Bhd). MDEC is located at

Cyberjaya as a government agency setup to oversee MSC (Malaysia Super Corridor) implementation including setting standards for MSC Malaysia's information infrastructure and urban development.

The firms list was confined to global offshore outsourcing support firms located in Cyberjaya. The reasons for selecting Cyberjaya as the location for an online survey were based on the following reasons. First, it is considered as Malaysia Silicon Valley and Information Communication and Technology (ICT) hub (FMT, June 2, 2012). Second, confining the survey to a certain strategic location as representation of the sampling population would ensure that the survey can be more focus and the ability to generate data that can be quantified and verified, and is amenable to computerized statistical analysis (Rea & Parker, 1997). Thirdly, due to the lack of studies conducted on knowledge-based companies in Malaysia, research on global offshore outsourcing support companies in MSC Malaysia would provide valuable information to this area of study.

3.5 Population

The target population for this study comprised of fixed schedule knowledge workers who are providing offshore outsourcing support in MSC-status companies located at Cyberjaya. MSC Malaysia status is recognized by the Malaysian Government through MDEC for ICT and ICT-facilitated business that develop or use multimedia technologies in producing and enhancing their products and services (MDEC, July 2014). Companies that have obtained MSC-status employ a substantial number of knowledge workers by nature of their ICT products and service delivery. These companies are accorded a host of privileges granted by the Malaysian Government

that serve as catalyst for Multi-National Companies (MNCs) and local firms providing ICT support to setup their operations at Cyberjaya.

There were 2,954 registered MSC status companies in Malaysia as of May 2013 (MDEC, Oct 2013) and 651 of these companies were foreign owned. From these foreign owned companies, 199 companies provide Global Offshore outsourcing or Shared Services with 44 of these companies located in Cyberjaya (Appendix U).

The size of these 44 companies was categorized in accordance to standard investment market capitalization defined by their outstanding shares at current market value shown in Table 3.1 (Investopedia, 2014). The outcome showed that 16 were large firms with on market capitalization value of more than USD 10 billion, 10 of the companies were medium with market capitalization value between USD 2 billion and USD 10 billion.

Table 3.1
Definition of company size by market capitalization

Market Capitalization	Value (USD billion)
Small Capitalization	< 2
Medium Capitalization	2 - 10
Large Capitalization	> 10

Source: Investopedia (2014)

The remaining were small firms with market capitalization of less than USD2 billion. Due to the time and financial constraints of the study, a census on the 44 companies is regarded as unfeasible. Therefore, a subset of the population or 'sample' is used to gain information about the entire population (Henry, 1990). A relatively small sample if appropriately selected can be informative about the total population. This was carried out using systematic random sampling where companies were arranged in the order of market capitalization and the first company was selected from the list

followed by every 2nd item on the list. The selected 22 companies were those denoted by "x" in Appendix V.

3.5.1 Sample size

In determining the appropriate sample size for the study, the formula for small population size was based on Rea & Parker (1997) (Figure 3.6). This formula provides a confidence level of 90% and acceptable margin of error i.e. half the width of the confidence interval[1] of 10%.

For questionnaires with multiple questions, the proportion of respondents corresponding to each of them varies. In such situation, it is not possible to have an estimation of (p), therefore, the least favorable case (p = 0.5) is considered (Rea & Parker, 1997). Although 95% confidence is used to provide forceful conclusions, 90% is acceptable for an indication of likely population value (NAO, 2001). In this case, as the working population size for the survey in Cyberjaya is an estimate, the formula is adjusted to 90% confidence level.

$$n = \frac{Z^2[p(1-p)]N}{Z^2[p(1-p)]+(N-1)c^2}$$

where

- n= the size of the sample
- Z= Z value (e.g. 1.645 or 90% confidence level)
- N= the size of the working population
- c= confidence interval, expressed as decimal (e.g. 0.10 = ±10%)
- p= percentage of respondents picking a choice

Figure 3.6
Sample size formula for small population

[1] The margin of error is the risk researchers are willing to accept. Confidence level is the level of acceptable risk researchers are willing to accept that the true margin of error exceed the acceptable margin of error Cochran (1977).

Working population is defined as the general population from which the researcher can reasonably identify a list as complete as possible of members of the general population (Rea & Parker, 1997). Based on the working population size (N) of 8,854 knowledge workers used in Ramli's (2012) survey of Shared Service and Outsourcing in Cyberjaya, the derived target sample size (n) using the above formula is 263 (Appendix I). This size is similar to the sample size (n = 236) of Shared Services and Outsourcing (SSO) used by MDEC in their 2012 survey of companies located in Cyberjaya (MDEC, 2012).

3.5.2 Sampling technique

It was established that the response rate for an online survey in Malaysia is 30% (Habsah Salleh, 2014). In spite of the anticipated low response rate towards online survey, the researcher made a conscious decision to proceed after having considered the following reasons. First, online survey is less intrusive on the operation of the sampling frame as it allows respondents to respond to the survey during their availability even during off working hours. This is an important consideration to ensure that the company operation is not interrupted in any way during the course of the survey. Second, the survey can be carried out at a shorter timeframe over a wide geographical location. Third, confidentiality of respondents is assured since the data is obtained collectively and results are summarized. No sensitive personal information such as name, contact number and personal address are captured in the database. Last but not the least important, using an online survey supports Malaysian Government "Kementerian Tenaga Teknologi Hijau dan Air" (KeTTHA) National Green Technology policy and Government initiatives since it does not involves printing huge amount of paper survey forms.

Given the anticipated 30% online response rate, the number of respondents required for participation in the online survey was expanded three times larger than the intended sample size of 263 respondents or 789 respondents in order to obtain a good sample.

3.5.3 Strata

In order to increase efficiency and reduce estimation of error, proportionate stratified random sampling technique was used (Särndal, Swensson, & Wretman, 2003). Stratified random sampling breaks a population down into several sub-populations known as strata that are individually more homogenous compare to the total population (Särndal *et al.*, 2003).. As each stratum is considered more homogenous, a more accurate estimate can be obtained. Collectively, these strata provide better estimates of the whole (Särndal *et al.*, 2003). The use of this technique restricts possible samples bias thereby ensuring appropriate populations are represented in the sample (Särndal *et al.*, 2003).

For this study, disproportionate stratified random sampling design was used to determine strata allocation in accordance to the proportionate weight of the company size from which they were drawn. The advantage of this method is that the distribution of strata is less time consuming compared with proportionate stratified sampling (Jawale, 2012). The formula used to derive at the fraction sampling for each of the 22 selected companies is:

$$\text{Sampling fraction} = \frac{n(\text{ survey sample size })}{N}$$

Where

n -strata population
N -total population

Figure 3.7
Sampling fraction formula
Source: Laerd Dissertation, 2015

The strata population (n) is the estimated size of selected companies by number of employees located at Cyberjaya and the total population (N) is the sum of strata population. The size of the selected companies from analysis of publicly available information is estimated as 1000 employees for large companies, 500 for medium size companies and 50 for small size companies giving a total population (N) of 8,200. Based on the online survey sample size of 789 respondents and using the sampling fraction formula (Laerd Dissertation, 2015) in Figure 3.7, the derived sampling fractions were distributed across the 22 selected companies where large size companies were allocated stratum of 96 respondents each, medium size companies were allocated stratum of 48 respondents and small size companies an allocated stratum of 5 respondents per company (Appendix W).

3.6 Data collection procedure

The choice of method is influenced by the data collection strategy, the type of variable, the accuracy required and the collection point (Sekaran, 2003). For this study, data was collected using a web based online survey from knowledge workers of offshore outsourcing support companies located at Cyberjaya. The graphical representation of the data collection process is in Appendix X.

Initial contact was made with MDEC to seek their permission in contacting the MSC-status companies. The request was declined with reason that companies in Cyberjaya

are under the jurisdiction of Cyberview Sdn. Bhd (Cyberview) that was entrusted by the Malaysian Government and MDEC to manage and develop Cyberjaya. Cyberview has since given their support to this study with the appropriate support letters obtained from Universiti Utara Malaysia (UUM) as sponsor of the study. The requirement for support letters is in compliance with the enforcement of Malaysia Personal Data Protection Act (PDPA) 2010 that came into effect on November 15th, 2013 (Chi, 2013).

Prior to contacting the companies, support letter was obtained from UUM Othman Yeop Abdullah Graduate School of Business as proof of research authenticity for the authorities and the respondents in the sampling frame (Appendix Y). Research is able to gain a great deal of credibility if it is associated with a governmental body (Rea & Parker, 1997).

The MSC-status companies were contacted once their address and contact details were obtained from Cyberview. Personalized emails were sent to the companies' HR managers as studies (Cook, Heath, & Thompson, 2000) have shown that it increased the rate of response. Support letter from UUM was enclosed with the email. A follow up call was made to the HR manager informing them of the study objective and the benefits of the study to their organization. In addition, they were also informed of the profile type required of the respondents and the number required to participate in the survey as determined in the stratum derived from disproportionate stratified random sampling. This approach is important to convince respondents that their participations are important to both the researcher and to the respondents (Rea & Parker, 1997). Interested HR managers were sent a template that includes a communication pack (Appendix C) that they used in cascading to their organization. The communication pack was segregated into three (3) sections. The first section is a brief introduction of

the author and the sponsor of the survey. Section two covers the objectives of the survey, survey time line and the hyperlink to the web base survey. Companies that agreed to participate in the online web survey were given a unique hyperlink used to facilitate monitoring responses coming from these companies. The last section is for thanking respondents for their effort in completing the survey.

HR managers who could not participate in the survey or could not be contacted were dropped from the list and labeled as "declined" or "cannot be contacted". No further action was taken by the researcher.

Of the 22 companies invited to participate in the survey, 14 of the companies have given their consent to participate, 5 declined due to their companies' corporate confidentiality policy and no responses were received from the remaining 3 companies.

In encouraging response from the potential respondents, the researcher has given out gifts to lucky winners as token of appreciation for their time and effort in completing the survey. According to Dillman, Tortora, and Bowker (1998), a token of appreciation promised for each fully completed survey would improve the response rates.

In ensuring that the survey was communicated within the selected companies, the online web survey for each of the companies based on their unique hyperlink was monitored for response. For those without response, follow up emails and calls were sent to HR manager after 2 weeks from the date of the original email. HR manager was also notified for survey with poor response. This process was iterated until the end of the survey within a maximum of four (4) weeks period.

3.6.1 Data collection and survey response

The sample (n) collected from the actual study was 306 respondents. Although, 5 companies that were selected for the survey declined to participate, the impact from their non-participation is not significant to the overall survey. First, the disproportionate stratified random sampling technique has made provision for a few selected companies to decline by having multiple companies identified for each of the market capitalization categories. Second, the total respondents identified to participate in the online survey were three times larger than the intended sample size (Habsah Salleh, 2014). Third, the participation of companies from all three market capitalization categories minimizes possible sample bias and ensuring that the appropriate populations are represented in the sample (Särndal *et al.*, 2003). The collected sample size (n) of 306 met the requirement of the target sample size of 263.

3.7 Instrumentation

This subsection discusses the process used in developing the variables in the study. The variables shown in the conceptual model comprises of job demands, work time demand and job resources as independent variables, job satisfaction as dependent variable, and flexible work arrangement as moderator variable.

3.7.1 Questionnaire design

This study adopted quantitative research methodology to examine social phenomena. The quantitative research method used a survey approach to carry out structured questionnaires consisting of closed-ended questions. Questionnaires are considered as one of the better data collection instruments for survey research (Asika, 1999).

The instrument designed for this study comprised of three main sections (Table 3.2).

Table 3.2
Distribution of variable

Section	Title	Item
A	Demographic information	Personal, organization background, gender and filter questions
B	Independent variables	Job demands, job resources and work time demand
B	Moderator variable	Flexible work arrangement
C	Dependent variable	Job satisfaction

Section A was used to collect demographic information of the respondents. These questions were designed to provide information about the respondents who participated in the study. The collection of demographic information compares sub-groups and cross-tabulate responses among groups within the sample.

The demographic questions were segregated into three categories. The first are demographic questions regarding the personal and organization background of the respondents. These questions comprise of the respondent's age, academic qualification and job category, working experience and length of service with the company. The second is a dichotomous question on the respondent's gender. The third are filter questions used to determine whether the respondents meet the requirement of the study. As the study is on fixed working arrangement employees who are providing global offshore outsourcing support, the filter questions "My role require me to support global operation" and "My role require me to work shift" ensure only qualified responses in scope of the study were collected for data analysis.

The design used for Section B and Section C was similar. It comprised of survey questionnaires constructed to solicit responses from respondents who met the requirement of the study. The survey questionnaires were designed to measure responses on an interval scale level. Ordinal scales measure levels of agreement or

disagreement in terms of their linear strength and intensity. On each ordinal scale, a five-point Likert scale using bi-polar rating with mid-point being neutral was used for measuring responses. For example respondent has a choice of rating his responses to a questionnaire from a scale of "1" indicating strongly disagree to a scale of "5" for strongly agree, with "3" being neither agree nor disagree. Such measurement is designed for attitudes or opinions (Bowling, 1997) and is considered appropriate in testing the proposed hypothesis (DeVellis, 2003).

The questionnaires in the survey were grouped in accordance to the four variables defined in the conceptual model. In order to ensure that the questionnaires obtain complete and accurate information possible, questionnaires were adopted in their original form and wordings from related researches done in past studies. For those that could not be adopted due to new population, location, language, mode or any combination of these, an adaptation was made to the question content, format, response options or visual presentation (Harkness, 2008).

English language was the sole language used in the instrument. This is because English language is a widely spoken and understood in Cyberjaya. In addition, the population and sample frame are knowledge workers based in Cyberjaya who are mostly tertiary educated and have a sound understanding of English language.

3.8 Operational definitions and measures

This section discusses how each variable in the present study are measured. In total, there were six main variables involved in the study. A five point scale was adopted for this study since it is the most common scaled-response used in recent researches

(Gwinner, 2014). In addition, the five point scale has the ability in providing the most accurate measurement (Hair, Black, Babin, & Anderson, 2010).

3.8.1 Dependent variable measure

Different measures of job satisfaction have been used to assess global job satisfaction based on several key aspects of the job such as pay, supervision, promotion, co-worker relationship and the job itself. Studies have used measures of both global and specific job facets to reflect changes in relevant situational factors. For example global measure may be more likely reflect individual responses than specific items (Witt & Nye, 1992). Watson & Slack (1993) used Job Descriptive Index (JDI) in measuring individual items such as work itself, pay, promotion, supervisor and co-workers and Minnesota Satisfaction Questionnaire (MSQ) is used when measuring overall job satisfaction covering several items.

MSQ was first designed by Weis *et al.* (1967) to measure specific aspects of an employee's satisfaction with his or her job. The instrument provides information on the rewarding aspects on a job than do more general measures of job satisfaction. Response choices are "Very Satisfied", "Satisfied", "N" neither (Neither Satisfied nor Dissatisfied), "Dissatisfied" and "Very Dissatisfied." Among the items used to examine employee's well-being are items related to Job Satisfaction that were adapted from Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, England, & Lofquist, 1967). Respondents were asked how satisfied or dissatisfied they are with eight aspects of their job comprising Sense of achievement, Scope for using initiative, Influence over job, Training, Pay, Job security, Working Condition and Involvement in decision-making.

2004 Workplace Employment Relations Survey (WERS) was developed by Kersley, Alpin, Forth, Bryson, Bewley, Dix, and Oxenbridge (2006) used to provide a national representative account of the state of employment relations and working life inside British workplaces. It has eight aspects that determine employee job satisfaction.

Unlike MSQ, WERS is conducted every few years in UK and the items used in the survey to measure issues affecting employee job satisfaction issues are kept up to date. In addition, WERS has a more comprehensive coverage of the intrinsic motivation and extrinsic hygiene factors of employees. As such, the eight (8) items used in WERS 2004 were adapted for this study.

3.8.2 Independent variable measures

Three separate sets of items were used to measure the independent variables of Job Demands, Job Resources and Work Time Demand.

3.8.2.1 Job demands measures

Job demands refer to physical, psychological, social, or organizational aspects of the job that require sustained physical or psychological (cognitive and emotional) effort or skills associated with certain physiological or psychological costs (Demerouti *et al.*, 2001). Job demand for this study was operationalized based on physical demands (work overload), psychological (emotional) demands, and reorganization.

A total of eight items were used to operationalize job demands variable. Quantitative demands refer to work overload or work pressure or too much work to do in too little time (Peeters, Montgomery, Bakker, & Schaufeli, 2005). Emotional demands refer to the extent to which employees are confronted in their job with things or persons that

touch them personally (Demerouti & Geurts, 2004). Reorganization assesses problems that are associated with the reorganization of an employee role (Veldhoven & Meijman, 1994).

Job Demands instrument comprised of eighteen items was designed by Karasek (1979) known as Job Content Questionnaire (JCQ) to measure the four constructs of psychological demands, decision latitude, physical demands, and job insecurity items.

Furda (1995) developed the Dutch version based on Karasek's (1979) JCQ to assess quantitative demand of workload using three items with a five point scale from "1" (Never) to "5" (Always). The survey was in response to European research signals that work pressure is an important cause of fatigue at work place. The scale includes items that refer to physical demanding aspects of the job.

Psychology demands and reorganization were based on the three items developed by Van Veldhoven & Meijman (1994). These items were measured with a five point scale from "1" (never) to "5" (always).

All the items developed by Van Veldhoven & Meijman (1994), and Furda (1995), totaling six items that made up of work overload, emotional demand and reorganization constructs were adapted for the measurement of Job Demand for this study.

3.8.2.2 Job Resources measures

Job resources refer to physical, psychological, social, or organizational aspects of the job. It comprises of having the functional ability in achieving work goals, reducing job demands and associated physiological and psychological cost as well as stimulating personal growth, learning, and development (Demerouti *et al.*, 2001).

Decision authority and co-workers and supervisory support were constructs of job resources variable used in a number of studies in buffering the relationship of job demand and job satisfaction (Willemse, De Jonge, Smit, Depla, & Pot, 2012; Cheng, Luh, & Guo, 2003; Okediji *et al.,* 2011).

Karasek (1979) defined decision authority as referring to employees' authority to make job-related decisions. Karasek & Theorell (1990) defined social support as "overall levels of helpful social interaction available on the job from both co-workers and supervisors". It was found that social support benefited from supervisors who have experienced in handling work-related matters was of particular helpful (Beehr, King, & King, 1990). Support provided by co-workers in various forms in the workplace is instrumental in promoting the well-being of the workplace (Ducharme & Martin, 2000). Park, Wilson, and Lee (2004) found that social support in organizational settings in the form of decision authority, supervisory and co-worker support are essential to wellbeing.

The items for job resources instrument were adopted from the study carried out by Mohd Awang Idris *et al.* (2011). The original scale was taken from Karasek's (1979) JCQ instrument. Mohd Awang Idris used decision authority representing autonomy that was assessed using a three item scale. For example "I have a lot of say about what happens on my job", "My job allows me to make a lot of decisions on my own" and "On my job, I have very little freedom to decide how I do my work" were extracted from the original three-item JCQ scale. For supervisory support subscale, three items were used. Item such as "My supervisor/ manager is concerned about the welfare of those under him/her" represent the supervisor support received by the organization. The items were measured with a four Likert point scale ranging from "1" (strongly disagree) to "4" (strongly agree).

Co-worker support was adapted from three items developed by Van Veldhoven & Meijman (1994). Example of items such as "I can ask my colleagues for help if necessary" and "I can count on my colleagues when you face difficulties at work" were measured with a five point Likert scale ranging from "1" (never) to "5" (always).

This study used a 5-point Likert scale in measuring the job resources component of decision authority, supervisory support and co-worker support following Veldhoven & Meijman (1994) who have had used a 5-point Likert ("1" - totally disagree, "5" – totally agree) as their scale for job resources rating.

3.8.2.3 Work Time Demand measures

Geurts, Beckers, Taris, Kompier, and Smulders, (2009) distinguished that work time demand are measured by three types of work time demand. First, the contractual hours refer to the time spent on work according to one's contract. Second, overtime hours referring to the number of hours spent on doing overtime work, and third, the commuting hours that are the number of hours spent on commuting. Wickramasinghe (2010) in his study on offshore outsourced software development firms used excessive work hours as the measure of work time demand. However, commuting as a work time demand measure was not used in his study as most of the offshore outsourcing support employees telecommute.

In the global networking and global collaborative working study that was conducted with a sampling size of 1,015 globalized small- and medium-sized (SME) companies from Belgium, Denmark, Finland, Germany, Portugal, Sweden, Netherlands and UK., time zone differential was used as a measure for work time demand on global

distributed working in a geographically dispersed locations with different time zones (Stanoevska-Slabeva, Blijsma, Gareis, Vartiainen, & Verburg, 2009).

As studies have shown the effectiveness of using both global and specific job facets to better reflect changes in relevant situational factors (Witt & Nye, 1992), this study adopted the measures used by Wickramasinghe in assessing local work time demand and time zone differentials from the global networking and collaborative working study in assessing global work time demand.

In the global networking and collaborative working study, Stanoevska-Slabeva used two items in measuring the subscale of time zone work demands. These items are, "There have been problems in organizing work across time zones" and "My job requires me to adapt my working times to the demands of global collaboration" using a six point scale of "1" (very often) to "6" (Do Not Know). In the case of Wickramasinghe for time demand of work, three items were used. "Usually I work more hours, sometimes until late in the night'', ''usually I come to work on weekends, sometimes both Saturday and Sunday'', and ''usually I take office work home when I leave the office, which I couldn't complete during the day''. The above items were measured with a five point Likert scale ranging from "1" (strongly disagree) to "5" (strongly agree).

These two measures of work time demand and time zones differential provided the items needed for this study. First, it projects time demand of working in a global virtual organization spanning across multiple time zones. Second, it reflects the effect of individuals providing global offshore outsourcing support especially those located in the Far East. It is for these two reasons that the five items comprise of two measures were used in measuring work time demand for this study.

3.8.3 Moderator variable measure

Hyland (2000) developed two components to operationalize flexible work arrangement. The first is flextime where work timing may be flexible, and second, flexplace where the place of which work is completed may be flexible (Shockley, 2007). Both measures were represented by two items. For example "I have the freedom to vary my work schedule" was used to represent flexibility in terms of time, and "I have the freedom to work wherever is best for me – either at home or at work", represent access to flexplace. The responses were set on a 5-point scale ranging from "1" entirely not true to "5" entirely true.

In describing the new way of working (NWW), Brummelhuis, Bakker, Hetland, & Keulemans (2012) added a third component of communication to the measures of flextime and flexplace for three reasons. First, flextime gives employees greater freedom and flexibility in selecting the timing of when they work (Baarne, Houtkamp, & Knotter, 2010). Second, flexplace empowers employees to choose their work location of working from home, in the office or somewhere else (Kelliher & Anderson, 2008). Third, this type of work arrangement is heavily dependent on media technology to facilitating communication (Baarne *et al.*, 2010). Their study on NWW with a sample size of 550 respondents showed the use of flexible work arrangement was positively related to engagement and negatively to exhaustion due to increased effective and efficient communication. The items were scored on a seven-point rating scale ranging from "0" (never) to "6" (always).

In the study of preferred work arrangement by employees of the offshore outsourced software development industry, Wickramasinghe & Jayabandu (2007) used only flextime as the measure of flexible work arrangement. The basic model of flextime

comprising three items namely periodical flexi time, daily flexi time, and time-offs. These items were, "How often are you allowed to define the beginning and ending times of your work for a particular time period?", "How often are you allowed to define the beginning and ending times daily basis" and "How often are you allowed to take time offs during the working hours of a particular day for specific reasons, such as a medical appointment?". A five-point Likert scale ranging from "5" (Very often) to "1" (Never) were used.

As the focus of this study is on global offshore outsourcing support, all three items used in Wickramasinghe & Jayabandu (2007) study were adopted. The same five point Likert scale of "1" (Never) to "5" (Always) were used for this study.

Telecommuting is becoming the preferred choice of working in a global virtual organization. As firms began to adopt this practice as HR policy, it is important that flexplace as a measure of flexible work arrangement is considered for this study. In line with this argument, the two items that were developed by Hyland (2000) were adapted as the representation of flexplace making a total of five items comprising of two components measuring flexible work arrangement. This study also used a five point Likert scale similar to the scale used in both the previous studies.

3.8.4 Variables measure summary

The variables denoted by their measuring items in the various sections of the instrument and the related hypotheses are shown in Figure 3.8.

No	Variables	Section	Related Hypotheses
1	Independent Variable: Job Demands	Section B: 6 items	H1
2	Independent Variable: Work Time Demands	Section B: 5 items	H2
3	Independent Variable: Job Resources	Section B: 9 items	H3
4	Moderator Variable: Flexible Work Arrangement	Section B: 5 items	H4
5	Dependent Variable: Job Satisfaction	Section C: 8 items	H1, H2, H3, H4

Figure 3.8
Variables, sections and related hypotheses

A sample of the instrument is available in Appendix B.

3.9 Pre-test

A pre-test refers to a trial administration of an instrument to identify flaws. When a questionnaire is used as a data gathering instrument, it is necessary to determine whether questions and directions are clear to respondents and whether they understand what is required from them. The main focus of pre-test is to identify question defects such as ambiguous question (Polit & Hungler, 1995).

The approach used for pre-test was by forming a focus group comprising of subject matter experts in the field of linguistic and offshore outsourcing support operation. The language expert's role is to determine the correctness in the use of key words and phrases in the instrument and whether respondents interpret phrases and questions as the researcher intends. The subject matter experts for offshore outsourcing support operation comprised of workers who have had many years of experience in the offshore outsourcing field to provide feedback on the relevancy of the questionnaires. Most researchers believe that instrument must be tested under field conditions no matter how much developmental work is done on the questionnaires (Oksenberg, Cannell, & Kalton, 1991).

3.10 Pilot study

The primary objective of a pilot study is to test the strength of the questionnaire design as well as providing initial feedback from test sample on the actual survey (Cooper & Schindler, 2008). In addition, pilot study serves as a mini version of a full-scale study that allows the researcher to conduct feasibility on the hypothesized conceptual model to increase the likelihood of success in the main study (Van Teijlingen & Hundley, 2001). The testing carried out on a range of important functions would provide valuable insights and establish whether the technique and framework model are effective (Van Teijlingen & Hundley, 2001).

For this study, a web-based online survey was used for the pilot study for consistency with the actual survey. The study used a non-random and convenience sampling approaches derived from the sample since these respondents were available to the researcher (Henry, 1990).

Prior to undertaking pilot study, the pretest instrument was uploaded into an online survey website. Each of the selected companies was assigned a unique survey site that would distinguish the companies of which data were collected. This method of data collection is important to ensure sample collected is multivariate that would prevent possible homogeneity issue which might cause skewness and kurtosis problems. Connectivity and accessibility checks were undertaken to verify the survey link and the ability of the online survey in accepting responses from respondents.

The statistical analytical approach adopted by the researcher for the pilot study followed that of the main study with a few exceptions. One, demographics analysis of the respondents was not carried out which is in line with the objectives of the pilot study to test the strength of the instrument and conduct feasibility study on the

hypothesized conceptual model with the aim of increasing success likelihood in the main study (Van Teijlingen & Hundley, 2001). Second, as hypotheses testing through the prediction of relationship between a dependent variable and its independent variables is not the aim of pilot study, linear regression analysis for the hypothesized structural model would not be performed.

3.11 Techniques of data analysis

This subsection discusses the statistical tools used in data analysis and hypotheses testing. There are several statistical techniques that can be used in drawing conclusion about the antecedents of job satisfaction in the context of global offshore outsourcing support.

The data collected from the survey was analyzed using a combination of IBM SPSS statistical software version 21.0 (SPSS) and AMOS version 21.0 (AMOS) of Structural Equation Modeling (SEM). SPSS was used for descriptive analysis, reliability testing and exploratory factor analysis (EFA). Measurement model was used for confirmatory factor analysis followed by specification and estimation of the models (Schumacker & Lomax, 1996). The reason for this approach is confirmatory factor analysis (CFA) can determine whether factors are redundant with each other as well as addressing both convergent and discriminant validity, whereas exploratory factor analysis only address convergent validity (Cole, 1987).

Statistical analysis is made up of two classifications of descriptive statistics and inferential statistics. The intent of descriptive statistics is to describe sets of data through observing summary charts and tables. It does not attempt to draw conclusions about the population from which the sample was taken. On the other hand, inferential

statistics is used in testing hypotheses by drawing conclusions about a population based on a sample (DeCaro, 2011).

3.11.1 Descriptive analysis

Descriptive statistics such as nominal data e.g. gender, ordinal data e.g. frequency, percentage and interval/ ratio data e.g. minimum, maximum, mean, standard deviation were used to describe the respondents' profile found in the demographic section of the instrument. Means and standard deviation were analyzed in determining the highest score of the data. In addition, T-Test and ANOVA were also be used to compare group means. Whilst T-Test is limited to comparing means of two groups, the comparison of more than two groups can be carried out using one-way ANOVA. The test was carried out using IBM SPSS statistical software version 21.

The analysis of the Data from the survey was carried out using descriptive statistics, frequency distributions, correlations, means and standard deviations and other statistics obtained by the Frequencies and Pearson Correlation commands. Descriptive statistics such as frequency, percentage and mean were used for measuring the percentage of returned questionnaire and for analyzing respondents' profile such as gender, age, education level and working experience (Babbie, 2004; Zikmund, 2003).

3.11.2 Inferential statistical analysis

There are different types of inferential statistics that are used depending on the type of variable (i.e. nominal, ordinal, interval / ratio). Whilst the type of statistical analysis is different for these variables, the main idea is the same which is to determine how each variable compares to another.

3.11.2.1 Exploratory factor analysis

For this study, Exploratory Factor Analysis (EFA) was undertaken using SPSS to validate the scales of variables by demonstrating that their constituent items were loaded onto the same factor. Items which were cross loaded onto more than one factor were dropped since it is desirable having items loaded onto one factor rather than multiple factors so that the items can be used in measuring one construct. This would ensure that the loadings of the measured variables confirmed what was expected of the pre-established theory (Hair, Tatham, Anderson, & Black, 1998). The inferential statistical testing for EFA covered the following:

- Analysis of variance (T-Test, One Way Anova)
- Correlations (Pearson Correlations, Multicollinearity)
- Regressions (Linear and Multiple Regressions)

Analysis of variance

One-way ANOVA was used to determine the difference in the mean scores and whether the difference was significant or otherwise. This variance analysis (ANOVA) was used to test the mean scores of the different demographic categories to determine whether there are any significant differences among the different demographic categories in terms of job satisfaction.

In addition to One-way ANOVA, T-Test was used to compare whether there is any significant difference in the mean scores of job satisfaction between male and female respondents.

Correlations

The following correlation tests were carried out:

- Pearson Correlations
- Multicollinearity

Pearson correlation between sets of variables is a measure of how these variables are related. Multicollinearity allows the study to determine which variables in a multiple regression model are highly linearly related.

Pearson correlations

Pearson correlation test was carried out to examine the relationship between the independent variables and the dependent variables. Different facets of the relationship between the dependent variable of job satisfaction and the independent variables of job demands, work time demand and job resources were recorded. Pallant (2005) proposed that the strength of correlation is indicated by the value of 0 (no relationship) to 1.0 for perfect positive correlation. The guideline in interpreting the correlation values suggested by Cohen, Cohen, Aiken, and West (2003) is shown in Table 3.3.

Table 3.3
Strength of correlation

Value	Rating
r = 0.10 to 0.29 or r = -0.10 to -0.29	weak
r = 0.30 to 0.49 or r = -0.30 to -0.49	medium
r = 0.50 to 1.00 or r = -0.50 to -1.00	strong

The procedure for this test is based on significant statistic of a two-tailed test at 99% (0.01 levels).

Multicollinearity analysis

When correlations among the independent variables are strong, it creates a problem during multi-regression testing where the model is perceived to fit the data well (high F-Test) even though none of the independent variables has a statistically significant impact on explaining dependent variable. When this happens, the independent variables are collinear and the results show multicollinearity. This type of situation inflates standard errors causing some variables to be statistically insignificant even though they are not.

Such situation can be avoided by carrying out multicollinearity analysis. For instance, SPSS uses variance inflation factors (VIF) to measure the variance of the estimated coefficients among the independent variables. VIFs show value of 1 if no two independent variables are correlated. If two or more variables have VIF around or greater than 5 (VIF > 5), one of these variables must be removed from the regression model (Moataz, 2013).

Regression analysis

The hypotheses were tested using multiple regression analysis by estimating the value of random variable (dependent variable) at a given value of one or more associated independent variable(s) (Kazmier, 1996). This multiple regression technique can be used to estimate the relationship between a single dependent variable (job satisfaction) from the predictors (job demands, job resources and work time demand) by adopting the linear regression formula (Figure 3.9) (Hair *et al.*, 1998).

$$Y=b0 + b1x1 + b2x2 + b3x3 + b4x4 + €i$$

Where

b0 is the value of Y at zero x components
b1, b2, b3… is the change in Y as a result of a unit of change in x component.
x is the unit
€I is standard error

Figure 3.9
Linear regression formula

Significance testing

P-value is the probability of obtaining a test statistic result that is as close to the one observed based on the assumption that null hypothesis is true (Goodman, 1999). The outcome of the hypothesis testing is determined by p-value (Figure 3.10) that indicates the significance of the results.

P-Value	*Asterisk Rating*	*Description*
$p \leq 0.001$	***	Very strong evidence against the null hypothesis in favor of the alternative.
$0.001 < p \leq 0.01$	**	Strong evidence against the null hypothesis in favor of the alternative.
$0.01 < p \leq 0.05$	*	Moderate evidence against the null hypothesis in favor of the alternative.
$p > 0.05$		Weak or No evidence against the null hypothesis. Null hypothesis will not be rejected.

Figure 3.10
P-value

Five percent (5%) indicates that there are less than 1 in 20 chance of being wrong and one percent (1%) indicates a chance of 1 in 100 of being wrong. When presenting P values, it is helpful to use the asterisk rating system as well as quoting the P value. For this study, the researcher refers $P < 0.05$ as statistically significant.

3.11.2.2 Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) is the next step after exploratory factor analysis to determine the factor structure of the proposed model. Whilst Exploratory Factor Analysis (EFA) explore the factor structure of the relations of different variables in the study and group these variables based on inter-variable correlations, CFA confirms the factor structure extracted from EFA.

Measurement model

These absolute fit indices include but not limited to the Chi-Squared test, root mean square error of approximation (RMSEA), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square residual (RMR) and standardized root mean square residual (SRMR). Kline (2010) recommends reporting at the minimum the Chi-squared test, RMSEA, CFI, and SRMR indices.

Measurement model technique is used to estimate the covariance matrix between constructs and whether the pilot sampling frame data fitted the hypothesized conceptual model (Preedy *et al.*, 2009). It is the first of the three forms of Structural Equation Modeling (SEM) quantitative data analytical technique (McQuitty, 2004). It specifies estimates and tests theoretical between unobserved exogenous variables, and endogenous and latent variables (Byrne, 2001). The approach uses model specification in linking variables assumed to have effect on other variables and the direction of these effects (Kline, 2005). Regression weights, variances, covariances, and correlations in its iterative procedures are produced and converged on a set of parameter estimates (Holmes-Smith, Coote, & Cunningham, 2004). Fit statistics

through the process of estimation are evaluated to determine the fittings of the proposed model to the sample data.

The model fit indices comprise of absolute fit indices, incremental or comparative fit indices and indices of model parsimony (Holmes-Smith *et al.*, 2004). Each of these categories uses different fit indices and rules of thumb in gauging the minimum level of value requirement for good fit (Bryne, 2001). There is currently no consistent standard on which fit indices are to be used in evaluating an acceptable model (Ping Jr., 2004) although structural equation modeling (SEM, 2015) has recommended that the minimal set of fit indices that should be interpreted and reported are:

- Model chi-square
- Root mean square of approximation (RMSEA)
- Comparative fit index (CFI) and
- Standardized root mean square residual (SRMR).

Steenkamp, Batra, and Alden (2003) used $\chi 2$, Comparative fit index (CFI) and Tucker-Lewis Index (TLI) as fit measures, Knight and Cavusgil (2004) recommended CFI, TLI, Incremental fit index (IFI), relative noncentrality index (RNI) and RMSEA as fit measures, and Fan, Thompson, and Wang, (1999) suggested RMSEA, TLI and CFI.

In recent times, more fit indices were used by researchers as they became available. Nazir and Hawi (2013) used CMIN/degree of freedom ($\chi 2$/df), RMSEA, P-value, Normed fit index (NFI), CFI, TLI, Root mean square residual (RMR), SRMR, Goodness-of-fit index (GFI) and Adjusted goodness-of-fit index (AGFI). However, Kenny (2014) cautioned that having too many fit indices would result in "cherry

picking" fit indices. He opined that if one decides not to report a popular index such as TLI or RMSEA, one has to give a good reason for not reporting it (Kenny, 2014). As reference, he advocated the use of CMIN/df, NFI, TLI, CFI, RMSEA, PClose, SRMR, GFI and AGFI as popular indices that should be reported (Kenny, 2014).

According to Hair, Hult, Ringle, and Sarstedt (2014), before conducting structural model, Covariance Based SEM has to perform at least one index from each of three types of fit indices comprising of absolute, incremental and parsimonious fit to achieve the fitness of measurement model. Of these fit indices, Hair *et al.* (2014) recommended the use of Chi Square ($\chi 2$), RMSEA, and GFI for absolute fit, AGFI, CFI and TLI for incremental fit and Chi Square/degree of freedom ($\chi 2$/df) as representation of parsimonious fit index.

For the pilot test the structural equation modeling fit indices advocated by both Kenny (2014) and Hair *et al.* (2014) were used:

- CMIN/degree of freedom ($\chi 2$/df)

Amos reports Chi Square ($\chi 2$) as CMIN. CMIN/df is used to assess the fit of a model where a $\chi 2$/df ratio of less than 2.0 represents an adequate fit (Byrne, 2001).

- Goodness-of-fit index (GFI) and Adjusted Goodness-of-fit index (AGFI)

The index describes how well the generated model is able to reproduce the observed model. The closeness between the generated and the observed model determines their ability to produce variance covariance matrix that indicates the efficiency of the model. The value of GFI should be greater than 0.9 to be considered good and for AGFI, a good value should exceed 0.8 (Cruz, Goncalves, Lopes, Miranda, & Putnik, 2012).

- Normed fit index (NFI) and Tucker-Lewis index (TLI)

NFI is an incremental fit measure that analyzes the discrepancy between the hypothesized model and the null model in terms of their $\chi 2$ value (Bentler & Bonnett, 1980). TLI assesses the fit of a model in which normed fit index is adjusted by the complexity of the model. Both values are assessed at a minimum of 0.90 to be considered good (Cruz *et al.,* 2012).

- Comparative fit index (CFI)

CFI examines the differences between the sample data and the hypothesized model simultaneously adjusting for issues relating to sample size inherent in CMIN and NFI (Bentler, 1990). Similar to NFI, CFI should be above 0.90 for sound model (Cruz *et al.,* 2012).

- Root mean square error of approximation (RMSEA) and Root mean square residual (RMR)

The issues relating to sample size as faced by CFI is avoided in RMSEA by analyzing the discrepancy between the hypothesized model with optimally chosen parameter estimates, and population covariance matrix (Bentler, 1990). RMR is the square root of the discrepancy (Bentler, 1990). The general rule of thumb to accept a model for RMSEA value is no greater than 0.05. The indicative value of an acceptable model for RMR is 0.05 or less (Zencaroline, 2007).

- p-value

This measure is assessed together with RMSEA to provide a one-sided test of the null hypothesis in that if RMSEA equals 0.05 and p is greater than 0.05, it results in a close fitting model with some specification error (Kenny, 2014). On the other hand, if

p is less than 0.05 and RMSEA is greater than 0.05, it is concluded that the model's fit is worse than close fitting (Kenny, 2014). Therefore, the threshold for a good model fit would provide an insignificant result of 0.05 (Barrett, 2007).

3.11.3 Structural regression analysis

Statistical regression analysis is a process for estimating relations among variables and how changes made to one independent variable could affect its dependent variable while the other independent variables remain unchanged (Mandeep, Satwinder, & Sahib, 2014). Structural regression modeling is one of regression analysis models used in examining the causal and correlations between theoretical variables in terms of their paths and variances of the disturbances of endogenous variables (Kenny, 2011). This is carried out by investigating statistical significance of standardized regression weight such as p-value of research proposition at 0.01, 0.05, 0.001 and coefficient of determination for endogenous variables. Structural modeling allowed us to test our overall model simultaneously.

3.11.4 Moderation model test

Moderation model test is used to determine whether the prediction of dependent variable i.e. Job Satisfaction from an independent variable i.e. Work Time Demand differs across levels of a third variable i.e. Flexible Work Arrangement. Moderator variable affect the strength and/or direction of the relation between a predictor and an outcome: reducing, changing or enhancing the influence of the predictor (Aiken & West, 1991).

The effects of moderation are tested with multiple regression analysis where the predictor variables and their interaction term are centered prior to model estimation. It

is to improve interpretation of regression coefficients. The basic moderation model (Figure 3.11) can be formed by the following single regression formula.

$$Y = i_5 + \beta_1 X + \beta_2 Z + \beta_3 XZ + e_5$$

β_1 is the coeff relating to independent variable, X, to the outcome, Y when Z = 0.
β_2 is the coeff relating moderator variable Z to the outcome, Y when X = 0.
i_5 is the intercept in the equation and
e_5 is the residual in the equation.

Figure 3.11
Basic moderation model

The regression coefficient for the interaction term β_3 provides the estimate of the moderation effect. If β_3 is statistically different from zero, there is a significant moderation of the X-Y relation in the data. The moderating effect showing how Y slop on X is dependent on the value of moderator variable can be interpreted through plotting an interaction effect graph. This moderation effect was carried out using IBM SPSS statistical software version 21 (SPSS).

3.12 Summary

This chapter discusses the development of the research framework, the construction of hypotheses basing on the research questions and detailed the rationale behind the research design. It outlined the methodology used in deriving at the sample size from the working population using sampling techniques. The chapter describes the approach taken in developing the instrument and operationalized it using the various scales and subscales of the variables defined in the conceptual model. Finally, different data analysis techniques were discussed including descriptive analysis, inferential analysis and moderation model test to ensure that the analysis and testing done are in compliance with existing research standards.

CHAPTER 4 ANALYSIS AND FINDINGS

4.1 Introduction

Further to the establishment of the research framework, development of the research hypotheses and the research instrument in Chapter 3, this chapter discusses the execution of data collection process and analysis of the data using a combination of descriptive, inferential and moderation model test. The outcome of the statistical analysis would be used to answer the research questions and objectives.

4.2 Pre-test

During the pre-test stage, three offshore outsourcing support operation senior workers who have had at least ten years of working experience in the offshore outsourcing industry and an English language expert who works for United Nation High Commissioner for Refugees (UNHCR) in Malaysia were selected to participate in this test using non-probability judgment sampling. Using such technique provided the research specialty of authority that can bring more accurate results compare to other probability sampling techniques (Explorable, Mar, 2015).

The pre-test was segregated into two phases. The first phase involved an English language expert who was requested to review the instrument for grammatical and syntax error especially in the use of key words and phrases in the instrument. The feedback received was that the text used to describe the education subcategory of "PHD" was not adequately constructed as it did not address respondents having doctorate qualification but not necessary "PHD". The anomaly was corrected by replacing "PHD" text with "Doctorate" as the subcategory under "Education". The other feedback was on the use of lower and upper case for text in the demographic

categories. According to the language expert, overusing upper case letter reduces the importance of those words and that upper case letter is used only in the first word unless otherwise defined in Standard English (Thorne, 2008). As a result, change was made to use upper case letter for only the first letter of first word that described the various demographic categories and subcategories such as "Age", "Job category", "Non-executive" and "Total years of experience".

In the second phase, a group session was arranged for three experience offshore outsourcing employees to congregate in a room where the instruments were distributed. The session was facilitated by the researcher who observed the behavior of the respondents while they were reviewing the items in the instrument. The researcher intervene any hesitation from the respondents in answering the questionnaires to enquire the reason for the delay response. The feedback received was an overlap of period between "6 to 8 years" and "8 to 10 years" in "Total years of working experience" category. This was resolved by revising the period from "2 to 5 years" to "2 to 4 years" and allowing the next period to start from "5 to 7 years" without having to change the "8 to 10 years" period.

4.3 Pilot study analysis

A group of 120 respondents were identified from two large market capitalization companies from the sampling frame using a non-random and convenience sampling approach to provide initial feedback on the usability of the instrument. The respondents were given instructions to complete the online web-based survey.

From the initial group of 120 respondents, 113 completed the online survey. Baker (1994) suggested that a sample size of 10-20% of the full scale study is reasonable for

the number of respondents to consider enrolling in a pilot. As the collected sample size is greater than the suggested sample size, it was accepted for the pilot study. It is noted that none of the respondents have commented nor provided their input for improvement. These responses taken from the pilot study would not be included in the actual field study to ensure no biases would occur (Sekaran, 2003).

4.3.1 Instrument validity test

Prior to the validity test, the sample was first visually inspected for missing value. Subsequently frequency test was carried out confirming all 113 responses were valid and no missing values were detected in the pilot study sample.

One of the questions "*JR3: On my job, I have very little freedom to decide how I do my work.*" was found to have been set in a reverse order scale. The score for this question was labeled as 5 being low whereas for other questions 5 was a high score. In order to maintain consistency in measuring the response, the score for this question was reversed.

4.3.2 CFA of hypothesized conceptual model

At this stage, the construct measures used for the pilot study were those making up the hypothesized conceptual model determined during instrumentation. It could well be that some of these construct measures could be measuring different aspects of the same underlying construct. In order to establish whether the technique and hypothesized conceptual model are valid, a confirmatory factor analysis that is based on the observed variables of the hypothesized conceptual mode was performed. This was carried out using measurement model technique.

Table 4.1
Initial measurement model fit of pilot study

Fit Values	*Score*	*Standard*	*Fit*
Chi Square	1053.652		
df	470		
Chi Sq/df	2.24	< 2.0	Poor
p-value	0	> 0.05	Model does not fit
Goodness-of-fit index (GFI)	0.65	> 0.90	Poor
Adjusted goodness-of-fit index (AGFI)	0.58	> 0.80	Poor
Tucker-Lewis index (TLI)	0.75	> 0.90	Poor
Comparative fit index (CFI)	0.78	> 0.90	Poor
Normed fit index (NFI)	0.66	> 0.90	Poor
Root mean square residual (RMR)	0.11	< 0.05	Poor
Root mean square error of approximation (RMSEA)	0.11	< 0.05	Poor

The initial CFA measurement model (Table 4.1) revealed a poor model fit for all derived fit indices. As none of the fit indices met the minimum requirement of a good model fit, using these factor structures would most likely posed a problem.

4.3.3 EFA of hypothesized conceptual model

In order to increase the likelihood of success in the main study, an exploratory factor analysis (EFA) was performed to determine whether some of construct measures could be measuring different underlying dimensions of a set of variables. EFA allows all indicators to load on all factors resulting in the interpretation of the most sensible solution from the different solutions generated for different factors (Lei & Wu, 2007).

For this study, two EFA extraction methods principal component analysis (PCA) and principal axis factoring (PAF) were used segregated into two separate passes for factor analysis (Beaumont, 2012). PCA was performed in the first pass to identify the underlying latent variables from the observed variables. Once the latent variables were identified, it was followed by PAF restricting the rotation around a fix number of identified factors.

4.3.3.1 KMO and Bartlett's Test

Before undertaking EFA, it is appropriate to measure sampling adequacy based on correlation that is used to assess the possibility of multicollinearity amongst the factors. The sampling adequacy is tested by Kaiser-Meyer-Olkin measure. The result of the test (Appendix D) shows the sampling adequacy of 0.786. Kaiser (as cited in Haper & Jin, 2012) suggested that measure of sampling adequacy above 0.90 is considered marvelous, in the 0.80s meritorious, in the 0.70s middling, in the 0.60s mediocre, in the 0.50s miserable and measure that is below 0.50 is considered not acceptable. In this case, the sampling adequacy was middling and acceptable for use in EFA.

The other test is Bartlett's used for testing null hypothesis for uncorrelated factors in a population of correlation matrix. Rubio, Sellens, and Zarco (2014) suggested rejecting null hypothesis if the significant value is less than alpha level. As Bartlett's test of sphericity shows a significant alpha value ($p < 0.001$ ***), the null hypothesis was rejected.

4.3.3.2 Principal component analysis (PCA)

In extracting the latent variables from the observed variables, principal component method with Varimax rotation option was used in selecting factors with eigenvalue of greater than 1.0. Varimax rotation was chosen to maximize the variance of the factors while minimizing the variance of the new underlying variable (Costello & Osborne, 2005). The higher is the eigenvalue, the closer is the correlation between a specific observed variable and a specific factor (Beaumont, 2012).

The Total Variance Explained table (Appendix E) shows the total number of latent variables extracted with eigenvalue greater than 1.0 is 8 with cumulative score of 75.8% that explained the variance in the model.

Scree Plot is a simple line segment plot that shows the descending order of eigenvalues magnitude of correlated matrix of which a sharp drop in the plot indicates that the rest of the factors can be ignored (Karan, 2013). Tabachnick and Fidell (2013) suggested that the factors are determined by the number of eigenvalues above the break point defined as a line drawn through the points when it changes direction. Eigenvalues below the break point indicate error variance. However, Zoski and Jurs (1990) in their attempt to circumvent the issue of subjectivity in the interpretation of scree plot establish a set of guidelines. The salient points of the guidelines are:

- The number of sequential points for drawing the scree plot should be at least three.
- The first break point should be used when multiple break points exist in the curve.
- The slope of the curve should have an angle of 40 degrees or less from the horizontal.

Based on the above suggestions, the interpreted Scree Plot shows a total of four latent variables up to the first break point where the line indicates an elbow followed by a sharp drop and a less than 40 degrees angle from the horizon (Appendix E).

Past studies (Cattel & Jaspers, 1967; Hakstian, Rogers, & Cattel, 1982) had shown that Kaiser criterion sometimes retains too many factors. On the other hand, scree test sometimes retains too few although both perform quite well under normal conditions. In this case, eight factors were extracted using Kaiser eigenvalue greater than one rule

whereas four factors were extracted using Scree plot based on Zoski and Jurs (1990) guidelines. Due to the contrast between Kaiser criterion and Scree plot, it is therefore necessary to examine alternative solutions and choose one that makes the most sense with more or few factors (Statsoft, 2015). Kanyongo (2005) supported this approach by recommending that scree plot not solely be used in determining the number of components to retain and instead should be used with other procedures such as Velicer's Minimum Average Partial (MAP) or parallel analysis (Velicer, Eaton, & Fava, 2000).

In line with this recommendation, Monte Carlo PCA for parallel analysis was used to arbitrate between Kaiser eigenvalue greater than one rule and Scree plot (Appendix F). Monte Carlo PCA for parallel analysis is a simulation technique that researchers use as aid in ascertaining the number of factors to retain in Principal component analysis (Ledesma & Valeo-Mora, 2007). Compare to other techniques such as Scree Plot and Kaiser's eigenvalue-greater-than-one rule, Monte Carlo parallel analysis simulation technique provides a superior alternative (Ledesma & Valeo-Mora, 2007).

In calibrating the factors extracted from total variance explained table and the observed factors from Scree Plot, Monte Carlo parallel analysis was used as a "tie breaker" by randomly generating factors based on 100 replications and using the result to compare with the factors extracted from total variance explained analysis.

The result of these comparisons shows six out of eight selected factors with eigenvalue of greater than one from total variance explained table were having value higher than the randomly generated factor value from parallel analysis report (Appendix F).

The findings were further verified with the PCA rotated component matrix (Appendix G) showing six of the total eight components having at least two items in each of the factors. The seventh and eighth factor has only one item each. These two factors along with its items i.e. JS8 "*I am satisfied with my pay*" and JR8 "*I can count on my colleagues when I face difficulties at work*" were removed from further analysis.

4.3.3.3 Principal axis factoring (PAF)

In the second pass, principal axis factoring was carried out restricting the number of extracted factors to six. This time Promax option was used to allow rotation for the identified correlated factors. The outcome of PAF reveals the first five factors having the best and strongest inter-relationship among the different factors in the component matrix. The sixth factor has only 2 items i.e. JD4. "*Does your work put you in emotional situation?*" and JD5. "*Do the people whom you meet through your work intimidate you?*" These two items when analyzed, shows both were highly correlated responses giving similar score. The factor was found redundant and removed from the selected list of factors (Statsoft, 2015). Also, the best fit to the data is the component with item loadings greater than .3 with no or few items cross loadings and having no fewer than three items (Costello & Osborne, 2005), it was determined that five selected factors met the optimal criteria.

Items JR1. "*My job allows me to make a lot of decisions on my own.*" and JR2. "*I have a lot of say about what happens on my job.*" that belong to Job Resources construct in conceptual model were found cross-loaded into the first factor that has a number of "Job Satisfaction" items. Both these items were relabeled as JSJR1 and JSJR2 respectively. The item JR3R "*On my job, I have very little freedom to decide how I do my work*" has a small loading below 0.4 was removed.

Choosing the correct label for each of the factors in the model is extremely important. The factor pattern should be examined for highly loaded items on which factors and then determine what those items have in common (Fabrigar, Wegener, MacCallum, & Strahan, 1999). The commonalities among the items would indicate the meaning of the factor (Fabrigar *et al.*, 1999). Using these suggestions as guide, label was assigned to the latent variables in accordance to the item loading value and common traits among the items. For example, the first factor has a mix of job satisfaction items and job resources items. As the item with the highest loading was JS3 at 0.832 and there were 7 items related to job satisfaction compared to 2 items related to job resources, hence, the first factor was labeled as "Job Satisfaction". There were no cross-loading items for the rest of the factors. This means the loaded items were the same as the ones defined for their constructs in conceptual model. Therefore, no further examination was required. The latent variable label followed the label of their respective constructs in the conceptual model (Appendix H).

4.3.4 Pilot study reliability test

Reliability of a measure refers to its ability to reproduce similar results when measures are repeated under identical conditions (Bordens & Abbot, 2011). Hair *et al.* (2010) considered reliability as the degree in which observed variable measures are at their true value determined by internal consistency check among variables in a summated scale (Hair *et al.*, 2010). The internal consistency check determines whether individual items or indicators of a scale are measuring the same construct and hence highly inter-correlated (Nunnally, 1978).

Corrected items-Total Correlation (correlation of an item to summated scale score) and inter-item correlation (squared multiple correlations between the respective item

and all others) are the two most common diagnostic reliability measures (Hair *et al.,* 2010). Robinson, Stimpson, Huefner, and Hunt (1991a) suggested that as a rule of thumb the Corrected item-Total Correlation should exceed 0.50 and the inter-item correlation should exceed 0.30. Coles, Coon, DeMuro, McLeod, and Gnanasakthy (2014) opined that the inter-item correlation coefficient should be within the range of 0.30 and 0.80. Coefficient less than 0.30 indicates a poor correlation with the other items within the construct and high coefficient exceeded 0.80 indicates potential redundancy (Coles *et al.,* 2014).

For the pilot study, Cronbach's alpha coefficient of reliability was used to measure internal consistency of how closely the set of items in the identified variable were related. The findings on the pilot sample size of n=113 show high internal consistency with all constructs exceeded the acceptable alpha coefficient of 0.60 for exploratory research (Robinson *et al.*, 1991a) and coefficient of 0.70 for non-exploratory research alpha coefficient (Nunnally, 1978). The alpha coefficient for Job Satisfaction (JS) factor was 0.939, Job Demand (JD) was 0.837, Job Resources (JR) was 0.892 and Flexible Work Arrangement (FWA) was 0.837 (Appendix AB). The number of items assessed for JS was 9, 4 items were assessed for JD, 5 items for WTD, 5 items for JR and 5 items for FWA giving a total of 28 items assessed for internal consistency and reliability.

In assessing the correlation reliability among items that formed the construct, the study adopted both the diagnostic reliability measures suggested by Hair *et al.* (2010). The outcome of the assessment shows coefficient of all items making up the model has exceeded the acceptable value of 0.50 for Corrected item-Total Correlation and was within the range of 0.30 and 0.80 for inter-item correlation. This means all items

that were assessed are correlated to each other within the construct they are representing.

When the individual item's Cronbach's-Alpha-if-item-deleted coefficient was compared with their construct alpha coefficient, almost all items show values below their respective constructs' alpha coefficient. The exception is item JR7 that has a coefficient of 0.911 compare to its construct's alpha coefficient of 0.892. The reason for this high coefficient is due to the low Corrected item-Total Correlation and inter-item Squared Multiple correlation value of 0.544 and 0.361 respectively. Although removing this item can bring the coefficient higher, the researcher chose to retain the item for the following reasons. One, the factor alpha coefficient has exceeded the acceptable alpha coefficient of 0.70. Second, the item has met the minimum acceptable value of both Corrected item-Total Correlation and inter-item correlation. Third, removing JR7 would only increase factor alpha coefficient by a small incremental of 0.02. Lastly, this item was adapted from past study as one of the construct items that is considered congruent to Job Resources. Removing this item would dilute the summated scale of this construct. Based on the above reasons, removing the item would not bring additional benefits to the study.

4.3.5 Second CFA of hypothesized conceptual model

A second CFA measurement model was performed after the completion of Exploratory Factor Analysis (EFA) to reassess the model fit of the refined hypothesized model. The results reveal a much improved model with fit values showing overall improvement (Table 4.2).

CMIN/df ($\chi 2$/df), CFI and NFI values show good fit. AGFI, RMR and RMSEA were in the moderate fit range. However, GFI and TLI remains less than satisfactory albeit with some improvement.

SEM requires a rather large sample size (n > 200) for path analysis, causal modeling, and covariance structure analysis (Kline, 2005). Some of the weak fit values such as GFI and AGFI could be attributed to low sample size of n=113 collected during the pilot study. A pilot study can provide only limited information and magnitude of variability of response measures therefore it is unlikely that a pilot study alone can provide data on variability for a power analysis to estimate in a well designed experiment (NC3Rs, 2014).

Table 4.2
Refined measurement model

Fit Values	*Score*	*Standard*	*Fit*
Chi Square	569.482		
df	326		
Chi Sq/df	1.75	< 2.0	Good
p-value	0	> 0.05	Model does not fit
Goodness-of-fit index (GFI)	0.80	> 0.90	Weak
Adjusted goodness-of-fit index (AGFI)	0.78	> 0.80	Moderate
Tucker-Lewis index (TLI)	0.88	≥ 0.90	Moderate
Comparative fit index (CFI)	0.90	≥ 0.90	Good
Normed fit index (NFI)	0.90	≥ 0.90	Good
Root mean square residual (RMR)	0.08	< 0.05	Moderate
Root mean square error of approximation (RMSEA)	0.08	< 0.05	Moderate

Since the fit values of the latent variables of the refined hypothesized measurement model have improved significantly having gone through exploratory factor analysis dimension reduction process, validity assessment for internal consistency, and reliability test, the refined model and its instrument are considered technically effective and ready for use in the actual study.

4.4 Main study analysis

For the main study, data was collected from the target sampling frame comprising of fixed schedule knowledge workers providing offshore outsourcing support in multi-national companies located at the MSC flagship town of Cyberjaya in Malaysia. It covered Information Technology outsourcing (ITO) and Business Process outsourcing (BPO) with a total MNC sampling frame of circa 8,854 employees and a sample size (n) of 306 responses.

For the main study, data collected for the pilot study was not used. This is to avoid bias from non-random convenience sampling used which is not representative of the entire population. The pilot sample data has also limitation in generalization and inference making about the whole population (Explorable, April, 2015).

In the approach taken for the main study, the data is first screened for response bias, missing data, multivariate and multicollinearity. Descriptive statistical analysis is then carried out on the validated sample to determine the relation of the respondents' demographics with the underlying factors in terms of their basic features and measures of central tendency and variability. It is followed by inferential statistics that is used to make generalization based on the observed descriptive statistics and the probability estimates drawn randomly from the target population (Banerjee & Chaudhury, 2010).

4.4.1 Data screening

Prior to descriptive and inferential statistical analysis, the data was screened to determine its "worthiness" and fit for use in subsequent statistical analyses. This process ensures the data is reliable, useable and valid for testing causal theory

(Statwiki, 2014). Hair *et al.* (2010) suggested examining normality, linearity, homoscedasticity, and independence of residuals first before drawing conclusions about the regression analysis. In addition, the assumption of multicollinearity should be examined (Hair *et al.,* 2010). Hair *et al.* (2010) further clarified that the assumptions would apply to all variables and their relationships that made up the model as a whole and that the residual plots can be employed if the analysis of residual that does not exhibit any nonlinear pattern to the residuals.

As suggested by Hair *et al.* (2010), the data screening tests employed for this study was carried out prior to the descriptive and inferential statistical analysis. These tests were:

- Missing data analysis
- Multivariate normality assessment
- Multivariate outlier detection
- Scatter plot linearity
- Homogeneity of variance and
- Multicollinearity test

In addition, the sample data was analyzed for reverse-coded questionnaires. Scores for such questionnaire were reversed accordingly to maintain consistency with other scores and avoid the affected score from being treated as outlier.

4.4.1.1 Missing data analysis and reverse order scale

Hair *et al.* (2010) defined missing data as valid values on one or more variables not made available for analysis. For this study, visual inspection was first carried out on

the main study sample data for possible missing value. Visual inspection is a most common form of method used for data acquisition and data analysis with an inspection inaccuracy rate of 2% for false positive and 23% rate for false negative (Schoonahd, Gould, & Miller, 1973). Data with missing values have to be either removed or missing values substituted, in order for statistical procedure to generate meaningful results. The visual inspection of the collected sample found no traces of missing values.

Frequency analysis was then performed using SPSS Descriptive Statistic frequency that confirmed no missing values were found for all 306 responses collected.

Scores received for question JR3 "*On my job, I have very little freedom to decide how I do my work.*" that was set in a reverse order scale were interchanged between the high and low score to maintain consistency with the scores for the other questions.

4.4.1.2 Multivariate normality assessment

Normality is assessed using a combination of skewness and kurtosis, histogram and q-q plot to determine the univariate normal distribution of the sample. Skewness is used in measuring asymmetry and kurtosis measures the "peak" of a distribution.

The result (Table 4.3) shows all constructs in the regression model were having negative skewness which indicates that the tail on the left side of constructs in assessment is longer than the right side of the constructs and the bulk of the values lie to the right of the mean (West, Finch, & Curran, 1995). However, the departure from normality is within the absolute skew range value of ±1.5 (Tabachnick & Fidell, 2013).

Similar to skewness, a perfect normal distribution for excess kurtosis is zero (West *et al.*, 1995). The kurtosis assessment that was carried out on the sample data showed returned values ranging from -1.249 for Work Time Demand construct to 0.994 for Job Resources. The kurtosis values for the rest of the constructs i.e. Job Satisfaction, Job Demand, Flexible Work Arrangement are between -1.249 and 0.994 (Table 4.3).

Table 4.3
Normality assessment using skewness and kurtosis

	Job Satisfaction	Job Demand	Work Time Demand	Job Resources	Flexible Work Arrangement
Skewness	-0.568	-0.551	-0.205	-0.233	-0.117
Kurtosis	-0.626	-0.068	-1.249	-0.994	-0.733

The positive value of the two constructs i.e. Job Demand (Kurtosis = 0.068) and Job Resources (Kurtosis = 0.994) indicates leptokurtic distribution or high peak distribution. Conversely, Job Satisfaction (Kurtosis = -0.626), Work Time Demand (Kurtosis = -1.249) and Flexible Work Arrangement (Kurtosis = -0.733) were all showing negative value which indicate flat-topped curve referred as platykurtic distribution (West *et al.*, 1995). The sample data for all five constructs were assessed within the reference of substantial departure from normality range of ±1.5 and accepted as normal (Tabachnick & Fidell, 2013).

Another method of testing data normality is using histogram to determine whether data are from a normal distribution. Correlation and regression tests can only be carried out in normal distributed data with linear relationship among the variables of which the data represent (Hair, Black, Babin, Anderson, & Tatham, 2006).

Data that is considered "worthy" and fit has normal distribution without noticeable skewness and bell-shaped (Coakes & Steed, 2001). The simplest method used in

testing data normality is by generating a histogram of the data and focusing on the vertical lines (Norusis, 1985).

Normality of data can also be observed using a normal probability plot (Hair *et al.,* 2006). A straight line moving diagonally upwards from the point of origin is considered a normal line. Plots on and around the line are residual values under study. Data that is normal have its residual values concentrated and centralized around the diagonal linear line. The normal probability plot used for this study was Q-Q plot. Both histogram and Q-Q plots are shown in Appendix J.

Results were consistent with skewness and kurtosis. The histogram for all variables shows inverted bell shape normal curves. When calibrated with Q-Q plot, the charts show the plots were centralized and concentrated along the linear normal line. The results are indication that the data representing the various understudied variables were normally distributed. No abnormal distribution was observed.

4.4.1.3 Multivariate outlier detection

The sample was then tested for outliers using Boxplot outlier labeling rule which is an automated way of detecting outliers in a normally distributed data by finding the difference between the first and third quartile of the distribution and multiplying it by a control parameter (g) of 2.2 (Hoaglin, Iglewicz, & Tukey, 1986). The threshold or lower (LF) and upper fence (UF) are defined from the resulting value added to the third quartile and subtracted from the first quartile values (Hoaglin *et al.,* 1986). The labeling rules identify outliers through the construction of a Boxplot with lower fence (LF) and upper fence (UF) serving as tolerance limits within which a specified large proportion of the sampled population are asserted to fall (Sim, Gan, & Chang, 2005).

The outcome of the test indicated by the lowest and highest extreme values of the data in the underlying constructs showed that the responses or cases that made up the constructs were within the Boxplot lower and upper tolerance limit (Table 4.4). Both Work Time Demand (lowest value = 1.00) and Flexible Work Arrangement (lowest value = 1.20) have lowest extreme case values that equal to their lower fence limit (WTD = 1.00, FWA = 1.20). Since both constructs' lowest case values did not breach the lower fence limit, the cases were all accepted.

Table 4.4
Boxplot outlier labeling

	Fence		Extreme Values	
Construct	Lower	Upper	Lowest	Highest
Job Satisfaction	0.88	5.55	1.50	4.75
Job Demand	1.00	6.03	1.67	4.67
Work Time Demand	1.00	6.48	1.00	4.60
Job Resources	0.67	5.24	1.33	4.89
Flexible Work Arrangment (FWA)	1.20	6.44	1.20	4.80

The findings further confirm that none of the cases in the main study sample were outliers. As such no adjustment was required on the collected sample.

4.4.1.4 Scatter plot linearity test

The linear relationship between two variables especially between the dependent variable and independent variable is known as linearity. For this study, a residual scatter plot was used to show the type of correlation between the independent variables and job satisfaction. The zero fit line in the scatter plot indicates homosedasticity which assume all values of the independent variable have similar variance around the regression line. If the assumptions are fulfilled, most residuals scatter along the zero fit line and scores concentrated at the 0 point in the centre (Flury & Riedwyl, 1998).

The scatter plot between Job Satisfaction and the job related factors including flexible work arrangement shows that the residual scores were centered and concentrated along the zero fit line with residual distributed fairly equal along the line (Appendix K).

The findings show linearity assumption was met and that homosedasticity was assumed for all values of job related factors.

4.4.1.5 Homogeneity of variance test (equality of variance)

Homogeneity of variance refers to all random variables having the same finite variance in the sequence or vector (Judd, 2014). Also known as homoscedasticity, it implies equal variances of the dependent variable at each observation of the independent variable that can be examined through residual plots (Hair *et al.*, 2010).

Homogeneity of variance is assumed to have been met if examination shows decreasing or increasing residuals. It is based on the underlying assumption that the population variances of two or more samples are considered relatively similar in terms of providing responses or exhibiting behaviors when subject to both t tests and F tests (analyses of variance, ANOVAs) (Davis, 2010).

The homogeneity of variance test used for this study was test of non-response bias. Sometimes in a survey sampling respondents might be unwilling to participate or participate reluctantly in the survey resulting in a non-response bias and the failure on the part of the research in collecting complete information on all items in the selected sample (Statistics Canada, 1998).

During the course of encouraging respondents to participate in the survey, multiple follow-up calls were made to the Human Resource representatives of the selected

companies who in turn followed up with the targeted members of their organization. In many cases, these unwilling respondents would delay their response until the closure of survey before completing.

Non-response bias if not treated would affect survey in two ways. One, the reduced sample size collected for a particular question would result in greater variance and larger standard errors. Second, when bias is introduced, the characteristic of interest from these non-respondents would differ from respondents within a selected sample (Statistics Canada, 1998).

In order to ensure no non-response bias, the researcher segregated the sample into two different groups. The first consisted of the first 30 respondents labeled as "Early". The second group labeled as "Late" was made up of the last 30 respondents. These two groups were then subjected to Levene's independent T-Test to determine whether the means of these two groups were statistically significant difference. Levene's independent T-Test is an inferential statistic used in assessing equality of variance calculated for two or more groups for a variable (Levene, 1960). It is indicated by the resulting p-value of Levene's test. P-value greater than 0.05 denotes sample variances that are significantly different based on random sampling from a population with equal variance (Levene, 1960).

Appendix AC shows the significant (Sig.) value of Levene's Test for Equality of Variances for all the constructs were greater than 0.05 which means that the standard deviation for homogeneity was not statistically significant. The constructs' t-value (t) of t-test for Equality of Means was less than the standard t-value of ±1.96 and therefore considered as not significantly different. These findings were collaborated by a non-significant (Sig. 2-tailed) p-value.

The outcome of Levene's independent T-Test indicates that the responses given by the early respondents and the late respondents for the job satisfaction survey were homoscedastic and non bias.

4.4.1.6 Multicollinearity test

Collinearity refers to the ability of an independent variable not only correlate with the dependent variable but also with other independent variable (s) in the same regression equation (Hair *et al.,* 2010). Two statistical methods can be used to assess multicollinearity are Variance inflation factor (VIF) and tolerance statistics.

Tolerance is a measure of collinearity where small tolerance value that is less than 0.10 indicates a multicollinearity problem and a tolerance that is close to 1 means there is little multicollinearity (O'Brien, 2007). The variable's tolerance level is indicated by 1-R2 where R is the coefficient of determination of a regression of the independent variable on other predictors.

VIF which is a reciprocal of tolerance (1/Tolerance) measures the impact of collinearity among variables in a regression model. Hair *et al.* (2010) suggested variance inflation factor (VIF) that is outside the range of 0.10 and 10.0 is a potential problem of multicollinearity.

For this study, the four variables of job related factors were tested for multicollinearity with Job Satisfaction as their dependent variable. All four met the criteria of low correlation among independent variables (Table 4.5).

Table 4.5
Collinearity Statistics

Variable	Tolerance	Tolerance threshold	VIF	VIF threshold
Job Resources	0.817	0.1(Highly correlated) - 1.0 (No correlation)	1.225	Acceptable VIF value (0.10 - 10.0)
Work Time Demand	0.982		1.018	
Job Demand	0.978		1.023	
Flexible Work Arrangement	0.825		1.212	

Dependent Variable: Job Satisfaction

Based on the range 0.10 for highly correlated and 1.0 for minimum collinearity for tolerance, both Work Time Demand and Job Demand variables have high tolerance value of 0.982 and 0.978 respectively. Even though Job Resources (JR) and Flexible Work Arrangement (FWA) have lower tolerance value at 0.817 and 0.825, both variables were considered to have low susceptibility of correlation with other independent variables.

Calibrating the variables' tolerance value with their variance inflation factor (VIF) confirms that their VIF values were within the threshold range of 0.10 and 10.0 for VIF.

4.4.1.7 Data screening summary

The series of data screening tests that were conducted confirmed reliability, usability and validity of the main study sample data collected and that the data was fit and worthy for used in subsequent statistical analysis.

4.4.2 Descriptive analysis

The next step is to understand the data and describe its basic features in terms of measures of central tendency and measures of variability. Measures of central tendency involve using mean, median and mode to describe the center of a data set. Variance on the other hand is a measure of the average distance a set of data lies from

its mean (Studycom, 2015). The analysis was undertaken with homoscedasticity being assumed based on the previous tests conducted.

4.4.2.1 Profile of respondents

The demographic profile of the respondents is shown in Table 4.6. The profile is segregated by the respondent gender, age, education, job category, years of work experience and the length of service with the company they were attached at the time when the survey was conducted.

Table 4.6
Profile of respondents

Category		Frequency	Percent (%)
Gender	Male	202	66.0
	Female	104	34.0
Age	Below 25	29	9.5
	25 to 34 years	112	36.6
	35 to 44 years	107	35.0
	45 to 54 years	36	11.8
	55 and above	22	7.2
Education	Secondary	10	3.3
	Diploma	43	14.1
	Degree	205	67.0
	Master	47	15.4
	Doctorate	1	0.3
Job Category	Non-executive	40	13.1
	Executive	207	67.6
	Management	59	19.3
Years of work experience	Below 2 years	11	3.6
	2 to 4 years	34	11.1
	5 to 7 years	90	29.4
	8 to 10 years	87	28.4
	More than 10 years	84	27.5
Length of service with company	Below 2 years	49	16.0
	2 to 4 years	97	31.7
	5 to 7 years	86	28.1
	8 to 10 years	51	16.7
	More than 10 years	23	7.5

The demographic profile shows that the number of male respondent who took part in the survey was almost twice as many compared to the female respondent with male making up 66% and female 34%. Out of the total responses, 230 or 72% of the respondents were between the age group of 25 and 44. This is expected as most of the target population that works in offshore outsourcing industry in Cyberjaya are graduates. According to AGCAS (2010) the average age at graduation for a bachelor degree in Malaysia is between 24-25 years. This statement is supported by the statistics shown in the Education category where 254 or 82.7% of the respondents were having at least bachelor or post graduate degree.

The job category shows that the number of executives is five times the non-executives and the number working at the management level was slightly higher than those working at non-executive level.

The working experience for those in the "5 to 7 years", "8 to 10 years" and those having "More than 10 years" groups were almost similar at 29%, 28% and 28% respectively. The remaining 17% were those "below 5 years" of working experience.

The statistics imply that majority of the targeted workforce were experienced professionals with many years of working experience. Among the age groups, the statistics reveal that those in the above 34 age group have had working experience of more than 7 years.

Majority of the respondents have relatively short length of service with their company. Those in the "2 to 4 years" length of service range have the most respondents (31.7%) followed by "5 to 7 years" range at 28.1%. However, 16% of the respondents have "less than 2 years" of service with the company. This is quite significant as it could imply a staff turnover of 16%. Whilst it is significant, the result

is not surprising as the nation's staff attrition rate for BPO is 19% and that of the general industry is 13.2% (Towers Watson, 2013).

4.4.2.2 Means and standard deviations analysis

Mean analysis is a common method of comparing means and variances across several groups with the aim of testing whether any of the group means, standard deviation and group ranges is statistically different from the overall groups (Nelson, Leibenluft, McClure, Pine, 2005). It is a measure of central tendency that offers a general view of the sample.

The results of the mean scores of independent, moderator and dependent variables shown in Table 4.7 has established that highest mean score was Job Demand ($\bar{x}$ =3.58) followed by Job Resources ($\bar{x}$=3.45), Job Satisfaction ($\bar{x}$=3.30), and Work Time Demand ($\bar{x}$=2.85). The variable with the least mean score was Flexible Work Arrangement ($\bar{x}$=3.28).

Table 4.7
Mean, standard deviation, mode and variance

Variable	Mean	Std. Deviation	Mode	Variance	Min	Max
Job Satisfaction	3.286	0.723	3.89	0.52	1.00	4.67
Job Resources	3.448	0.867	4.00	0.75	1.00	5.00
Work Time Demand	2.854	0.928	2.20	0.86	1.20	4.80
Job Demand	3.577	0.735	3.50	0.54	1.75	5.00
Flexible Work Arrangement	3.278	0.926	3.67	0.86	1.00	5.00

Tasmin and Wood (2008) suggested that in a 5-point scale, a mean rating value of 3.8 is considered high, between 2.4 and 3.7 is considered moderate and mean rating value below 2.3 is rated as low (Table 4.8). The rating when applied to the current study would mean respondents have rated majority of the questionnaires as moderate. The difference is in the degree of moderation.

Table 4.8
Extent level of mean

Extent	Range
Low	1.0 - 2.3
Medium	2.4 - 3.7
High	3.8 - 5.0

Source: Tasmin & Wood (2008)

Two interpretations implied from the mean score are work overload and psychological demand brought about by offshore outsourcing support, and the role of job resources in providing the necessary supervisory and co-worker support. These two variables were given the highest mean rating compare to the rest.

The mean score rating shows that respondents were positive about flexible work arrangement. Having the flexibility to plan when and where he or she works within a set of core working hours provide workers with better quality of work life that would help foster work-life balance and work-to-family enrichment. However, in a global virtual organization where real time communication among temporal dispersed teams is necessary, having schedule flexibility brings relief but would not compensate for the evening calls that the workers spent away from their families and social activities. Similar argument applies to Work Time Demand variable. At an average mean score rating of 2.8, it implies the majority of respondents considered the demand of work time in offshore outsourcing setting as immutable and that temporal dispersion boundaries and operating in different time zones are beyond the control of workers and are taken as part and parcel of offshore outsourcing support duties.

Sekaran and Bougie (2010) suggested using standard deviation and variance as measures to determine how dispersed data are in dataset. They further suggested that the standard deviation and variance should be less than 1.0 (Sekaran & Bougie, 2010). Data points that are close to the mean are indicated by a small standard deviation. The

inverse is true in the case of high standard deviation where data is spread over a large range of values. The results of standard deviation and variance (Table 4.8) for all five constructs were below 1.0 which showed that the data was well dispersed.

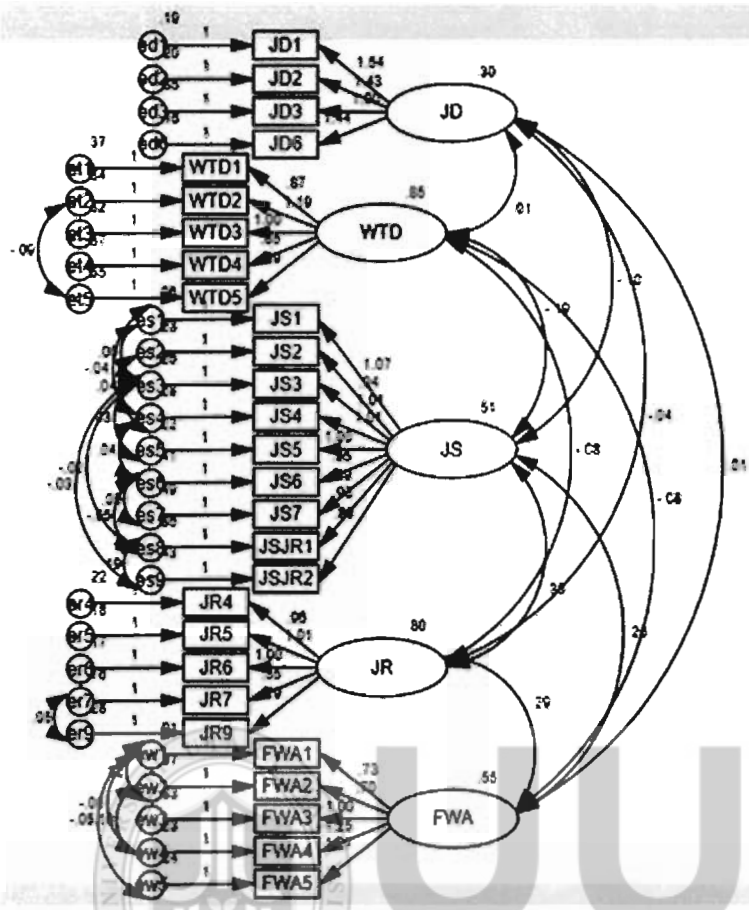
4.4.3 Inferential analysis

The statistics and observations made during descriptive analysis serve as inputs used by statistical inferential to draw conclusions about the target population. Whilst descriptive statistics concern with the characteristics of the observed sample, inferential statistics assume the data is from a larger related population and make inferences based on those observations.

4.4.3.1 CFA initial hypothesized model

As the main study is a full scale version of the pilot study, the approach used for this study emulates the steps taken during the pilot study. In order to avoid the possibility of a false positive or a type 1 error where the null hypothesized model is rejected even before it is tested, this study undertook the necessary steps to check the measurement fit of the initial hypothesized model by subjecting it to confirmatory factor analysis.

The SEM fit indices $\chi 2/df$, Goodness-of-fit index (GFI), Adjusted Goodness-of-fit index (AGFI), Normed fit index (NFI), Tucker-Lewis index (TLI), Comparative fit index (CFI), Root mean square error of approximation (RMSEA), Root mean square residual (RMR) and p-value used as measurement fit indices during the pilot study were applied for the main study.



Fit Values	*Score*	*Standard*	*Fit*
Chi Square	719.97		
df	324.00		
Chi Sq/df	2.22	< 2.0	Moderate
pClose	0.00	> 0.05	Model cannot be accepted
Goodness-of-fit index (GFI)	0.85	> 0.90	Moderate
Adjusted goodness-of-fit index (AGFI)	0.82	> 0.80	Good
Tucker-Lewis index (TLI)	0.93	> 0.90	Good
Comparative fit index (CFI)	0.94	> 0.90	Good
Normed fit index (NFI)	0.90	> 0.90	Good
Root mean square residual (RMR)	0.06	< 0.05	Moderate
Root mean square error of approximation (RMSEA)	0.06	< 0.05	Moderate

Figure 4.1
Initial hypothesized measurement model

There are two reasons for adopting this set of fit indices. First, using the same set of criteria would allow both the pilot and actual study a consistent and reliable way of measuring the fit of the model. Second, the fit indices were established measures used by researchers (Barrett, 2007; Kenny, 2014) in the past and recognized as standards for determining a good model fit.

The outcome of the confirmatory factor analysis (Figure 4.1) on the measurement model shows that a number of indices are in good fit range. The Chi square per degree of freedom is 2.222 slightly above its fit standard of 2.0. P-value is below the statistically significant threshold coefficient of 0.05. The significant alpha coefficient implies that variance between the hypothesized model and null hypothesized model is still significant which means the model could not be accepted. Although AGFI has a score of 0.817 that is considered a good fit, GFI with score of 0.854 is considered moderate fit and approaching the standard good fit value of 0.90. TLI, CFI and NFI are all showing good fit values with scores greater than 0.90. RMR and RMSEA are both just outside the good fit range of below 0.05.

Overall, the initial hypothesized model was considered only moderately fit and could not be accepted unless further modification made to its factor structure. In order to improve the model structure, exploratory factor analysis was undertaken.

4.4.3.2 Exploratory factor analysis of initial hypothesized model

Exploratory factor analysis (EFA) was performed with the aim of improving the model and correcting indicators cross-loaded onto other factors and measuring different underlying dimensions resulting in multicollinearity issues if not addressed.

Although EFA was carried out during the pilot study, non-random convenience sampling technique was used in collecting the sample. This data collection method is different from the actual study which uses stratified random sampling technique. As such, certain degree of variances is expected with actual study. The respondents for the actual study are from the same sample frame as that of the pilot study. Hence, the researcher does not anticipate an extreme variance during EFA.

Similar to pilot study, two EFA extraction methods were used. The principal component analysis (PCA) was first performed to identify latent variables. It was then followed by principal axis factoring (PAF) restricting the indicators rotation within the number of identified latent variables.

4.4.3.3 Principal component analysis (PCA)

Before EFA, test for sampling adequacy and null hypothesis was carried out using KMO and Bartlett's Test.

a. KMO and Bartlett's Test

The result of KMO and Bartlett's test shows significant alpha value (Sig = 0.000) for Bartlett's and 0.877 for Kaiser-Meyer-Olkin measure of sample adequacy (Appendix L).

Bartlett's test of sphericity is used for testing null hypothesis for uncorrelated variables in the population correlation matrix. This means if the correlation matrix is an identity matrix, variables are implied uncorrelated when all diagonal elements are 1 and all off-diagonal elements are zeros (Rubio *et al.,* 2014). If the significant value is less than alpha level, the null hypothesis is rejected that the population matrix is an

identity matrix (Rubio *et al.,* 2014). As the result is significant, the null hypothesis was rejected.

KMO is used to measure internal consistency. In comparison with ordinary correlation coefficients, a KMO measure that is closer to 1.0 confirms small partial correlation coefficient (Haper & Jin, 2012). In accordance to Kaiser (as cited in Haper & Jin, 2012), measure of sampling adequacy above 0.90 is considered marvelous, in the 0.80s meritorious, in the 0.70s middling, in the 0.60s mediocre, in the 0.50s miserable and measure that is below 0.50 is considered not acceptable. In this case, the KMO measure was shown as meritorious and met the minimum criteria to proceed with PCA.

b. PCA with varimax rotation

PCA is a variable reduction technique for reducing the number of observed variables to a small number of principal components that account for most of the variance of the observed variables. Similar to the pilot study, varimax rotation was used in the extraction of principal components because of uncorrelated factors and also to maximize the variance of the factors while minimizing the variance of the new underlying variable (Costello & Osborne, 2005). Kaiser (1960) proposed to retain only factors with eigenvalues equal or higher than 1.0.

Based on this criterion, 6 factors with eigenvalue greater than 1.0 were extracted constituting 74.78% of the total variance explained (Appendix M).

c. Scree Test

Scree test was then carried out to verify the number of factors extracted by PCA. This was conducted following the suggestion given by Karan (2013) to inspect the

generated segment plot for descending order of eigenvalues magnitude of correlated matrix until a sharp drop in the plot, and Zoski and Jurs's (1990) guidelines:

- The number of sequential points for drawing the scree plot should be at least three.
- The first break point should be used when multiple break points exist in the curve.
- The slope of the curve should have an angle of 40 degrees or less from the horizontal.

Based on a combination of Karan's (2013) suggestion, and Zoski and Jurs's (1990) guidelines, the interpreted Scree Plot shows a total of five latent variables up to the first break point where the line indicates an elbow followed by a sharp drop and a less than 40 degrees angle from the horizon (Appendix N).

Past studies (Cattel & Jaspers, 1967; Hakstian *et al.*, 1982) had shown that Kaiser eigenvalue greater than one rule sometimes retains too many factors and scree test sometimes retains too few although under normal conditions both perform quite well. In this case, six factors were extracted using Kaiser criterion and five factors were extracted using Scree plot. As "tie-breaker", Ledesma and Valeo-Mora (2007) recommended using Monte Carlo parallel analysis simulation technique as a superior alternative in ascertaining the number of factors to retain in Principal component analysis.

d. Monte Carlo PCA for parallel analysis

Monte Carlo PCA determines the number of factors required to be retained for rotation in factor analysis by computing basing on the parallel analysis criteria (eigenvalues). The randomly generated eigenvalues tables were found accurate and make parallel analysis accessible (Velicer *et al.,* 2000).

Appendix O shows the outcome of Monte Carlo PCA analysis simulation using sample size (n = 306), the total number of variables as 28 and eigenvalues randomly generated from 100 replications. The Kaiser's eigenvalues generated by PCA varimax rotation were then compared with the eigenvalues generated by Monte Carlo PCA. Factors accepted were those extracted from PCA varimax rotation with eigenvalue higher than their corresponding random generated eigenvalues produced by Monte Carlo PCA.

The comparison in Appendix O shows that Kaiser's eigenvalues were higher than those generated by Monte Carlo PCA analysis simulation for the first five factors. The turning point was at the sixth when the Kaiser's eigenvalue dropped from 1.835 to 1.216 making it below the random generated eigenvalue (1.2914) of the sixth Monte Carlo PCA factor. As a result, five of the factors in the Total Variance Explained report were accepted. The result is in line with the observation made for Scree plot.

e. Rotated component matrix

Each of the accepted latent variables was then investigated on their item loadings and correlation between the variable and other estimated components using rotated component matrix which is a key output of principal component analysis (Surveyanalysis, 2015).

In the rotated component matrix table (Appendix P), 6 factors from Kaiser normalization were shown although the accepted latent variables were 5. All items loaded on the factors have high loading above 0.70 with the exception of JR7 "*I can ask my colleagues for help if necessary*" having a loading of 0.461. As JR7 loading was above 0.4 it was retained. The rotated component matrix table shows nine items

were loaded on factor 1, five items were loaded on factor 2 and factor 3 respectively, four items were loaded on factor 4, and factor 5 was loaded with three items.

The last factor that was not accepted in accordance to parallel analysis was loaded with just 2 items. These two items FWA1 "*How often are you allowed to define the beginning and ending times of your work for a particular time period*" and FWA2 "*How often are you allowed to define the beginning and ending times on daily basis?*" are similar resulting in respondents giving similar score for both the questions. Costello and Osborne (2005) suggested that the best fit to the data is component with item loadings greater than 0.3 with no or few items cross loadings and having no fewer than three items. As such, both the items were dropped from further analysis in tandem with factor 6.

f. Principal axis factoring with promax rotation (PAF)

After having identified and correlated the latent variables, EFA was rerun this time changing the "principal component" to "principal axis" as the factors were by then known and correlated. Unlike principal component analysis, principal axis factoring delineates the latent variables underlying the data and focus on the common variance among the items (Fabrigar *et al.,* 1999). The number of variables was set to 5 in line with the accepted number of identified factors.

The pattern matrix table shown in Appendix Q using promax rotation and principal axis factoring extraction revealed no changes to the items loaded onto all 5 factors. All the items have loading above 0.70 with the exception of JR7 previously having a low loading during PCA was not loaded on any of the factors in PAF. This item was removed from further analysis.

h. Factor labeling

The method used in assigning labels to the latent variables for the main study followed the same method that was used during the pilot study which is examining highly loaded items within the factor and determining what among those items is in common (Fabrigar *et al.,* 1999).

Referring to Appendix Q, items in the first column was labeled as "Job Satisfaction" since all items in this column were related to intrinsic motivation and external hygiene factors. The second column comprised of five items that were related to work time demand and hence the factor was labeled as "Work Time Demand". The third column comprised of items associated with decision authority, co-workers and supervisory support. These items were grouped as "Job Resources". The fourth column comprised of those items that were related to psychology and work demand. As such, the factor was labeled as "Job Demand". The fifth and the final accepted factor belonged to those items related to flexi-time and flexi-place, therefore labeled as "Flexible Work Arrangement".

In summary, the five factors derived from factor analysis are "Job Satisfaction", "Work Time Demand", "Job Resources", "Job Demand" and "Flexible Work Arrangement". These factors are similar to the original variables in the conceptual framework. As such, the research objectives of the study remain unchanged.

With the completion of exploratory factor analysis, the factor structure is ready to proceed with reliability test.

4.4.3.4 Cronbach's Alpha

Cronbach's alpha coefficient of reliability was used to evaluate internal consistency of items in the identified variable. The reliability is determined by internal consistency-check among variables in a summated scale (Hair *et al.,* 2010) and whether the items or indicators of scale of these variables are highly inter-correlated (Nunnally, 1978).

As advocated by Hair *et al.* (2010) and Robinson *et al.* (1991a), the two most common diagnostic reliability measures i.e. Corrected items-Total Correlation (correlation of an item to summated scale score) and inter-item correlation were used for the study.

In addition, it is important to examine the overall Cronbach's alpha coefficient if a given item within the measured construct were removed. The reason is to improve the internal consistency that contributes to the overall construct reliability.

All constructs shown in Appendix R have Cronbach's alpha coefficient exceeded 0.70. Robinson *et al.* (1991a) suggested an acceptable alpha coefficient of 0.60 for exploratory research, and Nunnally (1978) suggested coefficient of 0.70 for non-exploratory research. It indicated a high level of consistency between each of the constructs with other constructs in the regression model.

The Corrected item-Total Correlation coefficient of all items that made up the constructs exceeded the accepted threshold of 0.50 suggested by Robinson *et al.* (1991a). The result shows a strong positive correlation between each of the items and the summated scales measuring the underlying constructs.

Inter-item correlation matrix for all constructs in Appendix S shows the constructs' items were within the range of 0.30 and 0.80 suggested by Coles *et al.* (2014) as the acceptable coefficient range for correlated pairs within the same construct.

All the items with the exception of JD3 "*How often does it occur that you have to work extra hard to finish your work?"* have Cronbach's alpha if item deleted coefficient of less than their construct Cronbach's alpha coefficient. JD3 has a "Cronbach's alpha if item deleted" coefficient of 0.914 which is higher than Job Demand construct Cronbach's alpha of 0.900. However, investigation revealed that removing the item was not advisable due to the following reasons.

One, the alpha coefficient between the existing construct alpha and the adjusted alpha if the item were removed would not result in significant change on the construct alpha coefficient as the difference is just 0.014. Second, the corrected item-total correlation coefficient of the item at 0.647 is relatively high indicating a strong positive correlation between the item and the summated scale for the construct. Third, the inter-item correlation matrix of JD3 reveals that its correlation with JD1 (0.595), JD2 (0.607) and JD6 (0.592) is within the acceptable range of 0.30 and 0.80 indicating strong correlation between JD3, and JD1, JD2 and JD6 when matched as a pair. Finally, this item was adapted from past study as one of the Job Demand construct items. Removing this item would dilute the summated scale of this construct.

4.4.3.5 Correlation among variables

The next step is to examine the relationship among the identified factors in the regression model using correlation analysis which is a technique for examining relationship and measuring the strength of association between variables.

For this study, Pearson's correlation of coefficient was used in measuring the association of the 5 constructs forming the regression model. Two-tailed significant test was used to determine the strength of their relationship. Pallant (2005) suggested zero "0" for variables that have no relationship and one "1" for variables that have

perfect positive correlation. Cohen *et al.* (2003) provided a guideline in the interpretation of the correlated coefficient shown in Table 4.9.

Table 4.9
Guideline for Pearson correlation

Negative	Positive	Correlation
-0.10 to -0.29	0.10 to 0.29	Weak
-0.30 to -0.49	0.30 to 0.49	Moderate
-0.50 to -1.00	0.50 to 1.00	Strong

Source: Cohen *et al.* (2003)

Table 4.10 shows that Job Satisfaction and Job Resources are strongly and significantly ($r = 0.533$, $p<0.01$) correlated with each other. The positive (+ve) correlation implies a direct correlation where both Job Resources and Job Satisfaction move in the same direction.

This means any increase in co-worker and supervisory support, would most likely see a corresponding increase in the level of job satisfaction. However, the correlation is based on the observed trend and does not establish a causal relationship between Job Resources and Job Satisfaction.

Conversely, both Work Time Demand and Job Demand variables have weak but significant negative correlation ($r = -0.254$, $p < 0.01$ and $r = -0.239$, $p < 0.01$ respectively) with Job Satisfaction. Due to the inversed correlation, increase in demand-related factors would most likely see a reducing effect on intrinsic motivation of the staff. However, the impact may not be as great as Job Resources since both the variables are less correlated.

Table 4.10
Correlations

	Job Satisfaction	Job Resources	Work Time Demand	Job Demand	Flexible Work Arrangement
Job Satisfaction	1				
Job Resources	.533**	1			
Work Time Demand	-.254**	-.084	1		
Job Demand	-.239**	-.108	-.070	1	
Flexible Work Arrangement	.448**	.409**	-.099	.019	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The relation between Flexible Work Arrangement and Job Satisfaction variables are positively moderate and significant ($r = 0.448$, $p < 0.05$). It implies that improvement to schedule flexibility in the work place would see an increase in the level of employee job satisfaction.

On the other hand, Job Resources variable has a negligible and non significant relation with the demand-related factors (Work Time Demand $r = -0.084$, $p > 0.05$, Job Demand $r = -0.108$, $p > 0.05$). This means that any change in co-worker support, supervisory support or decision authority might not see corresponding change on the demand of their work. However, it has a moderate and significant positive relation with Flexible Work Arrangement variable. As both the variables are moderately correlated, increase in schedule flexibility would most likely see an increase in co-worker and supervisory support.

The demand-related factor of Work Time Demand and Job Demand variable did not have significant relation with each other. The same applies to the magnitude of their relation ($r = 0.70$, $p > 0.05$). It implies that changes in work, psychology or time demand would unlikely show a significant change on each other. The same applies to

their relation with Flexible Work Arrangement variable (Work Time Demand r = 0.099, p > 0.05, Job Demand r = 0.019, p > 0.05).

Overall results show significant correlation between the dependent variable of Job Satisfaction and its independent variables of Job Resources, Work Time Demand and Job Demand. The other significant correlation is between the moderator variable of Flexible Work Arrangement and Job Resources variable. These results indicate a statistically significant relation between the dependent variable and predictors in a multiple regression model. The results eliminate the concern of multicollinearity among the predictors that could result in erratic coefficient estimates from small changes in the model.

The correlation analysis has given an indication of adequate relation among the variables. It allows the study to progress to the next phase of confirmatory factor analysis measuring the underlying variables and determining the fit of the hypothesized measurement model.

4.4.3.6 CFA refined measurement model fit and modification

The initial hypothesized model used at the beginning of the main study was slightly modified having gone through the exploratory factor analysis. Items FWA1 and FWA2 were removed from Flexible Work Arrangement construct during EFA and item JR7 was removed due to low factor loading.

The outcome of the confirmatory factor analysis (Table 4.11) shows an overall improvement for all fit indices. Chi square per degree of freedom at 2.122 is close to the threshold of below 2.0. GFI (0.877) fit value has improved but still below the fit value of greater than 0.90 deemed as good fit. However, AGFI (0.842) fit is above the good fit value of 0.80 (Cruz *et al.,* 2012). TLI (0.939), CFI (0.949) and NFI (0.908)

are all above the threshold of 0.90. RMR (0.051) and RMSEA (0.061) were just outside the threshold of 0.50. P-value is below the significant alpha coefficient of 0.05, which means the model could not be accepted.

Based on the fit indices, the measurement model is considered moderately fit. It shows that there are still "fit" issues between the proposed correlations and the observed correlations. In order to improve the fit measures of the proposed model, modifications of the underlying factors are required. This is carried out through a combination of examining the indicators' factor loading, performing unidimensionality testing and evaluating data set to confirm the underlying structure on the basis of theoretical ground (Mueller, 1996).

Table 4.11
Refined hypothesized measurement model

Fit Values	Score	Standard	Fit
Chi Square	539.105		
df	254		
Chi Sq/df	2.122	< 2.0	Moderate
p-value	0	> 0.05	Model cannot be accepted
Goodness-of-fit index (GFI)	0.877	> 0.90	Moderate
Adjusted goodness-of-fit index (AGFI)	0.842	> 0.80	Good
Tucker-Lewis index (TLI)	0.939	> 0.90	Good
Comparative fit index (CFI)	0.949	> 0.90	Good
Normed fit index (NFI)	0.908	> 0.90	Good
Root mean square residual (RMR)	0.051	< 0.05	Moderate
Root mean square error of approximation (RMSEA)	0.061	< 0.05	Moderate

The examination of the indicators' factor loading is based on the alpha coefficient threshold of 0.70 (Nunnally, 1978). In terms of unidimensionality testing, modification indices (MI) and standardized residual covariances are used to verify the dimensionality of the measurement. Modification indices offer remedies for discrepancies found between proposed and estimated mode by co-varying error terms within the same factor (Kenny, 2011).

Standardized Residual Covariances (SRCs) have similar properties as MI in raising differences between the proposed and estimated models. SRCs provide more description on the differences by indicating whether the discrepancies are significant.

Anderson and Gerbing (1988) suggested the preferred basic ways to respecify the model is by relating or removing the indicator from the model under unacceptable but converged and proper solutions. Kenny (2011) suggested evaluating the measures and considering dropping those measures that have large standardized residuals and modification indices.

a. Factor loading

In assessing the reliability of the factors, Cronbach's alpha was used since it remains the best method to estimate reliability even though it may underestimate reliability (Hair *et al.,* 2010). The indicators of the underlying factors show high internal consistency and reliability among the indicators. All indicators that were examined shows coefficient greater than 0.70. As the indicators have shown high internal consistency and reliability, no further actions were deemed necessary.

b. Modification Indices (MI)

The modification indices threshold for output is set at 7.882. Joreskog and Sorbom (1993) suggested that at 0.5% default value for alpha (α), the MI should be greater than 7.882 for it to be considered large. MI covariance matrix (Table 4.12) shows a list of large MIs for the covariance of error terms for a same factor.

Table 4.12
Indicators with large variance

Error term correlation			M.I.	Par Change
es8	<-->	es9	67.449	0.193
es3	<-->	es1	13.474	0.06
es5	<-->	es1	10.504	-0.065
es6	<-->	es7	8.778	-0.053
er4	<-->	er9	8.063	0.048

The error term es8 <--> es9 of JSJR2 "*I have a lot of say about what happens on my job.*" and JSJR1 "*My job allows me to make a lot of decisions on my own"* has a high modification indices (M.I.) of 67.449. Error term of indicator JS1 "*I am satisfied with the sense of achievement I get from my job",* with JS3 "*I am satisfied with the work I do"* and JS5 "*In my work, I feel appreciated by my supervisor"* respectively has large M.I. indicated by es3 <--> es1 (M.I. = 13.474) and es5 <--> es1 (M.I. = 10.504). Similarly, error term covariance (es6 <--> es7) of indicator JS6 "*I feel my job is secure"* and indicator JS7 *"I am satisfied with the training I have received"* has an M.I value (8.778) that is greater than the threshold of 7.882. The other highly co-varied error term pair (er4 <--> er9, M.I. = 8.063) is indicator JR4 "*My supervisor is concerned about the welfare of those under him/her."* and JR9 *"People I work with are competent in doing their jobs".*

As these indicators are linearly associated with each other, their error terms were co-varied to improve the fit of the measurement model. The actions taken had brought improvement but not enough to have all indices qualified as good measurement fit. The other recommended solution is to inspect large standardized residual for the possibility of dropping the affected indicators.

c. Standardized residual covariances (SRCs)

Before inspecting for large standardized residuals, there is a need to determine the meaning of large residual. Brown (2015) suggested using statistically significant z score at $p < 0.05$ which correspond to an absolute critical value of 1.96 rounded up to 2.00. Byrne (2014) suggested a larger cutoff value of 2.58 based on the alpha level of $P < 0.01$. The rationale is sample size (n) influences the size of standardized residuals and larger N contributes to larger standardized residuals. Brown (2015) concluded suggesting a cutoff of 2.00 or 2.58 as a general guideline for standardized residuals diagnostics but also to look for standardized residuals with outlying values.

As recommended by researchers (Anderson & Gerbing, 1988; Kenny, 2011) to remove indicators with large standardized residuals from the regression model, it is critical to determine the minimum retained indicators required for each factor. Kline (2011) suggested that the requirement for a minimum number of indicators should either be two or three per factor depending on the pattern of error correlations or constraints imposed on factor loadings. He further suggested that the minimum number of retained indicators must meet all three of the conditions (Kline, 2011):

- For each factor, there are at least three indicators whose errors are uncorrelated with each other or if there are at least two indicators, the errors of both indicators are not correlated with error term of a third indicator for another factor.
- For every pair of factors, there are at least two indicators, one from each factor, whose error terms are uncorrelated.
- For every indicator, there is at least one other indicator not necessarily of the same factor with which its error term is not correlated.

This study followed the recommendations by Brown (2015) of having standardized residual cutoff threshold at 1.96 which is the statistically significant z score of $p < 0.05$. In addition, further examination was made to detect indicators with outlying values.

The minimum indicators used for the study was set at three indicators per factor. Costello and Osborne (2005) suggested amongst others, the best fit to the data are items with loading greater than 0.3 with few items cross loadings and having no few than three indicators in a factor. For factors with just three indicators, effort is taken to ensure compliance to conditions suggested by Kline (2011) that measurement errors are not co-varied with each other within the same factor and at least one indicator is not co-varied with indicators from other factors (Kline, 2011).

As FWA factor was already down to the minimum three indicators, further removal of indicators from FWA would conflict with the minimum number of indicators set for the study. As such, a conscious decision was made not to take any action on FWA indicators even though one of the indicators FWA3 "*How often are you allowed to take time offs during the working hours of a particular day for specific reasons, such as a medical appointment?"* has residual greater than 1.96.

No measurement error was found among the three indicators of FWA3, FWA4 and FWA5. Examination of M.I. covariance matrix showed although FWA4 error term ew4 and FWA5 error term ew5 were co-varied with other factor indicators, FWA3 error term ew3 was not. This satisfied the second condition of at least one error term without correlation with error term from another factor and third condition of at least one other error term without correlation (Kline, 2011). As such, all FWA indicators inspected were found to have complied with Kline's (2011) identification rule 6.6.

There are nine indicators making up the factor of Job Satisfaction. These indicators were inspected in SRC matrix (Appendix T) for possible large standardized residuals. Four of the indicator residuals were found to have residuals that are more than 1.96 and correlated with different indicators. The four indicators JSJR1 *"My job allows me to make a lot of decisions on my own"*, JSJR2 *"I have a lot of say about what happens on my job"*, JS3 *"I am satisfied with the work I do"*, and indicator JS4 *"My manager involves me in decision making"* were removed from measuring Job Satisfaction factor. The remaining five indicators are below the threshold of 1.96.

Job Demand factor has a total of four indicators in the regression model. This means only one of the four indicators can be removed. The four indicators were inspected for residuals greater than 1.96. JD3 *"How often does it occur that you have to work extra hard to finish your work?"* was found to have the most number of large residuals and was removed. M.I. covariance matrix shows co-varied error terms for indicator JD1 and JD2 but none for JD6. Therefore Kline's minimum number of indicators per factor conditions was met (Kline, 2011).

Of the five indicators in the Work Time Demand factor, two of the indicators WTD2 *"My job requires me to adapt my working times to the demands of global collaboration"* and WTD5 *"Usually I take office work home which I couldn't complete during the day"* had having large residuals and were removed leaving a remaining three indicators. The M.I. covariance matrix shows error term covariance for indicator WTD1 and WTD3. There is no correlation for WTD4 error term hence meeting the conditions of minimum number of indicators per factor (Kline, 2011).

Job Resources factor comprised of four indicators allowing at most one indicator that can be removed. Compared to the three indicators JR4, JR6 and JR9, JR5 *"In my*

work, I feel appreciated by my supervisor" has the most outlying value shown in SRC matrix and was removed. The error term er4 and er6 representing indicator JR4 and JR6 were found to have correlation with error terms in other factors. However, there was no co-varied error term for indicator JR9 therefore fulfilling the second and third condition of Kline's minimum number of indicators per factor (Kline, 2011).

In summary, the outcome of the M.I. examination and SRC matrix diagnostic have resulted in a co-variance of error term es6 <--> es7 representing indicator JS6 and JS7 respectively and co-variance of error term es5 <--> es1 representing indicator JS5 and JS1. The other co-varied error terms identified during M.I. covariance inspection were dropped in tandem with the removal of their indicators.

Following diagnostic based on SRC matrix, eight indicators measuring different factors with residuals exceeded the threshold of 1.96 were removed from the regression model. The eight indicators were JSJR1, JSJR2, JS3, JS4, JR5, WTD2, WTD5 and JD3.

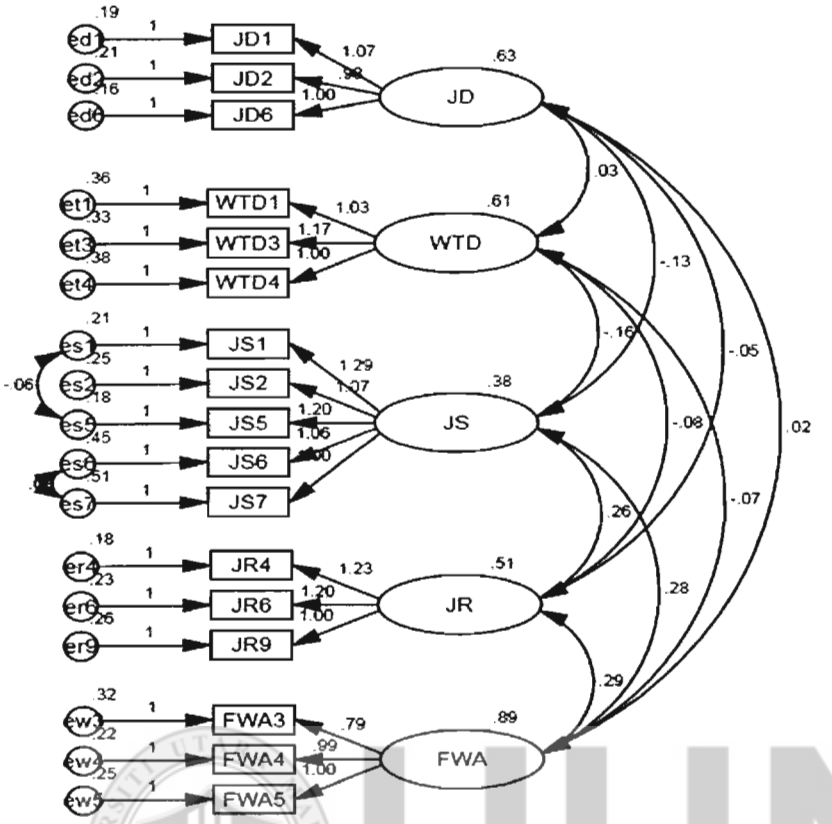
The remaining factors that have a minimum of three indicators per factor were tested and found in compliance with identification rule 6.6 suggested by Kline (2011).

4.4.3.7 CFA final respecified model

The final respecified model (Figure 4.2) shows significant improvements with all measurement fit indices meeting the minimum level of value requirement for good fit.

- CMIN/degree of freedom ($\chi 2$/df)

The result of the model fit analysis shows a $\chi 2$/df ratio of 1.380 which is below the ratio threshold of 2.0. This means that the fit of the model is assessed as an adequate fit (Byrne, 2001).



Fit Values	Score	Standard	Fit
Chi Square	147.634		
df	107		
Chi Sq/df	1.380	< 2.0	Good
p-value	0.06	> 0.05	Model is accepted
Goodness-of-fit index (GFI)	0.947	> 0.90	Good
Adjusted goodness-of-fit index (AGFI)	0.925	> 0.80	Good
Tucker-Lewis index (TLI)	0.984	> 0.90	Good
Comparative fit index (CFI)	0.987	> 0.90	Good
Normed fit index (NFI)	0.955	> 0.90	Good
Root mean square residual (RMR)	0.034	< 0.05	Good
Root mean square error of approximiation (RMSEA)	0.036	< 0.05	Good

Figure 4.2
Final (respecified) measurement model

- Goodness-of-fit index (GFI) and Adjusted Goodness-of-fit index (AGFI)

The score of goodness-of-fit (GFI) and adjusted goodness-of-fit indices are 0.947 and 0.925 respectively. The scores exceeded the value of 0.90 for GFI and 0.80 for AGFI and hence considered a good value (Cruz *et al.,* 2012). The good fit values suggest

model efficiency which means that the generated model is able to reproduce the observed model.

- Normed fit index (NFI)and Tucker-Lewis index (TLI)

The fit values for normed fit index (NFI) and Tucker-Lewis index (TLI) are 0.955 and 0.984 respectively which are higher than the minimum good fit threshold of 0.90 (Cruz *et al.,* 2012). This means that the fit of the regression model as assessed by TLI is good. NFI complements TLI as an incremental fit measure shows a closely matched hypothesized model with the null model in terms of their $\chi 2$ value (Bentler & Bonnett, 1980).

- Comparative fit index (CFI)

The comparative fit index (CFI) value of 0.987 is higher than the minimum threshold of 0.90 giving an indication of a sound model based on the differences between the sample data and the hypothesized model (Cruz *et al.,* 2012).

- Root mean square error of approximation (RMSEA) and Root mean square residual (RMR)

The results show that the fit value for root mean square error of approximation (RMSEA) and root mean square residual (RMR) at 0.036 and 0.034 are both within the acceptable model indicative value of 0.05 or less (Zencaroline, 2007). The RMESEA and RMR fit values further confirm CFI's deduction of a sound model by analyzing the discrepancy between the model and the optimally chosen parameter estimates and population covariance matrix (Bentler, 1990).

- p-value

Finally, p-value shows a non-significant alpha coefficient of 0.06 that was above the minimum threshold of 0.05 for a good model fit (Barrett, 2007). The result indicates a close fitting model between the hypothesized model and the null hypothesis albeit some specification error (Kenny, 2014). The good model fit is confirmed with both RMSEA and p-value fit measures fulfilling their respective minimum threshold requirement of a good fit.

The model fit analysis has established that the final respecified model possessed all necessary good fit requirements to proceed with the convergent and discriminant validity.

4.4.3.8 Construct reliability and validity

As modifications carried out especially with the removals of large residual indicators could have impacted the regression model structure, there is a need to reassess the reliability and validity of the constructs. Testing causal structural model without demonstrating validity and reliability adequacy in the constructs would be futile since issues arising from validity and reliability would be reflected in the structural model test. Hair *et al.* (2010) suggested assessing the construct reliability first before examining its validity.

Construct reliability

Table 4.13 shows Cronbach's alpha and factor loading for the indicators making up their respectively variables. Even though factor reliability was assessed during the initial measurement fit analysis, the loadings were re-checked for possible

degradation of factor alpha coefficient due to the possibility that some of the high loading items could have been removed during model respecification.

The results show all variables in the regression model having alpha coefficient greater than 0.70. According to Nunnally (1978) the alpha coefficient threshold of 0.70 is sufficient to indicate internal consistency for non-exploratory research. The results indicate that the internal consistency and reliability among the underlying variables remain high despite a drop in coefficient for all variables that were measured. For e.g. the coefficient for Job Satisfaction is reduced to 0.86 from 0.93, Job Resources is reduced from 0.93 to 0.88, and Job Demand is reduced to 0.81 from 0.90.

Table 4.13
Internal consistency and reliability measurement of refined model

Construct	Item	Cronbach's Alpha	Factor Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
WTD	WTD4	0.83	0.79	0.853	0.659
	WTD3		0.85		
	WTD1		0.80		
JS	JS7	0.86	0.65	0.886	0.612
	JS6		0.70		
	JS5		0.87		
	JS2		0.79		
	JS1		0.88		
JR	JR9	0.88	0.77	0.886	0.722
	JR6		0.92		
	JR4		0.86		
FWA	FWA5	0.83	0.88	0.894	0.737
	FWA4		0.89		
	FWA3		0.80		
JD	JD6	0.81	0.72	0.860	0.674
	JD2		0.87		
	JD1		0.87		

The factor loading for all items was at least 0.70 except item JS7 "*I am satisfied with the training I have received*" having a loading of 0.65. Matsunaga (2010) suggested that on a conventional liberal-to-conservative continuum, the setting for the lowest

acceptable (liberal) factor loading is 0.40 whereas the conservative limit is 0.60 or 0.70. As such all the items in the regression model are accepted.

Construct validity

In establishing construct validity of the regression model, both convergent and discriminant validity were used. Whilst convergent validity measures constructs that are theoretical related are actually observed to be related, discriminant validity measures constructs that theoretically should not be related are actually not related to each other.

a. Convergent validity

Convergent validity uses composite reliability (CR) and average variance extracted (AVE) to assess construct validity (Fornell & Larcker, 1981; Hair, 2005). The computation of AVE is based on the mean variance of items loaded on a construct. The formula used in computing AVE with standardized loadings is:

$$AVE = \frac{\sum_{i=1}^{n} L_i^{\,2}}{n}$$

Where $\sum_{i=1}^{n} L_i^{\,2}$ refers to square of standardized factor loading (L) and n denotes the number of items.

Computation of AVE for the constructs shows values ranging from 0.612 and 0.737 (Table 4.14).

Table 4.14
Convergent validity matrix

Construct	Item	Cronbach's Alpha	Factor Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
WTD	WTD4	0.83	0.79	0.853	0.659
	WTD3		0.85		
	WTD1		0.80		
JS	JS7	0.86	0.65	0.886	0.612
	JS6		0.70		
	JS5		0.87		
	JS2		0.79		
	JS1		0.88		
JR	JR9	0.88	0.77	0.886	0.722
	JR6		0.92		
	JR4		0.86		
FWA	FWA5	0.83	0.88	0.894	0.737
	FWA4		0.89		
	FWA3		0.80		
JD	JD6	0.81	0.72	0.860	0.674
	JD2		0.87		
	JD1		0.87		

The AVE value of Work Time Demand is 0.659, Job Satisfaction is 0.612, Job Resources is 0.722, Flexible Work Arrangement is 0.737 and Job Demand is 0.674. According to Fornell & Larcker (1981), AVE that is greater than 0.50 indicates variance due to measurement error is less than variance due to construct. As the computed AVE value for all constructs is greater than 0.50, it implies that the variance of constructs in the regression model is more than the measurement error variance.

Composite reliability is used for measuring internal consistency of how closely constructs are correlated. According to Fornell and Larcker (1981), composite reliability is more robust compare to Cronbach's alpha. The formula used in computing composite reliability is:

$$\text{Composite reliability} = \frac{(\sum \text{Standardized Loading})^2}{(\sum \text{Standardized Loading})^2 + \sum \varepsilon j}$$

Where εj refers to error variance.

The threshold value for composite reliability is set at 0.70 (Fornell & Larcker, 1981). The outcome of composite reliability computation shows all constructs are having CR value greater than the threshold of 0.70. The other observation is that the value of composite reliability is higher than Cronbach's alpha even though both solutions are measuring the same construct. For e.g. composite reliability of Job Satisfaction construct is 0.886 whereas Cronbach's alpha shows a lower estimates of 0.86. Likewise, composite reliability for Job Demand construct is 0.860 against estimates of 0.81 by Cronbach's alpha. The results nevertheless confirm the findings from Cronbach's internal consistency and reliability test that the constructs in the regression model have high reliability and internal consistency.

b. Discriminant validity

Discriminant validity is used for assessing construct unidimensional to which an underlying construct is truly different from other constructs (Hair *et al.,* 2010). A high level of discriminant validity implies a unique latent construct that possesses some phenomena that other constructs do not.

One of the ways to examine discriminant validity is by comparing the AVE of each construct based on the shared variance or square of correlation estimate between the two constructs. Validity is supported if the AVE for each construct is greater than the square correlation estimate (Hair *et al.,* 2010).

Table 4.15
Discriminant validity matrix

Construct	JD	FWA	JR	JS	WTD
Job Demand	0.821				
Flexible Work Arrangement	0.023	0.859			
Job Resources	-0.100	0.431	0.850		
Job Satisfaction	-0.260	0.480	0.592	0.782	
Work Time Demand	0.023	-0.089	-0.120	-0.329	0.812

Table 4.15 shows the square roots of AVE for each of the constructs are greater than the value of the other correlated constructs in the regression model. For e.g. the square root AVE of Job Demand construct at 0.821has greater variance with its own items than with Flexible Work Arrangement construct (0.023), Job Resources construct (-0.100), Job Satisfaction construct (-0.260) and Work Time Demand construct (0.023). It implies that the degree of association among the items measuring Job Demand is higher than the items measuring Flexible Work Arrangement, Job Resources, Job Satisfaction and Work Time Demand in the model.

The outcome of the analysis supports discriminant validity of the constructs. The completion of convergent and discriminant validity pave the way to test the structural model.

4.4.3.9 Structural regression model analysis and hypothesis testing

Figure 4.3 showed Amos's path diagram for the final model. The dependent Job Satisfaction variable had six indicators whereas its predictor variables i.e. Job Demand, Work Time Demand, Job Resources, and Flexible Work Arrangement all having three indicators each. The latent variable "ds1"is the residual for the dependent variable's structural equation.

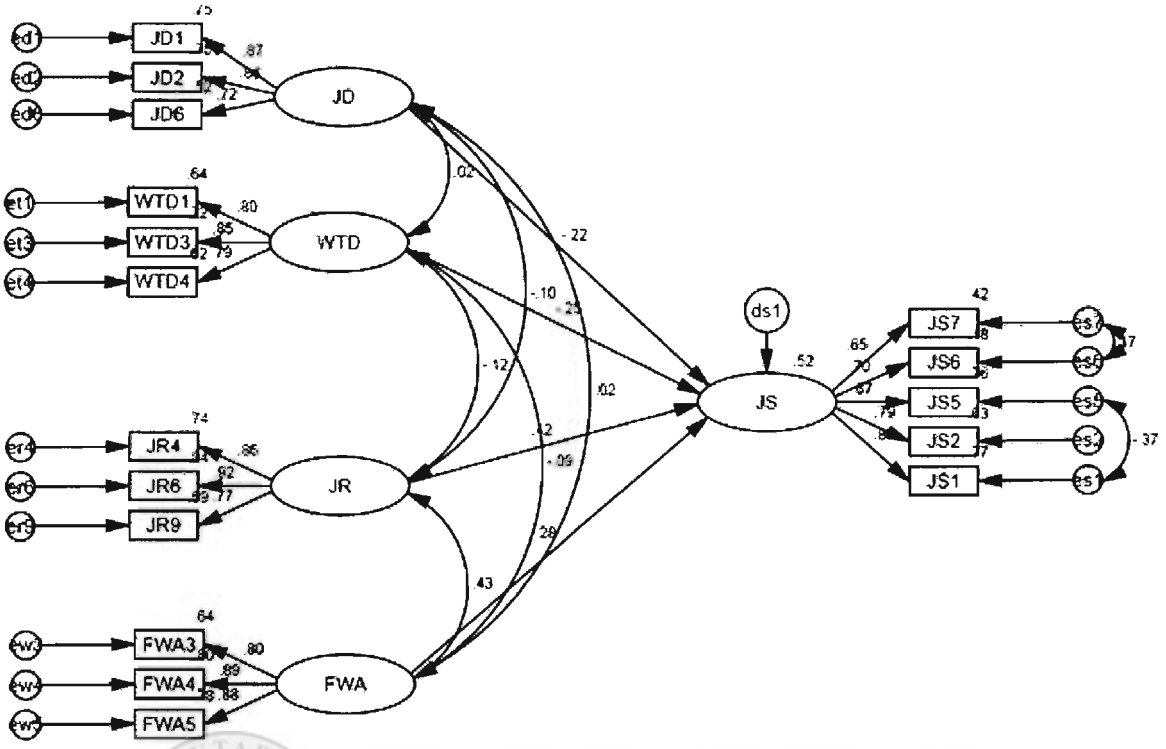


Figure 4.3
Structural model of job related factors and job satisfaction

As variables of Job Demand, Work Time Demand, Job Resources and Flexible Work Arrangement are assumed predictors of Job Satisfaction, the path between the independent variables and Job Satisfaction is denoted by a single directional arrow pointing towards the dependent variable describing the effect of job satisfaction from variance (cause) in the job related factors. The estimated regression weights or path coefficient were indicated on their respective paths. Chin (1998) suggested that for the standardized path to be considered meaningful, it should be at least 0.20 and ideally above 0.30.

The results show only the standardized path coefficient between Job Resources and the dependent variable had coefficient greater than 0.30. However, the standardized

path coefficient for the rest of the predictors was above 0.20, hence, could be accepted for regression testing.

The negative sign in the path coefficient shows inverse relation between the dependent variable and its predictors. This means Job Satisfaction as the dependent variable in the model is inversely related to both Job Demand and Work Time Demand. It implies that any increase in workload, psychological and work time demand would have a reducing effect on employee job satisfaction.

Conversely, those paths without negative signs by default have direct relation between the dependent and its independent variables. For e.g. both Job Resources and Flexible Work Arrangement variables are directly related to Job Satisfaction. This implies that any increase in co-worker support, supervisory support, empowerment or positive changes in schedule flexibility would correspondingly increase employee job satisfaction.

The combined R-squared (R2) value is 0.52. As the formula for R-squared is Explained variation / Total variation, it is used to statistically measure how closely fit is the data to the regression line. In this case, 52% of the model can be accounted by the variability of response data around its mean.

Estimation of structural regression model

The estimation of structural regression modeling is carried out using regression analysis to predict the effect of dependent variable from variability of independent variables. SEM findings shown in Table 4.16 are based on the estimated path coefficient, critical ratio (CR) and p-value. The significance of the path coefficient

between the dependent variable of Job Satisfaction and its independent variables is decided by the standard decision rules which are $t > 1.96$ and $p < 0.05$ (Byrne, 2001).

Table 4.16
Structural regression test

Hypo No.	Hypothesis path			Path Coefficient	T-Value (CR)	P Value	Decision
H1	JS	<---	JD	-0.219	-4.171	***	Supported
H2	JS	<---	WTD	-0.248	-4.655	***	Supported
H3	JS	<---	JR	0.419	6.503	***	Supported

Where "***" denotes P-value < 0.001, "**"denotes P-value < 0.01 and "*" denotes P-value < 0.05

- Hypothesis 1

The first hypothesis (H1) concerns whether "*Job demand has an influence on employee job satisfaction*". In order to determine whether the regression model support the hypothesis, a combination of path coefficient, standard decision rules and bivariate correlation were used to derive at the deduction.

The standardized estimated path JS <-- JD shows a path coefficient of -0.219 that is significant (t- value = -4.771 and $p < 0.001$***) between the IV and DV. The finding therefore supports the hypothesis that Job Demand indeed is a predictor of Job Satisfaction. Bivariate correlation laid credence to this finding revealing a relation that is not large but inversely significant ($r = -0.239$, $p < 0.01$ **).

The combination of regression analysis and bivariate correlation confirms a causal linkage between Job Demand denoted by work overload and psychological demand, and employee job satisfaction. In essence, the causal linkage predicts the cause and effect of increasing job demand and diminishing employee job satisfaction.

- Hypothesis 2

The second hypothesis (H2) concerns whether "*Work time demand has an influence on employee job satisfaction*". Table 4.18 shows a coefficient of -0.248 for JS <--

WTD path and significant critical ratio (t-value) of -4.655 and alpha coefficient ($p < 0.001$ ***) based on standard decision rules (Byrne, 2001). The JS <-- WTD standardized path shows significant relation between the IV and DV which supports the hypothesis that variability of independent Work Time Demand variable predicts the variance of dependent Job Satisfaction variable and any change in local or global work time demand would cause a change in employee motivation inverse to work time demand.

In addition, correlation between these two IV and DV shows a small but significant negative relation ($r = -0.254$, $p < 0.01$**) confirming a causal linkage between local and global work time demand, and employee job satisfaction. The presence of this causal linkage allows work time demand to predict its effect on employee job satisfaction.

- Hypothesis 3

The third hypothesis (H3) concerns whether *"Job resources have an influence on employee job satisfaction"*.

The standardized path (JS <-- JR) shows a path coefficient of 0.419 and significant critical ratio (t-value) of 6.503 and alpha coefficient ($p < 0.001$ ***). The positive coefficient indicates a direct relation between the independent variable of Job Resources and the dependent variable of Job Satisfaction. The significant relation between the IV and DV indicated by the critical ratio and p-value shows a strong positive linkage between Job Resources and Job Satisfaction. It supports the hypothesis that job resources in the form of co-worker support, supervisory support and decision authority have a strong influence on employee work engagement and ultimately job satisfaction.

The finding is collaborated by bivariate correlation between Job Satisfaction and Job Resources indicating a significant large positive relation ($r = 0.533$, $p < 0.01$**) between the two variables. The combination of regression analysis in predicting the effect of DV from variability of IV, and the observed correlation between the two variables establish a causal linkage that make Job Resources a strong positive predictor of Job Satisfaction.

Moderation effect analysis

The fourth hypothesis (H4) concerns whether "*Flexible work arrangement has a positive moderating effect on the relation between work time demand and employee job satisfaction*". Moderation is an effect caused by the presence of a third variable in this case Flexible Work Arrangement on the relationship of the dependent Job Satisfaction variable and the independent Work Time Demand variable affecting the direction and/or strength of the relation between the dependent variable and its predictor (Cohen *et al.*, 2003).

In order to test the last hypothesis (H4), Amos path diagram was used to establish the relation between the DV of Job Satisfaction and its relation with IV of Work Time Demand shown by standardized path (JS <-- WTD), and moderator variable of (MV) Flexible Work Arrangement shown by standardized path (JS <-- FWA) (Figure 4.4).

The third relation is between DV of Job Satisfaction and the product of IV (Work Time Demand) and MV (Flexible Work Arrangement). The objective of the third relation is for testing the interaction effect of schedule flexibility on the relation between job satisfaction and work time demand (JS <-- WTD_FWA). As precaution of possible multicollinearity, computation of the product variable (WTD_FWA) was

based on the standardized IV (Work Time Demand) and MV (Flexible Work Arrangement).

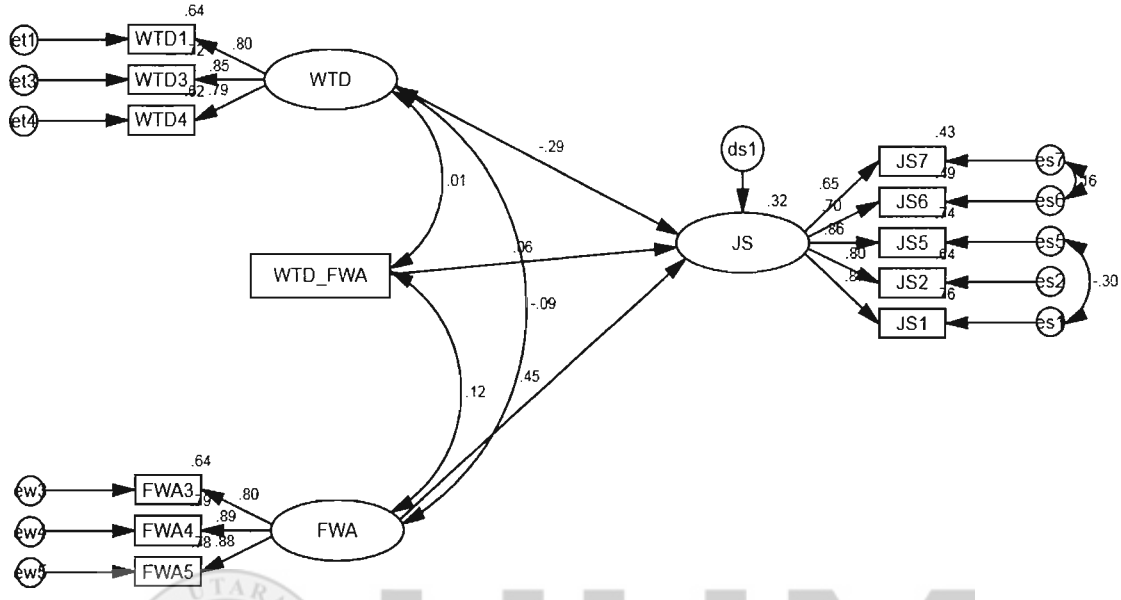


Figure 4.4
Moderation structural regression model

The structural path diagram (Figure 4.4) shows the standardized path between the DV (Job Satisfaction) and both IV (JS <-- WTD) and MV (JS <-- FWA) above the 0.20 standard path coefficient to be considered meaningful (Chin, 1998). The positive standardized path (JS <-- FWA) with coefficient of 0.45 indicates that schedule flexibility is directly related to employee job satisfaction. Variance in schedule flexibility would most likely see an effect on job satisfaction.

Conversely, the standardized path (JS <-- WTD_FWA) between DV (Job Satisfaction) and product variable (WTD_FWA) has coefficient of 0.06 which is below the standard path coefficient of 0.20. This implies an existence of a weak relation between the DV (Job Satisfaction) and the product variable (WTD_FWA).

The result of SEM moderation test (Table 4.17) shows a significant positive relation between Job Satisfaction and Flexible Work Arrangement with a standardized

estimated path coefficient of 0.45 and significant CR (t-value = 6.954) and p-value (p < 0.001***). The significant relation between the DV and MV implies that MV (Flexible Work Arrangement) is a strong predictor of DV (Job Satisfaction). This relation is collaborated by the bivariate correlation between DV and MV showing a moderate but significant (r = 0.448, p < 0.01 **) relation.

Table 4.17
SEM moderation test

Moderator path			Path Coefficient	T-Value (CR)	P Value	Decision
JS	<---	WTD	-0.291	-4.721	***	Supported
JS	<---	FWA	0.45	6.954	***	Supported
JS	<---	WTD_FWA	0.06	1.151	0.25	Not Supported

On the other hand, the standardized estimated path (JS <-- WTD_FWA) between the DV (Job Satisfaction) and the product variable (WTD_FWA) shows a weak and insignificant (path coefficient = 0.06, t-value = 1.151 and p > 0.05) relation. Based on the finding, hypothesis (H4) "*Flexible work arrangement has a positive moderating effect on the relation between work time demand and employee job satisfaction*" cannot be supported.

In order to determine what type of moderator is Flexible Work Arrangement, the sample data related to Flexible Work Arrangement was segregated into two groups based on the data median. Responses lower than the median were re-coded and given a value of "1" and those equal and above the median were re-coded and given a value of "2". The same process was iterated for Job Satisfaction and Work Time Demand.

The three variables were then mapped to a line graph (Figure 4.5) with Job Satisfaction as dependent variable (y-axis), Work Time Demand as category axis (x-axis) and Flexible Work Arrangement as defined lines in the graph.

The result shows no visible changes in the downward trend of Job Satisfaction correspondence to the increase in Work Time Demand for those respondents who responded having high schedule flexibility. The same applies to those having low schedule flexibility.

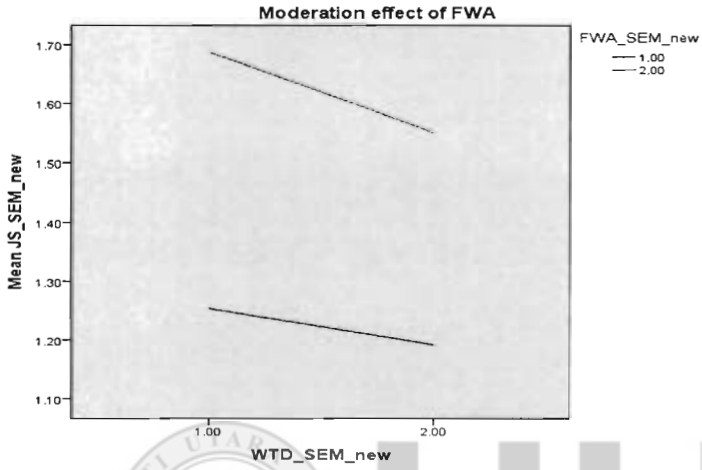


Figure 4.5
Moderation effect graph of FWA

This means that Flexible Work Arrangement is neither a quasi nor a pure moderator. It has certain degree of moderation effect. However, the effect is not significant enough to alter the strength or direction of the relation between the dependent Job Satisfaction variable and the independent Work Time Demand.

4.5 Summary

In undertaking a comprehensive and robust research approach, the study adopts a three-phase test strategy starting with pretest, followed by pilot test and ultimately the actual test. In the pretest stage, the instrument used for the study was reviewed for its face validity, usability and aesthetics of its presentation. The pilot test further expanded on pretest by testing the instrument on 113 respondents selected using non-random convenience sampling method.

The data was then analyzed first for CFA model fit followed by EFA. The five factors identified through EFA were tested for internal consistency and reliability before subjecting to a second CFA. The instrument was modified basing on EFA and tested on data from 347 respondents using stratified random sampling technique. The sample collected was screened for data worthiness as precursor for statistical analysis.

Statistical analysis involves two stages. The descriptive analysis was undertaken to get a general outlook of respondents' demographic profile and also a general view of the sample looking at the means and standard deviations of study variables. The statistics and observations made during descriptive analysis serve as inputs that are used by statistical inference to draw conclusions about the target population. Findings from statistical inference supported hypotheses (H1, H2 and H3). The fourth hypothesis (H4) was not supported.

CHAPTER 5 DISCUSSION AND CONCLUSION

5.1 Introduction

In this final chapter, the researcher endeavors to summarize the findings contributions as well as addressing identified and potential implications arising from the study. In concluding the research, shortcomings of the study and suggestions for future research will be presented.

The empirical research was undertaken primarily to investigate job satisfaction of offshoring workers and the underlying assumptions of its impact from globalization and work time demand brought about by spatial and temporal dispersed boundaries among teams located at different time zones. It encapsulates four research questions. First, how changes in job demand affects employee job satisfaction in an offshore outsourcing support work environment? Second, what influence would time demand arising from temporal dispersion separation have on employee job satisfaction? Third, what influence of perceived co-worker involvement and supervisory support on job satisfaction in a virtual organization setting and fourth, would firms having flexible work arrangement policy moderate the relationship of work time demand and employee job satisfaction in Malaysian offshore outsourcing support team?

In addressing these questions, four core objectives were developed as the aims for the research. The first objective is to examine the impact of job demands on offshore outsourcing support employee job satisfaction. Second is to determine the impact of work time demand on job satisfaction of employee providing global offshore outsourcing support. Third objective is to examine the impact of job resources on offshore outsourcing employee job satisfaction and the final objective is to examine

the moderating impact of flexible work arrangement on work time demand and offshore outsourcing employee job satisfaction.

In achieving these research objectives, a comprehensive review of related theories and past studies were carried out to understand the magnitude of the problem from psychological, sociological and theoretical standpoint. The knowledge was externalized into a conceptual framework with propositions and hypotheses as starting point for further investigation given the limited evidence.

The conceptual model was then subjected to pre-test, pilot test before doing a full scale test. The analysis, findings and discussions were presented in Chapter 4.

As explained in Chapter 4, three hypotheses (H1, H2 and H3) were supported. The findings also show that Job Demand, Work Time Demand and Job Resources are strong predictors of Job Satisfaction. However, only Job Resources have direct relation, whereas both the demand factors have an inverse relation with Job Satisfaction. In brief, elevation of work time demand diminishes employee's motivation, hence, his job satisfaction level. In contrast, increasing co-worker support, supervisory support and decision authority positively influences job satisfaction

Contrary to prediction, the finding reveals that Flexible Work Arrangement is a predictor of Job Satisfaction and not a quasi nor a pure moderator. This is understandable since schedule flexibility would not alter temporal dispersion barriers among virtual teams. Therefore hypothesis (H4) could not be supported.

5.2 Discussion

Social Exchange Theory is used in this study as an overarching framework from which specific sub-theories related to the different areas of the study are referenced.

The purpose of using this framework is to explain the risk and reward consideration by Malaysian offshore outsourcing support workers when undertaking work demands and willingness to sacrifice social and family enrichment activities to maintain real time inter-region communications in a temporal dispersed organization. The study has established causal linkages of job satisfaction with its predictors in the regression model. An increase in the satisfaction level of workers would most likely result in in-role and extra role performance. Combined with better job resources and implementation of schedule flexibility would lead to an overall increase in organization performance. This is because of the risk and reward consideration in Social Exchange Theory that workers are willing to take more chances and work the extra mile on provision that they are rewarded in the form of tangible and intangible benefits.

In the offshore outsourcing support context, it means workers are willing to forsake their evening social responsibilities and work extended irregular working hours to ensure the team meets their commitment and key performance indicators in exchange of tangible rewards and recognition. Part of these exchanges includes Flexible Work Arrangement that is provided by employers to their employees for better control of their Work-Life. This in turn translates into better quality of work life advocated in Herzberg's Two Factor Theory. The job autonomy and decision latitude rhymes with JD-R model that workers under such circumstances would possess better vigor and dedication towards their work. It creates value in the workplace. Over time it would help firms achieve competitive edge from knowledge retention and low resource substitutability. The use of such resource strategy and Human Resource policy align with the Resource Based View theory. It sets the tone for further discussion of the

impact of the findings on past researches and sub-theories that were formulated under the Social Exchange Theory framework.

Of the four hypotheses, Job satisfaction as the dependent variable forms the core of these three hypotheses underlying by intrinsic motivation and extrinsic hygiene factors referred as the two factor theory. According to Herzberg (1966), having a good hygiene by itself is not enough to create a positive attitude. It is imperative to have both factors working side by side to create the motivation.

This theory was tested by expanding the seven items in Job Satisfaction construct into two component facets of intrinsic motivators and extrinsic hygiene factors of which Pearson correlation was carried out (Appendix Z). The result shows a high correlation between both the IJS and EJS indicating that both of these facets are closely linked. The result reveals that all predictors in the regression model are also significantly correlated to both components measuring JS. It implies that in order for an individual to achieve sustained affective and cognitive emotion and quality of worklife, an individual must attain a balance between his intrinsic motivation and the extrinsic hygiene factor. The finding from this test aligns with the Two Factor theory professed by Herzberg (1966).

The three hypotheses also conform well to Bakker and Demerouti's (2007) JD-R model in predicting employee burnout, work engagement, and consequently organizational performance.

The first hypothesis (H1) supports past studies (Mohd Awang Idris *et al.*, 2011; Sengupta, 2011; Kawada & Otsuka, 2014; Sobia & Yasir, 2014) that work overload and psychological demand increase level of work stress which in turn causes burnout and job dissatisfaction among employees. The inverse cause and effect of job demand

on job satisfaction addresses the first research question of "*how changes in job demand affects employee job satisfaction*" in offshore outsourcing support setting. It aligns with Demerouti's JD-R prediction of employee burnout attributed to increase in work pressure, emotional, mental and physical demand.

It is unfortunate that working in virtual organization does not allow supervisor to monitor the emotional drain of an employee. Without a constant visual supervision, occasion onsite visits and employee satisfaction survey does little to boost employee morale. These actions are just "perfunctory" empathy in nature with effect that is at best temporary.

Unless an organization is highly autonomous, the consequence of working in a highly demanding environment would be greatly felt when team decision and team collaboration can be an extremely long process due to the temporal dispersion separation challenges. This creates tremendous strain on the employees leading to poor organization performance and job dissatisfaction.

The results of second hypothesis (H2) are in line with past studies that local and global work time demand arising from offshore outsourcing activities increases work stress resulting in health impairment and job dissatisfaction (Wickramasinghe, 2010; Ge, Fu, Chang, & Lie Wang, 2011; Mouraa, *et al.*, 2014). The second research question is "*what influence would time demand arising from temporal dispersion separation have on employee job satisfaction?*" The time demand in this context refers to both local work time and global work time demand. In the earlier study by Wickramasinghe's (2010) found a positive link between local work time demand arising from working long hours and job satisfaction in offshore software support. This study reaffirms Wickramasinghe's finding and complement it by extending the

local work time demand to global work time demand from the perspective of maintaining effective inter-region real time communication and global collaboration in a virtual organization. By doing so, it addresses the research question that there is indeed an inverse causal linkage between work time demand for both local and global time demand on employee job satisfaction.

The third hypothesis (H3) supports past studies by Mohd Awang Idris *et al.* (2011), Sengupta (2011), Schaufeli & Salanova (2007), and Meijman & Mulder (1998), confirming the motivational potential of job resources in buffering the impact of job demand and fostering better employee work engagement and extra-role performance. Regarding the third research question on "what influence of perceived co-worker involvement and supervisory support on job satisfaction in a virtual organization setting", it merely confirms the study that was previously carried out by Mohd Awang Idris *et al.* (2011) that established a causal linkage of co-worker and supervisory support with employee job satisfaction. However, this study takes a step further in fostering that understanding by extending Mohd Awang Idris et al.'s theory from a generic population-based sample to the domain of offshore outsourcing support.

Although SEM standardized estimated path (JS <-- WTD_FWA) shows the fourth hypothesis (H4) cannot be supported, it does not necessarily mean rejecting Resource Based View theory. It simply implies in the case of offshore outsourcing scenario, schedule flexibility brings little relief since it cannot overcome temporal dispersion challenges of operating in different time zones. This study supports previous research undertaken by Holmström *et al.* (2006) who argued that temporal dispersion respondents continue to feel dissatisfied, "being behind" or "missing out" despite flexible work hours and communication technologies that enable asynchronous communication. The same argument applies to the research question "W*ould firms*

having flexible work arrangement policy influence the relationship of work time demand and employee job satisfaction?" Even though response to this research question is negative, the structural regression modeling shows Flexible Work Arrangement is a significant predictor of Job Satisfaction. This means that although it is not able to mitigate the impact of local and global work time demand, schedule flexibility gives employees the choice of work-life balance allowing employees to plan their priorities around a set of core working hours. The findings are in line with survey results published by Rockefeller Foundation and TIME, Inc., which confirm employees see control over their hours of work as critical for managing day-to-day quality-of-life issues (Boushey, 2011).

The other pressing thought arising from the study is that moderation test of FWA was carried out only on the relation of WTD and JS and not for the predictor of JD and JR. Although the examination of the moderation effect of FWA on the relation of both JD and JR on JS is not part of the research scope for reason described in Section 3.2, it is worth exploring.

Using the same set of data sample, the responses for JD and JR was standardized to avoid issue of multicollinearity. Moderation test using SPSS regression was carried out on the interaction effect of FWA and JD on JS construct and the interaction effect of FWA and JR on JS construct. The result of the test shows no moderation effect of FWA on either the relation of JD and JS, or the relation of JR and JS (Appendix AA).

To confirm this finding, the data for JD and JR was re-coded ("1" for lower than medium and those above given "2") and mapped to their respective line graph. Re-coding of FWA and JS was completed earlier. The first line graph in Appendix AA

shows the effect of JD on JS at low and high value of FWA. The second line graph similarly show the effect of JR on JS at low and high value of FWA (Appendix AA).

Visual analysis of the graph shows that although there was some moderation effect, it was not strong enough to change the strength or direction between the predictors and the dependent variable. The result is not surprising as past research such as Carlson *et al.* (2010) and Kelly *et al.* (2008) found that job demand did not differ by schedule flexibility as performance is a measureable tangible delivery that cannot be controlled by emotional psychology effect of an individual and there is no coherent explanation on exactly how these working time arrangements influence employee productivity.

From an implementation standpoint, companies planning to implement workplace flexibility policy should be aware of the costs associated with having such strategy. The Economic benefits of workplace flexibility arrangements reported that almost a third of the companies cited costs or limited funds as obstacles towards implementing schedule flexibility at workplace (Council of Economic Advisers, 2014). The benefits of adopting such practice can offset the costs through better employee job satisfaction, lower staff turnover and better work-life balance. A motivated organization with good workplace hygiene factor could boost employee performance and productivity. A study of over 700 firms in the United States, United Kingdom, Germany and France found significant positive relation between work-life balance practices and total factor productivity (Council of Economic Advisers, 2014).

5.3 Research implications

In this subsection, the researcher attempts to draw deductions from the research findings that are not explicitly reported and determine if necessary specific actions that can be taken arising from this research.

In general, the outcome of the research supports the problem statements mentioned that job satisfaction of offshore outsourcing support workers with fixed work arrangement are constantly challenged by various demanding situations arising from globalization and global communication related issues.

The impact of maintaining an effective global communication is felt even more as the space and time zones increase barriers between locations in communication. The challenge would be even greater as the number of participants from different time zones increases.

Data collected for the question "*Usually I work more hours, sometimes until late in the night*" excluding those who took a neutral position shows majority of the executive and above level responded that they were required to work extended hours. In contrast, majority of the non-executives responded that they were not required to work longer than the stipulated core working hours.

The reason for this is because non-executive roles such as administrative assistance, personal assistance and secretaries are less likely to participate regularly in global operation related meetings. Most of the communications are usually carried out via asynchronous media. In contrast, executives are directly involved in business operation that requires regular interactions with other virtual teams located at various time zones. Effective communication is paramount in meeting customer expectations. Working under such conditions induces stress, causing health impairment and job dissatisfaction.

Implication does not necessarily mean problem. One of the positive implications is the almost absence of overlapping work hours between Malaysia and major regions in Western Europe and America. In globalization, companies taking advantage of the

asymmetrical world by engineering and designing workflow such as "Follow-the-sun", where work can be completed and handed off when the next region wakes up. As Malaysia is eight hours ahead of Western Europe (GMT) and fourteen hours ahead of USA Central time zone, the lack of overlapping work hours serve as a location advantage for employees who performed these types of tasks. An employee located in Malaysia would have a full 8 hours (GMT +8) to complete the tasks compare to his counterpart in Western Europe (GMT) who has 6 hours to complete the tasks before America (GMT -6) wakes up. In this context, the absence of overlapping hours between Malaysia and the other regions does not require the teams to adapt their working hours to meet the demands of global collaboration when organizing work across the different time zones.

The other implication is the impact of work demand on employee job satisfaction. In other word, the question of which is most impactful on job satisfaction between work time demand and job demand? This could be addressed by looking at the standardized estimated path. Although both JS <-- WTD and JS <-- JD paths show strong predictor of employee job satisfaction, Work Time Demand has a slightly larger coefficient.

This implies that although the teams in study think that demands of work and time are important drivers of their job satisfaction, they feel that work time demand outweighs work demand in meeting their job satisfaction with regards to working long irregular hours which interrupt their evening social hours and Work-Family-Enrichment (WFE) activities.

With regards to the findings, the researcher suggests formulating guiding rules for global communications to within reasonable hours between the start of dawn and

midnight. In addition, individuals is given a self determined evening off from attending calls outside their working hours.

This could restore job satisfaction by alleviating individual health impairment and spending the off–call evening devoting to social activities and enriching family interactions. That would in turn lower staff turnover and increase organization performance.

5.3.1 Theoretical implication

The main contribution of this study is the causal effect of work time demand and flexible work arrangement as predictors of employee job satisfaction. The JD-R model is based on two simultaneous processes of high job demands causing health impairment and job resources buffering the health impairment impact to foster employee work engagement and restoring employee job satisfaction.

The study has shown that work time demand from temporal dispersion challenges exerts the same strain effect as Job Demand. JD-R model proposed by Demerouti *et al.* in 2001 at the period when firms were expanding their operations offshore in the 2000s taking advantage of an interconnected online world (New York State Department of Labor and Empire State Development, 2010). As offshore outsourcing became more entrenched in the subsequent years, problems relating to global shoring communications began to surface (Rao, 2004, Gonzalez *et al.*, 2006, Klitmoller & Lauring, 2013).

The outcome of this study affirms the issue of global shoring communication on employee job satisfaction. As Work Time Demand is a fairly new phenomenon

attributed to globalization and due to the similarities between the two components, Work Time Demand could be recognized as part of Job Demand in the JD-R model.

In contrast, Flexible Work Arrangement is found to have a buffering impact to Work Time Demand. Flexible work arrangement was first legislated by the UK Government in 2003, introducing the right for parents of young and disabled (UK, 2003). It has since been evolved and applied as resource strategy in mitigating staff turnover.

Similar to Work Time Demand, Flexible Work Arrangement has a fairly recent history. Given the similarities with Job Resources, schedule flexibility could be recognized as part of Job Resources to buffer the impact of Job Demand.

The other contribution of the study is that the intrinsic motivation component of Job Satisfaction Two-Factor theory is highly and significantly correlated with hygiene factor which is the other component of Two-Factor theory. The finding whilst not in alignment with past studies (Kelly *et al.*, 2008; McNall *et. al.*, 2010; Spector, 1997; Wong *et al.*, 1998) that claimed affective and cognitive attitudes are influenced by component facets of the job resonates with studies carried out by Baltes *et al.* (1999) and Calson *et al.* (2010) that job satisfaction arose from an individual's holistic view of the whole job.

It is also as important to note that all predictors in the regression model such as Work Time Demand, Job Demand, Job Resources and Flexible Work Arrangement are significantly correlated and structurally related to both the components measuring Job Satisfaction.

Herzberg Two Factor theory posited that the intrinsic motivation comprise of the five features of work namely achievement, recognition, the work itself, responsibility and

career advancement and the hygiene factors listed as salary, supervision, interpersonal relations, working conditions and management. Theoretically speaking, it means that any change in the demand of job and work time would have pertinent impact on the work itself and responsibility which is intrinsic inherently and working conditions that is part of the hygiene factors. Likewise, a change in job resource in the form of co-workers, supervisory or decision latitude support would have an effect on the intrinsic motivation of recognition and extrinsic hygiene factors of supervision, interpersonal relations and management.

Similarly, having flexible work arrangement would result in better recognition of the hardship suffered by employees in offshore outsourcing support environment which is an intrinsic motivator and better extrinsic working conditions. This study also confirm that flexible work arrangement can be used as a firm's resource strategy and human resource policy in line with Resource Base View theory to improving employee motivation and job satisfaction. As flexible work arrangement is not a moderator, it is not dependent on other factors to improve the satisfaction level of an employee and instead can be used independently to develop a competitive edge for the firm in terms of enhancing the organization's overall satisfaction.

These theoretical contributions serve as a means for academicians to contemplate when undertaking future studies on temporal dispersion separation in offshore outsourcing support environment.

5.3.2 Practical implication

A survey conducted by JobStreet (2012) on employee job satisfaction in Malaysia, had reported that 78% of the 1,145 respondents claimed they were not satisfied with

their current job. 9% of these respondents mentioned working hours as the cause of their dissatisfaction. Overall, 62% said they would seek alternatives to restore their satisfaction if their wellbeing especially career development and work-life balance were not taken care (JobStreet, 2012).

This point encapsulates the importance of employee job satisfaction on staff retention. The revelation of the current study is that since temporal dispersion cannot be controlled the use of right resource strategy and management practices such as flexible work arrangement can help buffer the negative impact and restore job satisfaction. In the context of offshore outsourcing support or shared services, flexible work arrangement is a powerful tool that can be harnessed to reduce work stress, intensify quality of work life and improve work-life balance.

As Flexible Work Arrangement can generically apply to any industry as predictor of Job Satisfaction, it could be deployed as a resource strategy for industrial sectors beyond outsourcing sector. This strategy would be ideal for companies involve in hospitality industry such as medical, hotelier, transportation, event planning etc. whereby working irregular long hours is a norm.

Government and industrial practitioners can play a big role in supporting and formulating socio-economic policies and guidelines to facilitate implementation of such management practices.

According to former Deputy Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin, having more streamlined time zone especially those within the same regional economic bloc, would results in financial gains to its member countries (The Star Online, April 26, 2015). This statement highlights another contribution from this

study on the spatial and temporal dispersion challenges faced by the respondents. The longitudinal time grids that define world time could be rationalized for countries within the same region to consolidate their nation time. Reducing the space and temporal dispersion between locations in communication would reduce challenges and improve employee job satisfaction. This proposition requires in depth study to evaluate its feasibility. Nevertheless, it presents an opportunity that could be explored as a way of fostering intra and inter regional economic collaboration.

5.4 Limitations of study

This sub-section highlights the limitations that could have affected the interpretation and analysis of the data. The main purpose is to explain the shortcomings, conditions and influences that place restriction on the ability of the researcher to come up with a more comprehensive conclusion. In addition, this sub-section evaluates options that could be used to address the shortcomings for future research.

5.4.1 Research design

The research design of the study uses cross sectional approach. Feedback received represents the perception of respondents at a particular point in time. This method limits the ability of respondents in providing feedback over a longer period that would be useful in gauging the fluctuation of job satisfaction following sequence of events. The feedback may be different if a longitudinal study that could provide an in depth understanding was used.

5.4.2 Scope of study

The study was conducted in the MSC flagship town of Cyberjaya in Malaysia. It is a good strategy given the time limitation as MSC has a cluster of local and

multinational companies that are providing shared services or offshore outsourcing support.

However, findings from survey carried out in Cyberjaya may not be representative for the entire population of study. This is because companies that are located outside of Cyberjaya especially in other economic zones could have different legislation requirements and local cultural norms that may lead to different results.

5.4.3 Temporal dispersion coverage

Finally, Malaysia of where the study was conducted is eight hours ahead of GMT. Although the findings show there is a significant inverse relation between job satisfaction and work time demand, the study is confined to a single time zone (GMT +8).

This limitation does not permit the study to determine a trend or magnitude of the job satisfaction issue as temporal dispersion widens between locations in communication. It would be interesting and a good contribution to social science to understand the pattern of work time demand on employee job satisfaction in relation to temporal dispersion variances.

This would further support the hypothesis that work time demand varies in accordance to global spatial and temporal dispersion coverage. The wider is the gap, the more demanding is the work time.

5.5 Suggestions for future study

This sub-section offers suggestions that could be undertaken for future studies as a step forward in overcoming the limitations and complementing the current study.

5.5.1 Longitudinal study

One suggestion in overcoming these limitations of cross-sectional survey is by conducting a longitudinal study. Having fieldwork observations spread over a longer period of time has the advantage of projecting an in depth study on emotion and motivation of an employee.

5.5.2 Expand scope of survey

As the scope of the current survey is confined to MSC flagship town of Cyberjaya, the suggestion is to extend the survey nationwide. With a larger scope, the survey could be generalized to other global outsourcing companies.

5.5.3 Increase variance of temporal dispersed coverage

Expand the study over wider temporal dispersed locations to understand the pattern of work time demand on employee job satisfaction in relation to temporal dispersion variances. For instance, future studies may cover locations further in the East such as locations at Australian Eastern Standard Time (AEST – GMT +10) to determine whether the wider variance would have greater impact on work time demand.

5.6 Conclusion

As world economics become more integrated through the proliferation of global collaborations, companies are taking advantage of globalization to harness the asymmetrical allocation of world resources. Organizations are setup virtually where teams are spread across geographical locations and time zones. Workers faced with the new ways of working are forced to readjust. The resulting imbalance of work demands and resources have a dramatic effect on employee job satisfaction. In many cases resulting in work related depression, burnout and other unfavorable outcomes.

As globalization became more entrenched, organizations that outsourced their operation began eliminating jobs while pursuing a relentless approach towards doing more with less, employees are feeling increasingly under pressure to cope with greater workloads and shorter elapse times without a corresponding increase in resources. In addressing these challenges, many multi-national companies introduce flexible work arrangements that allow employees the discretion of determining when, where and how long they chose to engage in work within a certain core working hours.

From the practical standpoint, the study shows the significant impact of flexible work arrangement on employee job satisfaction which requires employers' and policy makers' attention. Both Government and industrial practitioners must play an integral role by formulating socio-economic policies and guidelines to facilitate implementation of management practices that could enhance offshore employee job satisfaction.

From the academia knowledge standpoint, the knowledge gained from this study will be externalized through the following means:

- The findings from this study will be presented in 2015 International Conference of e-Commerce where the outcome of the study will be shared in the proceedings of the conference.
- The findings will also be published in academic journals for the benefit of both academicians and practitioners who are interested to explore the subject further or for organization development and performance.

Finally, incorporating the relevant points raised in this study would help Shared Service and Outsourcing industry implement friendly global offshore outsourcing

policies that would improve employee job satisfaction and entice more Foreign Direct Investment drawn into Malaysia.

"***True motivation comes from achievement, personal development, job satisfaction, and recognition***". Frederick Herzberg (1966)

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