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**JOB CHARACTERISTICS, WORKING
CONDITIONS AND JOB STRESS ON
ACADEMICIANS WELL-BEING IN OPEN
DISTANCE LEARNING ENVIRONMENT**

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AND JOB STRESS ON ACADEMICIANS WELL-BEING
IN OPEN DISTANCE LEARNING ENVIRONMENT**



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**DOCTOR OF BUSINESS ADMINISTRATION
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JOB STRESS ON ACADEMICIANS WELL-BEING IN OPEN
DISTANCE LEARNING ENVIRONMENT**



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Thesis Submitted to
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Doctor of Business Administration



**OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS
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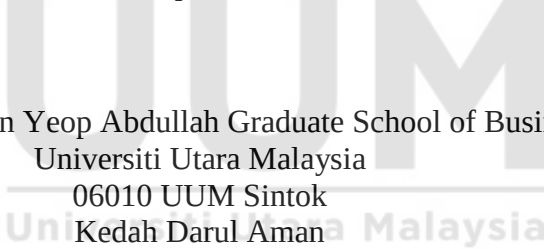
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ABSTRACT

The up surging of academicians' job stress and the challenge to maintain job characteristics such as job demand, job autonomy, social support, and combined with the change of working conditions of academicians in an open and distance learning setting is causing severe decline of academicians' well-being. The presence of open and distance learning has changed the conventional nature of work in education to digital learning. This study aims to examine the relationship between job characteristics (job demand, job autonomy, social support), working conditions, and job stress on academicians' well-being. The study also examined the role of job stress as mediator variable. A quantitative approach via survey was employed. Respondents were 200 academicians from five Open and Distance Learning universities in Malaysia namely Open University Malaysia, Wawasan Open University, Asia e University, Al-Madinah International University and the Global University of Islamic Finance. Data analysis was performed using partial least squares structural equation modelling (PLS-SEM). The research findings revealed significant influence of job demand, job autonomy, working conditions, on academicians' well-being. However, social support did not influence academician's well-being. Furthermore, the finding revealed job stress as a significant mediator within the open and distance learning context. There are several positive research implications where open and distance learning universities implement wellness and stress management practices to mitigate job stress among academicians. These include redesigning the academic's job to increase support resources and issues such as developing policies, responsibilities training, and online setting. Moreover, the social context theory in this research contributes to the literature on academicians' well-being in the open and distance learning setting. Many private and public universities have moved toward the open and distance learning which may lead to a larger sample size. Future studies is needed to improve the results of the data analysis and more empirical research can be conducted.

Keywords: Academicians' well-being, Job characteristics, Open Distance Learning, Working conditions, Job stress

ABSTRAK

Peningkatan tekanan kerja dalam kalangan ahli akademik dan cabaran untuk mengekalkan ciri-ciri pekerjaan seperti permintaan pekerjaan, autonomi pekerjaan, sokongan sosial, dan digabungkan dengan perubahan keadaan kerja ahli akademik kepada pembelajaran terbuka dan jarak jauh telah menyebabkan kemerosotan kesejahteraan yang teruk dalam kalangan ahli akademik. Kewujudan sistem pembelajaran terbuka dan jarak jauh telah mengubah ciri kerja konvensional dalam pendidikan kepada pembelajaran secara digital. Oleh itu, kajian ini menyelidiki sejauh mana pengaruh ciri-ciri pekerjaan (permintaan pekerjaan, autonomi pekerjaan, sokongan sosial), keadaan kerja dan tekanan pekerjaan terhadap kesejahteraan ahli akademik. Kajian ini juga mengkaji peranan tekanan kerja sebagai pengantara. Pendekatan kuantitatif melalui survei telah digunakan untuk mengumpul data. Responden kajian ialah seramai 200 ahli akademik dari lima universiti pembelajaran terbuka dan jarak jauh di Malaysia, iaitu Universiti Terbuka Malaysia, Universiti Terbuka Wawasan, Asia e Universiti, Universiti Antarabangsa Al-Madinah dan Universiti Kewangan Islam Global. Analisis data dilakukan menggunakan *partial least squares structural equation modelling* (PLS-SEM). Penemuan penyelidikan mendedahkan pengaruh signifikan permintaan pekerjaan, autonomi pekerjaan, keadaan kerja ke atas kesejahteraan ahli akademik. Namun, sokongan sosial tidak mempengaruhi secara signifikan terhadap kesejahteraan ahli akademik. Kajian mengesahkan tekanan pekerjaan adalah pengantara yang penting dalam konteks pembelajaran terbuka dan jarak jauh. Terdapat beberapa implikasi penyelidikan yang positif di mana universiti-universiti pembelajaran terbuka dan jarak jauh harus melaksanakan amalan pengurusan kesihatan dan tekanan untuk mengurangkan tekanan kerja di kalangan ahli akademik. Ini termasuk mereka bentuk semula tugas akademik untuk meningkatkan sumber sokongan dan isu-isu seperti membangunkan dasar, latihan dan tetapan dalam talian. Tambahan lagi, teori sosial konteks dalam penyelidikan ini menyumbang kepada literatur tentang kesejahteraan ahli akademik dalam pembelajaran terbuka dan jarak jauh. Semakin banyak universiti awam dan swasta telah melaksanakan sistem pembelajaran tersebut yang mempunyai saiz sampel lebih besar. Oleh itu, kajian masa hadapan perlu bagi menambah baik dapatan analisis data dan kajian empirikal yang lebih meluas dapat dijalankan.

Kata kunci: Kesejahteraan akademik, Ciri-ciri pekerjaan, Pembelajaran Terbuka dan Jarak Jauh, Keadaan kerja, Tekanan pekerjaan

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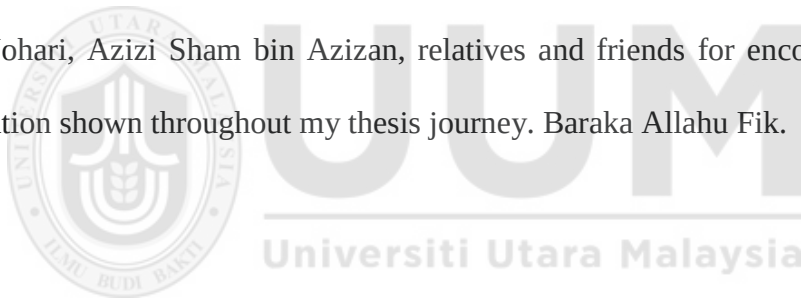


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LIST OF ABBREVIATIONS

ODL	Open Distance Learning
HEIs	Higher Education Institutions
PLS-SEM	Partial Least Squares Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
CFA	Confirmatory Factor Analysis
CBSEM	Covariance-Based SEM
VBSEM	Variance-Based SEM
MV	Manifest variables
LV	Latent Variables
AVE	Average Variance Extracted
HTMT	Heterotrait-Monotrait
R^2	Determination Criteria
f^2	Size Effect
Q^2	Relevant Forecast
IPMA	Performance Matrix Analysis

CHAPTER 1

INTRODUCTION

1.0 Overview

The study of academicians' well-being has been seriously discussed among educators, professionals, researchers, and economists. Although academicians are regarded as a highly respected profession, they cannot avoid issues related to workload, which involve policies that they must adhere to and intense contact with learners (Pedrelli, Nyer, Yeung, Zulauf, and Wilens, 2015). In recent covid-19, the sudden changed in the world educational system has seen the nature work of academic transformed. The Covid-19 pandemic is very significant in changing the teaching landscape and environment. Teaching online, communicating with learners through teaching platforms and dealing with higher administrative workloads through technologies are new challenges facing them. While your ones are more IT savvy, the more senior academics might find the new teaching and learning environment very challenging. Learners and academicians are connected to each other in the form of productivity, being motivated and engaged. Poor well-being of academicians may decrease learners' academic performance, social interaction, and satisfaction (Yu, Shek and Xiaoqin, 2018). Further, it would also affect the economic growth as education plays an essential role in enhancing human capital skills and knowledge. Therefore, this study was conceptualized and designed with the above in mind. Specifically, it seeks to study the job and working environment, and how that eventually impacted of academicians' well-being.

1.1 Background of the study

There are three main issues that motivates and justifies this study. Firstly, many factors contribute to low well-being of employees. Amongst others is the shifting of technology. The World Development Report (2019) concluded that technology has reshaped the skills needed for work. This is because a decline in less advanced skills can be replaced with technologies. Due to this development, education has become an important factor in economic development where digital skills have become essential. According to the AIA Vitality (2017) survey, Malaysia has lost 67 days a year to absenteeism due to poor health and fitness. In addition, the survey also mentioned that approximately 64% of Malaysian employees are at risk of being physically inactive and an estimated annual loss of RM2.7 due to absenteeism per organisation. One ramification from this is that, if allowed to persists, employees' productivity will be negatively affected the organisation in the long term.

Secondly, the well-being at work has been discussed extensively in business and is increasingly gaining ground as a fertile ground for academic research. In the past, most of the studies on employee well-being is related to workplace-oriented and workplace intervention (Adam, 2019). Studies showed that the well-being of employees could have led workers to be more productive and increased their engagement (SHRM, 2015). The Department of Statistics Malaysia 2020's (DOSM, 2020) well-being index indicator has also revealed that the Malaysia well-being index has declined by 2.1 percent (from 118.3

points in 2020 to 120.8 points in 2019). The social well-being sub-composite declined by 1.2 percent to 1140 points at the same period. Specific sub-components which contribute to physical and mental well-being of Malaysians for 2019 and 2020 is shown in Table 1 below;

Table 1: Malaysia Well-Being Index, 2019 And 2020

Component	Year		2019 - 2020	
Year 2000=100	2019	2020	Index point change	Growth
Economic well-being	130.7	126.2	-4.5	-3.4
Transport	137.9	127.7	-10.2	-7.4
Communications	130.5	130.0	-0.5	-0.4
Education	130.9	132.2	1.3	1.0
Income & distribution	130.3	117.6	-12.7	-9.7
Working life	123.7	123.7	0.0	0.0
Social well-being	115.4	114.0	-1.4	-1.2
Housing	119.3	120.5	1.2	1.0
Entertainment & recreation	131.5	110.9	-20.6	-15.7
Public safety	126.6	140.4	13.8	10.9
Social participation	118.7	121.7	3.0	2.5
Governance	121.5	120.4	-1.1	-0.9
Culture	109.3	91.7	-17.6	-16.1
Health	107.1	113.1	6.0	5.6
Environment	106.9	109.8	2.9	2.7
Family	97.4	97.0	-0.4	-0.4
Malaysia well-being index (MyWD)	120.8	118.3	-2.5	-2.1

Note: The Malaysia well-being index is 100.

The findings of MyWI 2020 above showed that almost all components of well-being were affected by COVID-19 transmission. Another significant change over the years is that academic workplace has evolved from mainly focussing on utilizing physical spaces to being focused on connectivity with the environment for instant access. For example, the Covid-19 pandemic has made teaching, learning, and meetings to discuss research all to be done online. This switching of working environment forced academicians to rely heavily on

smartphones, tablets, and other portable electronic devices to get works done. This new phenomena of increasing use of digital technology has changed the latitude of how people communicate and interact with each other and has also changed traditional education to the modern way of learning (Kowalski & Loretto, 2017; Vaio et al., 2020), pushing them and organisations to react, adopt and adapt to the new needs without realising it can eventually create pressures and stress amongst employees.

Finally, the Covid-19 pandemic significantly impacted the education industry. The restriction imposed through the mandatory Movement Control Order (MCO) caused the Government to introduce Study-from-home concept using online learning method. This online study approach, although enable flexible learning styles and delivery in an online environment, has increased demands on the learners, academicians, and support mechanisms (Muthuprasad, Aiswarya, Aditya and Jha, 2021). Researchers have also found that academicians in higher institutions were experiencing diverse types of health problems. A study by Amirul Arbae et al. (2019) found that stress is largely due to the increase in economic, financial and job demands. Particularly, they found that three major factors contributed to the academic staff stress level, depleting academicians' well-being – higher demand from the surroundings in the workplace, relationship in the workplace, and work-related matters with colleagues, seniors, and related clients. They opined that academicians who have more work-life conflicts and perceived a more significant discrepancy between their present and ideal levels of work-life integration are less healthy,

less satisfied with their jobs, and the worst is that they will consider leaving academia.

An interview with the academicians working in the ODL institutions was conducted to determine the characteristics of work and working conditions. Based on the interview, majority of the academicians indicated that they constantly had headache for the last six months. The reasons were because of high volumes of work load and meeting deadlines. The feeling of stress and lack of sleep can cause headache (Cesar, Juan, Maria, Paula, Margarita and Esperanza, 2018). Further, they informed that they have enough time to perform tasks at work, but if the tasks could not be completed on the same day, they will continue doing it at home or stay back to finish their tasks. According to Wafi, (2016), long working hours is unhealthy for the academicians and failure to manage them will contribute to the increase risk in poor health, safety, and unproductive performance. During the interview, all academicians indicated that they get well support from their co-workers at the workplace and be praised by their supervisors when they performed. However, few claimed that they had not been praised and recognised by their superior. Moreover, all academicians have autonomy in managing their work. Despite of working in the ODL environment, academicians universities informed that their universities did not practice flexible working hours. The concluded that the academicians working in ODL environment were experiencing working long hours due to workload especially in meeting deadlines. As such, it is an opportune time to study how the physical and mental health of academics is studied in more depth. It is hoped that the study will shed some light on the

impacts of the pandemic and subsequent changes in working environment on academicians' wellbeing.

Usually, academicians' workloads will extend beyond the time they spend on teaching and conducting research. The stress and learning burden of adopting a new delivery mode is taking a major toll on the lives of academicians in higher education as they adapt to teaching and learning at a distance. This is an immense problem that is snowballing. While some students thrive through online learning, the increased workloads and other associated effects are also rising among many students, educators and school members (Roddy, Amiet, Chung, Holt, Shaw, Mc Kenzie, Garivaldis, Lodge, Mundy, 2017). Hence, it must not be underestimated. Academicians and school members will feel considerable stress remaking their classes into effective digital forms. This additional load of work will double the responsibilities of the schools, and academicians will eventually experience emotional let-downs. From mail services through telephones, radio, television, and the internet, technological communication has improved to the point that new instructional delivery systems have emerged. These new learning methods are being used to deliver distance education and are proliferating in a variety of graduate and postgraduate programmes, leading some experts to believe that distance education will soon replace the traditional academic method of imparting knowledge, which involves students attending classes at predetermined times and locations. Distance education has evolved from an 'anywhere' to an 'anytime' delivery approach in idea and practise, despite being a costly alternative today. Open and Distance Learning (ODL) has been the most

rapidly growing field of education in recent times and has a substantial impact on all education delivery systems (Bates, 1995; Borch, 1997; Bradley & Yates, 2001). This was due to the development of internet-based information technologies. ODL education came from the idea that learners and teachers are separated by geographical distance to make the entire education system flexible.

According to Syed Noor-Ul-Amin (2013), the concept of teaching and learning through online platforms and open components has shifted the teaching methods between learners and academicians. Allen and Seaman (2016) describe distant education as "the use of one or more technologies to give instruction to learners who are separated from the instructor and to support regular and substantive synchronous and asynchronous interaction between the learners and the instructor." ODL refers to a method of teaching and learning in which the learner and lecturer do not engage face to face (Chawinga & Zozie, 2016). According to Mahmut (2018), teaching in ODL encompasses a wide range of activities such as teaching, coaching, mentoring, and monitoring that guide students through their courses while facilitating the learning process by mediating packaged learning resources. Hence, to support the ODL learning environment, the ODL institutions have been introduced to represent new information dissemination challenges. Generally, the roles and responsibilities of ODL institutions are like the traditional institutions that provide courses at lower and higher degree levels to cater to the knowledge of working adult's learners (MOHE, 2016). However, the Ministry of Higher Education realised the increasing demands for open and distance learning

programmes is high. Therefore, the first Open University was established in 2000. This Open University has adopted a blended learning pedagogy that integrates self-management. These institutions adopted a blended learning pedagogy that integrates self-managed learning, physical tutorials, and virtual learning interactions (Adam, 2009; Ali, 2005). As of 2020, five institutions have been set up to meet the demand, as shown in Table 1.1.

Table 1.2: Open and Distance Learning Universities 2019

Institutions/Universities	Year Established
Open University in Malaysia	2000
Wawasan Open University (WOU)	2006
Asia e University (AeU)	2008
Al-Madinah International University (MEDIU)	2006
Global University of Islamic Finance (INCIEF)	2005

Source: Code of Practice - Open and Distance Learning 2019

This development of ODL has become increasingly challenging for academicians working in higher education, especially when academicians play major roles in assisting student proficiency and involvement in an online setting (Park, 2015; Stott, 2016). The main objective of ODL is to provide a continuous learning process for the working adult. Moreover, this open concept learning has changed the work setting and is also crucial in ensuring the quality of the programme is maintained and at the same time, learners achieve their learning goals (Menezes & Kellihar, 2019; Putnam, 2014). ODL is gaining momentum and is the new frontier of learning, which will revolutionise the higher education landscape (Amini-Philips & Okonmah, 2020). Therefore, the ODL academicians are expected to frequently depend massively on technology,

which requires them to spend time corresponding via the learners' emails, messages, and developing content modules as the teaching materials.

As Dunwill (2016) predicted, many institutions must restructure the implementation in terms of post learners' grades and assignments online. Learners also need to use a collaborative platform and portal to complete tasks (Learning Management System, LMS). ODL learners are now highly dependent on cloud storage to store their work and communications among themselves. In contrast, academicians must depend highly on social media platforms as part of their medium of interaction, such as Facebook, Instagram, Twitter, WhatsApp, Telegram, smartphone apps, video conferencing and other digital platforms. These tools connect academicians to their work while operating away from the workplace. All these have been incorporated with their personal and professional subsists. To full fill this, the academicians would have to double up their work by spending as much as 10 -12 hours every day in the workplace to ensure good services are well delivered. These new normal of learning may cause pressure to comply with work time constraints, too many tasks at a time, or continuous demands that they will have to cater to (family request or occupation frailty). Therefore, they must ensure that they are fit enough mentally and physically to enhance delivery capacity in the institutions (Morrish, 2019).

In its goals, the Malaysia Higher Education 4.0 (Industry 4.0) has recognised lifelong learning as the new national and important agenda to ensure that human capital development can be achieved (Kolesnichenko, Radyukova, Pakhomov,

2019; Sima, 2020). As such, the Ministry of Higher Education has taken the initiative to change the process of teaching and learning. Therefore, this study is conducted to explore the involvement of academicians who are directly involved in delivering and ensuring learners' satisfaction. They are responsible for preventing learners from leaving the institutions.

In summary, this study was carried out to emphasise the importance of academicians' well-being at the workplace and the need for ODL institutions to demonstrate that they are serious about their academicians' well-being. The focus was more on the characteristics of the academicians and the education system that practices the ODL. The reason was mainly due to the fast-changing education system in learning technologies and pedagogies, especially during the pandemic. There were various variables that institutions could adopt to improve academicians' well-being, which can also lead to the success of the institutions. Therefore, this study will further investigate whether these online settings and characteristics can reliably predict the level of academics' well-being in the ODL environment.

1.2 Problem Statement

In ODL learning environment, academicians play significant roles in supporting student's proficiency and engagement in an online setting. Additionally, this open concept learning has altered the workplace and is essential for maintaining the program's quality while also guaranteeing that students meet their learning objectives. Therefore, to fulfil this, the

academicians must frequently spend time on using these technology in developing interactive learning assessment aside of actively communicating with learners through emails, student portal, messaging via WhatsApp or telegram. Moreover, academicians are also required in creating and developing e-content modules for the learners. The full and sudden utilisation of these online tools especially during COVID-19, may have some negative effects on academicians. As a results of some hindrances which may likely hamper many academicians well-being. Further, the governance demands of qualities assurance templates and documents to be completed including reviewing academics 'material, assignments, and examination papers may also increase pressure and stress among the academicians (Poalses and Bezuidenhout, 2018). As a results, these had led to an extremely high administrative burden on the academicians, subsequently decrease the well-being level. It is undeniable that the work demand is known as the heavy workload and task overload.

According to Badri and Panatik (2020), the well-being of academicians can be improved by giving them more opportunities to take control over various aspects of their job. For example, increasing in job autonomy, decision making and support from management are linked to well-being (Badri, 2019) and will subsequently increase the academicians' performance. Past findings have proven that job autonomy could play a crucial role in the performance of the employees and subsequently improve their well-being (Zhou, 2019; Edem, Akpan & Pepple, 2017). According to Guthrie et al. (2018), co-workers and supervisors' support can reduce the workload. Further, Alsubaie et al. (2019)

supported the findings that social support from family and friends is significantly negatively correlated with depressive symptoms. However, Sudhashini (2018) found that academicians working in the private universities in Malaysia were moderately satisfied with supervision, flexible working hours, and relationships with co-workers, autonomy, and work conditions. The unfavourable workplace issues could also cause stress, demotivation, absenteeism, turnover, personal growth, work achievement, social relationship, autonomy, recognition, tasks, administration, and work environment and the nature of work (Kinman, 2016; Hashim; Fessehatsion, 2016).

In higher education, the non-stop effort to keep up with information technology developments is one of the major causes of stress. Academicians involved in online learning often rely heavily on technology to remain contactable and attend to correspondence any time of day (Poalses, 2018). Nicklin et al. (2016) explained that the ODL learners' physical isolation and lack of interpersonal interaction increases the demands and expectations that the learners may direct towards the lecturer and for other technical support staff. Indeed, learners need significant support from both administrative staff and academicians to manage their learning experience. This kind of work setting will result to long working hours which would cause unhealthiest for academicians, and failure to manage them will increase poor health, safety, and unproductive performance (Wafi, 2016; Vallo & Mashau, 2020). Researchers have recently reported that both academicians and learners are facing multiple obstacles in conducting ODL using ICT platform (Bozkurt and

Sharma, 2020). These obstacles included technical issues such as unfamiliarity with ICT platform, limited internet access, insufficient experience with online learning platform, inadequate well-designed assessment process to measure online outcome and lack of experience to develop e-content.

According to Huda and Amalina (2016), academicians who work between forty five to sixty hours per week is likely to suffer from job stress. Finding from this study has showed that workload and responsibility also determined job stress among academicians. Moreover, poor sleep quality will also affect the students' academic performance. The Malaysian Education Development Plan (Higher Education) 2015-2025 states that educators comprising lecturers and teachers are the leading components, representing a continuation of the National Higher Education Strategic Plan 2007. Therefore, the well-being of academicians needs more intention especially in the ODL higher education institutions, which has been given relatively less importance by the researchers (Akram, 2019).

1.3 Research Questions

Based on the problem statement above, the research questions arose as follows:

- a) Do Job Characteristics (job demand, job autonomy, social support), Working Conditions influence Academicians Well-Being?

- b) Does Job Stress mediate the relationships between Job Characteristics and Academicians Well-Being?
- c) Does Job Stress mediate the relationships between Working Conditions and Academicians Well-Being?

1.4 Research Objectives

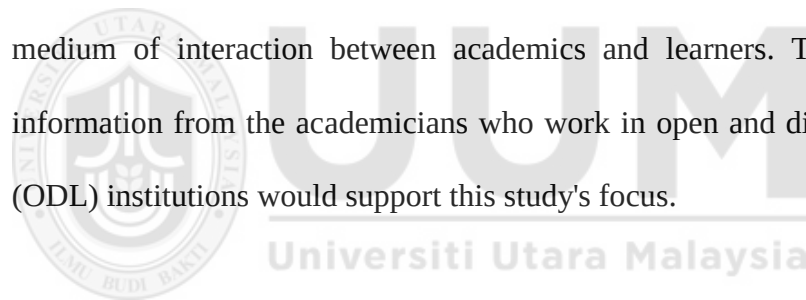
Therefore, this research was conducted with the purpose of:

- a) To examine the influence of Job Characteristics (job demand, job autonomy, social support) and Working Conditions on Academicians' Well-Being.
- b) To examine the mediating effect of Job Stress in the relationship between Job Characteristics and Academicians' Well-Being.
- c) To examine the mediating effect of Job Stress in the relationship between Working Conditions and Academicians Well-Being.

1.5 Scope of Study

This study is conducted at five open and distance learning (ODL) institutions that offer and conduct blended and online learning modes of study in Malaysia, namely Open University Malaysia (OUM), Wawasan Open University (WOU), Asia e University (AeU), Al-Madinah International University (MEDIU) and Global University of Islamic Finance (INCIEF). Although the number of ODL institutions in Malaysia is small, the increase in online learning and classes among educators and stakeholders in similar industries is

very high. Recently, more private, and public institutions are changing to the ODL mode. Four variables were tested in this study that involved job characteristics (job demand, job autonomy, social support), working conditions, job stress and academicians' well-being. Focuses are mainly on the academicians' working in the ODL environment regardless of full time, part-time or contract staff and academicians who have served for more than a year. The academicians were chosen because they are the key people in higher education responsible for executing the knowledge, delivering, designing, and implementing various teaching and supervision methods to the learners. Furthermore, the nature of the ODL environment forced the academicians to depend highly on the technology, support platform, and social media as a medium of interaction between academics and learners. Thus, collecting information from the academicians who work in open and distance learning (ODL) institutions would support this study's focus.



1.6 Significance of Study

1.6.1 Theoretical Contributions

The theory and findings contribute to understanding the importance of well-being among academicians in the ODL institutions. The study is an attempt by using Warr Model underpinned by social context theory to understand and explain how job characteristics (job demands, job autonomy, and social support), working conditions, job stress and academicians' well-being can influence the academicians' well-being working in an ODL environment.

Subsequently to investigate the mediating effect of job stress relationship between job characteristics and academicians' well-being and working conditions and academicians' well-being. Consequently, a research framework to be developed, hypothesised, and analysed using SPSS version 25 and partial least squares structural equation modelling (PLS-SEM).

1.6.2 Practical Contributions

The changing education system that aims to achieve the industry 4.0 goals would highly require educational institutions competencies in utilising digital technologies in adopting new methods to the learning process. These changes would also affect the academicians' productivity, performance and, most importantly, their overall well-being. The findings from this study serve as a useful reference to the ODL institutions, including higher education institutions (HEIs), to endorse a good work policy or strengthen the existing policy related to the well-being or wellness of the academicians. For example support by the Malaysia Qualifications Agency (MQA) in the development of Self-Instructional Modules (SIM) or e-content and reviewing of the assessment methods for ODL learners. It would also be beneficial to assist further the higher institutions management (human resource department) and academicians in having a clear understanding of their role, respectively. Guest (2017) supported the idea in his article about the relationship between Human Resource Management (HRM) and organisation performance that has been pursued at the expense of a concern for employee well-being.

1.7 Definition of Key Terms

The following terms and phrases are defined and elaborated for the reader's further understanding:

- a) In this study, academicians' well-being is discussed in relation to their performance and productivity. According to Hamar, Coberley, Pope, Rula (2015), the academicians would have a better quality of life, increased work productivity, and a greater likelihood of giving back to the learners and communities compared to academicians with poorer well-being. Furthermore, academicians who are in good physical and mental health are more likely to perform at their best at work (Harvard Business Review Analytic Services, 2019). As a result, academicians' well-being is defined in this study as the level of mental health, happiness, and job performance of academicians (Diedericks, 2019).
- b) Job Demand refers to the increase in workload, competing time demand, commitment and responsibilities of work that require continuous involvement from the academics in accomplishing their tasks (Theron et al., 2014; Van Veldhoven, 2014; Naidoo-Chetty, 2021). Hence, in this study, the term job demand is defined as academics' specific workload or the amount time and efforts spent in performing teaching tasks, facilitating learners cum curricular activities, supervision, publication, consultation, and managerial work (Rahman & Avan, 2016; Budiman, Fanany, Basaruddin, 2016)

- c) Job autonomy in this study refers to the freedom and control given to the academicians in performing their work and making decisions (Siti Khadijah & Siti Aisyah, 2020). The extent to which one job permits freedom, independence, and discretion to work schedule, making decisions, and selecting appropriate methods to perform tasks is part of job autonomy. Therefore, job demand in this study is defined as control given to the academicians in performing tasks assigned and in making decisions.
- d) Social support in this study explains the relationship between supervisors to supervisors and co-workers to co-workers in the workplace that can enhance and shape the positive well-being among academicians working in an ODL environment (Vera, 2016). Firdaus (2021) explained that all social support factors (supervisor, peer, and family support) have a positive and significant effect on the lecturer's performance because the role of social support at the workplace can reduce job stress and subsequently improve mental health (Mensah, 2021). Thus, social support in this study is defined as emotional and physical support from the co-workers, superior and family.
- e) Working Conditions is referred as work-related factors that impacted the academician's well-being (Lonnie Golden, 2015; Amirul, 2020; Maureen & Jonathan, 2019). Due to the specific regulations controlling the working hours, lecturers are having trouble separating work and spare time. This

can be because of the type of intellectual work lecturers do (which can be referred to as the academicians working in the ODL environment), intense workdays, and their emotional engagement with their students (Schad, 2019). As such, working conditions, in this study, is not only refers to the physical conditions of the workplace, but include the interpersonal relationships between academicians and management.

- f) Job Stress is a physical and emotional response that arose due to work demands, long working hours and job dissatisfaction. These job-related behaviours will lead to poor health, behavioural strain, and underperforming (Ya-Yuan Hsu et al., 2019). This study has indicated job stress as being overwhelmed by a heavy workload, frustration, and no control over work that emerged among the academicians in the ODL environment (Jacolize & Adele, 2018).

1.8 Organisation of the Thesis

Chapter 1 introduces the research background. This includes the background study of the characteristics of academicians' well-being and Open and Distance Learning environment. This will lead to the formation of the problem statement, research questions, research objectives, scope of the study, the significance of this study and the definition of the key terms.

Chapter 2 discusses the critical variables. Firstly, it will define the dependent variable, independent variables, and mediator. The next section will examine

the underpinning theories and empirical evidence to support the relationship between job characteristics (job demand, job autonomy, social support), working conditions, job stress and academicians' well-being, followed by the research framework, hypothesis development, research gap and summary of the chapter.

Chapter 3 presents the research design, operational definition, development of questionnaires, instrumentation, and measurement of the variables. Then, this study research carried out data collection sampling and present the procedures taken in this section. This study also examines the techniques of data analysis and a pilot test was conducted.

Chapter 4 interprets and discusses the findings by analysing the instruments' measurement and validity through SPSS version 25 and partial least squares structural equation modelling (PLS-SEM). Next, the analysis models and a chapter summary are discussed.

Chapter 5 discussed the relationships between job characteristics (job demands, job autonomy, social support), working conditions, job stress and academicians' well-being. Finally, the mediating of job stress discussed between job characteristics and academicians' well-being and working condition and academician well-being. Thereafter, the implications and future research, conclusion and recommendation of the study presented.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter has four parts. It begins with the general introduction of the definitions and concept of variables. This is followed by discussions definition of important and significant terms that are going to be heavily used in this dissertation. The third section describes the theories which underpin this study, the framework as a guide to this study and the research gap, thereafter, hypothesis development. Finally, it concludes with a summary of the discussion and a brief explanation of the subsequent chapter.

2.1 Definitions and Concept of Variables

2.1.1 Academicians Well-Being

World Health Organisation (2018) defined employee well-being as a state of mind where individual employee understands his or her own capability in managing normal stresses of life, work productively, and able to contribute to her or his community. On the other hand, Lubega, Joel and Lucy (2017) defined employee well-being as the process through which an individual can achieve or work actively to meet the environmental, physical, psychological, social, or spiritual domains of life in accordance with his or her deeply held values.

Medvedev and Landhuis (2018) opined that the employee well-being is a very wide terms which covers all aspect of normal life, for instance, physical, mental, social, emotional, and spiritual. In addition, past studies have shown that employee well-being factors include availability of adequate environment, ability to make physiological adaptations to the external environment, and opportunities to act with some autonomy to maintain self-direction in one's life. Past literature has also provided evidences that wellbeing is also a state of mind influenced by the ability to establish mutually supportive relationships in which the opportunity to give is as essential as the opportunity to receive support from others. Emma and Kim (2015), in their study, indicated that the management and employers believe that happier and healthier employees would increase the employees' efforts, contributions, and productivity.

According to Giorgi et al (2017), institution's success is highly related to improved employee well-being. This is proven by studies of Davidescu (2020), Clarke (2020) and Grabel (2017) who found that many universities and higher learning institutions benefited much by the success of their academics, indicating that academicians' well-being is an asset in their educational achievements, and that competency and performance of their academics contributes in achieving high quality education.

Therefore, in this study, academicians' well-being is described as the overall functioning at the workplace which can influence not only the performance of academicians but the overall academic performance of their institutions (Hsu, Huang & Huang, 2015; Tezci, Sezer, Gurgan & Aktan, 2015).

2.1.2 Job Characteristics

This study's job characteristics (job demands, job autonomy, social support) are derived from the Warr (1987) model. Specific functionalities of each job characteristic are presented in the subsections as follows:

2.1.2.1 Job Demands

Karasek (1979) described job demands as the psychological pressures associated with workload, unclear tasks, and work involving personal conflict. Past studies have also discovered that job demand is strongly connected with the number of hours worked per week, psychological discomfort, marital status, and employees' negative affectivity impacted on their health and well-being over time (Demerouti & Bakker, 2011; Skaalvik & Skaalvik, 2015). A study on job demands among academic staff in higher education by Chetty and Plessis (2021), have classified job demands into volume and complexity. They described volume as the number of tasks and speed at which it can be completed. While complexity of the demands was focus on the skill types and effort required to complete the tasks. Due to the globalisation and technological advancements nowadays, the researchers found that academicians were impacted with workload and teaching loads. These include redesigning the curriculum for online delivery, increasing staff-student ratios and student support, management of part-timer staff and academicians, and 24-hour availability (Bezuidenhout, 2015). Poalses (2018) stated that academicians

of time-consuming job requirements against which performance is measured. The increase in time pressure, work overload, working longer hours, and concomitant has increased academicians' stress levels, which can subsequently lead to poor well-being if not appropriately addressed. In addition, Ismail, Saudin, Ismail, Samah, Bakar (2015), in their research, asserted that academicians these days are overwhelmed with more academic and administrative works, and some of them are afraid to be laid off from the institutions if they could not deliver the job tasks.

Heavy workloads will gradually deplete the well-being of academicians. Therefore, this study views job demands as primarily refers to psychological demands such as the workload, institutional constraints on task, work pressure which focussing on the work characteristics of long working hours, tasks overload due to administrative duties, research activities and increase in students' demands that eventually cause stress and poor well-being of the academicians (Hulsheger, 2015; Du Plessis, 2019). Ceschi et al., (2016) suggested that as job demands increase, academicians' physiological and psychological resources will eventually be negatively affected. As a result, unfavourable work outcomes and work performance will occur. Under these circumstances and constant consumption of academicians' resources, many are unable to cope leading to increased likelihood of absenteeism and absence (Hakanen et al., 2006; Xanthopoulou et al., 2007).

2.1.2.2 Job Autonomy

Job autonomy, according to Hackman and Oldham (1975); Morgeson et al. (2005) and Frederick et al. (2005) refers to the extent to which the job allows the employee substantial freedom, independence, and discretion in scheduling work and determining the procedure to be followed in completing it. According to Wu et al. (2015), it also allows people to control their emotions and behaviours to achieve goals that are aligned with their personal beliefs. On the other hand, job autonomy is described by Ozkoc (2016) as employees' level of authority and flexibility to select how they execute their work. Past studies have also indicated that job autonomy allows workers to actively take control of their task until its completion (Hackman and Oldham, 1980) and highly associated with positive affective outcomes (Hackman and Oldman (1976).

However, the emergence of new technologies has created an imperative situation for organisations of all kinds to grant further autonomy to their employees (Alavi et al., 2016). Kubicek et al. (2017) further opined that low job autonomy is associated with deleterious effects. The employees would have experienced less power over many parts of their job autonomy and have no influence over their performance targets. In addition, employees who experience little control are inclined to experience higher stress levels and be less committed to work. These studies support Parker et al.'s (2001) study who found that job autonomy is a key employment attribute in creating a safer and more supportive workplace

In this study, job autonomy is defined as the freedom and discretion offered to academicians in conducting their work (Thomas, 2021). It is operationalised as the flexibility and freedom of expression given to academicians working in ODL to decide how their work will be accomplished, and is examined via criteria, such as opportunity and freedom to do work, including making decisions and controlling work progress (Morgeson and Humphrey, 2006). This is in support of Kubicek et al.'s (2017) study which discovered the positive influence of job autonomy on employee well-being and motivation. They suggested that if academicians are given autonomy in their job, they can perform their work more effectively and execute the service activities more. Therefore, job autonomy can be translated as the setting of responsibilities, expertise, and obligations. In addition, it implies the opportunity to develop the activity obligations and duties that need to be performed.

2.1.2.3 Social Support

Researchers have defined social support as a feeling of comfort, appreciation, attention, or help that a person gets from another person or group (Pluut et al., 2018). Social support is described as a function of social ties, and these social ties explain the quality level of interpersonal relationships (Kaplan, Cassel, and Gore, 1977). Further to this statement Gerald Caplan (1974) had addressed five concepts of the support system and listed three types of support activities. It is said that special bonding and friendships with others are considered to be emotionally satisfying aspects of an individual's life (Novitasari, Asbari, Purwanto, et al., 2020; Sutardi et al., 2020). Further, this study describes social

support, which has a specific role in reducing work stress (Mansour & Tremblay, 2016) as to include supports provided by superiors, co-workers, and family (Armstrong et al., 2015). This supports the contention that social support as a vital factor in enhancing effective workgroup interaction between employees, their supervisors, and co-workers. For example, the University of Minnesota (2016) described social support as having friends and other social connections as well as family relationships, which give one broader focus and definite self-image to improve the quality of life.

According to Harandi (2017), social support gives physical and psychological advantages to those who are confronted with severe physical and psychosocial situations and is a factor in reducing psychological distress when confronted with stressful occurrences. Higher levels of social support act as a buffer or as a direct factor in reducing stress perception and response, reducing distress, or increasing an academic's health and well-being (Glozah & Pevalin, 2014; Perera & Digiacomio, 2015). In conclusion, this study has adopted social support in the form of support from co-workers, supervisors, and family. It is undeniable that the role of social support at the workplace becomes one of the most critical variables that can impact employees' attitudes and boost their well-being because social support enhances employees' psychological well-being (Soulsby, Bennet, 2015).

2.2 Working Conditions

Working conditions, according to the International Labour Organization (ILO), encompass a wide range of themes and issues, ranging from working hours, rest time, and work schedules to remuneration and the physical and mental demands of the workplace. Working conditions are defined even more broadly in the European Union's (2019) which refers it as working environment and a component of an employee's terms and conditions of employment. As such, working conditions includes topics like workplace organisation and activities, training, skills, and employability, health, safety, and well-being, and working time and work-life balance. Because the above definition encompasses such a broad concept of working conditions, employee well-being is likely to be influenced not only by standard work-related variables, but also by variables that are often overlooked, such as interpersonal interactions, which are important for individual well-being.

Working conditions also include all parts of the organisations' culture and employees' involvement with the work (Markowitsch, 2018). Positive working conditions make people feel good about coming to work and provide the inspiration they need to stay on track at their jobs. Negative working conditions, on the other hand, can lead to a loss in health, whereas being engaged in good working conditions protects both physical and mental health. (Chandola and Zhang, 2017). In addition, according to Nappo (2019), improved working circumstances are linked to higher self-reported and objective health. Poor working conditions, he continued, are costly to

individuals because they can cause serious health impacts, contribute to sickness, absenteeism, and retirement, and reduce employee productivity. Furthermore, employees' performance may be influenced by tough working conditions (Danica and Tomislav, 2013).

In conclusion, this study translates working conditions as the interpersonal relationships which include irregular work timetables, hours of work, rewards such as recognition, respect, support, career opportunities, role clarity and employees' abilities (Nunzia, 2019). Adversely, poor working conditions can harm the employee well-being and may also influence employees' health and increase stress levels (Harvard University, 2016).

2.3 Job Stress

According to Mucci et al. (2015), stress is the result of a dynamic interplay between an individual and the social and organisational setting in which they work. It can also be defined as negative psychological impacts caused by characteristics of the profession. It is also seen as adverse psychological effects that result from aspects of the job. Job stress is further defined as an employees' feeling of job-related hardness, tension, anxiety, frustration, worry, emotional exhaustion and distress (Nur Izzaty, 2015; Bhui, 2016). Job stress is further described as the experience of negative emotional states attributed to work-related factors which will affect an individual's productivity, effectiveness, personal health, and quality of work (as cited by Prasad & Ahmad, 2021).

According to Park (2020), long working hours contributes to increased job pressure and decreased in the satisfaction of life-work balance, especially for employees who work long hours (Mc Namara et al., 2013; Wong, Chan, and Ngan, 2019). This has been explained by Karasek and Theorell (1990) that stress is presumed to result from a complex set of phenomena and is not just a consequence of a single external event acting on a person. In addition, based on the study by Mensah (2021), job stress can also occur when an individual's perceived ability to successfully cope with a circumstance at work exceeds their perceived ability to cope with the issue, resulting in negative reactions. As a consequence, job stress will have significant negative impact on academicians' mental health. In short, the lower their stress level, the better will be their health (Ekromi, Fraida and Tsalasah (2019). Applying these to academics, it can be implied that those who experienced job stress will show negative work performance, indicating that their well-beings are being compromised.

In this study, the poor performance of an academician may affect the overall learner's performance. Subsequently, the continuous evolution in the job characteristics (job demands, job autonomy, social support) has developed in an issue of high workload and stressful working environment (Basaruddin et al., 2016). Past research explored by Anthony, Florina, Adriana, and Efharis (2015) shows that workload, emotional and organisational demands are positively correlated with emotional, fatigue, depersonalisation and negatively with vigour. The continuation of this situation may lead to two different kinds

of effects, i.e., constant effect (poor performance neither improves nor unpleasant or harmful) or poor ill-health.

Furthermore, to measure the stress level, Ghamdi NG (2017) has used job stress scale developed by Parker and Decotiis (1983) to investigate the stress level among female university staff and statistical tools were applied consisted of correlation analysis and t-test. An extensive search from past studies and articles has found out that the academicians' job stress in ODL institutions in Malaysia is scanty, however, there are few research studies from South Africa (Du Plessis, 2019; Masuku and Muchemwa, 2015) on job stress among their academicians working in ODL environment. Job stress can be concluded as a physical and emotional response that arose due to work demands and long working hours which may lead to poor well-being. These job-related behaviours would cause poor health, behavioural strain, and underperforming.

Therefore, this study has described job stress as being overwhelmed by workload, frustration, and no control over work that emerged among the academicians within the ODL environment.

2.4 The Underpinning Theory

To further understand the academicians' well-being, numerous theories and models have been put forth in the literature, each seeking to describe and explain how job characteristics (job demands, job autonomy, social support), working conditions and job stress influence individuals' experiences of well-

being states and attitudes toward their work. In this study, the social context is the underpinning theory. According to the social context in an open distance education, social presence was found significant to academicians working in the open distance education, the degree to which individual feels socially present in the ODL environment (Short, Williams and Christie, 1976). The social presence explained the importance of social setting in the ODL environment where the learning process is heavily relied on the technology and system especially when interacting with the learners, learning materials and services. Pasick and Burke (2008) described social context as sociocultural forces that shape people's daily experiences and that directly and indirectly affect health and behaviour.

Besides, this study has adopted Vitamin Model (VM) by Warr (1987, 1998, 2007) to explain the job characteristics variables. Three job characteristics were adopted in this study, namely job demand, job autonomy and social support. In this model explained that those variables are related with three key indicators of employee well-being (Jonge and Schaufeli, 1998). They also describe psychological features of the environment in terms of vitamins such as the presence of each in the environment is important for psychological well-being, but on the other hand, their effects on well-being will vary as their level increases. According to Warr and Nielsen (2018). Unhealthy well-being at work can create negative effects on the performance and overall productivity of the employee. In relation to this study, poor performance of an academicians may affect the overall learner's performance. Subsequently, the continuous evolution in the job characteristics has developed in an issue of high workload

and stressful working environment (Basaruddin et al., 2016). Past research explored by Anthony, Florina, Adriana, and Efharis (2015) with evidence shows that workload, emotional and organisational demands were positively correlated with emotional, fatigue, depersonalisation and negatively with vigour. The continuation of this situation may lead to two different kinds of effects i.e., constant effect (poor performance neither improves, nor unpleasant or harmful) or poor ill-health. This is shown in figure 2.0.

Furthermore, job demand and job autonomy were discovered to be linearly linked to depression, anxiety, and contentment. Qualitative and quantitative workloads, control or discretion of employees executing activities, and the level of repetition of jobs are all regarded important for employee well-being. As a results, the work surroundings that creates these job characteristics through the way work is planned and organized is regarded as one of the utmost important influences on employee well-being. Moreover, job demands, and job autonomy are also closely associated with depression, anxiety, and satisfaction linearly. Job characteristics (job demands, job autonomy, social support) are considered vital for employee well-being, including qualitative and quantitative workloads, control or discretion of employees performing tasks, and level of repetition.

As a result, the work surroundings that create these job characteristics through the way work is planned and organised is regarded as one of the utmost important influences on employee well-being.

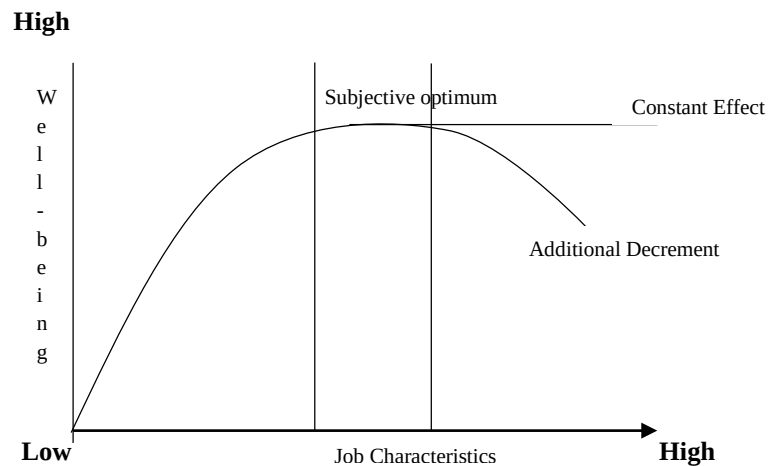


Figure 2.0: The Vitamin Model

2.5 Research Gaps

As presented in the following section, many research studies have investigated the relationships linking job characteristics (job demands, job autonomy and social support), working conditions and job stress on the academicians's well-being and the prediction of job stress on the educator's performance. However, fewer studies have examined their relationships on the well-being of academicians working in an ODL environment and how these variables influence those (Andrew, Haris, Zakariah, Zekaria, 2016). Furthermore, Mudrak, Zabrodska, Kveton, Jelinek, Blatny, Solcova, Machovcova (2017) research findings suggested that the salience of some work-environment factors, such as work demands or job insecurity, might differ across national systems of higher education which require more investigation and future research.

Moreover, according to Mohammad (2018) study, further research be conducted to explore the development of strategies, such as enhancing institutional support to aid work-life balance, paralleled with designing assessment to enhance well-being. He stated that it would be interesting to explore the relationship within other areas, aside from organisational perspectives such as the quality of work-life, regulations from the government, and job stress. Nevertheless, many past researchers are dedicated to the improvement of teaching and learning.

However, not much on research has been conducted pertaining to the well-being of the academicians or those involved in imparting the knowledge especially in the ODL environment.

2.6 Research Framework

Based on the above literature review on the academicians' well-being, the following framework has been developed to illustrate all the variables discussed. Figure 2.1 is shown below:

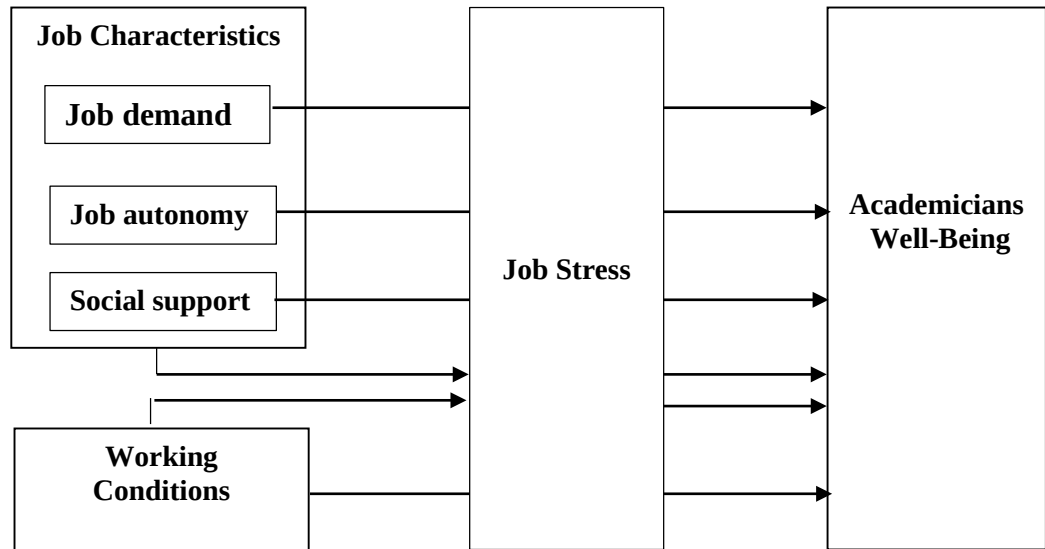


Figure 2.1: Research Framework

2.7 Hypothesis Development

This section reviews the literature on the relationship between job characteristics (job demands, job autonomy, social support), working conditions, job stress and academicians' well-being, followed by hypotheses formation.

2.7.1 Job Demands and Academicians Well-being

Muhammad Nur Amirul Arbae et al. (2019) found that most academicians have an average number of teaching hours per week i.e., more than 20 hours. These include teaching, consultation, research, and publication. A few academicians claimed that the workload had decreased when they became promoted to a new designation, while some had reported that the workload had increased. This may be due to conflicting demands at work or unclear tasks assigned. A study by Vallo and Mashau (2020) found a moderate relationship

between standard working hours and well-being and a moderate relationship between productivity and well-being. Sovold (2021) found that job demands can ruin the employees' physical and psychological resources, eventually resulting in health problems and destitute employees' well-being. Examples of job demands include strongly overwork and pressure and emotionally taxing interactions with the client (Kim 2018 and Broetje, 2020). The primary procedure anticipated that ineffectively planned occupations and high job demands contrarily influence employee well-being (Tesi, Aiello, and Giannetti, 2018).

Furthermore, evidence is emerging that email has become a major source of stress for university employees. Staff and students' excessive use of email, combined with the expectation of a speedy response, created a sense of overload (Pignate et al., 2015). Access to emails outside of conventional working hours might exacerbate the negative effects of work overload among academics, particularly where job commitment is strong and work-life boundaries are fluid and permeable (Kinman, 2016). Thus, job demands can be concluded as the key attribute to pressure and stressor for employees. For instance, task workload, time pressure, ambiguous roles, and workplace conflict are some of the causes, and this would eventually result in health problems and decrease in work performance, increase absenteeism and burnout (Alghamdi, 2017). Report findings of a study on the work demand, work-life balance, and well-being among academic staff in the United Kingdom indicate that job demands, and level of psychological distress are high and working during evenings and weekends is commonplace (Kinman

and Jones, 2015). Skaalvik and Skaalvik (2016) explained that high job demands in the long term may result in declining educators' well-being. The demand factor is in critical condition, including relationship and role factors, which also cause academic staff to encounter harmful stress levels. These findings support Heigstra and Rafrisduttor's (2010) argument that the possible negative effects of technology on academicians' well-being were also emphasised in a study of Icelandic academics. According to a study of 2127 Danish university staff, long working hours considered core to the profession, such as research, had a weaker relationship with well-being than illegitimate hours, such as administration (Opstrup and Thingvad, 2016). Almost solely, job demand is linked to stress (Mudrak et al., 2017). Workload has a favourable impact on employees' workplace stress, according to a recent study by Farah and Hazrina (2019). Hence;

H1: There is significant influence between job demands and academicians' well-being.

2.7.2 Job Autonomy and Academicians Well-being

Job autonomy was found to be positively associated with job involvement, job satisfaction, good health, and academicians' well-being, motivational support, and the meta-cognitive learning processes (Van Dorssen-boog, 2020; Khosnaw, 2020). This statement supports the claim that academicians' performance would increase if they were empowered to deliver tasks and make decisions. However, the lack of autonomy reduces employees' performance (Langfred & Rockman, 2016; Sai, 2016). As a result, it will increase staff

absenteeism and turnover (Johari, 2018). Drawbacks of job autonomy have dire consequences at the organisational and individual levels (Lu et al., 2017). Moreover, Clausen (2021) and Adil (2018) found that jobs with high demands, low autonomy and low support are added to representatives' emotional well-being. Mudrak et al. (2017) also found that job autonomy influenced a widespread impact on academic staff well-being. Academics who perceived more job autonomy, social support and flexible working conditions from the institutions will increase their well-being (Kinman and Jones, 2015). Besides, job autonomy is also identified as one factor contributing to building trust and raising enthusiasm among employees that they are part of efforts in achieving results (Terason, 2018).

The Vitamin model (Warr, 1987) predicts a positive link between job autonomy and psychological well-being at lower levels of job autonomy. At higher levels of autonomy, however, increases in autonomy are likely to be inversely associated to psychological well-being. These dynamics may also apply when employees discover that they lack the abilities or requirements to deal successfully with high degrees of job autonomy. In such instances, increased professional autonomy may become a potential stressor, negatively impacting the employee's psychological well-being.

Johnson and Spector (as cited in Bhui, 2016) argued that job autonomy could prevent employees from being emotional about work tasks and overcome stress due to high job demands, eventually leading to less turnover (Peart, 2019). Job autonomy, according to Park and Searcy (2012), can be regarded

as a predictor of mental well-being based on Warr's conceptualization (1987). Warr proposes a multi-dimensional definition of mental health, with five core dimensions: affective well-being, competence, autonomy, aspiration, and integrated functioning. Furthermore, Warr has enlarged his research by distinguishing between context-free mental well-being and context-specific mental well-being (mental well-being resulting from an employee's job experiences). Finally, excessive levels of job autonomy may cause worry or a decrease in psychological well-being in circumstances where the level of job autonomy surpasses the worker's capacity (Vitamin model).

Csikszentmihalyi's theory of flow similarly articulates the relationship between job autonomy and psychological well-being as an inversed U-shape. According to this viewpoint, a work scenario characterised by a match between situational demands and the worker's skills is more likely to result in psychological well-being. If the circumstances demands surpass the worker's abilities, anxiety and a decrease in psychological well-being may result (Csikszentmihalyi, 2000).

H2: There is significant influence between job autonomy and academicians' well-being.

2.7.3 Social Support and Academicians Well-being

Social support can act as instrumental support from supervisors and co-workers that would be valuable to decrease burden (Yang, 2016). Specific interventions are based on the introduction of proactive changes in the

workplace for different types of employees, including educators, and the interventions have enhanced their well-being and performance at work (Balker et al., 2016; Hodzie et al., 2017; Van Wingarden et al., 2017). The role of social support is to reduce stress. Stress might result from an unbalanced interaction between job responsibilities and social support.

Furthermore, past study has suggested that a lack of support can lead to stress, which can negatively impact other aspects of human life (ILO, 2020). Employee well-being can be facilitated by reducing strain at the source and buffering or moderating the impact of stresses such as high demand through a healthy working relationship and mutual support (Joel and Isabella, 2020 and Obrenovic, 2020). Another factor that needs improvement and monitoring is the manager's support and peer support. These factors can slowly lead to the lowest stress level if those involved are unaware of current conditions. Control and change factors have scored above average, and the respondent is in good shape (Muhammad Nur Amirul Arbae et al., 2019). According to Mudrak et al. (2017), academics may be mostly content with their jobs if they have available and sufficient employment resources, such as if they consider their social environment as helpful and have a strong influence over their work.

Additionally, Warr (1998) and Kahneman (2009) explained that the employee well-being can be increased by social support from co-workers and employers, communication, and superior and physical security variables. In addition, this study research has supported the findings conducted by Panatik, Rajab and Shaari (2012) on academicians' well-being where it was found that high level

of participation from the academicians and managerial job control including informal support from supervisors and co-workers are correlated positively. The lack of social support is a determinant of mental health problems, including depressive symptoms among university students (Bukhari & Afl, 2017; Safree & Dzulkifli, 2010), and it has a negative impact on the quality of life for students (Dafaalla et al., 2016). In addition, research evidence indicates a significant negative relationship between social support and psychological disorders, including depression and stress (Alimoradi, Asadi, Asadbeigy & Asadniya, 2014; Bukhari & Afzal, 2017; Kugbey, 2015).

H3: There is significant influence between social support and academicians' well-being.

2.7.4 Working Conditions and Academicians Well-being

In a study conducted by Bum-Joon Lee et al. (2014), the relationship between general working conditions factors and academicians' well-being is supported. The findings indicated that the academicians' well-being is significantly increased when they are satisfied with their working conditions. A further study conducted by Mudrak et al. (2018) found that occupational well-being among university faculty is associated with stress and the work conditions influence different aspects of occupation well-being. According to study conducted by Kinman and Wray (2020), perceptions of support in UK universities have decreased over time, and the quality of working relationships has deteriorated. Due to a lack of time and energy, the increase in demand and role stress is likely to have limited opportunities for academics to receive and

offer support over time. Academic leaders appear to have a critical role in fostering favourable working circumstances in academic institutions (Machovcova and Zabrodska, 2016).

A Danish study also observed that lack of congruence between participants' expectations of academic freedom, poor recognition, and job security and their actual working conditions increased the risk of stress (Kinman and Wray, 2020). These working conditions had a significant and direct positive effect on job stress, as in the case study conducted by Mai and Vu (2016). In addition, working conditions influence employees' mental health and stress levels (Chan, 2016; Giorgi et al., 2018). Therefore, working conditions can eventually affect the academician's well-being. Organisation research studies indicate that working conditions in leadership, workload, co-workers have a significant influence on worker's quality of (Davidescu, 2020, Bhui, 2016 and Rupietta, 2016) as the influence of working conditions on health has been studied extensively over the years (Karasek and Theorell, 1990). Subsequently, Bum, Shin, and So-Hyun (2014) found that the well-being of workers in their study was essentially higher when they were satisfied with their working conditions, when their real working hours were the same as their expected working hours or surpassed less than 10 hours and when their employment was steady. Longer working hours, in general, would decrease the health and well-being of employees, and low flexibility and high variability of working hours were consistently associated with poor health and well-being. This indicates that long working hours and productivity were positively

correlated and statistically significant with health and stress level, well-being, job satisfaction, working conditions and environment.

In 2015, Claartje and Ward found that flexible working designs produced opportunities to improve the work/life balance, enhance job autonomy, and effective interactions. This shows that flexible working in the workplace can improve well-being. The influence of working conditions on health has been studied extensively over the last two decades.

H4: There is significant influence between working conditions and academicians' well-being.

2.7.5 Job Stress and Academicians Well-being

Complex working and living situations, long working hours, and shift employment, especially night-time work, were identified as psychosocial stressors by Baste and Moen (2009) in their previous study. All these things can have an impact on well-being, environment, and safety. Teaching is a highly emotional profession for professors, and it is linked to high levels of stress, which can lead to work unhappiness, psychological disorders, and poor well-being (Harmsen, 2018). According to previous research, stress among university employees has serious repercussions not just for the employees but also for students (Lease, 1999). Workload and stress, for example, resulted in less time spent on research, publishing, and development, as well as lower teaching standards and negative effects on staff relationships, emotional health, family relationships, and leisure activities (Boyd and Wylie - as cited

by William et al. 2017). Job stress significantly affects the well-being of academicians in Higher Education at Northern Ireland University (Shen and Slater, 2021).

This study also found that academicians experienced moderate stress levels during pandemic outbreaks (Kinman, 2016). This was because the academic and outside environments in different countries can impact academicians differently (Shen and Slater, 2021). However, the study has shown that the academicians were in poor emotional well-being during the pandemic.

H5: There a significant influence between job stress and academicians' well-being.

2.7.6 Job Stress mediates relationships between Job Characteristics and Academicians Well-Being

A study on the mediating effect of job stress between work environment characteristics and burnout revealed that both relationships can be primarily accounted for by the job stress (Badawy, 2015). The different stressful work environment characteristics caused job stress. According to the findings, among the seven work environment characteristics, five such as lack of work cohesion, lack of supervisor support, lack of autonomy, work pressure, and lack of innovation could be used to predict stress. Job demands can change into work stressors when it is realised that those demands require considerable efforts from which the employee has never really recovered (Golden, 2015).

In addition, Enhassi et al.'s (2015) study found that the mediation of job stress has been partially studied. It is believed that stress at work would affect the employee's well-being and organisation performance (WHO, 2020). Therefore, job stress occurs because of contention and uncertain appointed assignments that influence the well-being of the workers. In addition, according to Jialin and Andrew (2018), in the relationship between job demands, job support and control, it was found that job demands, job support and control were mediated by fatigue. They also found a correlation between stress and work-life balance and well-being. Previous studies reported that social support could buffer the negative impacts of pressure (Coulon, 2015). Salami (2010) indicated that when academicians face pressure, social support from the head of departments, associates, families, and others will help limit passionate trouble. In the end, support their confidence, the two of which, thus, upgrade their capacities in adapting viably to job-related issues they are stood up to with.

Therefore, social support can be concluded as the physical and enthusiastic comfort given to a person by family, colleagues, and businesses. As a result, a lack of support from co-workers and superiors was identified as a source of job stress and low workplace well-being (ILO, 2016). Susana, Jose, and Sixto (2017) discovered that the dampening effect of recognition and social support on Occupational Health European Professionals varied depending on whether the support came from colleagues or superiors. Without such an environment as a determining factor, there is an increased probability of them experiencing work-related pressure and unfavourable physical consequences on the well-

being of the workers. In addition, Muhammad, and Mayra (2018), in their study of job demand-resources (JD-R), showed that workload, autonomy and work-life imbalance have a positive correlation impact on burnout which sequentially shows a negative impact on employees' well-being. Burnout was also found to be associated with depression (Panagiota, Anthony & Katerina, 2019).

H6: Job stress mediates the relationship between job characteristics (job demands, job autonomy, social support) and academicians well-being.

2.7.7 Job Stress mediates relationships between Working Conditions and Academicians Well-Being

Stress has been recognised as an important outcome measure in various working environments (Amjad and Umair, 2021). A comparative study on employees working in Ireland (Helen, Bertrand, Dorothy & Eamon, 2018) found that the working pattern such as working during weekends or shift work was notably linked with job stress. For example, Sulistiyono (2019) research on job stress caused by workload and working conditions and loan collection performance in banking institutions suggested that job stress could mediate workload influence toward loan collection performance. According to Sulistiyono (2019), the excessive workload will increase job stress and eventually impact employee work performance. Work performance is associated with employee well-being (Kundi, 2020). Poor working conditions may be an important precursor of stress and may subsequently contribute to the development of depression and anxiety (Dollard et al., 2019). Edem et al.

(2017) provided empirical proof that a comfortable and healthier work environment are factors causing an enhancement in employees' productivity. Additionally, workplace conditions can affect the employee physically, mental, or emotional level and harm their well-being. It is also known as the mutual action between the working conditions and characteristics of the workers. This happens because of an imbalance between job demands and workers' capabilities.

According to Nappo (2020), job related includes job demand, pressures, degree of autonomy, flexibility, interpersonal relationship with superior and co-workers, and length of work hours. Results indicated that both interpersonal relationship and job stress are correlated. Researcher explained that help and support provided by a manager decreases the probability of being stress at work, while receiving help and support from co-workers is most probably increase the job stress occurrence. However, maintaining cooperation and getting on well with co-workers decrease the probability of experiencing stress, confirming the positive and gratifying features of contact with co-workers.

H7: Job stress mediates the relationship between Working Conditions and academicians' well-being.

2.8 Chapter Summary

This chapter reviews the literature that focused on the relationships between job characteristics (job demands, job autonomy, social support), working

conditions, job stress and academicians overall well-being. The literature also focussed on the Job Stress as the mediator between Job Characteristics (job demand, job autonomy, social support) and academicians well-being and working conditions and academicians well-being relationship respectively. A research gap was discussed to explore a new area that has yet to be explored and the theory adopted in the study to support this research was elaborated. Finally, the chapter explained how the hypotheses were developed and stated for verification in the study.



CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter explained the research framework and hypothesis development between the independent variables of Job Characteristics (job demand, job autonomy, social support), mediating variable (job stress) and dependent variable (academicians well-being). These include the descriptions of the research design and methodology which incorporate the unit of analysis, sample size, population, and sampling technique, development of questionnaires, research instruments and measurement used in this study. Additionally, a pilot study was conducted to determine the reliability and validity. Lastly, summary of this chapter.

3.1 Research Framework and Hypothesis Development

Based on the hypothesis in chapter 2, the research framework is shown below:

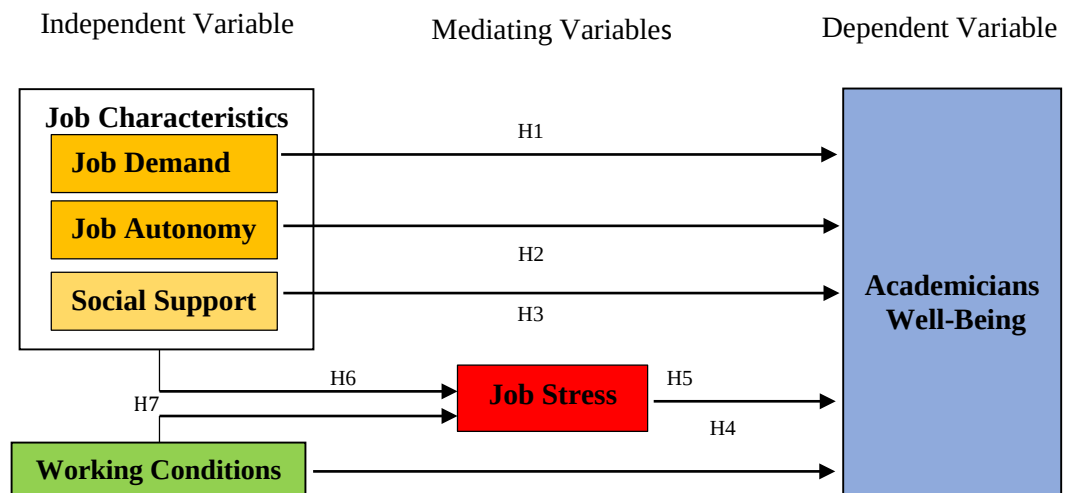


Figure 3.1: Hypothesis Research Model

3.2 Research Design

The quantitative research design as adopted in this study, examined the relationship between variables, and examine the hypothesis (Sekaran & Bougie, 2016). This approach is adopted because it can demonstrate the relationship between the variables (Bieger and Gerlach, 1999) and is useful to extract information and test the generalisability of factor by measuring the information numerically (Creswell, 2014; Patten & Newhart, 2017; Creswell & Poth, 2017). Quantitative research is popular method in the social sciences and involves testing one or more hypothesis. The questionnaires were adapted in the form of cross-sectional and was developed based on the objectives of the study which contained a structured question. By collecting all information through a survey questioned, the patterns and example of the relationship between job characteristics (job demand, job autonomy, social support), working conditions, job stress and academicians' well-being are distinguished.

The research also examined job stress as the mediator on the relationship between job characteristics and academician well-being and working conditions and academician well-being. Primary data is gathered and assembled specifically for the research purpose to test the hypothesis and examine the relationships between variables in this study (Zikmund, 2003). Self-reported questionnaire was employed for this study to collect data from the respondents.

3.3 Unit of Analysis, Determination of Sample Size and Sampling Techniques

This section will discuss subsections for units of analysis, sample size determination and sampling techniques.

3.3.1 Unit of Analysis

The study involved an analytical unit consisting of employees serving as academics working at Open and Distance Learning (ODL) universities. This approach was used to assess the influence of job characteristics (independent variable) on academicians' well-being (dependent variable) and job stress (mediating variable) between job characteristics and academicians' well-being. The academic staff working in the five selected universities including part time academicians or Academic Facilitators (AF) who have been serving the ODL institutions for more than 2 years is shown in Table 3.0. At present, there are five ODL universities, namely, Open University Malaysia (OUM), Wawasan Open University (WOU), and the International Center for Education in Islamic Finance (INCEIF), Al-Madinah University (MEDIU) and Asia e University (AeU). The researcher have contacted the universities by telephone to get the total figure of the academicians working in the universities. This study's samples are academicians who were directly involved in the day-to-day operations of the academic and academic administrative systems, ranging from assistant lecturers to professors. Some hold positions of authority, such as Deputy Vice Chancellor (DVC), Dean, and Head of Department (HOD).

Table 3.0

Numbers of Academicians

Universities	Academicians	Declined	Part-Time (PT)	Total
OUM	75	75		NIL
WOU	50			50
AeU	30			30
MEDIU	50			50
INCIEF	20			20
Academic Facilitators (AF)			50	50
TOTAL	225			200

3.3.2 Determination of Sample Size

Leading management scholars such as Krejcie and Morgan (1970), Hair, Ringle & Sarstedt (2011) and Erdfelder, Faul & Buchner (1996) assert that there are no universal measuring criteria for identifying the appropriate sample size in social science studies. To ensure sample size consistency, this determination can be made based on methods by Krejcie & Morgan (1970). According to the sample size that was simplified by Krejcie and Morgan (1970), from 200 academicians, the sampling frame taken must be 100 respondents to ensure a good decision model. This statistical formula provides an estimate of the accuracy of the number of respondents to meet the minimum level of sampling required in this study. According to Hair and Hult (2017), Burchinal (2008), Sekaran and Bougie (2015), there is no minimal sample size guideline, however there are several frequently accepted principles for determining the sample size, which is inverse to the population size.

3.3.3 Sampling Techniques

Most scholars agree that the random sampling technique is the best instrument to ensure that the study sample is representative of the population and has no element of selectivity. This study has utilised the simple random sampling techniques for the primary collection of the data. The reason was to ensure all the academicians have a fair chance representing the samples (Saunders, Lewis & Thornhill, 2012). The survey was conducted at five identified ODL universities in Malaysia (OUM, WOU, INCEIF, MEDIU and AeU) and the academicians or academic staff have been identified as the respondents in this study.

3.3.4 Questionnaire Development

The questionnaires development for the instruments are relevant to the research objective and validate through pilot test. The instruments measurement was adapted from the sources as follows: Six utilised instruments were explained: i) job demand (Karasek, 1979) to describe the workload carried by the academicians, ii) job autonomy (Hackman et al., 1976) to explain the level of autonomy given by the management to the academic staff, iii) social support Caplan et al., (1975) that describe support received from co-workers, supervisors, and family, iv) working conditions COPSOQ II (Pejtersen, 2010) described the work environment at the workplace, v) job stress (Parker and Decotiis, 1983) described the stress at workplace in which the academicians are unable to cope in order to meet the

job load, and vi) academicians well-being (Ryff, 1995) that described the academicians well-being in the workplace.

A panel of two experts were used to validate the instruments through content validity (quantitative) method. Items in the questionnaires are coded by identifiable codes comprising alpha numerals. The job characteristics was coded as job demand (JD), job autonomy (JA) and social support (SS). For example, the first question for the job demand was coded as JD1, the next question was coded as JD2, and the sequence follows. Similar approach used for job autonomy, which was coded as JA1, and social support, which was coded as SS1, and so on. Working conditions was coded as WC1 while job stress was coded as JS1. Likewise, academic well-being was coded as AWB. Upon completion on data coding, the responses were entered accordingly into SPSS version 25 for analysis and thereafter, partial least squares structural equation modelling (PLS-SEM).

- **Job Demand**

This study has adapted perceived work demand (PWD) to measure the job demand. Five items scale developed by Boyar, Carr, Mosley, and Carson (2007) were used to measure the extent to which one perceived one's job stressful and burdensome in an ODL environment. Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale (Cronbach 1951). This has revealed a good validity of the scale.

- **Job Autonomy**

Job autonomy refers to the degree to which the job provides substantial independence and freedom to the employee in scheduling their work. Nine items were taken to measure job autonomy from the Work Design Questions (WDQ) which represent three dimensions under job autonomy; work scheduling autonomy, decision making autonomy and work methods autonomy (Hackman et al., 1976). According to Onn, Khen, Zee, Ni, Yong, and Sin (2014), job autonomy is an important antecedent to improve academic staff commitment within the institutions. Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale. This has revealed a good validity of the scale.

- **Social Support**

Caplan et al (1975) developed a social support instrument that comprises subscales that describe the assistance an employee feels are available from co-workers, superiors, and family. It describes how much these three sources go out of their way to assist employees, are easy to talk to, can be counted on when things become rough at work, and are willing to listen to an employee's personal problems. This scale has been widely utilised and is still one of the most widely used scales for assessing social support in the workplace (Lim, 1996). Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale. This has revealed a good validity of the scale.

- **Working Conditions**

The working conditions instrument adapted COPSOQ II – Copenhagen Psychosocial Questionnaire short version of 40 items. The questionnaires were developed by the National Centre for the Working Environment, Copenhagen, Denmark. It was developed as a tool for workplace assessment of psychosocial work environment. Theoretically, the original COPSOQ is based on Kompier (2003) work. This study used 12 scales to assess four dimensions of working conditions: demand at work, work organisation and job content, and interpersonal relationships and leadership, and social support from supervisor. The 12 scales are quantitative demand, work pace, emotional demand, influence, growth opportunities (skill discretion), and commitment at the workplace, predictability, recognition, job clarity and social support from supervisors (Pejtersen, 2010). Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale. This has revealed a good validity of the scale.

- **Job Stress**

Job stress is operationally explained as poor work relationships, lack of control, work overload, and work demand (Ogechi, 2020). Therefore, the crucial understanding on the root cause is important to increase academicians' job performance and health. Job stress in this study was measured with eight items scale adopted from Parker and Decotiis (1983). The original scale of Parker and Decotiis (1983) had thirteen items. However, for the purpose of

this study, only eight of the thirteen items were used because of space limitation on the questionnaire and time spent by the academicians. It consists of two dimensions i.e., time stress and anxiety. Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale. This has revealed a good validity of the scale.

- **Academicians' Well-Being**

These items of the academician's well-being were developed by Ryff, the 42 items of Psychological Well-Being (PWB) scales to measure six aspects of wellbeing and happiness of the academicians i.e, autonomy (A), environmental mastery (EM), personal growth (PG), positive relations (PR) with others, purpose in life (PL) and self-acceptance (SA) (Ryff et al., 2007) adopted from Ryff, (1989). However, only sixteen items were adopted from the short version (Ryff and Keyes, 1995). These instruments have been used by numerous researchers in their studies to measure the well-being of the academicians and learners in the higher institutions. Cronbach's alpha values ranged from 0.7 to 0.88 which indicates good internal consistency of the scale. This has revealed a good validity of the scale.

All the construct using responses one to seven Likert scale format which ranging from strongly agree and strongly disagree. In social science studies, this scale is commonly used to measure optimal reliability to produce stronger correlations with t test results to measure respondent satisfaction (Lewis, 1993). According to Cox (1980) the ideal scale is focused on the number of

odd answer choices that are capable of producing a neutral or better response. Thus, all items contained in this questionnaire were measured using a Likert scale consisting of seven multiple choice answers such as "strongly disagree (1)" to "strongly agree" (7)".

3.3.5 Questionnaire Design and Item Development

This study has adopted the questionnaire survey method to assemble the information to investigate the relationship between job characteristics (job demand, job autonomy, and social support), working conditions, job stress and academicians' well-being. This study examined the influence of both independent and dependent variables and job stress as the mediator. The methodology is fundamentally the same as with numerous academicians' well-being studies in Malaysia. Therefore, to ensure a high response rate, the survey questionnaires have adopted simple and clear wordings. The survey questionnaires comprise of seven pages. The front page of the questionnaires was designed with a brief outline of the study, purpose, aims and its objectives. The cover page also incorporates the definition of terms and it composed of two sections namely, Section A and B which each section separated using important heading. Further precise and clear instructions were given in each section. Section A variables of academician well-being reflected in the writing were captured in a demographic area with inquiries on sex, age, years, salary, highest education background, years of experience in the profession/employer and job positioning. Section B focused on the structural model with 61 questions were asked. There was a solitary generally proportion of academic

well-being, utilizing a 7-point Likert scale from strongly disagree to strongly agree to measure the variables based on literature review. This study employs an interval scale measure to meet the requirement for continuous data distribution to employ the parametric statistical analysis (Awang et al., 2015, 2016; Hoque et al., 2016, 2017; Afthanorhan et al., 2017). The academic well-being variables were measured by approximately of 61 items totally. Table 3.1 shows the item of questionnaires.

Table 3.1

Distribution of Variables

Variables	Items in Questionnaires
Job Demand (5 items)	My job requires me to work fast. My job requires me to work hard. My job requires excessive amount of work. I feel that I do not have enough time to accomplish my work. I must face several conflicting demands in my work.
Job Autonomy (5 items)	The job allows me to plan how I do my work. The job allows me to make decisions about what methods I use to complete my work. The job provides me with significant autonomy in making decisions. The job allows me to make my own decisions about how to schedule my teaching. The job gives me a chance to use my personal initiative or judgement in carrying out the work.
Social Support (8 items)	My immediate supervisor is very understanding and always help me in doing things at work. My co-workers will go extra miles in helping me to accomplish work. My family, relatives and friends are very understanding and will help me whenever I needed.

I can rely on my immediate supervisor if I have problem at work.
 My co-workers always support me whenever things get tough at work.
 I can rely on my spouse, friends, and relatives when I have problem at work.
 My immediate supervisor is willing to listen to my personal problem.
 My co-workers will listen to my personal problem and give advice.

Working	I feel am lagging behind at my work.
Conditions	I can manage my work task on time.
<i>(19 items)</i>	I can work in a fast-paced environment.
	I can work in a fast-paced environment throughout the day.
	I can manage all the negative emotions at work.
	I must relate to other people's personal problems as part of my work.
	I have a large degree of influence concerning my work.
	I can learn new things through my work.
	I was given the opportunity to take the initiative at work.
	I enjoy doing my work.
	At my workplace, I have been informed well in advance about the changes, important decisions, or plan for the future.
	I receive all the information I need to do my work well.
	My work is recognised and appreciated by the management.
	I am being treated fairly at my workplace.
	My work has a clear objective.
	My work meets my expectation.
	My immediate supervisor gives high priority to job satisfaction.
	My nearest supervisor is willing to listen to my problem at work.
	I will get help and support from my nearest supervisor.
Job Stress	I have a lot of work and fear that very little time to do it.
<i>(8 items)</i>	I feel so burdened that even a day without work seems bad.
	I feel that I never take a leave.
	Many people at my office are tired of the company demand.
	I get nervous when performing my work.
	My job responsibility is too high.
	Many time, I am burdened with too much work that I cannot complete.
	Sometimes when I think about my job, I get a tight feeling in my chest.

Academicians	When I look at the story of my life, I am pleased with how things have turned out so far.
Well-Being	
<i>(16 items)</i>	The demands of everyday life often get me down. In many ways I feel disappointed about my achievements in life. Maintaining close relationships have been difficult and frustrating for me. I live life one day at a time and don't really think about the future. In general, I feel I oversee the situation in which I live. I am good at managing the responsibilities of daily life. I sometimes feel as if I've done all there is to do in life. For me, life has been a continuous process of learning, changing and growth. I think it is important to have new experiences that challenge how I think about myself and the world. People would describe me as a giving person, willing to share my time with others. I gave up trying to make big improvements or changes in my life a long time ago. I tend to be influenced by people with strong opinions. I have not experienced many warm and trusting relationships with others. I have confidence in my own opinions, even if they are different from the way most other people think. I judge myself by what I think is important, not by the values of what others think is important

3.3.6 Pilot Test

A pilot study was undertaken before the actual fieldwork. A total of 50 respondents were engaged in the pilot study. This study has used the convenience sampling as this method helps to evaluate actual value quickly

and save time (Ahmad & Ashraf, 2016). The sample size is aligned with the recommendation by Cooper and Schindler (2011) of between 25 and 100 individuals. Principally, the sample size determination for the pilot and field study of this research follows the rule provided by Hair, Black, Babin and Anderson (2010). Using the Cronbach alpha coefficients for the item scales, the results were reliable with values ranging from 0.856 - 0.948 which is above the threshold value of 0.7 (Nunnally, 1978), the pilot survey indicated that all scales were reliable and valid. The approach of pilot study in the development of the instruments in the questionnaires will help to provide the appropriate level of internal and content validity (Ooi & Tan, 2016).

3.4 Data Analysis

Hair et al., (2017) recommend using a data analysis approach for screening and diagnosing data to confirm the instrument's validity and reliability, as well as to assess the study model's strength. The Statistical Packages for Social Science (SPSS) version 23 was used to check the questionnaire data in three stages: checking the missing value, checking the extreme value (outliers), checking the normality data and descriptive analysis. Meanwhile, factor validation analysis, direct effect model, and indirect variable effect model were all performed using the SmartPLS (Smart Partial Least Square) software package version 3.0.

3.4.1 Data Analysis Using Statistical Package for The Social Sciences (SPSS) Software

The data from the survey should be checked using SPSS software version 25 (Hair et al., 2017). This software should be used in data analysis to assist researchers in checking for missing values, extreme values (outliers), and data normality, among other things.

a. Missing Value Check

The researcher used a frequency table to analyse the data and determine the value of dropped in the questionnaire. Respondents may not comprehend the question, neglect it, or refuse to provide feedback on the item, resulting in the missing value of incomplete information in the questionnaire (Bryman & Bell, 2011). Prior knowledge, mean replacement, maximum expectation (expectation maximisation), and multiple imputation are some of the strategies that can be used to estimate data to overcome the problem of dropped values (multiple imputation).

In this study, researchers use maximum expectation (EM) to form a data matrix by assuming a normal data pattern distribution for some of the dropped data and provide an inference basis for the dropped data based on the tendency of the distribution (Cohen, 1988). The advantage of this EM method is that it is able to avoid the study findings looking better than real (overfitting) and can provide a more realistic estimate of variance (Cohen, 1988).

b. Extreme Values Using Boxplot

The extreme values in the data set corresponded to the outcomes of the respondents' extreme feedback in the questionnaire form, can give an impact on the study's accuracy (Tabachnick & Fidel, 2007). Boxplot graphs marked with an asterisk * and a small circle o are used to perform extreme value tests (Chua, 2006). In order to meet the assumptions, put forth in inferential statistics, statisticians argue that data having extreme values should be discarded or removed from the data (Palaniappan, 2009; Pallant, 2011).

c. Data Normality Test

The data normality test for the study variables was tested using statistical tests as well as graphical approaches once the data screening was completed. Researchers utilised data normality tests to determine that the data in this study met the inferential statistical data assumptions (Chua, 2006; Palaniappan, 2008). The criterion for data normalcy can be assessed using two key criteria: skewness and curve shape (kurtosis). The skewness test refers to the asymmetry of a distribution in which the skewness variable produces an average value that is not in the center of the distribution. Meanwhile, the shape of the curve is evaluated based on the height (peakedness) of the distribution, which is located at a very high height with a positive value or horizontal negative value. Each study variable was measured based on the criterion of skewness ± 2 and kurtosis $5 \pm$ values not exceeding (Hair et al., 2017; George & Mallery, 2016).

d. Descriptive Statistical Analysis

Mean values and standard deviation values were used to assess descriptive statistical analysis. The mean value was calculated to determine the frequency of the overall score of the data provided by the respondents and to explain the study variables' features. The mean value can be used to describe the respondents' level of perception, whether it is low, medium, or high. In contrast, the value of the standard deviation is the direction of the measurement indicator to describe the distribution of data scores. Whether the value is in a remote or close data group in the research distribution, this data distribution can explain a study variable (Chua, 2006).

3.4. 2 Data Analysis Using SmartPLS Software Package

The researchers applied the structural equation modeling (SEM) method in this study. This method is a new multivariate technique that incorporates a combination of factor and path analysis, allowing you to test some of the set of relationships between independent, mediating/ moderating variable, dependent variables and can able to be tested simultaneously at the same time.

SEM's main purpose is to characterise the configuration of a chain of interconnected dependent interactions among latent or unobserved factors, each of which is measured by observed variables (Hair et al., 2010; Schumacker & Lomax, 2010). SEM employs a variety of models to characterise the relationship between observed variables, with the primary

goal of statistically verifying a theoretical model proposed by the researcher (Schumacker & Lomax, 2012). Further, SEM is regarded as a confirmatory technique instead of an exploratory one. Aside from analysing latent constructs, SEM also be after to facilitate other kinds of investigations which include variance and covariance estimation, linear regression, hypothesis testing, and confirmatory factor analysis (CFA) (Jöreskog & Sörbom, 1996), Hair et al., (2010) and Kline (2005) stated that SEM can measure multi-dimensionality and concurrently measure reliability and validity. Moreover, SEM provides the overall assessment of a model's fitness along with testing of the individual parameters. Hence, it is the most appropriate model for the data collected in this study. Thus, this study depended on SEM and CFA. SEM has two approaches, namely covariance-based SEM (CBSEM) and variance-based SEM (VBSEM) (Chin, 1998) and the differences between these two approaches are presented in Table 3.2.

Table 3.2

Comparison between Covariance-based SEM and Variance-based SEM (PLS)

Criterion	Covariance-based SEM	Variance-based SEM (PLS)
Objective	Parameter-oriented	Prediction-oriented
Approach	Covariance	Variance
Assumption	Parametric	Non-parametric
Implication	Optimal for parameter estimation	Optimal for prediction
Parameter estimates	Indeterminate	Explicitly estimated
Model complexity	Small to moderate complexity	Large complexity
Sample size	200–800	Minimum 20–100

In the context of PLS-SEM, a PLS path model consists of two models: measurement and structural, also known as the outer and inner model, respectively (Hair et al., 2014). The manifest variables (MVs) are linked to their latent variables (LVs) in a measurement model, whilst endogenous latent variables are linked to other latent variables in a structural model. Aside from that, the measurement model depicts the relationships between constructs and indicator variables, whereas the structural model depicts the relationships between constructs. The hypothesised link between the constructs was evaluated using the standardised path coefficient.

a. Analysis of Measurement Models

Before carrying out the study, the model is implemented to assess the relationship between the items and the constructs based on the items. This study model contains five latent variables: job demand, job autonomy, social support, job stress and academicians' well-being. Testing the validity and reliability of the measurement model analysis requires implementation (Gefen & Straub, 2005). The recommended analyses include evaluation of the reliability of internal consistency, convergent validity and discriminant validity (Hair et al., 2017).

The Table 3.4 provides summary information about the benchmarks used in the measurement model evaluation process.

Table 3.3

Summary of the Benchmarks Used in The Measurement Model Evaluation Process

Criteria	Measurement	Evaluation
Reliability of internal consistency	Composite Reliability	>0.60-0.90
Convergent Validity	External Factor Loading for each Item	>0.50-0.70 >0.50 >0.50
	Item Reliability	
	Average Variance Extracted (AVE)	
Discriminant Validity	Heterotrait-Monotrait (HTMT)	Test >0.85-0.90

b. Reliability of Internal Consistency

The reliability of internal consistency is assessed to see if the consistency of the scale or instrument results in similar findings when applied at different times, locations and populations. The internal consistency of the measures was assessed using the composite reliability analysis (Hair et al., 2017).

- **Composite Reliability**

This test is designed to measure the internal consistency of each construct. This value is based on a benchmark that falls within the range of 0 to 1, which suggests that a higher value indicates a high level of reliability. The reliability test results showed that the values

were 0.6 (weak), 0.7 (moderate) and 0.8 (strong) (Chua, 2006; Henseler, Ringle & Sarstrdt, 2015; Sekaran & Bougie, 2010).

c. Convergent Validity

Convergent validity tests measure how well an item correlates with other items measuring the same construct. To assess the convergent validity of reflective constructs, this analysis involves three important assessments: an external factor load analysis for each item, item reliability, and the Average variance extracted (AVE).

- **External Factor Load for Each Item**

For reliability tests, measurements were based on correlation values between the items and study constructs (Barclay, Higgins & Thompson, 1995). The reliability of the study's constructs was high if the weighting value between the item and the study construct set was 0.70 or higher (Fornell & Larcker, 1981; Henseler, Ringle & Sarstrdt, 2015).

- **Item Reliability**

To assess the reliability of an item, the value can be obtained by applying the square root of the item's weighted value. An item has a weighting value greater than 0.70, it needs to be squared to get an item

reliability value. The study items in this test achieved the convergent validity set at 0.50 (Hair et al., 2017).

- **Average Variance Extracted**

For convergent validity tests, the main criterion to be considered is the average value of the difference between items in a construct. This can be computed using the value of Average variance extracted (AVE) (Fornell & Lacker, 1981; Gefen & Straub, 2005; Henseler, Ringle & Sinkovics, 2009). The AVE value is a measure of how much the indicator's variation exceeds the variation of the measurement error.

The value set for the AVE test is greater than 0.5, meaning that the degree of construct validity is able to explain the average change between study items compared to the measurement error variance (Gefen & Straub, 2005; Hair et al., 2014; Henseler, Ringle & Sinkovics, 2009).

d. Discriminant Validity

The discriminant validity set was based on the Heterorait Monotrait (HTMT) value. This test is designed to measure the correlation between the items found in the study model. The HTMT value recommended by Clark & Watson (1995) and Kline (2011) is 0.85 for each research construct, which means that discriminant validity has been met. Some suggest that the HTMT value of .90 can be used as an alternative to the benchmark value of 0.85 if it cannot be

met (Gold, Malhotra & Segars, 2001; Teo, Srivastava & Jiang, 2008). Nevertheless, the best value for discriminating all items on all constructs is 0.85. This value has a higher rate of sensitivity to discriminant validity. Nevertheless, a value of 0,90 is still acceptable (Henseler, Ringle & Sarstedt 2015).

e. Structural Model Analysis

According to scholars, Hair et. al., (2017) describe that before the structural model evaluation procedure is carried out, the researcher needs to ensure that each study variable is independent of serious collinearity elements. A variable that exceeds the critical value of the variance inflation factor (VIF) by less than 5.0, means that the variable is independent of multicollinearity issues (Hair, Ringle & Sarstedt 2011). Multicollinearity refers to the state of the correlation matrix that occurs between independent variables that show a correlation that is too high to exceed the level of 9.0 (Henseler, Ringle & Sinkovics, 2009).

Scholars such as Hair, Ringle, and Sarstedt (2011) and Hair et al. (2014; 2017) offer numerous bases of evaluation for analysing and evaluating the structural model. The basis of the consideration is to evaluate the significant effect and relevant effect on the structural model relationship based on model strength determination criteria (R^2), size effect (f^2), model suitability test, relevant forecast (Q^2), PLS-Predict and Importance and Performance Matrix Analysis (IPMA) (Hair et al., 2014; 2017).

- **Assess the Level of R^2**

Evaluation to measure the strength of a structural model depends on the level of R^2 value (Hair et. al., 2014). In general, the degree of rigidity of the value of R^2 in a structural model is based on a value of 0 to 1 which indicates the degree of rigidity. The values set in this test were R^2 0.75 = strong, 0.50, moderate and 0.25 weak (Hair, Ringle & Sarstedt 2011). However, studies studied in the scope of social behaviors i.e., loyalty, commitment etc. the recommended R^2 level values were 0.67 = strong, 0.33 = moderate and 0.19 = weak (Chin, 1988; Hair et al., 2014; Henseler, Ringle & Sinkovisc, 2009).

- **Evaluate the Effect of Size f^2**

In the path analysis model, the size effect was evaluated based on the f^2 size effect procedure (Cohen 1988). This f^2 effect is measured based on the change in the value of R^2 when a construct is removed from a structural model (Hair et al., 2014; Henseler, Ringle & Sinkovics, 2009). This situation is implemented to make an assessment of the effect of the removed construct on other constructs in the structural model. The determination rates for the f^2 size effect values were 0.02 = small, 0.15 = medium and 0.35 = large (Cohen, 1988).

- **Assess of Standardized Root Mean Square Residual (SRMR)**

Standardized root mean square residual (SRMR) is a criterion introduced by Henseler, Ringle & Sarstedt (2015) as an appropriate measure for PLS-SEM that can be used to avoid incorrect model specifications. SRMR is defined as the difference between correlations and also matrix models that contain implicit correlations. Evaluations to measure the suitability of a structural model are dependent on values less than 1.0 or 0.08 (Hu & Bentler, 1998).

- **Evaluate The Forecast of The Relevant Effect of Q^2 Based on The Blindfolding Procedure**

An important evaluation of the structural model should also be involved with the model's ability to make relevant impact predictions using Stone-Geisser Q^2 (Stone, 1974; Geisser, 1975) through a blindfolding procedure (Tenenhaus et al., 2005). Based on the structural model, a Q^2 value greater than 0 indicates that the study constructs for the independent variable are able to provide relevant effect predictions on the constructs for the dependent variable (Hair, Ringle & Sarstedt et al., 2011).

3.4.3 Hypothesis Testing

In this study, hypothesis testing involves two models, namely the direct effect

model and the mediating variable effect model. The testing results of these research models explain the value of the strength of the relationship between the study variables based on the estimated values of path coefficients such as beta (β) and t (t) statistics. All of these values were obtained through statistical testing using the bootstrapping procedure (Hair et al., 2014; Zhao, Lynch & Chen, 2010).

a. Hypothesis Testing for Direct Effect Model

In PLS structural models, estimates of path coefficients or path coefficients are evaluated using standard beta (β) values, t (t) statistics, or p values (Hair et al., 2014; Henseler, Ringle & Sinkovics, 2009). The bootstrapping approach was used to obtain the values (β) and (t) from statistical testing. The value (β) is also used as an important contribution weight indicator for predictor or independent variables in a study. A high value (β) refers to a variable that proves that its contribution is higher than a variable that has a low value (β). This means that the larger the value (β), the larger and more important the contribution of the variable in a relationship (Mohd Azhar, 2004). On the other hand, the value of (t) is used to determine the significance level of a relationship that is $t > 1.28$ ($p < 0.10$); $t > 1.65$ ($p < 0.05$) and $t > 2.33$ ($p < 0.001$) which are usually used if the study hypothesis has neither positive nor negative direction. Whereas, the study hypothesis that did not have directional signs, the commonly used measurement value was $t > 1.65$ ($p < 0.10$); $t > 1.96$ ($p < 0.05$) and $t > 2.57$ ($p < 0.001$) (Henseler, Ringle & Sinkovisc, 2009; Hair et al., 2017). Nevertheless, a p value < 0.05 is a level of significance commonly

used in social science studies to produce more accurate and reliable study results (Chua, 2006; Cho et al., 2013). The significant relationship between the independent variable and the dependent variable is also used in the next step, which is to test the hypothesis of the model of the effect of the mediating variable.

b. Hypothesis Testing for Indirect Effect Model

The hypothesis testing findings elaborate that the strength values in the relationship between the study variables were identified based on the standard values of beta (β) and statistical (t). These values were obtained based on statistical tests using the bootstrapping procedure by identifying the level of significance in a relationship evaluated based on $*(t) > 1.96$ ($p < 0.05$); $** (t) > 2.58$ ($p < 0.01$) and $*** (t) > 3.29$ ($p < 0.001$). Nevertheless, scholars Zhao, Lynch and Chen (2010) as well as Hair et al., (2017) have presented an important procedure in hypothesis testing for the mediating variable model because of the existence of some shortcomings found in the procedure proposed by Baron and Kenny (1986). This master presents three main procedures. First, the robustness of the mediating effect was measured based on the size of the indirect effect rather than on the absence of a direct effect. Second, the researcher should ensure that the indirect effect (path $a \times b$) needs to be significant. Third, the Sobel test contains lower power than the bootstrap test.

Based on the above shortcomings and limitations, this study applies the

procedure highlighted by Zhao, Lynch and Chen (2010) as well as Hair et al., (2017) in determining hypothesis testing for the mediating effect model as shown in Figure 3.2. There are three important procedures used in this study. First, complementary splitting exists when the splitting effect ($a \times b$) and the direct effect (c) occur and are concentrated in the same direction (positive relationship). Second, split competition exists when the presence of a split effect ($a \times b$) and a direct effect (c) occurs and is concentrated in different directions (negative relationship). Third, indirect splitting exists when the splitting effect ($a \times b$) occurs but the direct effect (c) does not occur. Fourth, a direct non -intervening effect occurs when a direct effect (c) exists but an intervening effect ($a \times b$) does not occur. Fifth, no splitting effect exists when both the direct effect (c) and the splitting effect ($a \times b$) do not exist.

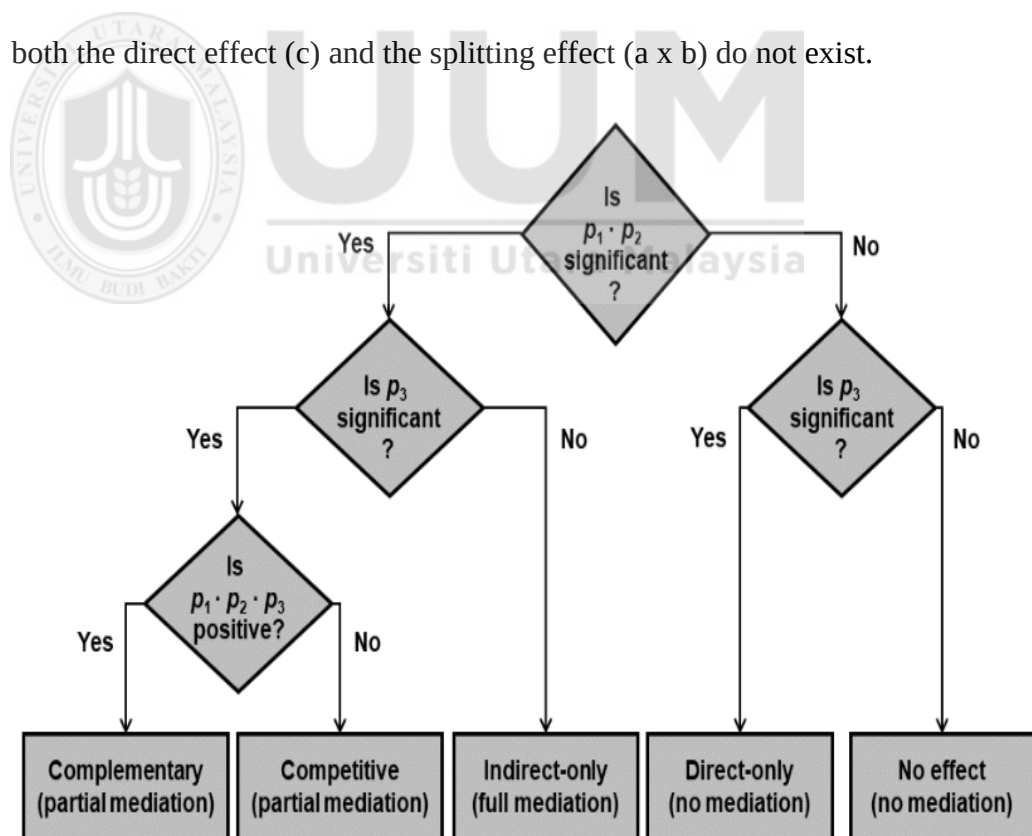


Figure 3.2 Type of Mediating Effect

3.5 Chapter Summary

This section plots the research methodology applied in the study. A quantitative survey is used throughout this study to obtain the respondents perceptions and skills to quantify the analysis through quantitative measurement. The unit of analysis used is individual which comprises the academicians working in the ODL universities and institutions. The development of the questionnaires adapted were derived from the past theories. Next, data collected were then be analyzed using the descriptive statistics, Pearson correlation matrix, structural equation modelling (SEM) and Partial Least Square (PLS) analysis. These methods were used to examine the influence of job characteristics (job demand, job autonomy, social support), working conditions, job stress, and academicians' well-being and to analyze the mediation effect of job stress between job characteristics and academicians' well-being, and working conditions and academicians' well-being. Results from the pilot test was used as a foundation for testing the reliability and validity of the research. The following chapter will discuss on the findings of the actual study and discussions.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.0 Introduction

This chapter reports the findings of the research. The chapter begins with the explanation on the survey response rate and respondents' demographic variables (gender, age, monthly income, occupation, education level, position, and roles and working hours). Besides, descriptive analysis discussed. This study has employed the validity and reliability analysis of reflective measurement model, discriminant validity and inner variance inflator analysis. The hypothesis was tested and finally the mediating effects of job stress between job characteristics and academicians' well-being and working conditions and academicians' well-being are reported. The summary concludes with the analysis test and finding of the results.

4.1 Response Rate

For data collection purposes, 200 sets of questionnaires were distributed, and the returned questionnaire sets were 120 which represent the response rate of 58.82%. Unfortunately, 15 questionnaires were incomplete. Therefore, the number of questionnaires usable was 105 which represents 51.47% and the sample size obtained was adequate to run the analysis by using SPSS version 25 and PLS. (Hair et al., 2010; Babbie, 2003). The above response rate and usable questionnaires were illustrated in Table 4.1.

Table 4.1

Summary of Total Questionnaires and Response Rate

Response Rate	Total
The sample size of the study	200
Returned Questionnaires	120
Incomplete Questionnaires	15
Returned and Usable Questionnaires	105
Response Rate	60%
Usable Response Rate	52.5%

4.2 Actual Study Result

The actual study analysis had two parts: First, analyse the data with SPSS. Second, analyse the data with SmartPLS. These two sub-sections are explained below.

4.2.1 Findings of Data Analysis Using SPSS Software

a. Data Screening

After the data were entered into SPSS version 25, the data screening and cleaning were carried out. As indicated by Pallant (2005), this includes detection of errors in the data collected, in the form of missing and out of range values and the assumptions for multivariate analysis were checked, as suggested by Hair et al, (2009) and Tabachnick and Fidell (2012). Out of range implies the value entered in SPSS version 25 are not within the scale utilised

in this study. For example, this study used a seven-point Likert scale. The values should be within one to seven. The summary of cases processed is the minimum, maximum, valid and missing value of each item in this study. There was no missing and out range value in this study.

Data screening is an analysis that is carried out to ensure that the information obtained is accurate. This phase is critical for ensuring that the data used is valid and thorough. There are three types of analysis performed, namely the identification of missing data values, extreme values (outliers) and data normality tests. The number of questionnaires received by researchers is shown in Table 4.2, which is also used in the study data filtering procedure.

Table 4.2

Number of Survey Questionnaires After the Data Screening Process

Data Screening Process	Total Original Data	Total Data Drop
Total Data Received	200	-
Step 1: Missing Value	-	-
Step 2: Extreme Values	105	-
Step 3: Data Normality Test	105	-
Total of Actual Data	105	

b. Missing Value Check

Based on the frequency table in the SPSS software, the researcher evaluated the data to determine the value of the data dropped in the questionnaire. A review of the data was performed and it was found that no dropped data values

were reported. Next, a total of 105 respondents were involved in the further analysis.

c. Extreme Values

Researchers have made an extreme value review of the study data by using boxplot analysis containing an asterisk (*) and a small circle (o) (Chua, 2006). The findings of this review show that there are no extreme values in this study.

d. Data Normality Test

Table 4.3 describes the data normality test findings based on skewness values ± 2.0 and kurtosis ± 5.0 (Hair et al., 2014; Hair et al., 2017). This study has five important variables namely job demand (3 items), job autonomy (5 items), social support, (3 items), work conditions (7 items), job stress (7 items) and academicians well-being (3 item). The results of the data normality test confirmed that the items represented by the study variables had met the criteria set by the data normality test.

Table 4.3
Data Normality Test

Constructs/ Variables		Std.					
Item	Min.	Max.	Mean	Deviation	Skewness	Kurtosis	
	Statisti	Statisti	Statisti				
	c	c	c	Statistic	Statistic	Statistic	
Job Demand	JD3	2.00	7.00	5.3714	1.31015	-.668	-.160
	JD4	1.00	7.00	4.6476	1.65239	-.435	-.835
	JD5	1.00	7.00	4.9619	1.64038	-.737	-.304

Job	JA1	3.00	7.00	5.6667	1.00639	-.786	.332
Autonomy	JA2	2.00	7.00	5.6286	1.08537	-1.005	.925
	JA3	1.00	7.00	5.3048	1.18584	-1.215	2.112
	JA4	2.00	7.00	5.1810	1.15842	-.589	-.288
	JA5	3.00	7.00	5.5143	1.08410	-.637	.180
Social	SS1	1.00	7.00	5.2381	1.45790	-1.108	.765
Support	SS4	1.00	7.00	5.0952	1.54125	-.950	.287
	SS7	1.00	7.00	4.6667	1.54214	-.609	-.226
Work	WC10	2.00	7.00	5.6762	1.29715	-1.421	1.837
Conditions	WC11	1.00	7.00	4.9429	1.57400	-.749	-.073
	WC12	1.00	7.00	4.8571	1.61976	-.608	-.592
	WC13	1.00	7.00	5.0095	1.49032	-1.171	1.161
	WC14	1.00	7.00	4.8762	1.54232	-1.103	.882
	WC15	1.00	7.00	5.2952	1.40688	-1.070	1.024
	WC16	2.00	7.00	5.5238	.99126	-.731	.827
Job Stress	JS1	1.00	7.00	4.2571	1.72107	-.270	-.970
	JS2	1.00	7.00	3.8667	1.69312	-.078	-.729
	JS3	1.00	7.00	3.7524	1.58588	-.143	-.663
	JS4	1.00	7.00	4.4095	1.42569	-.128	-.151
	JS5	1.00	7.00	3.0667	1.61880	.569	-.282
	JS7	1.00	7.00	3.8952	1.82358	.051	-.954
	JS8	1.00	7.00	3.7429	1.84510	.078	-1.068
Academician	AWB2	1.00	7.00	3.7238	1.67272	.223	-.753
Well-Being	AWB3	1.00	7.00	3.2762	1.75683	.490	-.712
	AWB4	1.00	7.00	3.3143	1.63680	.418	-.693

4.3 Demographic Profile of Respondents

This section displays the demographics of the respondents who took part in the study. The goal of gathering each respondent's demographic profile is to gain insight into the subjects and aid in the interpretation of the study's findings. The demographic profile of responders is detailed in Table 4.4.

This study comprises of 54 (51.43 percent) male respondents and 51(48.57 percent) female respondents. The population of the study comprises of academicians age above 40. Most of the respondents are at the age of 40 to 49 years (40 percent), 50 to 59 years (23.81 percent), under 39 years (23.81 percent) and 60 years and above (12.38 percent). The mmajority of the academicians married are 82 (78.10 percent), single 18 (17.14 percent) and widow 5 (4.76 percent). In terms of the academic qualification 61 are master's degree holders; 42 are Doctoral Degree holders and 2 Bachelor's Degree holder. In terms of the position, majority of them are senior lecturer 46(43.8 percent), assistant lecturers and lecturers 41(39 percent), Associate Professor and Professors 11(10.5 percent) and Academic Fellow 7 (6.7 percent). The academicians in this study that hold the role as the Program Coordinator are 84 respondents; Deputy Dean or Vice Dean 3 respondents; Dean 8 respondents; the Head of Department 10 respondents. In terms of annual income 34 respondents earned within RM50, 000 to RM79, 000 (approximately RM4,000 – RM6,500 per month); 25 respondents earned more than RM100,000 (approximately RM9,000 and above monthly income), 24 earned below than RM49,000 (approximately below RM4,000 monthly income), 22 earned within RM80, 000 to RM99,000 (approximately RM7,000 - RM8,000 per month). Majority of the respondents workk in standard working hours 58(55.24 percent) compared to flexible working hours 47(44.76 percent).

Table 4.4

Demographic Characteristics of the Respondents

Respondents' Profile	Profile-sub	Frequency	Percentage
Gender	Male	54	51.4
	Female	51	48.6
Race	Malay	63	60.0
	Chinese	20	19.0
	Indian	12	11.4
	Others	10	9.5
Age	Under 39 years	25	23.8
	40-49 years	42	40.0
	50-59 years	25	23.8
	60 or more	13	12.4
Marital Status	Single	18	17.1
	Married	82	78.1
	Widow	5	4.8
Highest Education	Bachelor's Degree	2	1.9
	Master's Degree	61	58.1
	Doctoral Degree	42	40.0
Position	Assistant Lecturer/ Lecturer	41	39.0
	Senior Lecturer	46	43.8
	Assoc. Professor/ Professor	11	10.5
	Academic Fellow	7	6.7
Roles	Programme Coordinator	84	80.0
	Deputy/Vice Dean	3	2.9
	Dean	8	7.6
	Head of Department	10	9.5
Annual Income	RM0 – RM49,999	24	22.9
	RM50,000 – RM79,999	34	32.4

	RM80,000 –	22	21.0
	RM99,999		
	RM100,000 or	25	23.8
	more		
Working Hours	Flexible Working	47	44.8
	Hours		
	Standard	58	55.2
	Working Hours		
	(eg:8.30am-		
	5.30pm)		

4.4 Descriptive Statistics Analysis

Descriptive analysis provides researchers a detailed idea about the respondents' responses for each construct in the study. A descriptive analysis is conducted to describe and summarize the characteristics of each construct namely the academicians' well-being, job characteristics (job demand, job autonomy, social support), working conditions and job stress through mean and standard deviation. Table 4.3 illustrates the findings of descriptive statistics of the constructs in this study. The minimum and maximum value represents the Likert scale used in this study. The minimum value of all the construct is one (1.00) and maximum value is seven (7.00). Most of the variables have the average mean value from 3.006 to 5.459; and the standard deviation ranges from 0.925 to 1.517. The score of standard deviation implies that there is variability in answering the questions among respondents. The minimum and maximum responses of each construct are also presented in Table 4.5. All constructs are above the acceptance level of implementation and at a satisfactory level.

Table 4.5

Descriptive Statistics of the Constructs

Constructs	N	Min	Max	Mean	Reliability	Std. Deviation
JD	105	1.00	6.00	3.006	0.782	1.314
JA	105	2.6	7.00	5.459	0.787	0.925
SS	105	1.00	7.00	5.000	0.786	1.359
WC	105	1.57	7.00	5.168	0.859	1.209
JS	105	1.00	6.57	4.144	0.879	1.359
AWB	105	1.00	7.00	4.561	0.721	1.517

The comparison between demographic variables (i.e., gender, race, age, marital status, highest education, position, roles, annual income, and working hours) and the academicians' well-being is not included in the research objectives. However, the analysis is meaningful to provide a better understanding about the characteristics of the academicians.

4.5 Model Specification

This study involves two structural models namely the direct effect model and the indirect effect model. Figure 4.1 shows the study model of the relationship between the independent variables (job demand, job autonomy, social support, working conditions), dependent variables (academician well-being) with mediating variable (job stress) in the structural model.

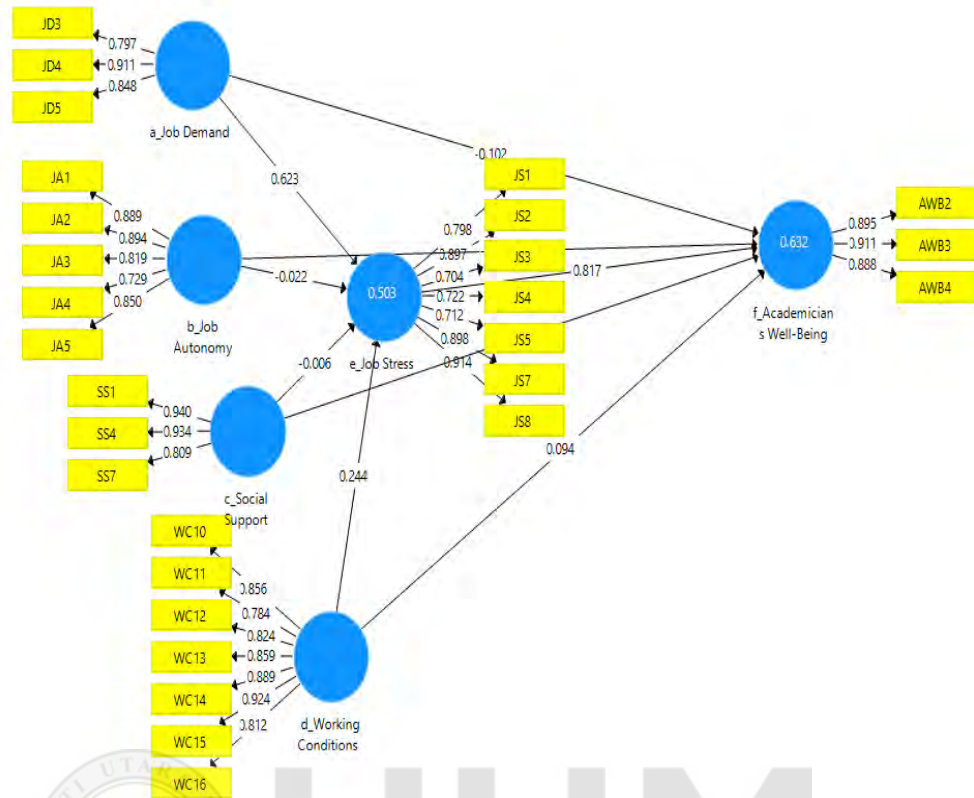


Figure 4.1 The Research Model

4.6 Validity and Reliability Measurement Model Analysis

Table 4.6 shown the analysis validity and reliability of reflective measurement model for factor loading, item reliability, average variance extracted (AVE) and composite reliability. The correlation constructs and items had factor loading values greater than 0.70 (Hair et al., 2017). Next, the item reliability value greater than 0.50. Following that, the AVE values for each construct were greater than 0.50. (Hair et al., 2017). Next, the composite reliability values were greater than 0.80. (Hair et al., 2017). These results confirm that the constructs used in this study met the convergent analysis standard. Based

on Table 4.5, several items (JD1, JD2, SS2, SS3, SS5, SS6, SS8, WC1, WC2, WC3, WC4, WC5, WC6, WC7, WC8, WC9, JS6, AWB1, AWB5, AWB6, AWB7, AWB8, AWB9, AWB10, AWB11, AWB12, AWB13, AWB14, AWB15, AWB16) were deleted due to low loading which is below 0.7 in their respective constructs.

Table 4.6

Validity and Reliability Analysis of Reflective Measurement Model

No.	Job Characteristics	Outer Loading (> 0.70)	Item Reliability (> 0.50)	AVE (>0.50)	Composite Reliability (>0.80)
Job Demand					
JD3	My job requires excessive amount of work.	0.797	0.635	0.728	0.889
JD4	I feel that I do not have enough time to accomplish my work.	0.911	0.829		
JD5	I must face several conflicting demands in my work.	0.848	0.719		
Social Support					
SS1	My immediate supervisor is very understanding and always help me in doing things at work.	0.940	0.883	0.803	0.924
SS4	I can rely on my immediate supervisor if I	0.934	0.872		

	have problem at work.				
SS7	My immediate supervisor is willing to listen to my personal problem.	0.809	0.654		
Job Autonomy					
JA1	The job allows me to plan how I do my work.	0.889	0.790	0.702	0.921
JA2	The job allows me to make decisions about what methods I use to complete my work.	0.894	0.799		
JA3	The job provides me with significant autonomy in making decisions.	0.819	0.670		
JA4	The job allows me to make my own decisions about how to schedule my teaching.	0.729	0.531		
JA5	The job gives me a chance to use my personal initiative or judgement in carrying out the work.	0.850	0.722		
Working Conditions					
WC10	I enjoy doing my work.	0.856	0.732	0.724	0.948
WC11	At my workplace, I have been informed well in advance about	0.784	0.614		

the changes,
important
decisions, or plan
for the future.

WC12	I receive all the information I need to do my work well.	0.824	0.678
WC13	My work is recognised and appreciated by the management.	0.859	0.737
WC14	I am being treated fairly at my workplace	0.889	0.790
WC15	My work has clear objectives	0.924	0.853
WC16	My work meets my expectation	0.812	0.659

Job Stress

JS1	I have a lot of work and fear that very little time to do it.	0.798	0.636	0.658	0.930
JS2	I feel so burdened that even a day without work seems bad.	0.897	0.804		
JS3	I feel that I never take a leave	0.704	0.500		
JS4	Many people at my office are tired of the company demand.	0.722	0.521		
JS5	I get nervous when performing my work	0.712	0.506		
JS7	Many time, I am burdened with too much work	0.898	0.806		

	that I cannot complete.				
JS8	Sometimes when I think about my job, I get a tight feeling in my chest.	0.914	0.835		
Academic Well-Being					
AWB2	The demands of everyday life often get me down	0.895	0.801	0.806	0.926
AWB3	In many ways I feel disappointed about my achievements in life.	0.911	0.829		
AWB4	Maintaining close relationships have been difficult and frustrating for me.	0.888	0.788		

Table 4.7 indicates the values of Heterotrait-Monotrait Ratio (HTMT) discriminant validity analysis using HTMT criterion for each construct. All the values were less than 0.85 (Hair et al., 2017, Kline, 2011), indicating that the constructs have fulfilled the discriminant validity criteria proposed by Henseler, Ringle and Sarstedt (2015).

Table 4.7

Discriminant Validity Analysis using HTMT Criterion

Construct	Job Demand	Job Autonomy	Social Support	Working Conditions	Job Stress
Job Demand					
Job Autonomy	0.189				
Social Support	0.166	0.473			
Working Conditions	0.242	0.762	0.439		
Job Stress	0.771	0.233	0.183	0.372	
Academic Well-Being	0.536	0.235	0.215	0.383	0.855

Table 4.8 has presented the variance inflation factor (VIF) analysis. The correlation coefficients between the independent variables (job demand, job autonomy, social support, working conditions), mediating variable (job stress), and dependent variable (academician well-being) are all less than 5.0. (Hair et al., 2017). This result demonstrates that the constructs are free of significant collinearity issues.

Table 4.8

Variance Inflation Factor Analysis

Variables	Job Demand	Job Autonomy	Social Support	Working Conditions	Job Stress	Academicians Well-Being
Job Demand						
Job Autonomy	0.189					
Social Support	0.166	0.473				
Working Conditions	0.242	0.762	0.439			
Job Stress	0.771	0.233	0.183	0.372		
Academicians Well-Being	0.536	0.235	0.215	0.383	0.855	

Table 4.9 shows the test findings of the descriptive statistical analysis. Each construct showed a mean value ranging from 3.006 to 5.459, indicating that job demand, job autonomy, social support, working conditions and job stress on academic well-being were between agree (4) and strongly agree (5). On the other hand, the value of standard deviation shows that each construct is between the value of 0.925 to 1.517 which explains the dispersion in the variety of answers answered by the respondents.

Table 4.9

Descriptive Statistics

Construct	Mean	Standard Deviation
Job Demand	3.006	1.314
Job Autonomy	5.459	0.925
Social Support	5.000	1.359
Working Conditions	5.168	1.209
Job Stress	4.144	1.359
Academic Well-Being	4.561	1.517

4.6.1 Standardized Root Mean Square Residual (SRMR)

For assess the model fit in SmartPLS is a measure of the mean value of the covariance residuals, the standardized root mean square residual (SRMR) based on transforming both a sample covariance matrix and the predicted covariance matrix into correlation matrix. The findings of the model fit test yielded the value of SRMR is 0.085 of less than 0.10 (Hu & Bentler, 1999), means the model of this study is appropriate and considered a good fit reflective model.

4.7 Hypothesis Testing**4.7.1 Direct Effect Hypothesis Testing**

Table 4.10 shows the hypothesis testing using bootstrapping analysis for the direct effect model. The results of hypothesis testing yielded five important findings. First, job demand has a significant relationship between academic well-being ($\beta = 0.490$; $p = 7.357$). Second, job autonomy has a significant relationship between academic well-being ($\beta = 0.282$; $p = 3.398$). Third, social support does not have a significant relationship between academic well-being ($\beta = 0.216$; $p = 1.933$). Fourth, working conditions has a significant relationship between academic well-being ($\beta = 0.399$; $p = 5.579$). Fifth, job stress has a significant relationship between academic well-being ($\beta = 0.787$; $p = 25.002$). This result indicates that the independent variables (job demand, job autonomy, working conditions and job stress) is an important predictor to academic well-being (H^1 , H^2 , H^4 , H^5 supported). Meanwhile, the independent variables (social support) do not important predictor to academic well-being (H^3 not supported).

Table 4.10

Direct Hypothesis Testing

Hypothesis	β Value	t Value	Result
H^1 : Job Demand $\longrightarrow$ Academician Well-Being	0.490	7.357	Supported
H^2 : Job Autonomy $\longrightarrow$ Academician Well-Being	0.282	3.398	Supported
H^3 : Social Support $\longrightarrow$ Academician Well-Being	0.216	1.933	Not Supported
H^4 : Working Conditions $\longrightarrow$ Academician Well-Being	0.399	5.579	Supported
H^5 : Job Stress $\longrightarrow$ Academician Well-Being	0.787	25.002	Supported

Table 4.11 shows the coefficient of determine (R^2), effect size R^2 (f^2) and blindfolding (Q^2) analysis for direct model. The R^2 value in the relationship between job demands to academic well-being has 0.24. This value was greater than 0.26, meaning that the effect of job demand to academician well-being had substantial effect (Cohen, 1989) and describes that 0.26 per cent of the variance for academician well-being is well described by job demand. Second, the relationship between job autonomy to academic well-being has 0.80. This value was greater than 0.26, meaning that the effect of job autonomy to academic well-being had substantial effect (Cohen, 1989) and describes that 0.80 per cent of the variance for academician well-being is well described by job autonomy. Third, the relationship between social supports to academic well-being has 0.47. This value was greater than 0.26, meaning that the effect of social support to academic well-being had substantial effect (Cohen, 1989) and describes that 0.47 per cent of the variance for academician well-being is well described by social support. Fourth, the relationship between working conditions to academic well-being has 0.15. This value was less than 0.26, meaning that the effect of working conditions to academic well-being had moderate effect (Cohen, 1989) and indicates that 0.15 per cent of the variance for academician well-being is described by working conditions. Fifth, the relationship between job stresses to academic well-being has 0.62. This value was greater than 0.35, meaning that the effect of job stress to academic well-being had substantial effect (Cohen, 1989) and describes that 0.62 per cent of the variance for academician well-being is well described by job stress.

Next, the size effect of f^2 test results revealed five major findings. First, the relationship between job demand and academic well-being of 0.181. This value is less than 0.35, meaning that the effect of job demand on academic well-being is moderate effect size (Cohen, 1988). Second, the relationship between job autonomy and academic well-being has a value of f^2 0.87. This value is greater than 0.35, meaning the effect of job autonomy on academic well-being is substantial effect size (Cohen, 1988). Third, the relationship between social support and academic well-being has a value of f^2 0.49. This value is greater than 0.35, meaning the effect of social support on academic well-being is substantial effect size (Cohen, 1988). Fourth, the relationship between working conditions and academic well-being has a value of f^2 0.18. This value is greater than 0.15, meaning the effect of working conditions on academic well-being is moderate effect size (Cohen, 1988). Fifth, the relationship between job stress and academic well-being has an f^2 value of 1.63. This value is greater than 0.35, meaning the effect of job stress on academic well-being is substantial effect size (Cohen, 1988).

The size effect of Q^2 test results revealed five major findings. First, the Q^2 value of the relationship between job demand and academic well-being is 0.181. Second, the Q^2 value of the relationship between job autonomy and academic well-being is 0.038. Third, the Q^2 value of the relationship between social support and academic well-being is 0.027. Fourth, the Q^2 value of the relationship between working conditions and academic well-being is 0.106. Fifth, the Q^2 value of the relationship between job stress and academic well-

being is 0.489. According to Hair et al. (2017), a value greater than zero, indicating that the model has predictive relevance.

Table 4.11

R Square Analysis, Effect Size and Predictive Relevance Analysis of Direct Effect Model

Hypothesis	R ² Value	f ² Value	Q ²
H ¹ : Job Demand → Academic Well-Being	0.24	0.31	0.181
H ² : Job Autonomy → Academic Well-Being	0.80	0.87	0.038
H ³ : Social Support → Academic Well-Being	0.47	0.49	0.027
H ⁴ : Working Conditions → Academic Well-Being	0.15	0.18	0.106
H ⁵ : Job Stress → Academic Well-Being	0.62	1.63	0.489

4.7.2 Indirect Effect Hypothesis Testing

Table 4.12 indicates the hypothesis testing for the indirect effect model using bootstrapping analysis. Following that, the results of hypothesis testing revealed two significant findings. First, there is a significant relationship between job characteristics, job stress and academic well-being ($\beta = 0.829$; $p=0.000$), H6 is supported. Second, there is a significant relationship between working conditions, job stress and academic well-being ($\beta = -0.508$; $p= 4.102$), H7 is supported.

Further the test to identify the type of effect of the mediating variable was implemented according to the guidelines recommended by Zhao, Lynch & Chen (2010). The findings of the test explain that job stress can act as a full mediating variable in the relationship between job characteristics, job stress and academic well-being (H6) and working conditions, job stress and academic well-being (H7).

Table 4.12

Indirect Hypothesis Testing

Hypothesis	Direct Effect		Sig. ($p < 0.05$)	Indirect Effect		Sig. ($p < 0.05$)	Type of Mediating Effect	Result
	(β) Value	(t) Value		(β) Value	(t) Value			
H6: Job Characteristics → Job Stress → Academic Well-Being	-0.126	0.721	No ($p = 0.471$)	0.829	6.183	Yes ($p = 0.000$)	Indirect Effect (Full Mediation)	Supported
H7: Working Condition → Job Stress → Academic Well-Being	0.193	1.120	No ($p = 0.263$)	-0.508	4.102	Yes ($p = 0.000$)	Indirect Effect (Full Mediation)	Supported

Table 4.13 shows the coefficient of determine (R^2), effect size R^2 (f^2) and blindfolding (Q^2) analysis for indirect effect model. According to the results of the effect size test, the value of R^2 for the relationship between job characteristics, job stress and academic well-being is 0.39. Following that, the correlation between working conditions, job stress and academic well-being is 0.62. All values in this relationship are greater than 0.26, indicating that job characteristics and working conditions have a substantial impact on job stress and academic well-being (Cohen, 1988). Next, the size effect of f^2 test results revealed two significant findings. First, the relationship between job characteristics, job stress and academic well-being is 0.64. Second, the relationship between work conditions job, stress and academic well-being is 1.32. All values in this relationship that are greater than 0.35 indicate that the relationship has a substantial effect size (Cohen, 1988). The size effect of Q^2 test results revealed two significant findings. First, there is a 0.477 relationship between job characteristics, job stress and academic well-being. Second, the Q^2 value of the relationship between working conditions, job stress and academic well-being is 0.493. According to Hair et al., (2017), a value greater than zero, indicating that the model has predictive relevance.

Table 4.13

R Square Analysis, Effect Size and Predictive Relevance of Indirect Effect Model

Hypothesis	R^2 Value	f^2 Value	Q^2
H6: Job Characteristics → Job Stress → Academic Well-Being	0.39	0.64	0.477
H7: Working Condition → Job Stress → Academic Well-Being	0.62	1.32	0.493

4.8 Chapter Summary

The findings of the data analysis are presented in the paper. The descriptive analysis was first discussed using SPSS version 23. The data was deemed to be trustworthy and valid. The data revealed that job features (demand, autonomy, and social support), working conditions, job stress, and academician well-being all had positive and significant associations. Smart PLS 3.0 was utilised to conduct the analysis in this study. The Standardized Root Mean Square Residual (SRMR) analysis is used to measure the mean of a covariance residual to assess model fit. The validity and reliability of the items used for each construct are then assessed, followed by discriminant validity to determine the value of the Heterotrait-Monotrait Ratio (HTMT) criterion for each construct, and inner variance inflator (VIF) analysis to determine the correlation between the independent variables and the dependent variable. The next stage is the hypothesis were tested and the relationship between the constructs assessed. As shown in the various analyses above, six (6) of the eleven (7) hypotheses are accepted as significant, while one (1) is rejected due to insignificant data, including two (2) hypotheses that were tested for mediating, both of which are supported. The findings are discussed in detail in the following chapter.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter begins with the recapitulation of the study followed by discussion of the findings. The next section explained on the theoretical, and practical and policy implications followed by the future research of this study. Finally, the recommendations and conclusions of this research study are discussed. The aim is to answer the three research questions and objectives formulated in chapter one.

5.1 Recapitulation of the Study

The purpose of this study is to highlight a growing concern on the well-being of academicians working in the ODL environment as past studies found that the level of well-being of academicians may also influence the students' well-being (L. Yu, 2018).

Therefore, this study was conducted to investigate the influence of job characteristics (job demand, job autonomy, social support), working conditions and job stress on academicians' well-being. This study also investigated job stress as the mediator in the relationship between job characteristics and academicians' well-being, and working conditions and academicians' well-being respectively. The research questionnaires were distributed and data collected were analysed. The results of the findings were discussed to answer the research questions and the research objectives.

5.2 Discussion on the Findings

5.2.1 Job Characteristics (job demands, job autonomy, social support) and Working Conditions Influence Academicians Well-Being

The findings of this study indicated that job characteristics (job demands, job autonomy, social support), working conditions and job stress act as predictor variables for academicians' well-being in the ODL environment. The results showed that job characteristics of job demands, job autonomy, and working conditions, and job stress have significant influence on academicians' well-being. Job autonomy was found to be the strongest predictor of academicians' well-being. This proves that by fostering job autonomy may increase the well-being of academicians which are useful for ODL universities and Higher Education Institutions. However, findings found that social support has no influenced on academicians well-being. A heavy workload, long working hours, and pressure with additional administrative works were identified as

contributors that place ODL academicians at risk of experiencing job stress. This analysis suggested that the uses of technologies in teaching and learning to some extent has impacted the academicians' well-being especially for academicians who are lacking of information technology literacy or skill. As mentioned by Ali, Farooqi (2014), Al-Ghamdi (2017) and Alya (2021) academicians with overloaded tasks produce lower levels of efficiency and furnish poor job performance which gradually would resulting the poor performance of the higher institutions.

The findings also revealed that academicians with more job autonomy were more likely to be content with their job, career their family, and their lives in general. Academicians who received more attention tended to perform better, reiterating the conclusion on an association between job autonomy and academicians' well-being. Moreover, academicians who are able to act independently and autonomously based on their knowledge, judgement, and analysis perform better and master new skills. Therefore, management should extend autonomy to academicians by empowering them to make more responsibility for all their actions. For example in setting up educational courses, delegating power and selecting learners.

Working conditions have been found to have a significant influence on academicians' well-being. The academicians' well-being increases when they are satisfied with the working conditions, for example support from supervisor and co-workers, or work recognised by the management. But in certain circumstances, they feel stressed and unproductive when burdened with a

workload that requires extra hours. In many cases, job stress has been found to have a stronger predictor of well-being than job demand, which is always treated as synonymous with job stressor. This proved that the feeling of being stressed or not at work depends of how they perceive the working conditions, jobs and the organisations themselves.

5.2.2 Job Stress mediates the relationships between Job Characteristics (job demand, job autonomy, social support) and Academicians Well-Being

The objective of this study was to investigate the mediating role of job stress in the relationship between job characteristics (job demand, job autonomy, social support) and academicians' well-being. According to the findings, job stress acts as an effective mediating variable in the relationship between job characteristics (job demand, job autonomy, social support) and the academician's well-being. This may be due to prolonged hours of working and high workload and responsibility that determine job stress among academicians (Nur Amalina, Huda and Hejar, 2016). Moreover, overload of task which does not fit the time provided result in greater risk of job stress. Therefore, the HEIs should implement job stress prevention and management programs emphasizing on time management and working strategies to improve the well-being of academicians.

5.2.3 Job Stress mediates the relationships between Working Conditions and Academicians Well-Being

According to the findings, job stress acts as an effective mediating variable in the relationship between independent variables (working conditions) and the dependent variable (academicians' well-being). As reported by Bhui, Dinos, Magdalena, Jongh and Stansfeld (2016), working conditions is the common causes of work stress. Stress occur as a result of relationship between working conditions such as the irregular or long working hours, time pressure, lack of social support, high demands of job and response to stress (Ornek and Esin, 2020). Academicians who are under stress most of the time are more likely to report poor health. Academicians, on the other hand, who are supported by their manager and whose work is recognised, mostly report good health and vice versa.

5.3 Implications of the Study

5.3.1 Theoretical Implications

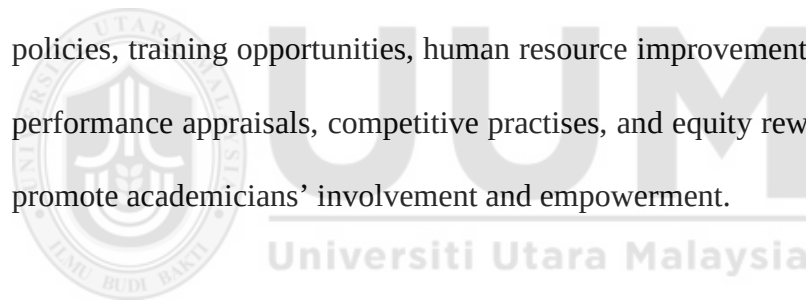
Three key conclusions emerged from this research: first, the ODL institutions' objectives, scope, and duties for safeguarding academicians' well-being in higher education are well defined. The social context theory on the value of ODL setting for both academic staff and learners was also proven in this study. In terms of research techniques, data collection processes based on a literature review, as well as pilot experiments and questionnaire formats employed in this study, have all been shown to be valid and reliable.

This condition may aid in the production of accurate and dependable study results.

5.3.2 Practical and Policy Implications

These findings of this study can serve as a guide by employers and employees in dealing with the issue of stress in the ODL environment. This not only affect the academicians and universities involved, but also the government and society in general. Stress at work is associated with absenteeism and presenteeism which in turn is likely to reduce productivity. There is evidence that work stress causes mental health problems which are also associated with job demand, long working hours and a lack of appreciation from the employer. In dealing with this unhealthy situation, the ODL institutions should implement wellness and stress management practices to mitigate job stress among academicians. The possible interventions by the HEIs includes redesigning of the academic's job to increase the adequate support resources, implementing health and wellness programmes to the academicians, and include protections to the academician wellness that covered in the health and safety regulation. In addition, reviewing the guidelines with reference to the current findings may also help to highlight additional focus (Khan et al., 2016). The guidelines must also cover issues such as developing policies and responsibilities, trainings for academicians to manage work stress, flexibility of work, promote awareness and monitoring.

Furthermore, the universities should put more attention on the academicians' well-being over profits, by creating a comfortable and conducive work condition for the academic staff to improve their performance in work (Fadel et al., 2019). Besides, the management should care for their academicians and provide adequate resource and support in their work. Moreover, the intervention from the government is important by investing to the development of higher education institutions, and legislation should be designed related to work stress, health, safety, and benefits of the academicians. By sending academicians for trainings may upgrade their technological skill and abilities to handle pressure and stress at work. To ensure the presence of these job characteristics and working conditions, institutions must invest in selection policies, training opportunities, human resource improvement, consistent fair performance appraisals, competitive practises, and equity rewards, as well as promote academicians' involvement and empowerment.



5.4 Future Research

The sample size of this study could be expanded to improve the results of the data analysis, as sample size has a significant impact on the results of data analysis. With a larger sample size, more extensive empirical research of the independent and dependent variables can be conducted, as well as various categories. Many of the improvements could be applied to this study, particularly in correcting methodology issues, such as using a larger and more representative sample. Many private and public higher education institutions have moved toward the ODL mode of learning, which may lead to a larger

sample, especially during the COVID-19 pandemic crisis. Alternative data gathering methods, such as qualitative measures, interviews, or workload measurement, should be included in future studies.

As a result, this study seeks to serve as a springboard for more empirical research aimed at identifying organisational support for academicians' well-being. Another interesting future research topic would be to investigate leadership styles in the ODL setting on a larger scale using smart PLS and see how they affect academicians' well-being. There is a need for more research into how to administer them so that institutions can build a healthy workplace as a means of promoting happy and productive staff.

5.5 Recommendations

Through the research results, this study provides practical evidence on the relationships between job characteristics (job demands, job autonomy, social support), working conditions, job stress and well-being of academicians in the ODL environment. This study may also increase the management awareness in ODL institutions of their impact on academicians' well-being. Additionally, by recognising and understanding the essential parts of these job characteristics and working conditions, management would pay more attention to taking care of the academicians to reduce their stress, increase their well-being and productivity.

Management should review academic workloads and salary increases every three and four quarters of the year. Offer training courses for academics on how to use the technology to expand their skills and give them more autonomy. Management should also develop standard working conditions regarding working hours and reward academics who work overtime. This could motivate them to be more proactive in their work. Employ more expert in the instructional material and design would not only improve learners experience but also helps academicians in developing their online content modules fast and easy to operate. Support from both non-academicians and academicians are important in improving the quality of work and subsequently will reduce stress at workplace.

An analysis was performed by measuring each mean for all questions for independent variables (job characteristics, working conditions, and job stress). The management of the ODL institutions should improve the workplace environment and the online environment. For example, by improving physical workspaces such as flexible hours, give academicians the opportunity to work from home and reward productive academicians. This could be a way to keep stress down. The ODL institutions should also optimize the introduction of ICT-based teaching, for example by improving online teaching to make it easier and more efficient for both academicians and learners. These could minimize the workload not only for the academicians but also for the support staff. Invest in a good and stable support system may helps ODL institutions to be more efficient and cost effective.

The management of ODL institutions must support academicians to find meaning in their work so that they can grow and perform. For example, career advancement and reputation enhancement through involvement in research activities. It has been hypothesized that effective management of academicians's well-being not only improves the productivity of academic work, but also helps create character within the academicians themselves, making them more efficient in their work and multitasking.

In addition, it is suggested that ODL institutions recognize the level of recovery experiences of academicians in order to maximize the beneficial benefits of work activities for workplace stress reduction and academic well-being. As a result, it can be worthwhile for management to routinely communicate with academicians who experience high levels of workload and long hours through day-to-day work activities, and to disseminate and apply the appealing recovery experiences when consulting with academicians struggling with the job stress and poor quality of life. Managing work-related stress can improve the health and well-being of academicians, which can also lead to greater productivity and efficiency at work (Dehnad et.al, 2016). It is crucial to implement stress reduction strategies and policies.

5.6 Conclusions

Basically, the research objectives were realised and research questions were answered. The findings answered all the three questioned which directly accomplished the three objectives of this study. Although research on the well-

being on academicians were numerous, this research is focus more on the academicians' well-being working in the ODL environment.

This study explains the influence of job characteristics (job demands, job autonomy), working conditions and job stress on academicians' well-being. But social support had no influenced on the well-being of academicians. It also explains the mediating effect of job stress on the relationships between job characteristics (job demands, job autonomy, social support) on academicians' well-being and working conditions on academicians' well-being.

With these results, this research contributed the level of stress among academicians' working in the ODL environment and its impact on their well-being. As a practical input, the findings are useful for the Higher Institutions Educations in implementing and revising their policy particularly for the benefits of academicians' well-being working not only in the ODL institutions but also in the non-ODL institutions and environment that offering ODL programmes or online courses.

According to the Malaysian Ministry of Higher Education, Education 4.0 is a response to the requirement of IR4.0, which combines human and technological capabilities to create new opportunities. As past research stated, that new learning methods will not only teach students how to learn skills and information, but also how to find out where to acquire those skills and knowledge (Fisk, 2017). As a result, rapid changes in the technology and technological growth have not only revolutionized teaching methods and the

learning process (Dunwill, 2016), but also the way all people live and work. The results of this study provide ODL institutions with important information on how, who and what they need to plan in order to increase the academician well-being and the institutional success.

REFERENCES

- Aryee, S., Luk, V., Leung, A., & Lo, S. (1999), *Role Stressors, inter role conflict, and well-being: The moderating influence of spousal support and coping behaviours among employed parents in Hong Kong*, Journal of Vocational Behaviour, 54, 259-278.
- Amran F.W, Ghazali H., and Hashim S. (2019), *Influence of Working Environment, Workload and Job Autonomy towards Job Stress: A Case of Casual Dining Restaurant Employees in Klang Valley, Malaysia*, International Journal of Academic Research in Business and Social Sciences, 9(5), 744-755.
- Allen T.D. *Family-supportive work environments: The role of organizational perceptions*. Journal of Vocational Behaviour. 2001; 58:414–435.

Amirul Arbae, M. N., Mohamad Othman, N. A., Mahamad, N. F., Zainal Bakri, S. F., and Hariri, A. (2019), *Study of Perceived Stress among Academicians in Higher Institutional Malaysia*, Journal of Safety, Health & Ergonomics, Vol. 1, No. 1 (2019).

Aida R. Z. & Ibrahim (2012), *Psychosocial Work Environment, Organisational Justice, and Work Family Conflict as Predictors of Malaysian Worker Wellbeing*, Victoria University.

Aida R.Z., Mazidah & Azlina (2016), *Exploring Job Control and Social Support as Moderators of Organisational Justice and Well-being relationship*, Medwell Journal 2016; 1818-58.0

Abdullah D. Alotaibi, Faris M. Alosaimi, Abdullah A. Alajlan, and Khalis A. bin Abdulrahman (2020), *The relationship between sleep quality, stress, and academic performance among medical students*, Journal of Family and Community Medicine. Jan-Apr; 27(1): 23-28.

Anealka A.H (2018), *Education 4.0 Made Simple: Ideas for Teaching*, International Journal of Education & Literacy Studies, ISSN: 2202-9478.

Allen E, Seaman J. (2017), *Distance Learning Compass: Distance Education Enrolment Report*, Bobson Survey Research Group , e-Literate and WCET.

Al-Homayan AM., Faridahwati, Subramaniam, and Rabiul Islam (2013), *The Mediating Effects of Job Stress on the Relationship between Job Demands Resources and Nurses' Performance in Public Sector Hospitals in Saudi Arabia*, Australian Journal of Basic and Applied Sciences, 7(10): 52-62.

Akram M (2019), *Psychological Wellbeing of University Teachers in Pakistan*, Journal of Education and Educational Development.

Abdullah Z and Mohamad Said MNH (2022), *Engaging and Empowering Malaysian Students Through Open and Distance Learning in the Post-COVID Era*. Front. Educ. 7:853796. doi: 10.3389/educ.2022.853796

Bakker A, Demerouti E (2007), *The job-demands resources model: State of the art*. Journal of Managerial Psychology. 2007; 22:309–328.

Behson S.J. (2002), *which dominates? The relative importance of work-family organizational support and general organizational context on employee outcomes*. Journal of Vocational Behaviour. 2002; 61:53–72.

Bryman, A. & Bell, E. (2011), *Business Research Methods*. 3rd ed. United States: Oxford University Press Inc., New York.

Briner R.B., (2000), *Relationships between Work Environments, Psychological Environments, and Psychological Well-Being*, Occup. Med., Vol. 50, No. 5, pp. 299-303.

Beehr, T. A., King, L. A., & King, D. W. (1990), *Social support and occupational stress: Talking to supervisors*, Journal of Vocational Behaviour, 36, 61-81.

Bhatti, K., & Qureshi, T. (2007), *Impact of employee participation on job satisfaction, employee commitment and employee productivity*, International Review of Business Research Papers, 3(2), 54 – 68.

Barak, M. E. M., Findler, L., & Wind, L. H. (2003), *Cross-cultural aspects of diversity and well-being in the workplace*, An international perspective Journal of Social Work Researcher and Evaluation, 4(2), 145-169.

Beehr, T. A., Jex, S. M., Stacy, B. A., & Murray, M. A. (2000), *Work stressor and co-worker support as predictors of individual strain and job performance*, Journal of Organizational Behaviour, 21, 391-405.

Barclay, D., Higgins, C. & Thompson, R. (1995), *The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration*. Technology Study 2(2): 285-309.

Bhanthumnavin, D. (2003), *Perceived Social Support from Supervisor and group Members' Psychological and Situational Characteristics as Predictors of Subordinate Performance in Thai Work Units*, Human Resource Development Quarterly, 14(1), 79-97.

Bradley, G. (2004), *Job strain and healthy work in teachers: A test of the Demands-Control-Support Model*. Griffith University.

Brough, P., & Pears, J. (2004), *Evaluating the influence of the type of social support on job satisfaction and work-related psychological well-being*, International Journal of Organisational Behaviour, 8(2), 472-485. 18

Bakker, A.B., E. Demerouti & A.I. Sanz-Vergel (2014), '*Burnout and Work Engagement: The JD-R Approach*', Annual Review of Organizational Psychology and Organizational Behaviour 1, 1, 389–411.

Bakker, A.B., E. Demerouti & W.B. Schaufeli (2003b), '*Dual Processes at Work in A Call Centre: An Application of the Job Demands Resources Model*', European Journal of Work and Organizational Psychology 12, 4, 393–417.

Bakker, A.B., E. Demerouti & W. Verbeke (2004), '*Using the Job Demands–Resources Model to Predict Burnout and Performance*', Human Resource Management 43, 1, 83–104.

Baron, R. M., & Kenny, D. A. (1986), *Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations*, "Journal of Personality and Social Psychology, 51 (6), 1173-1182.

Basaruddin N.A. & Yeon A.L. (2016), *Faculty Workload and Employment Benefits in Public Universities*, International Review of Management and Marketing, 2016,6(S7), 73082.

Biggs J. (1996), *Enhancing teaching through constructive alignment*. Higher Education 1996;32(3):347-364.

Boyar SL, Carr JC, Mosley DC, and Carson CM (2007), *The Development and Validation of Scores on Perceived Work and Family Demand Scales*, Educational and Psychological Measurement Volume 67 Number 1 February 2007 100-115 © 2007 Sage Publications.

Baron, R.M. & Kenny, D.A. (1986), *The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations*. Journal of Personality and Social Psychology 51(6): 1173-1182.

Chawinga WD, Zozie PA. (2016), *Increasing access to higher education through open and distance learning: Empirical findings from Mzuzu University, Malawi*. The International Review of Research in Open and Distributed Learning.

César F., Juan J. F., María P.C., Paula P.B., Margarita C.M, & Esperanza N.P. (2018), *Sleep disturbances in tension-type headache and migraine*; The Adv Neurol Disord. 2018.

Caplan, R.; Cobb, S.; French, J.; Harrison, R.; Pinneau (1975), *S. Job demands and worker health*, Ann Arbor, MI: Institute for Social Research, University of Michigan.

Carr J.Z., Schmidt A.M., Ford J.K., DeShon R.P. (2003), *Climate perceptions matter: A meta-analytic path analysis relating molar climate, cognitive and affective states, and individual level work outcomes*, Journal of Applied Psychology.

Cobb S (1976), *Social support as moderator of life stress*. Psychosomatic Medicine; 38:300–314.

Cohen S, Willis T.A. (1985), *Stress, social support, and the buffering hypothesis*. Psychological Bulletin. 1985; 98:310–357.

Cavazotte, F., A.H. Lemos & K. Villadsen (2014), '*Corporate Smart Phones: Professionals' Conscious Engagement in Escalating Work Connectivity*', New Technology, Work, and Employment 29, 1, 72–87.

Chesley, N. (2010), '*Technology Use and Employee Assessments of Work Effectiveness, Workload, and Pace of Life*', Information, Communication, & Society 13, 4, 485–514.

Chesley, N. (2014), '*Information and Communication Technology Use, Work Intensification and Employee Strain and Distress*', Work, Employment and Society 28, 4, 589–610. Crawford, E.R., J.A.

- Chambel, M. J., & Curral, L. (2005), *Stress in academic life: Work characteristics as predictors of student wellbeing and performance*. Applied Psychology, An International Review, 54(1), 135-147
- Chay, Y. W. (1993), *Social support, individual differences, and well-being: A study of small business entrepreneurs and employees*, Journal of Occupational and Organizational Psychology, 66, 285-302.
- Chen, W.-Q., Siu, O.-L., Lu, J.-F., Cooper, C. L., & Phillips, D. R. (2009), *Work stress and depression: the direct and moderating effects of informal social support and coping*. Stress and Health, 25, 431-443.
- Clark, L.A. & Watson, D.(1995), *Constructing validity basic issues in objective scale development*. Psychological Assessment 7(3): 309-319.
- Coetzer, W., & Rothmann, S. (2006), *Occupational stress of employees in an insurance company*, South African Journal of Business Management, 37(3), 29-39.
- Chu, H.C. (2006), *Autonomy and wellbeing: Self-determination in Chinese students in the United States*, Dissertation Abstracts International: Section B: The Sciences and Engineering, 67(8-B), 4702.

Chin, W.W. (2010), *How to write up and report PLS analyses*. In Handbook of partial least squares (pp. 655-690), Springer.

Clausen T, Madsen IEH, Christensen KB, Bjorner JB, Poulsen OM, Maltesen T, Borg V and Ruqulies R (2019), *Scand J Work Environ Health* [2019;45\(4\)](#):356-369.

Costa G. et. al., (2004), *Flexible Working Hours, Health, and Well-Being in Europe: Some Considerations from a SALTSA Project*, Chronobiology International, Vol.21, No. 6, pp 831-844.

Chetty MN, and Plessis Md (2021), *Systematic Review of the Job Demands and Resources of Academic Staff within Higher Education Institutions*, [International Journal of Higher Education](#) 10(3):268

Cho, H. C. & Abe S. (2013), *Is Two-tailed Testing for Directional Research Hypotheses Tests Legitimate*. Journal of Business Research 66 (9): 1261-1266.

Chin, W.W. (1998), *The partial least squares approach to structural equation modeling*. Modern Methods for Business Research 295(2): 295-336.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioural Sciences*. Hillsdale, NJ: Lawrence Erlbaum.

- Cox, E. P. (1980), *The optimal number of response alternatives for a scale: A review*.
Journal of Marketing Research 17(4): 407-422.
- Chua, Y.P (2006), *Kaedah dan Statistik Penyelidikan. Asas Statistik Penyelidikan Buku 2. Edisi ke-2. Malaysia*: McGraw Hill, Education
Cohen, J. 1992. A Power Primer. Psychological Bulletin. 112: 155-159.
- De Carlo, T. E., & Agarwal, S. (1999), *Influence of managerial behaviours and job autonomy on job satisfaction of industrial salespersons: Across-cultural study*. Industrial Marketing Management, 28(1), 51-62.
- De Jonge, J., & Kompier, M. (1997), *a critical examination of the Demand-Control-Support model from a work psychological perspective*. International Journal of Stress Management, 4, 235-258.
- Campos-Serna, J.; Ronda-Pérez, E.; Artazcoz, L.; Moen, B.E.; Benavides, F.G. (2013) *Occupational health related to the unequal distribution of working and employment conditions: A systematic review*. Int. J. Equity Health 2013, 12, 1–18.
- Doef, M. V. D., & Maes, S. (1999), *the job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research*. Work and Stress, 13, 87-114.

De Menezes, M. & C. Kelliher (2011), '*Flexible Working and Performance: A Systematic Review of the Evidence for A Business Case*', International Journal of Management Reviews 13,4,452–474.

Demerouti E., A. B. Bakker, F. Nachreiner & W.B. Schaufeli (2001), '*The Job Demands Resources Model of Burnout*', Journal of Applied Psychology 86, 3, 499–512.

Demo G. & Paschoal T. (2016), '*Well-Being at Work Scale: Exploratory and Confirmatory Validation in the USA*', Paideia (Ribeirido Preto), 26(63), 35-43.

Duygulu E, Ciraklar NH, Guripek E, and Bagiran D (2013), '*The effect of role stress on the employee's well-being: A study in the pharmaceutical companies in the city of Izmir*', Elsevier Ltd. Open access. Procedia Social and Behavioural Sciences 84 (2013)1362/68.

Escriba-Aguir, V., & Tenias-Burillo, J. M. (2004), '*Psychological well-being among hospital personnel: the role of family demands and psychosocial work environment*'. International Archives of occupational and Environmental Health, 77, 401-408.

Elizabeth Armstrong-Mensah, Kim Ramsey-White, Barbara Yankey and Shannon Self-Brown (2020), '*COVID-119 and Distance Learning: Effects on Georgia State University School of Public Health Students*', Public Health.

Erdfelder, E., Faul, F., & Buchner, A. (1996), *G Power: A General Power Analysis Program*. Behavior Research Methods 28 (1): 1 – 11.

Fujishiro, K. (2005), *Fairness at work: Its impact on employee well-being*, The Ohio State University.

Fritz C, Sonnentag S., Spector P.E., McInroe J.A (2010), *The weekend matters: Relationships between stress recovery and affective experiences*. J. Organ.Behav.2010; 31:1137–1162.

Fisk, P. (2017). *Education 4.0the future of learning will be dramatically different, in school and throughout life*.

Fornell, C. & Larcker, D.F. (1981), *Evaluating structural equation models with unobservable variables and measurement error*. Journal of Marketing Research 18: 39-50.

Gallagher, E. N., & Vella-Brodrick, D. A. (2007). *Social support and emotional intelligence as predictors of subjective well-being, Personality and Individual Differences*, 44,1551- 1561.

Gimeno, D., Benavides, F. G., III, B. C. A., Benach, J., & Martinez, J. M. (2004), *Psychosocial factors and work-related sickness absence among permanent and non-permanent employees*, Journal Epidemiology Community Health, 58, 870876.

Greenhaus, J. H., & Beutell, N. J. (1985). *Sources of conflict between work and family roles. Academy of Management Review*, 10(1), 76-88. Hill, E. J. (2005), *Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support*, Journal of Family Issues, 26(6), 793-819.

Geisser, S. (1975), *The predictive sample reuse method with applications*. Journal of the American Statistical Association 70(350): 320-328.

Griffin M.A., Clarke S. *Stress, and well-being at work*. In: Zedeck S., editor. *APA Handbook of Industrial and Organizational Psychology*. Volume 3. American Psychological Association; Washington, DC, USA: 2011. pp. 359–397.

George, D. & Mallery, P. (2016), *Ibm Spss Statistics 23 Step by Step: A Simple Guide and Reference*. Routledge.

Gefen, D. & Straub, D. (2005). *A practical guide to factorial validity using PLS-Graph: tutorial and annotated example*. Communication of the Association for Information Systems 16: 91-109.

Gräbel, Bianca Friederike (2017), *The relationship between wellbeing and academic achievement: a systematic review*.

Hackman, J. R., & Oldham, G. R. (1976), *Motivation through the design of work: Test of a theory*. Organizational Behaviour and Human Performance, 16(2), 250-279.

Ha Nam Khanh Giao, Bui Nhat Vuong & Hasanuzzaman Tushar, Len Tiu Wright
(Reviewing editor) (2020) *The impact of social support on job-related behaviours through the mediating role of job stress and the moderating role of locus of control: Empirical evidence from the Vietnamese banking industry*, *Cogent Business & Management*, 7:1, DOI: [10.1080/23311975.2020.1841359](https://doi.org/10.1080/23311975.2020.1841359).

Henseler, J., Ringle, C.M. & Sarstedt, M. (2015), *A new criterion for assessing discriminant validity in variance-based structural equation modeling*. *Journal of the Academy of Marketing Science* 43: 115-135.

Harvard University T.H., (2016), *The High Price of Workplace Stress*, *The Harvard Gazette*.

Hagelstam E, (2017), *Wellbeing at work, workplace health promotion and employee productivity: A case study of sales representatives*, *Thesues, Lataukset*:4319.

Hair, J.F., Ringle, C.M. & Sarstedt, M. 2011. *PLS-SEM: indeed a silver bullet*. *Journal of Marketing Theory and Practice* 19(2): 139-151.

Hair, J.F., Hult, G.T.M, Ringle, C. M. & Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modelling (PLS-SEM)*. California: SAGE Publication, Inc.

Henseler, J., Ringle, C.M. & Sinkovics, R.R. (2009), *The use of the partial least square path modeling in international marketing*. New Challenges to International Marketing Advances in International Marketing 20: 277-319.

Hair, J.F., Ringle, C.M. & Sarstedt, M. (2011). *PLS-SEM: indeed a silver bullet*. Journal of Marketing Theory and Practice 19(2): 139-151.

Hu, L., & Bentler, P. M. (1998), *Fit indicate in covariance structure modelling: Sentivity to underparameterized model misspecification*. Psychological Methods, 3 (4), 424-453.

Hair, J.F., Hult, G.T.M. Ringle, C.M. & Sarstedt, M. (2014), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. California: SAGE Publications, Inc.

ILO (2016) *Inclusive Labour Markets, Labour Relations, and Working Conditions Branch (INWORK)*.

Ilies, Hoeven & Zoonen, (2015), *Helping Others and Feeling Engaged in the Context of Workplace Flexibility: The Importance of Communication Control*, SAGE Journals.

Ibrahim NF (2021), *Relationship between Well-Being and Innovative Work Behavior in Public Educational Institutions: A Conceptual Paper*, Research Article:2021 Vol:27Issue: 5S.

Jamal MJ and Baba V (1992), *Shift work and Department – Type Related to Job Stress, Work Attitudes, and Behavioural Intentions: A Study of Nurses*, Journal of Organisational behaviour.

Jose, P. E. (2003) *MedGraph-I: A Programme to graphically depict mediation among three variables: The internet version, version 2.0*. Victoria University of Wellington, Wellington, New Zealand.

Jacolize P. and Adèle B. (2018), *Mental Health in Higher Education: A Comparative Stress Risk Assessment at an Open Distance Learning University in South Africa*, International Review of Research in Open and Distributed Learning, Volume 19, Number 2.

Jonge J. & Shaufeli W.B. (1998), *Job Characteristics and Employee Well-Being, A Test of Warr's Vitamin Model in Health Care Workers using Structural Equation Modelling*, Journal of Organisational Behaviour, Vol 19, 387-407 (1998).

Janet H. (2017), *Determination and Validation of the Project for Educational Research That Scales (PERTS) Survey Factor Structure*, Journal of Educational Issues, ISSN 2377-2263, Vol3, No1.

Jerome M. Adams (2019), *The Value of Worker Well-Being*, Journal of Public Health.

Kowalski & Loretto, (2017), *Well-being and HRM in the changing Workplace*, APA Psycnet.

Kline, R.B. (2011), *Principles and Practice of Structural Equation Modelling*. 3rd Edition. New York: The Guilford Press.

Kolesnichenko E, Radyukova Y, Pakhomov N (2019), *The Role and Importance of Knowledge Economy as a Platform for Formation of Industry 4.0*.

K. Bhui, S. Dinos, Galant-Miecznikowska, Jongh Bd, S. Stanfeld (2016), *Perceptions of work stress causes and effective and interventions in employees working in public, private and non-governmental organisations: A qualitative study*, BJPsych Bull.

Kain, J. and Jex, S. (2010), "Karasek's (1979) job demands-control model: A summary of current issues and recommendations for future research", Perrewé, P.L. and Ganster, D.C. (Ed.) *New Developments in Theoretical and Conceptual Approaches to Job Stress* (Research in Occupational Stress and Well Being, Vol. 8), Emerald Group Publishing Limited, Bingley, pp. 237-268.

Khuong N.K. & Yen V.H. (2016), *Investigate the Effects of Job Stress on Employee Job Performance – A Case Study at Dong Xuyen Industrial Zone, Vietnam*, International Journal of Trade, Economics and Finance, Vol. 7, No. 2, 2016.

Karasek, R.(1979), *Job demands, job decision latitude, and mental strain: Implications for job redesign*, Administrative Science Quarterly, 24(285), 308.

Karasek, R. (1985), *Job content questionnaire and user's guide*. Lowell: University of Massachusetts.

Keyes, C. L. M. (2005), *Mental illness and/or mental health? Investigating axioms of the complete state model of health*.

Kahn R.L., Byosiére P (1992), *Stress in organizations*. In: Dunnette M.D., Hough L.M., editors. Handbook of Industrial and Organizational Psychology. Volume 2. Consulting Psychologists Press; Palo Alto, CA, USA: 1992. pp. 571–650.

Krishanta (2018), *Employee well-being – effectiveness on motivation and organisational performance*, International Journal of Advancements in Research and Technology, 7(7) July – 2018.

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

Lliesa R, Sherry S.Y. Awa, and Pluut H (2015), *Intraindividual models of employee well-being: What we have learned and where do we go from here?* European Journal of work and organisational psychology.

LePine and B.L. Rich (2010), '*Linking Job Demands and Resources to Employee Engagement and Burnout: A Theoretical Extension and Meta-Analytic Test*', Journal of Applied Psychology 95, 5, 834–848.

Leviana A., Nurfazlina H., Habel Z.& Nur Atirah Z, (2016), *Job Characteristics and Job Satisfaction Among Employees: A Case Study at Craun Research Sdn Bhd at Kuching, Sarawak*, International Academic Research Journal of Business and Technology 2(2) 2016 Page 165-171.

Lofman J (2018), *Straining work and psychological well-being*, Stockholms University.

Lewis, J.R. (1993), *Multipoint scales: Mean and median differences and observed significance levels*. International of Human-Computer Interaction 5 (4): 383-392.

Lu Yu, Daniel T.L. Shek and Xiaoqin Zhu (2018), *The influence of personal well-being on learning achievement in university students over time: Mediating or Moderating effects of internal and external university engagement*, Frontiers in psychology, Vol 8.

McCloskey, J. C. (1990), *two requirements for job contentment: Autonomy and social integration. Image: The Journal of Nursing Scholarship*, 22(3), 140-143.

Meyer, J. P., & Allen, N. J. (1991), *A three-component conceptualization of organizational commitment*, *Human Resource Management Review*, 1(1), 61-89.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Mahway, NJ: Lawrence Erlbaum and Associates.

Masuku S. and Muchemwa's (2015), *Occupational Stress Among University Lecturers: A Case of Zimbabwe*, *US-China Education Review A*, April 2015, Vol.5, No 4, 258-266

Medvedev ON and Landhuis CE (2018), *Exploring constructs of well-being, happiness, and quality of life*, *PeerJ* 4903.

Muhammad J.J., and Vishwananth B., (2000), *Job Stress and Burnout among Canadian Managers and Nurses: An Empirical Examination*, *Canadian Journal of Public Health*.

Mc Namara et.al. (2013), *Handbook of Latent Semantic Analysis*, Taylor & Francis Group, Routledge.

- MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Mahway, NJ: Lawrence Erlbaum and Associates.
- MacDonald, LA, Bertke, S, Hein, MJ, et al. (2017), *Prevalence of cardiovascular health by occupation: a cross-sectional analysis among U.S. workers aged ≥ 45 years*. Am J Prev Med 2017;53(2):152-161.
- Mohd Azhar Abd Hamid. (2004), *Kreativiti Konsep Teori & Praktis*. Johor: Universiti Teknologi Malaysia.
- Ngubane-Mokiwa S.A. (2017), *Implications of the University of South Africa's shift to open distance e-learning on teacher education*. Australian Journal of Teacher Education (Online).
- Nilufar A., Zaini A., David Y.G.F., & Syed S.A. (2009), *A Study of Job Stress on Job Satisfaction among University Staff in Malaysia: Empirical Study*, European Journal of Social Sciences, Vol 8 Number 1.
- Noblet A. (2003), *Building Health Promoting Work Setting: Identifying the relationship between work characteristics and occupational stress in Australia*, Health Promotion International 18, 351-359.
- Nawal G A-Ghamdi (2017), *Role overload and job stress among the female university teachers- Saudi Context*, European online journal of natural and social science, Vol. 6, No 2 pp. 288-295.

Norimah Md Dali, Azila Ahmad Sarkawi and Alias Abdullah (2017), *An Analytical Study of Malaysia's Quality of Life Indicators*, Journal of Business and Economics, Volume 8, No. 6, pp. 488-498.

Nappo N (2020), *Job stress and interpersonal relationships cross country evidence from the EU15: a correlation analysis*, BMC Public Health

Oleg and Erik (2018), *Exploring constructs of well-being, happiness, and quality of life*, PeerJ 6: e4903; DOI 10.7717/peerj.4903.

Onn CY, Khen TM, Zee TM, Ni TP, Yong KT, and Sin TM (2014), *An The relationship of intrinsic motivation and job autonomy with organisational commitment: empirical study*, Australian journal of basic and applied sciences.

Ozkoc AG (2016), *Job Autonomy and Work Alienation: Organizational and Occupational Identification as a Mediator*, European Journal of Business and Management, Vol.8, No.11, 2016

Peter Warr (1999), *Well-being and the workplace, The foundations of Hedonic psychology*, pp 392-412. New York: Russel Sage Foundation.

P. Pedrelli, M. Nyer, A. Yeung, C. Zulauf, and T. Wilens, (2015), *College Students: Mental Health Problems and Treatment Considerations*, Acad Psychiatry. 2015 Oct; 39(5): 503–511.

Pejtersen JH, Kristensen TS, Borg V, Bjorner JB (2010), *The second version of the Copenhagen Psychosocial Questionnaire (COPSOQ II)*, Scandinavian Journal of Public Health 38 (3Suppl):8-24.

Parker, D. F., & DeCotiis, T. A. (1983). *Organizational determinants of job stress*. Organizational Behaviour and Human Performance, 32, 160-177.

Palaniappan, A.K. (2009), *Penyelidikan dan SPSS (PASW)*. Petaling Jaya: Pearson Malaysia Sdn. Bhd.

Pallant, J. (2011), *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS*. Fourth edition. Australia: Allen & Unwin.

R. Nandhakumar (2019), *A study on the learning pattern of generation – Z (Gen-Z) and their perception on curriculum, course deliverance and infrastructure*, International Journal of Management and Social Sciences Volume 9, (Issue Special, February 2019): 625-634.

Rethinam, G.S., Isa M., Musa, A.H., and Shah B.A., (2002), *Job Dimension and Growth Need Strength of Information System personnel as Predictors of Quality of Working Life*, World Employment Report, International Labour Organisation.

Roddy C, Amiet DL, Chung J, Holt C, Shaw L, McKenzie S, Garivaldis F, Lodge JM, and Mundy ME (2017) *Applying Best Practice Online Learning, Teaching,*

and Support to Intensive Online Environments: An Integrative Review. Front. Educ. 2:59. doi: 10.3389/feduc.2017.00059

Schaufeli W.B. & Toon W. T., Bauer G.B. & Hämmig O. (2014), *Bridging Occupational, Organizational and Public Health a Transdisciplinary Approach.*

Sonnentag S., Fritz C (2015), *Recovery from job stress: The stressor-detachment model as an integrative framework. J. Organ. Behav. 2015; 36: S72–S103.*

Stephen G.H.M. (2015), *Job Characteristics and Job Satisfaction: A Test of Warr's Vitamin Model in German Horticulture, The Psychologist-Manager Journal.*

Smith A. P. (2018), *Cognitive Fatigue and the Well-Being and Academic Attainment of University Students, Journal of Education, Society and Behavioural Science, 24(2): 1-12, 2018, Article no. JESBS. 39529.*

Syed Noor-Ul-Amin (2013), *An effective use of ICT for education and learning by drawing on worldwide knowledge, research, and experience: ICT as a change agent for education (A Literature review), Scholarly Journal of Education Vol. 2(4), pp. 38-45, April 2013.*

Susan Guthrie, Catherine A. Lichten, Janna Van Belle, Sarah Ball, Anna Knack, and Joanna Hofman (2017), *Understanding mental health in the research environment. A Rapid Evidence Assessment, RAND Corporation.*

Sulistiyono (2019), *The Mediation Effect of Work Stress on Workload, Work Condition, and Loan Collection Performance*, RJOAS, 2(86).

Shah D. (2016), *Online education: should we take it seriously? Climacteric*. 19:3–6.

S. Daud, SN. Toolib, WN. Wan Hanafi, R. Jegatheesan (2021), *Employee Well-Being during COVID-19 in Higher Education Institution in Malaysia: A Case Study*, International Journal of Business Management

Shani NI, Bamberger PA, and Bacharach SB (2011), *Social support and employee well-being: The conditioning effect of perceived patterns of supportive exchange*, J Health Social Behavioural 2011 Mar; 52(1): 123-139.

Sungjin Park, Hyungdon Kook, Hongdeok Seok, Hyoung Lee, Daeun Lim, Doong-Hyuk Cho, and Suk-Kyu (2020), *The negative impact of long working hours on mental health in young Korean workers*, PLoS ONE 15(8): e0236931.

Swan JG (2017), *The Challenges of Online Learning Supporting and Engaging the Isolated Learner*, Journal of Learning Design, Special Issue: Business Management, Vol.10 No1.

Stone, M. (1974), *Cross-validators choice and assessment of statistical predictions*. Journal of the Royal Statistical Society 36(2): 111-147.

Sekaran, U. & Bougie, R. (2010), *Research Methods for Business: A Skill Building Approach*. New York: John Wiley & Sons, Inc.

Teo, T.S.H., Srivastava, S.C. & Jiang, L. (2008), *Trust and electronic government success: an empirical study*. Journal of Management Information Systems 25(3): 99-132.

Tabachnick, B. G. & Fidel, L. S. (2007). *Using Multivariate Statistics. Sixth Edition*. UK: Pearson Education Limited.

Tenenhaus, M., Esposito Vinzi, V. Chatelin, Y.M. & Lauro, C. (2005), *PLS path modeling*. Computational Statistics & Data Analysis 48(1): 159–205.

T.H. Chan (2016), *The workplace and health, Public Opinion Poll series*, Harvard School of Public Health.

Teoh KB and Kee DMH (2020), *Psychosocial safety climate and burnout among academicians: the mediating role of work engagement*, International Journal of Society System Science, Vol 12, No 1, pp. 1-14

Ten Brummelhuis, L.L., & Bakker, A.B. (2012), *A resource perspective on the work-home interface: The work home resources model*. American psychologist. Advance online publication.

T. Muthuprasad, S. Aiswarya, K.S. Aditya and Girish K. Jha (2021), *Students' perception and preference for online education in India during COVID -19 pandemic*, Social Sciences & Humanities Open, Volume 3, Issue 1.

Wülferth, H. (2013). *Validity and Reliability of Empirical Discretion Model*.
In Contributions to Management Science.

World Economic Forum Report (2016b). *New Vision for Education: Fostering social and emotional learning through technology*.

Yozgat U., Yurtkoru S. E. & Bilginoglu E. (2013), *Job Stress and Job Performance among Employees in Public Sector in Istanbul: Examining the Moderating Role of Emotional Intelligence*, *Procedia – Social and Behavioral Sciences* 75(2013) 518-524.

Zhao, X., Lynch, J. G., & Chen, Q. (2010). *Reconsidering Baron and Kenny: Myths and Truths about Mediation Analysis*. *The Journal of Consumer Research*, Vol 37 (2), pp. 197-206

Zineldin M. & Hytter A. (2011), *Leaders Negative Emotions and Leaderships Styles influencing subordinates' well-being*, *The International Journal of Human Resource Management*, Volume 23, 2012 - Issue 4.

Zainuddin PFA, Norlina, Kadri A, Noor, and Maimon NZ (2021), *Identifying factors of job stress that effect job performance among employees in Sarawak*

Corporation Malaysia, International journal of academic research in business and social sciences.

Zhao, X., Lynch, J.G., & Chen, Q. (2010), *Reconsidering Baron and Kenny: myths and truths about mediation analysis*. Journal of Consumer Research 37(2): 197-206.

