International Journal of Innovation, Creativity and Change. www.ijicc.net
Volume 6, Issue 8, 2019

Exploring the nexus between Job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations

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The objective of the current study is to explore the nexus between Job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations. Meanwhile the mediating role of self-efficacy in the relationship between job demand and employee performance is also examined. Lastly, the moderating role of technological advancement in the relationship between self-efficacy and employee performance is observed. The study is of the view that Employees' performance in public organizations is directly affected government's efficiency and delivery of work. People are looking forward to a high-quality service offered by public employees or a negative image be imposed on the whole service. The underperformers can also cause detriment to the country where the government keeps paying them a salary while their performance is not up to their organizations' requirements. The study has employed the survey-based methodology. The response rate is 57 percent. The study has employed the PLS-SEM to achieve the objectives. This study will be helpful for policymakers and researchers in examining the link between Job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations.

Key words: *Job demands, Self-efficacy, Technological advancements, Employee performance. Indonesia Public Organization.*

Background

People are critical for organizational success (Noe, Hollenbeck, Gerhart & Wright, 2017). Zahargier & Balasundaram, (2011) classified people who work in an organization (employees) as an organization's most valued assets. Aguinis & Edwards, (2014) wrote that when employees' performance is congruent with the organization's goal, it will help the organization to gain a competitive advantage. In most organizations, there is a specific department called the Human Resource Department (HRM), whereby its most important function is to maximize employee performance so that organizations can achieve their strategic goals (Johanson & Vahlne, 2009). Motowidlo & Van Scotter, (1994) in their research highlighted that an organization's value can be measured through its employees' overall performance. Ensuring employee performance has not only become an important concern for companies all around the world but also has become a major research focus among organizational researchers especially in relation to occupational health and work, management and organizational psychology (Dawson et al., 2008).

Numerous studies have been conducted on the topic of employee performance (Koopmans et al., 2011) and most of them were done in profit-based organizations, whereby employee performance is reflected by organizational performance and can be generally measured through an organization's financials (profit or loss). However, only a few studies have been carried out for public or non-profit organizations where the monetary outcome is not the focus and base point in evaluating employees' performance; the employees' job scope is more concerned with management and administration that cannot be easily quantified. Furthermore, the performance of management and administration employees of the public sector are also deemed to be unspecific with a wide range of tasks and low intensity as compared to other technical or customer-based jobs, such as technicians, nurses and teachers. Hence, the performance of public sector employees is harder to study as compared to the employees of the private sector.

Like other organizations, in public service organizations, employees are considered as the backbone of the government (Marsidi & Latip, 2007). They are agents in drafting and executing policies according to laws, and manage the national administrative and public affairs (Zhang, Yan, Li, Chen & Zeng, 2015). Employees' performance in public organizations directly affects government's efficiency and delivery of work (Mingzheng & Man, 2014). People are looking forward to a high quality services offered by public employees or a negative image will develop (Marzuki & Manaf, 2014). The underperformers can also cause detriment to the country (Eniza, 2015), where the government keeps paying them a salary while their performance is not up to their organizations' requirements.

In Indonesia's public service organizations' performance evaluation practice, employees are rated annually by their first and second superior, according to general criteria specified by one of the government's central agency, Public Service Department. Public Service Department is the organization that holds the responsibility for human resource management for public service organizations in Indonesia. By referring to Service Circular No. 4 in 2002 (Public Service Department, 3 2002), the distribution of marks for employees' performance varies, based on the employee's level or grade. The evaluation of employees' performance is primarily focused on objective measures of work productivity or subjective judgement of quantity or quality of work, by the superior; according to Koopmans et al., (2012), this is the most applied performance evaluation measurement.

Literature Review

Employees' Performance

Employees' performance is defined as actions and behaviours that are under employee's control that contribute to the organization's goals and translated in timely, effective and efficient completion of mutually agreed tasks by the employee and the employer (Tinofirei, 2012). According to (Hatane, 2015), employees' performance is a vital factor to support the improvement of the outcomes, behaviour and traits of the employees. Past research showed that majority of employees' performance issues were discussed in a non-managerial job scope (Obeidat, Zyod & Gharaibeh, 2015) or profit based-organizations and proved to have positive relationship among them for example in banking, information technology and educational sector (Susanty & Miradipta, 2013).

Early approaches in employee performance studies had only considered task performance in its evaluation (Tugume & Basheka, 2016). Task performance is referred to as job specific behaviours and programs that contribute to strengthen the organization's technical core, or the maintenance of those processes, or via planning and organizing functions. Arinanye, (2015) then expanded the employee performance criteria to include contextual performance which is described as non-job-specific behaviours that contribute to the organizational, social and psychological surroundings in which the technical core must deal with. In 2011, a new construct for individual work performance was introduced by Koopmans et al. (2011). This comprises of task performance and contextual performance, adaptive performance and counterproductive work behaviour. According to Carpini, Parker & Griffin (2017) counterproductive work behaviour is identified as behaviour that harms the well-being of the organizations while adaptive performance is declared as the level of how an employee adapts to changes in their responsibility of work or its surroundings.

As discussed earlier, underperformers should be dealt with promptly and appropriately by the management. The Exit Policy introduced by the government of Malaysia in 2015 is a clear guidance to management in the public service organizations for corrective actions. This is because usually employees are unaware that they are not performing well and so are unlikely to change their performance. The influential factors, if not being addressed properly, will become more serious over time. These underperformers will not help much in achieving the organizations goals and are feared to influence other employees. To avoid such negative impacts, it is better for the management to identify factors affecting its employees' performance and find appropriate solutions from that.

Self-Efficacy

Self-efficacy is defined by Maddux (2016) as the ability of individual's to be confident and to successfully performing any task even in different situations. According to Hutchins, Burke, Hatton & Bowman-Perrott (2017), self-efficacy is one of the determinants of transfer in training. This is because, the level of human self-efficacy keeps changing and is influenced by many factors. Hence, it opens the opportunities to study self-efficacy. Bernacki, Nokes-Malach & Aleven (2015) defined self-efficacy as one's judgments of his or her ability to accomplish a task. In addition, Zimmerman, Schunk & DiBenedetto (2017) identified four bases of self-efficacy which are; enactive mastery, modelling, verbal persuasion, and arousal. Besides that, Mullen & Lambie (2016); Mahmood et al. (2016) suggest that self-efficacy is the employee's ability to determine effective action needed that suits the environmental needs, using various resources in which they are able to mobilize their motivation. Similarly, according to Mullen & Lambie (2016) efficacy motivates the employees as it influences how they think, feel, and act. The Study also proved that self-efficacy is significantly related to job attitudes, training proficiency and is able to boost up employees and organization performance.

So, on the basis of self-efficacy, one can easily say that it is like a motivation that stimulates the employees to adapt with the situation and helps to accomplish the job (Lippke, Pomp & Fleig, 2018). Personal experiences, family, recreation, faith traditions, and beliefs are some of the factors that shape the self-efficacy quality in one's life (Allred, Harrison & O'Connell, 2013). Interesting findings indicated by Allred et al. (2013) found that individual's with high levels of self-efficacy will choose challenging tasks and take more responsibility compared with those with low levels of self-efficacy. According to Ransom & Chuard (2012), higher self-efficacy employees also are believed to have clear goals, be able to form achievable strategies, and have low self-esteem. Furthermore, Johnson, Hollenbeck, DeRue, Barnes & Jundt (2013) mentioned, with a high level of self-efficacy, it will largely affect the learning attitudes, have a greater impact when participating in development activities, and at the same time increase the awareness of the importance of development program for them.
Additionally, in the workplace, self-efficacy is intervened by occupational positions that differ in terms of scope and job hierarchy such as power, authority, empowerment, trust, and

creativity. If these factors are poorly managed, it can create conflicts which in turn ruin the organization business, as time is taken to solve the internal problems. At the same time, even a minimal communication and feedback from the manager or supervisor will possibly impact the employee's self-efficacy level (Scherpereel, Williams & Hoefle, 2019)

Technology Advancement

The arrival of information technology has changed human resource management practices. The development and advancement in technology has improved human life as well as transforms business processes, communication and organization's architecture. People working in the business organizations know that technology advancements have impacted in the development of business communication system, but less can be proved in a non-profit or public service organization. Organizations invest in technology, for example in providing internet access, developing computer system or even providing employees with tools and gadgets, with the expectation that it will contribute to organizations' performance. Nevertheless, not much benefit will be gained from investments in information technology if employees refuse to accept or fully utilize its capabilities. The expeditious growth of information systems and its usage has led to changes in the workflow for both private and public organizations in Malaysia (Singh & Prasad, 2015). However, according to Landi & Niederreiter (2017), only certain employees can cope with technology advancement in organization and it is feared that such behaviour could influence job performance.

In public service organizations, technology has long been adapted in workflows. The recognition of electronic mail as one of government's official document in 2003 (MAMPU, 2003) is among other proof of the organization's acceptance. Hasan & Nadzar (2010) found that there is a strong relationship between technological changes and job performance in public service organization, while concluding that technology advancement can create new competitive advantages in organizations. Li (2016) stated that employees must be proficient in utilizing technological innovation to perform higher administrative and informational functions.

Role Ambiguity

According to Kannan & Lawrence (2012), a role is a set of hopes which influence the employee's ability to relate with the organizational limitations. Ambiguity means that the estimated outcomes of people behaviour is unknown. The employers put more hope in their employees in the working area and the employees need to come upon the customers different needs and fulfil their top management requirement which might lead them to role ambiguity (Soltani, Hajatpour, Khorram & Nejati, 2013).

There is theoretical framework which shows two types of role ambiguity where in the first type the employee is unable to understand actually what they wanted to do and what to give the priority too. The second type of role ambiguity is the person needs to know about the consequence of the role which they have provided to others, themselves and towards the organization. Based on Verbeke, Dietz & Verwaal (2011), role ambiguity is an indivisible part of the work environment and it points out an untrustworthy and ambiguous work circumstance. While, Verbeke et al. (2011) stated that confusion can occur in work and family roles when the individual is not able to predict their own duty. There are causes of role ambiguity which occur in the work area such as a lack of supervision, poor communication, lack of instruction and on-purpose retention by the co-worker and supervisor.

Further, there is an impact from role ambiguity if the people do not manage it correctly. The people will feel worry, tension and stress from the unpredictable role when they are involved in their work.

A substantial amount of past studies has shown that Role Ambiguity is related to a variety of Work-Family conflicts. Kavitha (2017) conducted a study on role ambiguity and work-family conflict and found a significant and positive relationship between both variables. The respondents were 757 married men and 270 married women. Concerning the perception of unspecific role faced by the employees in the public service organizations as compared to other technical or customer-oriented jobs, it is important for the researcher to identify whether role ambiguity establishes any relationship with employees' performance.

Work Overload

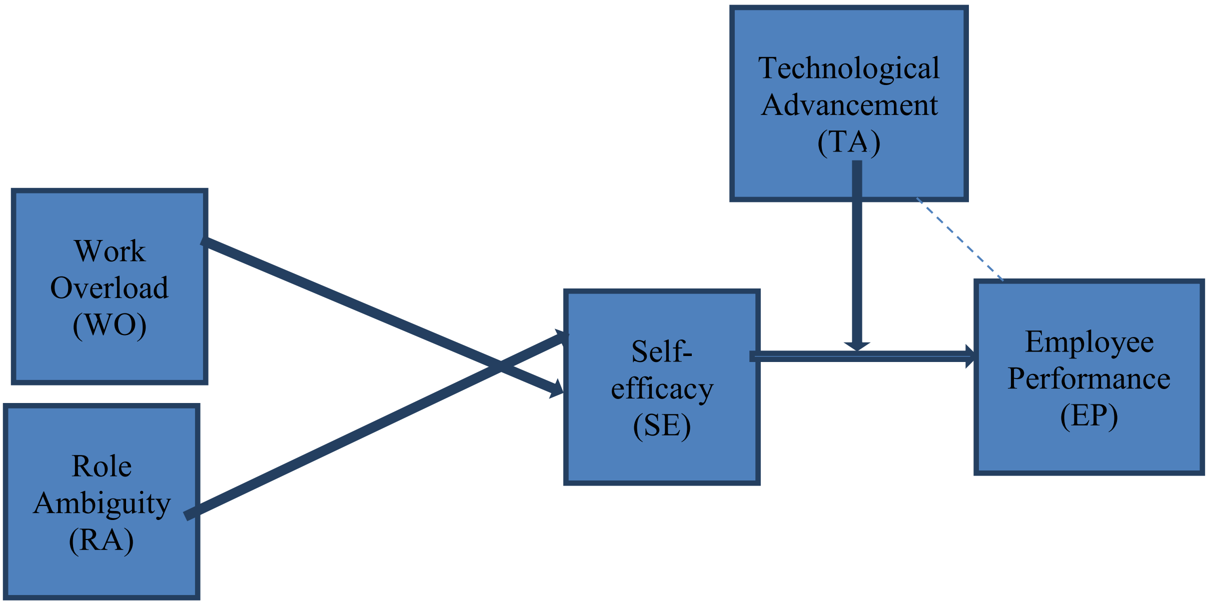
Workload is defined as the amount of work and responsibilities to be completed within the stipulated time. Generally, the workload can be categorized in two forms, namely quantitative and qualitative. Quantitative workload is an excessive amount of work that goes further away of the employees' capability in order to meet the demands in a particular time period (Karatepe, 2013). While in qualitative terms, the workload goes beyond the requirements of the work skills, capabilities and knowledge of the employee. Often excessive work can also lead to errors. If this occurs and persists, the employee will feel depressed, irritable or inflamed. Workload can be either work under load or work overload. Work under load exists as a possible stressor when an employee is receiving insufficient work or receiving tasks that are above and beyond his or her talents. However, work overload is a far more common stressor in today's work setting. Employees have either excessive work to accomplish in a limited time frame or they work too many hours on the job. According to Zohar, (1999) and Kossek et al., (2014) work overload creates a burden because of the pressure to do extra work, the increasing expectation of superiors, or having a huge and unbearable work load.

Conceptual framework

The conceptual framework of the current study is shown in figure 1 below.

Direct Relationships

Basing on the critical review of existing and contemporary literature, the study has proposed the following six direct relation between job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations
H1: Work overload has a positive and significant relationship with employee performance.
H2: Role ambiguity has a positive and significant relationship with employee performance.
H3: Self efficacy has a positive and significant relationship with employee performance.
H4: Work overload has a positive and significant relationship with Self efficacy.
H5: Role ambiguity has a positive and significant relationship with Self efficacy.
H6: Technological advancement has a positive and significant relationship with employee performance.



Mediating effect

The study has proposed the following two indirect relations (mediating) between job demands, self-efficacy, and employee performance in Indonesian Public organizations.
H7: Self-efficacy mediates the relationship between work overload and employee performance.

H8: Self-efficacy mediates the relationship between role ambiguity and employee performance.

Moderating effect

The study has proposed the following one indirect relation (moderating) between self-efficacy, technological advancements and employee performance in Indonesian Public organizations.
H9: Technological advancements mediates the relationship between self-efficacy and employee performance.

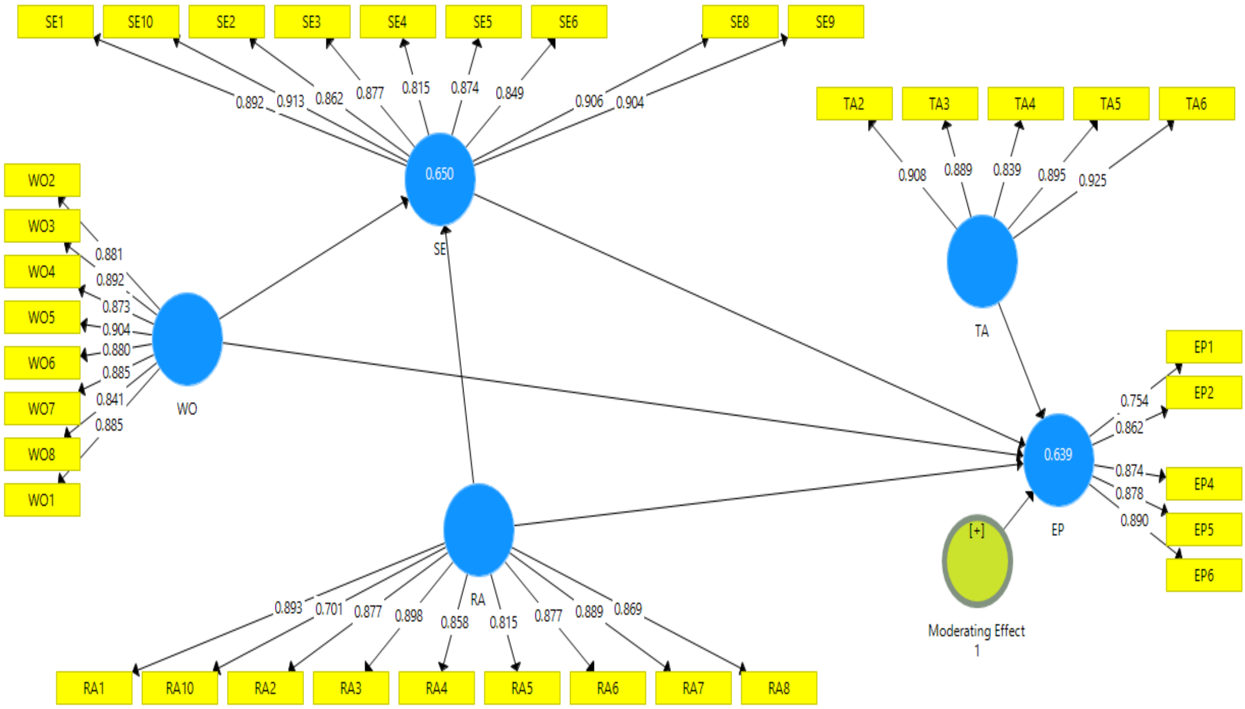
Methodology

For the data analysis, the survey-based methodology is employed in this study. The structural equation model is incorporated. The structural equation modelling involves factor analysis and multiple regression analysis. Studies have stated that the difference among the SEM and multiple regression is that SEM simultaneously examines the relation among latent variables, whereas the multiple regression assesses the relation in intervals. Hypotheses testing is easier through confirmatory factor analysis as compared to the exploratory method. Therefore, employing SEM for data analysis allows to incorporate multiple measures for determining the constructs and look for any errors, thus ensuring the validity of a construct(Byrne, 2016). The present study attempted to estimate multiple variables such as indirect paths, path analysis, and predictors. Moreover, choosing SEM seems unavoidable if nature of the measures of the construct are extremely conceptual and hypothetical and if the formulated questionnaire comprises of ratio and interval scale. Various statistical techniques can be used to perform research analysis, i.e. descriptive analysis, factor analysis, regression, and correlation analysis, such as multiple, single and hierarchical regression. However, the selection of any analysis is done depending on the nature and objectives of a study. Such as, descriptive statistics, correlation coefficients, factor analysis, hierarchical and multiple regression analyses were performed for the present study in order to achieve the desirable research objectives.

Results

Partial Least square (PLS), a second order SEM technique is coherent to the structural equation models which possess cause-and-effect associations and a set of latent variables. Moreover, partial least square is considered to be suitable in statistical model formulation and prediction (Afthanorhan, 2013).

Figure 2. Measurement model



The present study has employed this technique due to these reasons:
1) PLS-path modelling is suitable for complex models and is a powerful technique for the applications of the real world. In this study the relation among the dependent and the independent variables were observed. In addition, moderating effect is also determined on these relations.
2) PLS-path modelling is applicable for non-normal and normal data set. Therefore, PLS can address the underlying issue, since most social science researches involve less normal data.
3) The distinctive feature of PLS path modelling is that it can simultaneously estimate the relations among the constructs i.e. it estimates the structural model, and also estimate the relations among the factors as well the corresponding latent constructs of these factors (Duarte, Alves & Raposo, 2010). Therefore, PLS path modelling determines both the structural and the measurement model making it a robust statistical method for model estimation. Thus, the PLS path modelling is employed in order to examine the hypothesized relation, reliability and validity of a construct.

Under PLS path model, internal consistency reliability is determined through composite reliability test. The value of Cronbach alpha represents the internal consistency. In other words, the value for composite reliability must be 0.7 or above. Composite reliability values for each variable are presented in the Table.1. The values are ranging between 0.844- 0.985, which are higher than the benchmark level. Convergent validity is the degree to which same variable is measured by multiple items (Ramayah, Samat & Lo, 2011). Average variance extracted (AVE) has been observed in this study to assess the convergent validity as recommended by (Fornell & Larcker, 1981). To become sufficient, the value for AVE must be 0.5 or above. Afterwards, in order to improve the value of AVE, the items having lowest loadings have been removed.

Table 1: Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
EP	**0.906**	**0.910**	**0.930**	**0.728**
Moderating Effect 1	**1.000**	**1.000**	**1.000**	**1.000**
RA	**0.953**	**0.954**	**0.961**	**0.731**
SE	**0.962**	**0.964**	**0.968**	**0.770**
TA	**0.935**	**0.940**	**0.951**	**0.795**
WO	**0.958**	**0.960**	**0.965**	**0.775**

Discriminant validity is the extent the items estimate distinct concepts or distinguish between the constructs. Furthermore, it is the degree each study variable distinguished from the other variables (Duarte et al., 2010). As per the recommendation of (Hair, Ringle & Sarstedt, 2011), the discriminant validity of this study is checked using cross-loadings and Fornell-Larckers' criterion. In case of Fornell-Larcker criterion, for each variable the square roots of AVE must be higher than the correlations between the variables.

Table 2: Fornell-Larcker criterion

	EP	RA	SE	TA	WO
EP	0.853				
RA	0.723	0.955			
SE	0.773	0.794	0.977		
TA	0.728	0.767	0.907	0.892	
WO	0.665	0.940	0.701	0.675	0.880

The square roots of AVE were found to be consistent with the Fornell-Larcker criterion, i.e. higher than the correlations between the variables, except for the attitude variable. Therefore, 38items having loadings higher than 0.5 i.e. 0.581-0.881 were held and five lowest loading items have been removed from the data. Afterwards, the square roots for AVE were obtained and were also found to be consistent with the recommended criteria, thus confirming the discriminant validity. The boldface values in the Table 3 represents the square roots of AVE while the lightface values show the correlations for the latent variable.

Table 3: Outer Loadings

	EP	Moderating Effect 1	RA	SE	TA	WO
EP1	0.754					
EP2	0.862					
EP4	0.874					
EP5	0.878					
EP6	0.890					
RA1			0.893			
RA10			0.701			
RA2			0.877			
RA3			0.898			
RA4			0.858			
RA5			0.815			
RA6			0.877			
RA7			0.889			
RA8			0.869			
SE1				0.892		
SE10				0.913		
SE2				0.862		
SE3				0.877		
SE4				0.815		
SE5				0.874		
SE6				0.849		
SE8				0.906		
SE9				0.904		
TA2					0.908	
TA3					0.889	
TA4					0.839	
TA5					0.895	
TA6					0.925	
WO2						0.881
WO3						0.892
WO4						0.873
WO5						0.904
WO6						0.880
WO7						0.885
WO8						0.841

WO1						**0.885**

After the measurement model estimation, the next step is to estimate the structural or the inner model. The path-coefficients, effect size, R-square values, moderating effect, and predictive relevance were observed for this study, following the suggestion by (Henseler, Ringle & Sinkovics, 2009). Considering the recommendation by (Hair Jr, Sarstedt, Hopkins & Kuppelwieser, 2014) the bootstrapping method is employed for assessing the path coefficients' significance, by incorporating 345 cases and 5000 bootstrap samples. The results of the direct hypothesis 1 to 6 is shown in the table 4.

Table 4: Direct relationships

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
Moderating Effect 1 -> EP	0.074	0.067	0.043	4.720	**0.000**
RA -> EP	0.769	0.748	0.243	3.165	**0.002**
RA -> SE	1.172	1.189	0.176	6.667	**0.000**
SE -> EP	0.524	0.499	0.164	3.203	**0.001**
TA -> EP	0.122	0.146	0.151	4.810	**0.000**
WO -> EP	-0.112	-0.111	0.206	0.546	**0.000**
WO -> SE	-0.401	-0.418	0.219	1.830	**0.000**

The mediating results between self-efficacy role ambiguity, work overload and employee performance (H7 ,& H8) are shown in table 5

Table 5: Mediating results

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (|O/STDEV|)**	**P Values**
RA -> SE -> EP	0.615	0.592	0.215	2.860	**0.004**
WO -> SE -> EP	-0.210	-0.207	0.134	1.571	**0.000**

The moderating results between technological advancement in the relationship between employee self-efficacy and employee performance (H9) is shown in table 5

Table 6: Moderating results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Moderating Effect 1 -> EP	0.074	0.067	0.043	4.720	**0.000**

Estimating variance of the endogenous variable is the essential criteria for examining the structural model (Hair et al., 2011). The coefficient of determination or R^2 explains the degree of variation in the dependent variable which is explained by the independent variables (Hair, Joe F, Sarstedt, Matthews & Ringle, 2016: Hafeez et al., 2018). According to (Hair et al., 2011), the values of 0.25, 0.50, and 0.75 are explained as weak, moderate, and substantial variation respectively.

Table 7: R-Square

	R Square
EP	0.639
SE	0.650

While using PLS-SEM technique, measures should be used in order to obtain the predictive relevance of the model for determining model quality (Hair, Anderson, Babin, & Black, 2010). The present study used the (Geisser, 1974; Stone, 1974) predictive relevance test through blindfolding method. In PLS-SEM it is usually employed for determining the goodness-of-fit (Duarte et al., 2010). The blindfolding values are shown the figure 3 and table 8.

Figure 3. Blind folding

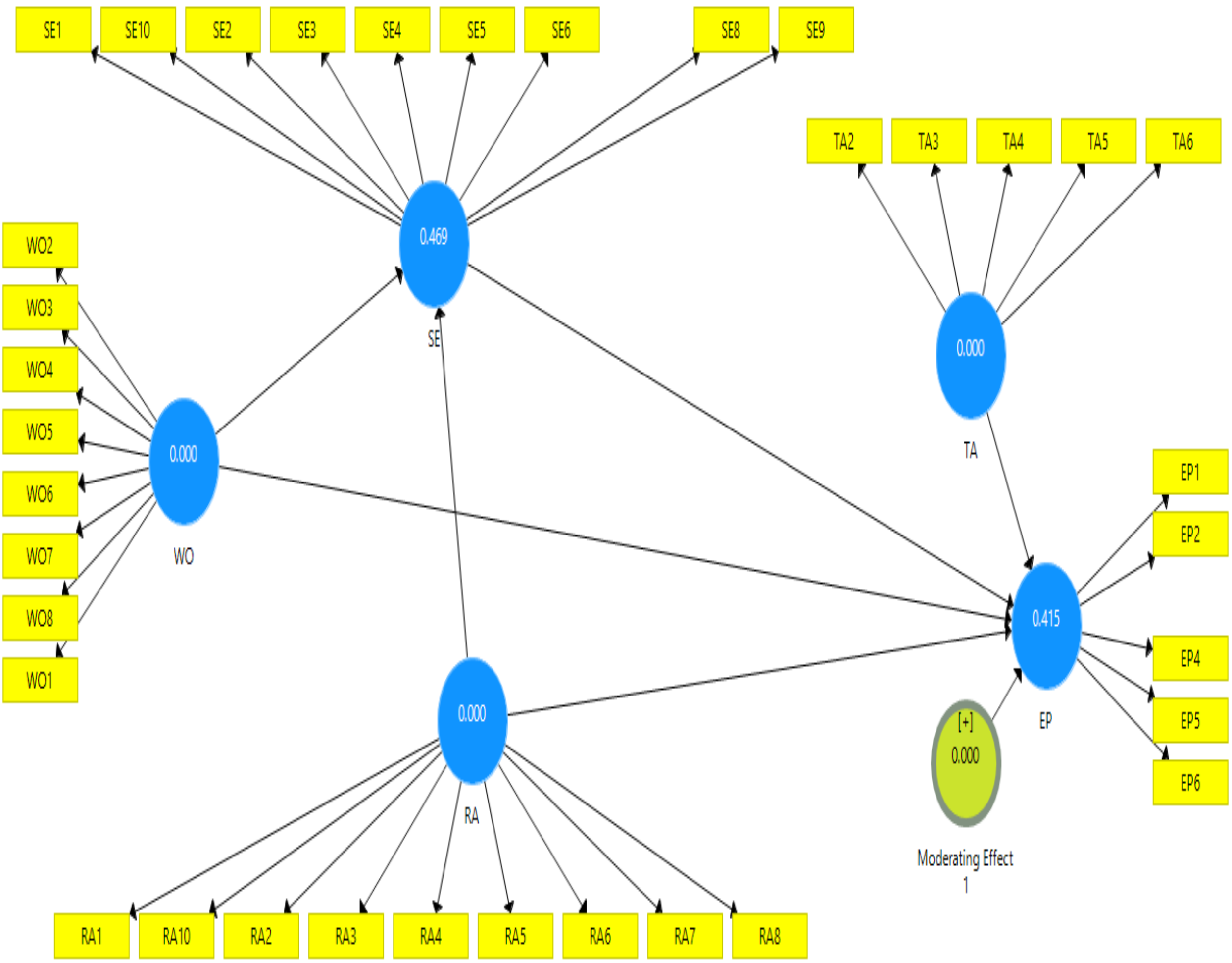


Table 8: Blind folding values

	Q² (=1-SSE/SSO)
EP	0.415
SE	0.469

Conclusion

Most studies showed that self-efficacy, technology advancement, role ambiguity as well as work overload influenced overall employee performance in organizations. Considering a slightly different scope and the environment in the Government departments , this study was conducted to identify the relationship between self-efficacy, technology advancement, role ambiguity and work overload on employees' performance and the extent to which these variables impacted public sector organisations.

The objective of the current study is to explore the nexus between Job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations. Meanwhile the mediating role of self-efficacy in the relationship between job demand and employee performance is also examined. Lastly, the moderating role of technological advancement in the relationship between self-efficacy and employee performance is observed.

The study is of the view that Employees' performance in public organizations directly affects government efficiency and delivery of work. People are looking forward to a high-quality service offered by public employees or a negative image will develop. The underperformers can also cause detriment to the country where the government keeps paying them a salary while their performance is not up to their organizations' requirements.

This study has employed the survey-based methodology. The response rate is 57 percent. The study has employed the PLS-SEM to achieve the objectives. The findings have shown that individual factors such as self-efficacy plays an important role in motivating employees towards better performance. A clear role and responsibility in the organization will also help the employees to excel in their job performance and to avoid uncertainty and ambiguity; which has negative influence on employees' performance. A working environment that supports technology does help the employees perform better in completing their tasks in term of flexibility of time, easier access to working materials as well as faster communication between employees.

Management has to be made aware of these findings. They must take appropriate actions to improve employees' performance in the organization. As discussed earlier, underperformers should be dealt with promptly and appropriately by management. The Exit Policy introduced by the government of Malaysia in 2015 is a clear guide to management in the public service for corrective actions. This is because usually employees are unaware that they are not performing well and so are unlikely to change their performance. In Indonesia's public service organizations' performance evaluation practice, employees are rated annually by their first and second superior, according to general criteria specified by one of the government's central agencies; The Public Service Department. The Public Service Department is the organization that holds the responsibility for human resource management for public service organizations in Indonesia. By referring to Service Circular No. 4 in 2002 (Public Service Department, 3 2002), the distribution of marks for employees' performance varies, based on the employee's level or grade. The evaluation of employees' performance is primarily focused on objective measures of work productivity or subjective judgement of quantity or quality of work, by the superior. The influential factors, if not being addressed properly, will become more serious over time. These underperformers will not help much in achieving the organizations goals and are feared to influence other employees. To avoid such negative impacts, it is better for management to identify factors that are affecting its employees' performance and find appropriate solutions.

This study can conclude that individual factor such as self-efficacy and role ambiguity influenced the employees' performance, before environmental factors such as technology advancement contributed to it. Thus, considerations should be given to activities that promote individual self-efficacy, a clear goals and objectives for individuals rather than giving only a general overview, and environmental support i.e. technology towards achieving goals. These objectives can be appended in existing programs or activities and it may not be necessary to hold a new program. This will ensure that no additional financial burdens will be imposed on the organization and that the planned activities are value for money. This is because according to Human Resource Management Department, courses and training that has been planned or implemented for employees are more towards generic and functional knowledge, or building teamwork among them, but no programs actually focus on developing individual inner confidence and motivation specifically.

This study had provided empirical evidence that could be used by management in making decisions. Hence, this will help those underperformers to improve their impact towards the organization as well as the country, to better serve the people. This study will be helpful for policymakers and researchers in examining the link between Job demands, self-efficacy, technological advancements and employee performance in Indonesian Public organizations.

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