

Predictors of Academics' Research Performance and The Significance of Engaging in Work Activities

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Abstract

Research activities and outputs play a significant role in determining the standing and performance of a university. This article aims to examine the influence of individual factors, work resources, and organizational factors on research performance, and the mediation effect of work engagement on these relationships among academics at four Malaysian research universities. Theory of personal engagement at work and job demands-resources theory was employed to explain academics' research performance. The study utilized a cross-sectional design and surveyed 252 randomly selected academics. Individual effort and professional development were found to be significantly correlated to academics' research performance, while organizational and work resources were not significantly associated with research performance. Work engagement did not mediate the relationships between all predictor variables and research performance. The study highlights the importance of individual factors and professional development in facilitating academics' research performance and highlights the significance of human resource development in facilitating academics' research performance.

Keywords: Work Engagement, Research Performance, Professional Development, Human Resource Development, Academics

Introduction

In 2007, the Malaysian government announced a significant transformation of the educational system to enhance research endeavors and boost research productivity. The ranking and reputation of a university are significantly influenced by its research activities and performance. This aligns with the national goal of promoting a research and development-driven knowledge-based economy. The transformation plan sought to achieve the goal of having one of its Higher Education Institutions (HEIs) listed among the top 100 institutions globally, as specified in the 10th Malaysia Plan. In addition, the objective was to have a second

Higher Education Institution (HEI) listed in the top 50, as outlined in the 11th Malaysia Plan. This move is a consequence of a global trend (Lee, 2004) that has led higher education institutions in a nation to reorganize and prioritize research (Ministry of Higher Education, 2007a; Ministry of Higher Education, 2007b). In addition, the government has prioritized assisting university leadership, recognizing their crucial role in driving the achievement of the national research and development (R&D) agenda (Tauhed et al., 2018, Tie, 2012).

Establishing a research-oriented workplace is one way to enhance research performance. Since 2006, the government has designated five institutions as Malaysian Research institutions (MRUs) to enhance the ranking of Malaysian universities in the THE-QS. This is achieved by intensifying research activities and increasing research output (Basarudin et al., 2016; Mohd Rasdi et al., 2023). The MRUs consist of Universiti Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Sains Malaysia (USM), Universiti Teknologi Malaysia (UTM), and Universiti Putra Malaysia (UPM).

Since 2010, the number of MRUs has remained constant due to the absence of any further institutions that meet the basic requirements for MRU recognition. MRUs are anticipated to primarily concentrate on research and innovation endeavors focused on the expansion of knowledge and driven by exceptionally skilled academics. With the acknowledgment as an MRU, these universities have a higher potential to be on the front lines in innovation, design, and research output based on international standards.

During the first stages of recognizing Research Universities (RUs), the government provided extra financial assistance (Prathap & Ratnavelu, 2014) in addition to the annual operating budget. This additional funding aimed to facilitate the implementation of research-oriented policies and strategies in the MRUs (Chapman et al., 2014). As a result, MRUs were able to generate more research and development funds and initiatives to motivate scholars (Ahmad, 2012). The investment was made with the anticipation that MRUs would generate substantial research outputs and serve as a benchmark for research-focused universities in comparison to non-RUs. Nevertheless, despite continuous efforts spanning over ten years to improve research performance, the Ministry of Education's report in 2015, which drew on the Annual Report by Universitas21 (U21), emphasized that Malaysia's R&D performance remained deficient, despite the education sector consistently receiving the largest allocation from the national development budget. Currently, research has the utmost importance for all institutions in Malaysia as they strive to meet the criteria established by the government in the ranking evaluation. This has increased the workload for both the institution and the individual professor (Basarudin et al., 2016). Longitudinal research conducted by Idris (2011) reveals that academics experience role overload and role ambiguity, which might exert long-term strain on them. The academics in question are probably linked to the goal of departing from the academic profession (Ryan et al., 2011) and the institution (Idris, 2011).

The contemporary academic environment places significant emphasis on research performance as the primary criterion for achieving world-renowned university status. This is because the job performance of academics in research is intimately linked to the institution's fundamental ability to generate knowledge. The significance of academic job performance in research lies in its tight association with and large impact on the university's reputation (Cadez et al., 2017; Aguinis & O'Boyle, 2014). Consequently, despite the ongoing economic decline, there is still a strong anticipation for academics to excel in their research work (Bentley, 2015). This is crucial for academics to make valuable contributions towards maintaining and enhancing the university's reputation as a distinguished research institution.

Previous studies have shown that work engagement plays a crucial role in mediating the job performance of workers in several sectors, such as banking, manufacturing, and healthcare (Bakker, 2011; Rich et al., 2010). Employers that focus on the development and maintenance of a dedicated workforce may achieve beneficial outcomes, for instance, improved performance of business units and a positive company image. Interactions and collaboration between individuals within a work team may positively impact the overall performance of an organization. Nevertheless, there is a scarcity of research examining the role of job engagement in moderating the relationship between academics' research performance and its determinants (e.g., Dubbelt et al., 2016; Menguc et al., 2013). Moreover, there is conjecture that the correlation between work engagement and performance is not straightforward, but rather complex, as there may be several intermediate processes that elucidate this relationship (Chughtai & Buckley, 2011; Demerouti & Cropanzano, 2010). This study aims to examine the variables that may accurately forecast the research productivity of academics, as well as the influence of work engagement in strengthening the relationships between the predictors and the research performance of academics.

Currently, there is a shortage of studies that identify elements to enhance research performance, particularly among academics at Malaysian research universities (MRUs), despite the significance of research performance in institutions. Academics' key functions at MRU involves multiple tasks and responsibilities ranging from teaching, research and publications, students' supervision, administrative task etcetera. Juggling with all these tasks and responsibilities, has made academics pressing for their time to participate in professional development initiatives. Nevertheless, such developmental activities are significant for upgrading and improving knowledge, skills, and abilities required for performing research activities. Lack of competence in research would influence research performance.

Therefore, it is essential to discover pertinent predictors in the study environment to get a more profound comprehension of the phenomena and help organizations to benefit from their workforce (Rich et al., 2010). The results of this study might serve as a valuable resource for leaders of MRUs who are responsible for formulating policies and procedures to improve the research performance of academics, particularly when it comes to suggesting practical solutions and guidance to stakeholders.

Literature Review

Theorizing Academics' Research Performance

The theory of Personal Engagement at Work and Job Demands-Resources Theory were employed to theorize academics' research performance.

Theory of Personal Engagement at Work

Kahn's (1990) Theory of Personal Engagement at Work (TPEW) suggests that organizational factors, work elements, and individual factors influence job performance. Kahn's (1990) grounded theory on TPEW enlightens the concept of personal engagement in performing work roles as it is very pertinent to determine the kind of outcomes to be obtained. The main proposition of TPEW is that work elements (i.e., work resources) and work context (i.e., organizational factors) as well as individual factors shape the psychological experience that then stimulates either individual engagement or disengagement during task performances. This involves the concurrent interaction of these factors that are expected to influence the magnitude of employees' work experience, quality, and productivity (Kahn, 1992; 1990). TPEW centers on the concept of personal engagement at work. Personal engagement in work

role performance refers to an individual's full investment of themselves in performing their work. Oppositely, disengaged employees withdraw and keep themselves from performing their work roles which are reflected in the individual's behavior (Kahn, 1990). Kahn's (1990) observation about the engagement was made on two different natures of work and work setting, i.e., counselors at a summer camp and employees of a prestigious architecture firm in the United States.

The requirements to be engaged according to Kahn (1990) are to identify factors that stimulate the psychological situation, i.e., the sense of meaningfulness, safety, and availability. Kahn (1990) classified these factors into three, which include work nature, work context or organizational factors, and individual characteristics. These factors subsequently influence how employees devote their energy to carrying out their tasks to achieve work outcomes in terms of performance, productivity, motivation, and creativity (Kahn, 1992; 1990).

In addition, TPEW also theorized that individual factors are also pertinent in determining the extent of personal engagement in work role performance that transmits effects on outcomes (Rich et al., 2010). Individual factors refer to the readiness of an employee to engage in performing their work. Based on the feedback from participants of Kahn's (1990) study, he identified physical and emotional energy as the individual elements that assist employees in coping with work demands. Such energy would make employees feel available and competent to perform their work (Deci & Ryan, 2000).

TPEW can be very helpful in theorizing employees' job performance in achieving the targeted goals. By applying TPEW to the study of research performance, this study argued that the organizational factors (e.g., organizational norms/culture and the way leaders inspire their subordinates), and work resources (e.g., task significance and networking) as well as individual factors can enhance the academics' research performance at MRUs.

The Job Demands-Resources Theory

The Job Demands-Resources Theory (JDRT) was chosen as the supporting theory in this study as it provides an understanding of individual motivation. The theory's efficacy resides in its capacity to elucidate the impact of motivation or work engagement in situations when job demands are substantial. The primary tenet of JDRT is that a surplus of work resources would enhance employees' incentive to fully use their skills and exert effort in carrying out their job responsibilities. Simultaneously, employment resources alleviate workplace pressures, enabling workers to boost their work engagement and impact their job performance. Job resources refer to the tangible, social, or structural elements of a job that serve to a) reduce the demands placed on individuals and the resulting psychological and physiological strain; b) contribute to the achievement of work objectives; or c) facilitate personal growth, learning, and advancement (Bakker & Demerouti, 2007). Job resources satisfy employees' psychological needs, as shown by Bakker et al. (2014) and Deci and Ryan (2000). This leads to increased employee engagement and improved job performance. This research defined work resources as individual elements and included variables such as individual effort, time management, and professional growth to illustrate and clarify the notion.

Patel et al. (2018) found that organizational factors, work resources, and individual factors are not sufficient to influence greater work performance. Whilst these factors were found to have relationships with work performance, Bakker and Demerouti (2008) revealed that higher employee engagement is evident to significantly contribute to greater work performance. According to Demerouti (2006), personnel who encounter a state of flow in their job,

characterized by absorption, pleasure, and devotion, are capable of enhancing their performance levels. The inclusion of work engagement in JDRT explains the underlying mechanism of how job resources affect research performance (Bakker & Demerouti, 2017). Job resources that include organizational factors and work resources as well as individual factors, lead employees to become engaged in performing research activities. Engaged individuals who are characterized as vigorous, dedicated, and absorbed in their role performance were found to positively influence their work performance (Schaufeli & Bakker, 2004; Rich et al., 2010).

Hence, JDRT was employed to further illustrate the relationships between organizational factors, work resources, and individual factors as well as the role of work engagement in mediating these relationships. Both TPEW and JDRT do not explicitly postulate that organizational context, work characteristics, and individual factors influence research performance. However, based on past studies and the conceptual discussion about TPEW and JDRT, the current study believed that employees with sound supportive environments and job resources would be engaged physically, cognitively, and emotionally subsequently influencing their job performance. Based on the above discussion, we illustrate the conceptual framework in Figure 1.

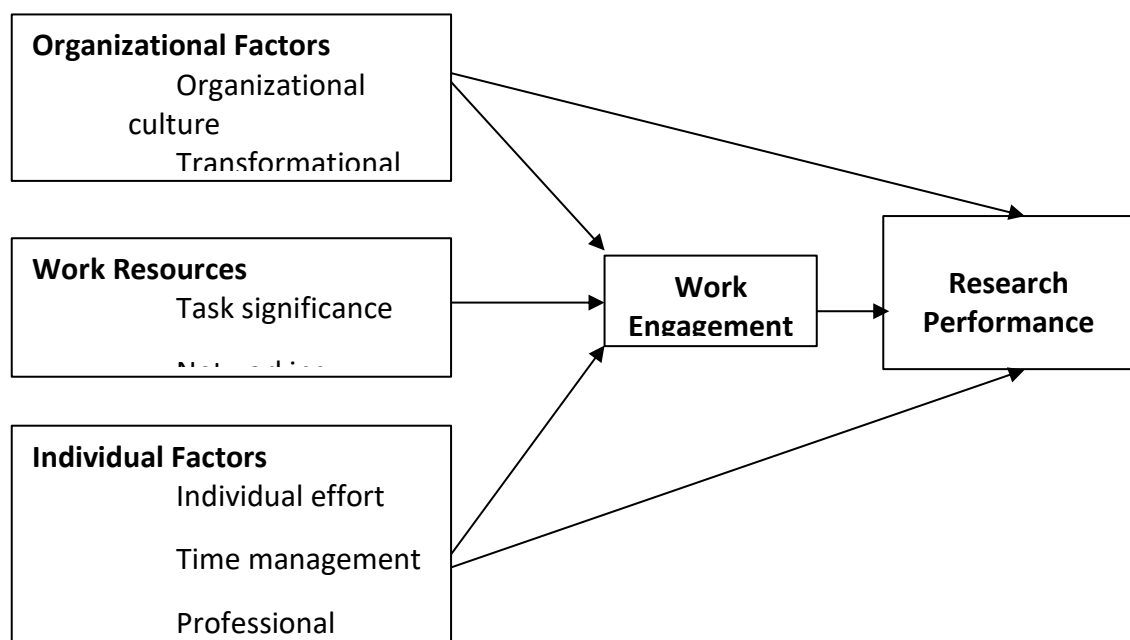


Figure 1: The Research Framework.

Methods

This correlational cross-sectional study employed academics from the four Malaysian Research Universities (i.e., UKM, UM, USM, and UTM) as the unit of analysis. UPM was excluded as the pilot study was conducted there. Academics without doctoral qualifications were excluded as they have different performance measures. Respondents were selected using proportionate stratified random sampling with the universities and job positions being the stratum involved.

The predictors (i.e., organizational culture, transformational leadership, task significance, networking, individual effort, time management, and professional development) and criterion variables (i.e., work engagement and research performance) were measured using

established instruments with an accepted internal reliability coefficient (above 0.7). Content validity was conducted by subject-matter experts and constructs validity using convergent and discriminant validity were accessed and found that the set of measured items reflects the latent construct which those items are designed to measure (Hair et al., 1998). Data were distributed to 381 academics using self-administered questionnaires. Out of this number, a total of 292 questionnaires were received, with a response rate of 76.64%. After data screening, the number of usable responses was 252 and they were preceded by SEM data analyses. Reasons for data removal were incomplete responses (21) and questionnaires were answered by senior lecturers/ assistant professors with less than three years of work experience (19).

Samples were randomly selected using the table of random numbers. Drop-and-pick method which was followed by several follow-up measures was utilized for data collection. Data collection was facilitated by a liaison personnel in each research university and the method was deemed appropriate to be applied among academics who were always occupied with many works.

Confirmatory factor analysis was carried out to test the model validity before proceeding with SEM and reported a very good fit between the data and the suggested measurement model. The results of the measurement model yielded the following fit model: [$\chi^2(1185)=1803,877$; $p=0.000$; $\chi^2/df=1.522$; CFI=.930; IFI=.931; TLI=.925; RMSEA=.046].

Respondents' Demographic Profile

Out of 252 respondents, more than half (53.6%) of the respondents were male and 46.4% were female. The mean of respondents' age was 47.0 (SD=7.5), with ages ranging from 31 to 65 years. Respondents were fairly represented from four research universities in Malaysia such as USM (27.0%), UTM (26.6%), UKM (23.8%), and UM (22.6%). In terms of job positions, assistant professor (54.0%) constituted the largest composition of respondents, followed by 67 respondents (26.6%) and 49 respondents (19.4%) holding a position as associate professor and professor, respectively. Most of the respondents had been working for three to nine years (28.6%), followed by respondents who had been working for ten to sixteen years (25.0%) and seventeen to twenty-three years (25.4%) at their current university. Meanwhile, another 13.9% had been working at their current university for four years and the other 9.3% had been working for five years. For overall work tenure as academics, 47.2% of the academics had at least nine to fifteen years of working experience.

Findings and Discussion

This study aimed to investigate the extent of influence of organizational factors, work resources, and individual factors on academics' research performance and how work engagement facilitates these relationships. Table 1 and Table 2 present the findings of the study on the predictors of academics' research performance and the mediation effect of work engagement on these relationships.

Organizational Factors and Research Performance

Table 1 shows that there was no significant influence of organizational culture ($\beta=-.110$, C.R. =-1.394, $p=.163$) and transformational leadership ($\beta=.026$, C.R.=.356, $p=.722$) on the research performance of academics in MRUs. This shows that organizational culture and transformational leadership do not significantly influence research performance among academics in MRUs.

Table 1: *The Regression Weights in the Direct Model between Factors and Research Performance*

Constructs	B	S.E.	Beta	C.R.	p
OC	-.032	.023	-.110	-2.394	.163
TR	.005	.014	.026	.356	.722
NE	-.055	.25	-.188	-2.188	.029
IE	.167	.034	.535	4.889	.000
TM	.024	.028	.074	.843	.399
TS	-.015	.027	-.051	-.551	.582
PD	.066	.026	.228	2.513	.012
WE	.012	.037	.024	.320	.749

Note. Organizational Culture = OC, Networking =NE, Individual Effort = IE, Time Management= TM, Task Significance = TS, Transformational Leadership = TR, Professional Development =PD, Work Engagement = WE.

Despite organizational culture playing an important role in job performance, in this study, it appears to be different. This discovery aligns with Kwiek's (2016) study, which suggests that individual traits are considered more significant for academic output compared to institutional features. Regarding transformational leadership, the possible explanation of its insignificant influence on research performance could be that the leaders of MRUs were focusing more on general management rather than on specific agendas to increase research performance. According to Pourbarkhordari et al. (2016), transformational leadership is related to individual effectiveness as it inspires followers to perform beyond the expected target.

Work Resources and Research Performance

Table 1 shows that task significance did not have a significant impact on research performance ($\beta=-.051$, C.R. $=-.551$, $p=.582$). On the other hand, networking was shown to have a negative and significant impact on research performance ($\beta=-.188$, C.R. $=-2.188$, $p=.029$). Hence, task significance does not influence academics' research performance and networking significantly and negatively influences academics' research performance in MRUs.

The finding on task significance was in line with Anderson and Stritch's (2016) study. According to Anderson and Stritch (2016), one of the possible reasons is academics try to be precise and cautious in their job as they want to achieve both the quantity and quality of the job. However, this led them to be more cautious about the technicality rather than the significance of the tasks. Therefore, task significance has no significant influence on research performance. It appears that academics are concerned more with fulfilling the high expectations for research performance rather than appreciating the significance of their research contributions.

This study discovered that networking has had a detrimental impact on the research performance of academics at MRUs. This indicates that academics with less networking have higher research performance. Edgar and Geare (2013) mentioned that high-performing academics are less dependent on networking. According to Mohd Rasdi et al. (2013), networking requires more time and effort. Due to these reasons, involvement in networking activities could potentially make the academics spend quite a lot of time engaging with their potential research partner, and in turn devote less time toward their research activities (i.e., writings and publications).

Individual Factors and Research Performance

Table 1 depicts the findings that individual effort ($\beta=.535$, C.R.=4.889, $p=.0001$) and professional development ($\beta=.228$ C.R.=2.513, $p=.012$) were found to have a significant effect on research performance. This indicates that individual effort and professional development significantly influenced the research performance of the academics in MRUs. Nevertheless, the findings indicated that time management had no significant impact on research performance ($\beta=.074$, C.R.=.843, $p=.399$).

Bentley (2015) found that individual effort has a positive influence on research output and publishing productivity. Macey and Schneider (2008) mentioned that individual effort involves setting individual plans to achieve certain goals, followed by how much commitment is invested and how much perseverance is needed to manage obstacles and difficulties. Therefore, to be successful in research, strategic individual plans about where and how the academics invest their effort are really important.

Abu Said et al. (2015) mentioned that the academic setting is complex with many roles and responsibilities. Academics have to juggle their time wisely not only in research activities but also in other tasks such as teaching and administrative work. Most of the time, academics have difficulty finding time to research as it involves a lot of interrelated activities from reading to idea creation to publishing. This aligns with the assertion made by Salehi et al. (2015) that administrative responsibilities have an impact on the capacity of academics to fulfill their other obligations. In regards to professional development, Afshar and Yar (2019) found it a crucial factor in all sectors of education and it remains important today. It helped academics to improve their ability in terms of knowledge and skill in the discipline (Brew et al., 2016) through involvement in research projects.

Work Engagement and Research Performance

The results in Table 1 indicate that there was no significant effect of work engagement on research performance ($\beta=.024$, C.R.=.320, $p=.749$) among the academics in MRUs. This means that work engagement did not significantly influence the research performance of academics in MRUs. This finding contradicts previous mainstream studies about work engagement (Christian et al., 2011; Dubbelt et al., 2016; Bakker et al., 2014). This difference could be explained by the nature of the sample study. In the academic setting, to fulfill the high expectations for research performance and to be equivalent to other world-renowned universities, the academic has no other option except to fully engage in performing their research tasks. Nevertheless, they have yet to internalize the essence of work engagement which deprives them of from benefiting the influence of work engagement on research performance.

At MRUs, the academics' key performance indexes were not just research and publication. On top of these, academics were occupied with teaching, supervision, student development, engagement in industry and community works, and administrative tasks at various levels (i.e., department, faculty, and universities). These overwhelming tasks and workloads have always made academics on the run and juggle in fulfilling their responsibilities. Eventually, these experiences have influenced their work-related well-being such as job satisfaction and work engagement. Consequently, this probably has led to an insignificant relationship between work engagement in research activities and research performance.

The Mediation Influence of Work Engagement between Organizational Factors, Work Resources, Individual Factors, and Research Performance

Table 2 shows that the standardized indirect effect (SIE) of all predictor variables on research performance through work engagement was not significant. In other words, these findings indicate that work engagement did not significantly mediate the relationship between all predictors and research performance.

Table 2

Summary of Mediation Influence of Work Engagement on the Relationship between the Predictor Variables and Research Performance.

Path	SIE	ρ	LB	UB	Status
OC→WE→RP	.009	.408	-.018	.067	No Mediation
TL→WE→RP	.008	.462	-.018	.054	No Mediation
TS→WE→RP	.003	.478	-.010	.048	No Mediation
NE→WE→RP	-.002	.486	-.035	.486	No Mediation
IE→WE→RP	.007	.348	-.013	.070	No Mediation
TM→WE→RP	.004	.417	-.011	.057	No Mediation
PD→WE→RP	.008	.339	-.015	.060	No Mediation

Note. Organizational Culture = OC, Networking =NE, Individual Effort = IE, Time Management= TM, Task Significance = TS, Transformational Leadership = TR, Professional Development =PD, Work Engagement = WE.

The findings of this study are inconsistent with the result of the majority of past studies that have substantiated the mediating effect of work engagement between its predictors and job performance (e.g., Dubbelt et al., 2016; Al-Tit & Wadi, 2015; Arifin et al., 2014). The socio-cultural context may also be one of the factors explaining the non-significant influence of work engagement in mediating the relationship between research performance and its predictors (Edgar & Geare, 2013). The instruments of work engagement, mostly have been used in Western countries. This study adopted questionnaires developed and tested in Western countries whose work culture, ecosystem, and values are different from Malaysia. The findings of this study implied that a different nature of work setting and socio-cultural context may lead to different results.

Summary of Findings and Conclusion

Research performance depends on many influencing factors, and these factors evolve through time as the nature of research performance has changed. The findings of this study conclude that individual factors are a function of academics' research performance. Academics should equip themselves with the right information and strategies to enhance their research performance. Simultaneously, academics should actively pursue possibilities offered by the organizational structure to improve their research skills. This finding sheds some light on the need for the university to have more concerted initiatives with academics and to strategize their plan to enhance academics' motivation and competency to improve their research performance. Research performance is closely related to human resource development initiatives and thus, HRD practitioners need to devise comprehensive strategies and plan at the individual level such as to include formal mentoring programs so that academics are more organized and systematic in their research work.

This study also concludes that organizational factors (organization culture and transformational leadership) are not factors of academics' research performance in MRUs. Every university has been taking initiatives to motivate researchers by providing support and facilities and encouraging innovative orientations. MRUs have been supportive enough by allocating financial incentives for academics who publish in high-ranking journals. Collectively, these supports act as extrinsic motivation whereas Ryan and Deci (2000) agree that they typically produce immediate results and require less effort in comparison to intrinsic motivation.

A further conclusion that can be drawn from the findings is that work resources are not crucial factors in enhancing academics' research performance at MRUs. Academics could not control the effectiveness of external work resources such as task significance and networking. Although they may understand that their research output has an influence on others' well-being and the importance of networking in their career development, in most instances, these work resources take years to materialize in terms of tangible or intangible outputs.

Surprisingly, based on the findings of the study, we also conclude that work engagement is not a factor in enhancing academics' research performance in this context. The "publish or perish" mantra which is common at research universities signals an unhealthy aspect of academic research orientation. Academics' passion and dedication to research projects would eventually decline, which probably explains the insignificant role of work engagement, organizational factors, and individual factors. Consequently, this implicates a call to balance between job demand and job resources among academics at MRUs.

Implications and Suggestions For Future Studies

This study has huge implications for HRD. Research performance is strongly related to individual professional development as it fundamentally lies in the competency development of academics (Swanson, 1995) or capacity development (Nguyen, 2016). Competence and capable academics would lead to high research performance and improved quality of research outputs. MRUs need to actively stimulate their HRD functions to grow and enhance academic competency through various initiatives such as skill-based training, hands-on workshops, webinars, mentoring, continuing education, and job assignments. The key element in such initiatives would be unleashing academics' potential, pushing them out of their comfort zones, and requiring them to think and act creatively.

Besides professional development, this study also found that individual effort plays an important role in influencing academic research performance. It is noted that individual professional development could not happen without individual effort, and both factors are needed to create a synergy that gives academics motivation to be involved in research activities. Without individual effort, professional development initiatives can be an isolating activity. Academics themselves need to be proactive in searching for professional development programs and participate actively in such programs to gain competencies. Academics benefit hugely when they feel part of a network of scholars and when they are actively connected to experts, research, know-how, and development opportunities. Such opportunities serve to enhance academic practice and enrich their experience in research-related activities.

By understanding the nature of research performance and its predictors, HRD practitioners could formulate more appropriate policies and create a more conducive environment that could motivate academics to enhance their research performance. The HRD practitioners and

universities should focus on capacity-building programs for academics to develop and nurture high research performers.

This study limits itself in its correlational design which restricts cause-and-effect relationships as well as generalizations. Hence, future research may carefully examine the variables involved, the use of the right sampling techniques, the right sample size as well as sample selection, and the application of statistical procedures. It is also recommended to consider a more specific sample of academics based on their job positions such as senior lecturer or associate professor to understand the challenges and experience based on academics' professional development stages. Future studies might be undertaken to ascertain the impact of many possible determinants and intervening variables, such as job crafting and mentorship, on the research performance of academics.

References

- Abu Said, A., Mohd Rasdi, R., Abu Samah, B., Silong, A. D., & Sulaiman, S. (2015). A career success model for academics at Malaysian Research Universities. *European Journal of Training and Development*, 39(9), 815-835. <https://doi.org/10.1108/EJTD-03-2015-0022>
- Afshar, H. S. & Yar, S. H. (2019). Investigating the relationship between attitude towards professional development, reflective teaching, self-efficacy, and job performance of Iranian English as a foreign language teacher. *Teaching English Language*, 13(2), 147-179. <https://doi.org/10.22132/TEL.2019.96070>
- Aguinis, H., & O'Boyle, E. (2014). Star performers in twenty-first century organizations. *Personnel Psychology*, 67(2), 313–350. <https://doi.org/10.5465/ambpp.2013.35>
- Al-Tit, A., & Wadi, M. F. (2015). The mediating effect of employee engagement between its antecedents and consequences. *Journal of Management Research*, 7(5), 47–62. <https://doi.org/10.5296/jmr.v7i5.8048>
- Ahmad, A. R., Farley, A., & Naidoo, M. (2012). An examination of the implementation federal government strategic plans in Malaysian public universities. *International Journal of Business and Social Science*, 3(15), 290–301.
- Anderson, D. M., & Stritch, J. M. (2016). Goal clarity, task significance, and performance: Evidence from a laboratory experiment. *Journal of Public Administration Research and Theory*, 26(2), 211–225. <https://doi.org/10.1093/jopart/muv019>
- Arifin, F., Troena, E. A., & Rahayu, M. (2014). The influence of organizational culture, leadership, and personal characteristics towards work engagement and its impacts on teacher's performance: A study on accredited high schools in Jakarta. *International Journal of Business and Management Invention*, 3(1), 20–29.
- Bakker, A. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20(4), 265–269. <https://doi.org/10.1177/0963721411414534>
- Bakker, A.B., & Demerouti, E. (2007). The job demands resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309–328. <https://doi.org/10.1108/02683940710733115>
- Bakker, A.B. and Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, 13(3), 209-223. <http://dx.doi.org/10.1108/13620430810870476>
- Bakker, A.B., & Demerouti, E. (2014). Job demands-resources theory. In P. Y. Chen & C. L. Cooper (Ed.), *Work and wellbeing* (pp. 37–64). Wiley-Blackwell. <https://doi.org/10.1002/9781118539415.wbwell019>

- Bakker, A., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. <https://doi.org/10.1037/ocp0000056>
- Basarudin, N.A., Yeon, A.L., Yaacob, N., & Rahman, R.A. (2016). Faculty workload and employment benefits in public universities. *International Review of Management and Marketing, 6*(S7), 73–82.
- Bentley, P.J. (2015). *Academic work from a comparative perspective: Cross-national differences in research orientation, productivity and time use*. University of Twente. <https://doi.org/10.3990/1.9789036539647>
- Brew, A., Boud, D., Namgung, S.U., Lucas, L., & Crawford, K. (2016). Research productivity and academics' conceptions of research. *Higher Education, 71*, 681–697. <https://doi.org/10.1007/s10734-015-9930-6>
- Cadez, S., Dimovski, V., & Groff, M.Z. (2017). Research, teaching and performance evaluation in academia: The salience of quality. *Studies in Higher Education, 42*(8), 1455–1473. <https://doi.org/10.1080/03075079.2015.1104659>
- Chapman, D.W., Chien, C.-L., Haddawy, P., Halevi, G., Ul Hassan, S., Katayama, Varghase, N.V. (2014). *Higher education in Asia: Expanding out, expanding up - The rise of graduate education and university research*. Montreal, Canada.
- Christian, M.S., Garza, A.S., & Slaughter, J.E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*(1), 89–136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Chughtai, A., & Buckley, F. (2011). Work engagement: Antecedents, the mediating role of learning goal orientation and job performance. *The Career Development International, 16*(7), 684-705. doi:10.1108/13620431111187290
- Deci, E.L., & Ryan, R.M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227– 268. https://doi.org/10.1207/S15327965PLI1104_01
- Demerouti, E. (2006). Job characteristics, flow, and performance: The moderating role of conscientiousness. *Journal of Occupational Health Psychology, 11*, 266-280. <http://dx.doi.org/10.1037/1076-8998.11.3.266>
- Demerouti, E., & Cropanzano, R. (2010). From thought to action: Employee work engagement and job performance. In A. B. Bakker (Ed.), *Work engagement: A handbook of essential theory and research* (pp. 147-163). Psychology Press.
- Dubbelt, L., Rispens, S., & Demerouti, E. (2016). Work engagement and research output among female and male scientists: A diary study. *Journal of Personnel Psychology, 15*(2), 55–65. <https://doi.org/10.1027/1866-5888/a000150>
- Edgar, F., & Geare, A. (2013). Factors influencing university research performance. *Studies in Higher Education, 38*(5), 774–792. <https://doi.org/10.1080/03075079.2011.601811>
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis. 5th ed.* Prentice-Hall International, Inc.
- Idris, M.K. (2011). Over time effects of role stress on psychological strain among Malaysian public university academics. *International Journal of Business and Social Science, 2*(9), 154–161.
- Kahn, W.A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. <https://doi.org/10.2307/256287>

- Kahn, W.A. (1992). To be fully there: Psychological presence at work. *Human Relations*, 45(4), 321–349. <https://doi.org/10.1177/001872679204500402>
- Kwiek, M. (2016). The European research elite: a cross-national study of highly productive academics in 11 countries. *High Education*, 71, 379–397. <https://doi.org/10.1007/s10734-015-9910-x>
- Lee, M.N.N. (2004). Global trends, national policies and institutional responses: Restructuring higher education in Malaysia. *Educational Research for Policy and Practice*, 3(1), 31–46. <https://doi.org/10.1007/s10671-004-6034-y>
- Macey, W.H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1(1), 3–30. <https://doi.org/10.1111/j.1754-9434.2007.0002.x>
- Menguc, B., Auh, S., Fisher, M., & Haddad, A. (2013). To be engaged or not to be engaged: The antecedents and consequences of service employee engagement. *Journal of Business Research*, 66(11), 2163–2170. <https://doi.org/10.1016/j.jbusres.2012.01.007>
- Ministry of Education Malaysia. (2015). *Malaysia education blueprint 2015-2025 (higher education)*.
- Ministry of Higher Education. (2007a). *National higher education strategic plan beyond 2020*.
- Ministry of Higher Education. (2007b). *National higher education action plan 2007- 2010: Triggering higher education transformation*.
- Mohd Rasdi, R., Garavan, T.N., & Ismail, M. (2013). Networking behaviours and managers' career success in the Malaysian public service: The moderating effect of gender, *Personnel Psychology*, 42(6), 684-703. <https://doi.org/10.1108/PR-07-2010-0117>
- Mohd Rasdi, R., Tauhed, S. Z., Zaremohzzabieh, Z., & Ahrari, S. (2023). Determinants of research performance of university academics and the moderating and mediating roles of organizational culture and job crafting. *European Journal of Training and Development*, 47(7/8), 711–728.
- Nguyen, H.T.L. (2016). Building human resources management capacity for university research: The case at four leading Vietnamese universities. *Higher Education*, 71(2), 231–251. <https://doi.org/10.1007/s10734-015-9898-2>
- Patel, R.S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors related to physician burnout and its consequences: A review. *Behavioral Sciences*, 8(11), 98, 1-7. <https://doi.org/10.3390/bs8110098>
- Pourbarkhordari, A., Hua, E., Zhou, I., & Pourkarimi, J. (2016). How individual-focused transformational leadership enhances its influence on job performance through employee Work Engagement. *International Business and Management*, 11(2), 249–261. <https://doi.org/10.5539/ijbm.v11n2p249>
- Prathap, G., & Ratnavelu, K. (2014). Research performance evaluation of leading higher education institutions in Malaysia. *Current Science*, 109(6). <https://doi.org/10.18520/v109/i6/1159-1164>
- Rich, B.L., Lepine, J.A., & Crawford, E.R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635. <https://doi.org/10.5465/AMJ.2010.51468988>
- Ryan, R. M., & Deci, E. L. (2000). When rewards compete with nature: The undermining of intrinsic motivation and self-regulation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 13–54). Academic Press. <https://doi.org/10.1016/B978-012619070-0/50024-6>

- Ryan, J.F., Healy, R., & Sullivan, J. (2011). Oh, won't you stay?: Predictors of faculty intent to leave a public research university. *Higher Education*, 63(4), 421-437. <https://doi.org/10.1007/s10734-011-9448-5>
- Salehi, P., Mohd Rasdi, R. & Ahmad, A. (2015). Personal and environmental predictors of academics' work-family enrichment at Malaysian research universities. *The Asia Pacific Education Researcher*, 24(2), 1-10. <https://doi.org/10.1007/s40299-014-0190-5>
- Schaufeli, B.W., & Bakker, B.A. (2004). Job demands and job resources and their relationship with burnout and engagement: A multiple-sample study. *Journal of Organizational Behavior*, 315, 293–315. <https://doi.org/10.1002/job.248>
- Swanson, R.A. (1995). Human resource development: Performance is the key. *Human Resource Development Quarterly*, 62(2), 2017–2213. <https://doi.org/10.1002/hrdq.3920060208>
- Tauhed, S. Z., Rasdi, R. M., Samah, B. A., & Ibrahim, R. (2018). The influence of organizational factors on work engagement among academics at Malaysian research universities. *International Journal of Academic Research in Business and Social Sciences*, 8(10), 973–988.
- Tie, F.H. (2012). Research publication as a strategy to improve international academic ranking. *International Journal of Leadership in Education*, 15(4), 437–450. <https://doi.org/10.1080/13603124.2012.696707>