

THE IMPACT OF WORK ENGAGEMENT ON ORGANIZATIONAL PERFORMANCE IN MALAYSIAN PRIVATE UNIVERSITIES

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Abstract

Organizational performance comprises strategic planning, operations, financial management, legal compliance, and organizational development. An organization's goals are notably augmented when personnel comprehensively comprehend their duties and obligations. Furthermore, continuous communication among management, leaders, and employees is critical for establishing performance expectations, monitoring progress, and attaining favorable outcomes. Work engagement is a vital component of organizational effectiveness; it is conceptualized as the degree to which employees wholeheartedly pursue the organization's goals, exhibiting enthusiasm, dedication, and involvement. This paper examines the impact of work engagement on organizational performance in Malaysian private universities. In conducting this study, the researcher utilized a quantitative methodology. A non-probability purposive sampling technique was employed in this analysis. SmartPLS 4 was used to evaluate the partial least squares structural equation path model (PLS-SEM). The analysis results ($\beta = 0.474$, $t = 7.571$, $p < 0.01$) corroborate the findings of the research, which establish a significant positive correlation between work engagement (WE) and the performance (OP) of private universities in Malaysia.

Keywords: Work engagement, Organizational performance, Private, University, Malaysia

1.0 Introduction

Performance success in Malaysian private universities is contingent upon their capacity to overcome unanticipated challenges effectively. Paul and Anantharaman (2003) state that the primary objective of organizational performance is to attain higher performance or maximize wealth for shareholders. Performance refers to an object's capacity to achieve specific targets or goals in a predetermined order (Laitinen, 2002).

Organizational performance encompasses various aspects such as strategic planning, operations, financial management, legal compliance, and organizational development. An organization can effectively achieve its objectives when employees comprehend their specific roles and responsibilities. Furthermore, continuous communication between management, leaders, and employees is crucial for establishing performance expectations, monitoring progress, and attaining favorable outcomes (Katou, 2008).

One of the most critical aspects of organizational effectiveness is work engagement, characterized as the dedication, vigor, and absorption employees show toward the organization's goals (Jaya & Ariyanto, 2021). Higher levels of dedication, vigor, and absorption are all associated with engaged workers, and these traits support organizations' adaptability and resilience (Karafakioglu & Afacan Findikli, 2024). Further investigation is necessary to determine how much WE affects the OP of Malaysian private institutions.

Research conducted by Abu-Mahfouz et al. (2023) and Lu et al. (2023) demonstrates the possible ways in which workplace empowerment (WE) might affect the success of strategic initiatives. It also sheds light on the intermediate effects of knowledge management and workplace empowerment on organizational performance. Arif et al.'s 2023 study underscores the impact of internal communication on staff engagement in academic settings, emphasizing the importance of effective communication channels.

This study seeks to address existing deficiencies in the literature by incorporating a diverse array of scholarly contributions, encompassing research on operational flexibility, organizational culture, internal communication, and sustainable human resource management strategies. By integrating data from many sources, the study offers a comprehensive understanding of the impact of work engagement on the organizational performance of private institutions in Malaysia. The objective of this study is to enhance our comprehension of the intricate mechanisms occurring within Malaysian private institutions by gathering data from various sources. The report offers significant insights and recommendations to policymakers and university administrators on how to foster a culture of work engagement in order to enhance performance and competitiveness in the higher education sector. This is accomplished by the systematic investigation and examination of data.

2.0 Literature Review

2.1 Work Engagement

Despite the long-standing use of the concept of work engagement under various names, such as job involvement or job empowerment, there has been ongoing debate about its precise definition. The absence of an accurate delineation of the concept has resulted in an additional challenge, explicitly determining the appropriate quantification method. Work engagement, on the other hand, can be quantified along a single dimension, according to specific authors (Maslach & Leiter, 1997). This notion stands in contrast to iteration fatigue. However, Schaufeli, Salanova, González-Romá, and Bakker (2002) contend that an alternative perspective would be to assess it as a multidimensional construct. The orientations were founded on the premise that fatigue is opposed to work engagement. On the contrary, the fact that employees experience fatigue and work engagement directly opposes this notion. Burnout and employee engagement are not mutually exclusive in practice.

The concept of work engagement has been around for a long time. However, the different approaches and interpretations have hindered the creation of a suitable measure that accurately represents the concept (Thomas, 2009). Hence, providing a concise overview of the concept's

evolution is imperative to elucidate its meaning and obtain a more precise measurement. As defined by Kahn in 1990, work engagement pertains to the concerted effort employees invest in their respective positions. Work engagement pertains to employees' active involvement and communication in executing their job duties, encompassing the physical, cognitive, and affective dimensions. However, in their professional endeavors, individuals integrate their identities.

Work engagement, according to the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981), was conceptualized by Maslach and Leiter (1997) as the exact antithesis of burnout. They postulated that dedicated personnel experience a sense of refreshment and regard their tasks as intellectually stimulating to circumvent exhaustion. Maslach, Schaufeli, and Leiter (2001) devised the Utrecht concept of work engagement, and the research paper by Maslach and Leiter (1997) presented the initial proposal as both seminal studies in this field.

On the contrary, Schaufeli et al. (2002) contend that the burnout inventory is the sole viable method for evaluating the burnout-engagement continuum. Work engagement was defined as a constructive and gratifying cognitive state associated with one's occupation, distinguished by enthusiasm, commitment, and total immersion. They created a new tool based on their definition to measure this concept. Vigor is defined as having a significant amount of energy and mental strength when working and being willing to put effort into one's work. Dedication encompassed feelings of importance, passion, motivation, satisfaction, and difficulty. Absorption is a state of complete focus and intense involvement in one's work, where time seems to pass quickly, and it becomes challenging to detach oneself from work.

Until now, there has been limited focus on concepts that could be seen as the opposite of burnout. One concept that emerged from role theory is 'psychological presence' or 'being fully there.' It refers to an experiential state when individuals engage in behaviors that require them to channel their energies into physical, cognitive, and emotional efforts (Kahn, 1992). While Kahn (1992) provides a thorough theoretical framework for psychological presence, he does not suggest a specific way to measure or define the construct.

2.2 Organizational Performance

Organizational performance is the systematic efforts to improve an organization's efficiency and productivity and its members' overall satisfaction and welfare through carefully planned interventions.

Organizational performance pertains to an organization's concrete results or accomplishments compared to its intended outputs, goals, and objectives (Jon & Randy, 2009). Regarding an organization's corporate image, competencies, and financial performance, it is the outcome that signifies or mirrors its efficiency or inefficiency.

Organizational performance is rooted in the notion that an organization is a voluntary union of productive resources, including human, financial, and capital assets. The primary responsibility of organizational performance is to generate value. This concept encompasses a systematic approach to achieving value creation, which involves identifying the dimensions for measuring performance, training the controller who assesses the value, and identifying relevant

opportunities for value creation (Carton, 2004). Identifying the individuals or groups interested in a project, enhancing the fundamental procedures, appropriate distribution of the human, material, financial, and information resources, and efficient and capable administration to establish a distinct and comprehensible plan by the employees (Kotler, 2000). The term "efforts" refers to the actions and behaviors carried out by individuals or groups within an organization, regardless of their level or nature. These activities can be driven by various factors such as equipment, financial resources, or collaborative work (Ho, 2008). The organizational performance concept can be defined as the ultimate outcomes achieved by an organization. Measuring these outcomes is essential to accurately depict the organization's standing in the market and the effectiveness of its internal processes.

Paul & Anantharaman (2003) state that the primary objective of organizational performance is to attain higher performance or maximize wealth for the shareholders. Performance refers to an object's capacity to achieve specific targets or goals in a predetermined order (Laitinen, 2002).

Organizational performance encompasses various aspects such as strategic planning, operations, financial management, legal compliance, and organizational development. An organization can effectively achieve its objectives when employees comprehend their specific roles and responsibilities. Furthermore, continuous communication between management, leaders, and employees is crucial for establishing performance expectations, monitoring progress, and attaining favorable outcomes (Katou, 2008).

The performance of an organization can be assessed and defined as all the relevant aspects of performance that contribute to the overall existence and success of the organization as it effectively achieves its objectives (Douwe et al., 1996). Comprehensive performance measurement is necessary for all aspects of performance that are important for the survival and success of an organization, leading to its achievement and growth (Kaplan & Norton, 1996; Hillman & Keim, 2001). Performance measurement systems typically incorporate more than just financial metrics. Many competitors focus on understanding and leveraging the organization's strengths, weaknesses, tactics, strategies, and potential. This concept has been established by various researchers, including Day and Wensley (1988), Narver and Slater (1998), and Noble, Sinha, and Kumar (2002).

Organizational performance is directly linked to an organization's long-term survival and achievement. Organizational performance calculation is crucial in service and manufacturing organizations (Brynjolfson, 1993). Organizational performance is measured using a balanced scorecard proposed by Kaplan and Norton in 1992. The balance score used in this study comprises four dimensions: Financial Performance, Customer Performance, Operational Performance, and Learn and Growth Performance. Performance is a holistic metric encompassing various factors such as productivity, quality, and consistency. Performance indicators may also include behaviors, outcomes, and relative measures founded on criteria. Instruments such as leadership and management development, in addition to notions of education and training, may be included among these indicators. These endeavors aim to foster

understanding and proficiency in critical abilities and performance management (Richard et al., 2002).

3.0 Research Methodology

The researcher employed a quantitative approach in this study because, as mentioned by Saunders et al. (2019), there is an exclusive relationship between positivist philosophy, a deduction approach, and a quantitative research design. This study's primary unit of analysis is private Higher Education Institutions (HEIs). Only one response represented each participating institution. The poll mainly targeted these individuals since they are more likely to produce meaningful feedback. However, to address the research issue effectively, it is essential to choose the most suitable sample technique (Saunders et al., 2019). Therefore, the researcher in this study utilized a non-probability purposive sampling technique, which was selected due to its capacity to pick respondents who match specified established requirements (Sekaran & Bougie, 2016). These selected participants are considered highly knowledgeable about their organizational strategies and performance, hence improving the accuracy and importance of their feedback relevant to the research questions and objectives of the current study. Similar studies have used these procedures such as (Chan & Muthuveloo, 2022; Khaw & Teoh, 2023).

The data collected from respondents through the questionnaire underwent a phased analysis using SPSS version 27. The initial stage represented data screening and preliminary analysis consisting of several statistical analyses such as assessment outliers, normality, linearity, and multicollinearity tests. Moreover, the descriptive analysis, which involved descriptive statistics of variables and participants' profiles, was conducted in this research. Subsequently, the evaluation of the partial least squares structural equation path model (PLS-SEM) was employed using SmartPLS 4, which comprised two steps: the evaluation of the measurement model and the structural model.

4.0 Findings

4.1 Descriptive Analysis of Participant Profile

The descriptive analysis conducted in this study provided a comprehensive profile of the respondents, encompassing key demographic and professional characteristics such as gender, age,

	Category	Number	Percentage
Gender	Male	102	48.1
	Female	110	51.9
Age	Less than 26	39	18.4
	26-30	43	20.3
	31-35	45	21.2
	36-40	41	19.3
	above 40	44	20.8

education, position, and experience.

Education	Bachelor's Degree	53	25.0
	Professional Degree	44	20.8
	Master	61	28.8
	PhD	54	25.5
Position	Chancellor	46	21.7
	Vice Chancellor	55	25.9
	Director	64	30.2
	Manager	47	22.2
Experience	Less than 10	41	19.3
	10-20	49	23.1
	20-30	41	19.3
	30 -40	36	17.0
	Above 40	45	21.2

serves as a valuable resource for understanding the composition of the survey participants and gaining insights into their backgrounds.

The data from

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	20-30	41	19.3
	30 -40	36	17.0
	Above 40	45	21.2

reveals a balanced gender distribution among the respondents, with 48.1% male and 51.9% female. This indicates a representative sample capturing perspectives from both genders within the context of Malaysian private universities. Regarding age distribution, most respondents fell within the 31-35 age bracket (21.2%), followed closely by those above 41 years (20.8%), suggesting a diverse range of age groups participating in the study. Additionally, significant proportions were observed for the age groups of 26-30 years (20.3%) and 36-41 years (19.3%), with smaller percentages representing respondents under 26 years.

Regarding educational attainment, most respondents held master's degrees (28.8%), followed closely by 25.5% with a Ph.D. certificate and 25.0% with a bachelor's degree. Moreover, 20.8% of respondents possessed professional degrees, indicating a varied educational background among participants, which could contribute to a rich and diverse set of perspectives in the study.

Furthermore, the analysis revealed insights into the professional positions held by respondents within Malaysian private universities. The majority (30.2%) occupied directorial positions, indicating a significant representation of decision-makers within the surveyed institutions. This was followed by vice-chancellors (25.9%), managers (22.2%), and chancellors (21.7%), highlighting the diverse leadership roles held by respondents and their direct involvement in strategic decision-making processes.

The data showed a broad spectrum of expertise among respondents in terms of experience. Approximately 23.1% reported having 5-10 years of experience, while 21.2% had over 30 years of experience, indicating substantial knowledge and expertise within their respective universities. Additionally, 19.3% reported having 10-20 years of experience, 19.3% had less than five years, and 17.0% had 20-30 years, demonstrating a balanced distribution across different experience brackets.

In summary, Table 4.1 provides a detailed and insightful portrayal of the profile of respondents participating in the study, offering valuable context for interpreting the findings and understanding the perspectives of key stakeholders within Malaysian private universities.

Table 4.1: The Profile of Respondents

	Category	Number	Percentage
Gender	Male	102	48.1
	Female	110	51.9
Age	Less than 26	39	18.4
	26-30	43	20.3
	31-35	45	21.2
	36-40	41	19.3
	above 40	44	20.8
Education	Bachelor's Degree	53	25.0
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	10-20	49	23.1
	20-30	41	19.3
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	Above 40	45	21.2

Table Error! No text of specified style in document..2 provides a detailed breakdown of the work engagement (WE) variable, offering insights into the various dimensions of employee engagement within private universities in Malaysia. This variable comprises nine items, each aimed at capturing different facets of employee engagement, as perceived by respondents utilizing the Likert scale.

The highest-ranking item within the WE variable is WE1, with a mean score of 3.778. This item reflects the observation of employees bursting with energy at work, indicating a strong level of

perceived engagement and enthusiasm among the workforce. Following closely, the second-ranked item, "The employees take pride in the work they accomplish," achieved a mean score of 3.717, highlighting the importance of intrinsic motivation and satisfaction derived from work accomplishments in fostering employee engagement.

Furthermore, the third item in the ranking, "Our employees are strong and vigorous in their roles," attained a mean score of 3.712, reinforcing the notion of employees' robust engagement and commitment to their responsibilities within the university setting. Similarly, the fourth-ranked item, "Sometimes, they seem to get carried away when working," achieved a mean score of 3.684, suggesting occasional instances of employees becoming deeply absorbed in their work tasks, indicative of high levels of engagement.

Continuing down the ranking, the fifth to seventh scales encompass items such as "In the mornings, employees are eager to come to work," "Employees exhibit enthusiasm for their tasks," and "The work in our university inspires the employees," achieving mean scores of 3.656, 3.609, and 3.609, respectively. These items underscore the importance of a stimulating work environment and meaningful tasks in fostering employee enthusiasm and engagement.

Finally, the last two items in the variable, "I notice happiness in their demeanor when they are deeply engaged in their tasks," and "The employees are fully immersed in their work," achieved mean scores of 3.576 and 3.462, respectively. These items further highlight the psychological aspects of engagement, including happiness and immersion in work tasks, which contribute to overall employee engagement levels.

Table Error! No text of specified style in document..2: The Mean and Std. Deviation of Work Engagement Indicators

Code	Items	Mean	Std. Deviation
WE1	I observe that employees are bursting with energy at work.	3.7783	1.04083
WE2	our employees strong and vigorous in their roles.	3.7123	.99155
WE3	In the mornings, employees eager to come to work.	3.6557	.96837
WE4	Employees exhibit enthusiasm for their tasks.	3.6085	.89893
WE5	The work in our university inspires the employees.	3.6085	.96994
WE6	The employees take pride in the work they accomplish.	3.7170	.99052
WE7	I notice happiness in their demeanour when they are deeply engaged in their tasks.	3.5755	.99713
WE8	The employees fully immersed in their work.	3.4623	1.06361

WE9	Sometimes, they seem to get carried away when working.	3.6840	.95348
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Table Error! No text of specified style in document..3 presents a comprehensive analysis of the organizational performance (OP) variable, delineating various dimensions that contribute to the overall performance of private universities in Malaysia. With 15 items, this variable aims to assess different aspects of OP as perceived by respondents, utilizing the Likert scale for evaluation.

The top-ranking item within the OP variable is OP4, with a mean score of 4.326. This item reflects respondents' perception that the quality of products or services offered by their institution has improved, indicating a positive impact on organizational performance. Following closely, the second-ranked item, "Improved employees' satisfaction," achieved a mean score of 4.311, highlighting the importance of employee satisfaction in driving overall organizational performance.

Moreover, the third and fourth items in the ranking, "Employee skills have improved" and "Improved new product/service development," attained identical mean scores of 4.302. These items underscore the significance of continuous improvement initiatives and innovation in enhancing organizational performance.

Continuing down the ranking, the fifth and sixth scales encompass items such as "Rapidly commercialize new innovations" and "In my institution, the net benefit was increased," achieving mean scores of 4.288 and 4.236, respectively. These items emphasize the importance of SA and efficiency in capitalizing on opportunities and maximizing organizational benefits.

From the seventh to ninth scales in the ranking, items such as "In my institution, added economic value services/products improved," "Sales growth in my institution was improved," and "Introduced innovative goods and services within our organization" achieved identical mean scores of 4.222. These items underscore the importance of value addition, sales growth, and innovation in driving organizational performance.

Finally, the last three items in the variable, "Increase customer satisfaction," "Improve market share growth," and "Keep current customers," achieved mean scores of 4.208, 4.198, and 4.170, respectively. These items highlight the importance of customer-centric strategies in enhancing OP and competitiveness.

Table Error! No text of specified style in document..3: The Mean and Std. Deviation of Organizational Performance Indicators

Code	Items	Mean	Std. Deviation
OP1	In my institution, the net benefit was increased	4.2358	.85489
OP2	In my institution, added economic value services/products improved	4.2217	.90439
OP3	Sales growth in my institution was improved	4.2217	.90961

OP4	Our product/service quality has improved.	4.3255	.87228
OP5	Introduced innovative goods and services within our organization.	4.2217	.90961
OP6	Rapidly commercialize new innovations	4.2877	.81876
OP7	Improve market share growth	4.1981	.92792
OP8	Increase customer satisfaction	4.2075	1.01847
OP9	keep current customers	4.1698	.86503
OP10	Employee skills have improved	4.3019	.89411
OP11	Improved employees' satisfaction	4.3113	.94255
OP12	Improved new product/ service development	4.3019	.88344

4.3 Measuring the Reliability of Item

In assessing the measurement model in this study, it is crucial to evaluate the reliability of individual items, commonly known as outer loading, for each construct (Becker et al., 2023; Hair et al., 2021; Hair et al., 2022; Ringle et al., 2020). Outer loading refers to the strength of the relationship between each item and its corresponding construct. To meet the required criteria, an item must have an outer loading value higher than 0.708. This threshold is determined based on ensuring that the average variance extracted (AVE) exceeds 0.50, indicating that the items effectively capture the variance in their respective constructs (Hair et al., 2019).

According to Hair et al. (2019), exterior loading values ranging from 0.40 to 0.70 are generally regarded as satisfactory, provided they aid in attaining an AVE value exceeding 0.50. Establishing this range guarantees that the items adequately mirror their fundamental constructs while preventing the introduction of undue measurement error. Therefore, it is necessary for an outer loading to contribute to attaining a sufficient AVE value, even though a value below 0.708 may be deemed acceptable within this range. In this investigation, all items were retained for analysis as their loadings contributed to an Average Variance Extracted (AVE) value above 0.50, meeting the established criterion (See Table Error! No text of specified style in document.:4). This decision indicates that each item effectively captures variance in its respective construct, thereby ensuring the reliability and validity of the measurement model.

This thorough examination of outer loading values and their contribution to the AVE assures the robustness of the measurement model used in the study. It underscores the importance of individual item reliability in ensuring the accuracy of construct measurement, thereby enhancing the overall quality of the research findings. By adhering to established criteria and guidelines, researchers can confidently interpret and analyze the relationships between constructs in their studies, ultimately advancing knowledge in their respective fields.

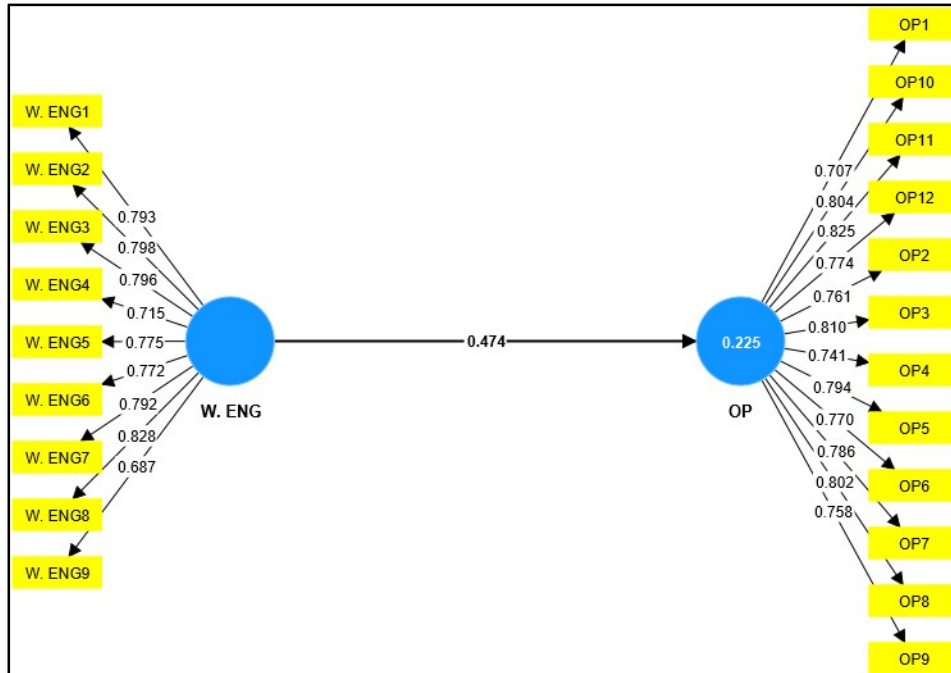


Table Error! No text of specified style in document..4: The Results of Outer Loading, Composite Reliability, Cronbach's alpha, and Average Variance Extracted

Model Construct	Item	Outer Loadings	Cronbach's alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Work Engagement (WE)	WE1	0.793	0.941	0.943	0.606
	WE2	0.798			
	WE3	0.796			
	WE4	0.715			
	WE5	0.775			
	WE6	0.772			
	WE7	0.792			
	WE8	0.828			
	WE9	0.687			
Organizational Performance (OP)	OP1	0.707	0.916	0.924	0.599
	OP2	0.761			
	OP3	0.810			
	OP4	0.741			
	OP5	0.794			
	OP6	0.770			
	OP7	0.786			
	OP8	0.802			
	OP9	0.758			
	OP10	0.804			
	OP11	0.825			
	OP12	0.774			

An alternative methodology for evaluating discriminant validity is the Fornell-Larcker criterion, developed by Fornell and Larcker (1981). To apply this criterion, the average variance extracted (AVE) of each construct is compared to the squared correlations between construct pairings, as Fornell and Larcker (1981) suggested. The square root of the Average Variance Extracted (AVEs) ought to exceed the correlations observed among the various components, according to the research of Hair et al. (2022). The AVE values, spanning from 0.553 to 0.606, are presented in Table 4.4. The component correlations are all surpassed by each of these values. The discriminant validity confirmation is achieved per the Fornell-Larcker criterion (Ringle et al., 2023).

4.4 Multicollinearity Test

To detect multicollinearity, this research employed “the tolerance value and variance inflation factor (VIF) method,” widely recognized and utilized by researchers Jandab et al. (2019); Purwanto (2021); Ringle et al. (2023); Sarstedt et al. (2022) suggested threshold values of 0.20 for tolerance and 5.00 for VIF. Tolerance values above 0.20 and VIF values below 5.00 indicate the absence of multicollinearity.

The results presented in Table Error! No text of specified style in document.5 demonstrate no evidence of multicollinearity, as indicated by tolerance values of 1.000 and VIF values of 1.000. Consequently, it can be definitely assumed that multicollinearity is not a concern among the independent factors in this study.

Table Error! No text of specified style in document..5: The Results of Multicollinearity

Variables		Collinearity Statistics	
		Tolerance	VIF
Work Engagement	Organizational Performance	1.000	1.000

4.5 Correlation Analysis

The present investigation utilized correlation analysis to examine the associations among various variables. The statistical correlation analysis technique is employed to ascertain the magnitude and orientation of the association between two variables (Field, 2024). It aids researchers in comprehending the relationship between variations in one variable and another. This relationship is measured by the correlation coefficient, which varies between +1 and -1. A coefficient of ± 1 signifies an association of flawless strength, whereas a coefficient approaching zero implies a relationship of lesser strength. Additionally, the direction of the relationship is denoted by the sign of the coefficient; a positive sign indicates a positive correlation, while a negative sign suggests a negative association (Obilor & Amadi, 2018).

Various methods are available for correlation analysis, including Pearson, Spearman, Kendall rank, and point-biserial correlation (Sedgwick, 2012; Zhi et al., 2017).

Among these methods, the Pearson correlation coefficient is widely utilized because it evaluates the relationship between continuous variables. It calculates the covariance between variables, providing valuable insights into the strength and direction of the correlation. By employing the Pearson coefficient, researchers can examine the correlation between the variable of interest and other relevant variables (Obilor & Amadi, 2018). This study uses the Pearson correlation coefficient to analyze the relationships between work engagement and organizational performance.

Table Error! No text of specified style in document..6: The Results of Bivariate Correlation analysis (Pearson)

Variable		WE	OP
WE	Pearson Correlation	1	.465**
	Sig. (2-tailed)		.000
	N	212	212
OP	Pearson Correlation	.465**	1
	Sig. (2-tailed)	.000	
	N	212	212

** . Correlation is significant at the 0.01 level (2-tailed), **WE:** Work engagement, **OP:** Organizational Performance.

Table Error! **No text of specified style in document..6** presents the results of the correlation analysis conducted in this study. The findings indicate that the correlation coefficient is less than 0.7, suggesting a high level of correlation between the variables. Measuring the Reliability of Item

Table Error! No text of specified style in document..7: The Results of the Fornell-Larcker Method

Construct	Organizational Performance	Work Engagement
Organizational Performance	0.778	
Work Engagement	0.474	0.774

Another method for assessing discriminant validity involves examining the Heterotrait-Monotrait (HTMT) correlation ratio, as proposed by Henseler, Ringle, and Sarstedt (2015). According to Abdulsamad et al. (2021), A. M. Al-Sharif et al. (2023), Al-Zubaidi et al. (2022), McDonald and Ho (2002), the HTMT value should not exceed 1.0 to establish discriminant validity. This ratio is calculated by comparing the correlations between constructs that represent different traits (Heterotrait) to those between constructs that represent the same trait (Monotrait). If the HTMT value is less than 1.0, constructs are more strongly correlated with their respective traits than with other traits, supporting discriminant validity.

Table Error! No text of specified style in document..8: The Results of Heterotrait-Monotrait Ratio (HTMT) Method

	Organizational Performance	Work Engagement
Organizational Performance		
Work Engagement	0.498	

The results presented in Table Error! **No text of specified style in document..8** illustrate the outcomes of the “HTMT analysis”, wherein all values of the “Heterotrait-Monotrait criterion do not exceed 1.0”. Additionally, the correlations among the constructs are observed to be less than

1.0, indicating their distinctiveness from one another. Consequently, the discriminant validity of the constructs has been firmly established. In conclusion, the outcomes from “the three tests-cross-loading comparison, Fornell-Larcker criterion, and “HTMT analysis”-collectively demonstrate that the model of measurement fulfills the criteria for “discriminant validity” of constructs.

4.6 Assessing the Structural Model (Direct Impact)

The analysis of the structural model, focusing on direct effects, carried out to address the questions of study and evaluate hypotheses 1 (H1), as delineated below:

Work Engagement (WE) positively impacts Organizational Performance(OP)in Malaysian private universities.

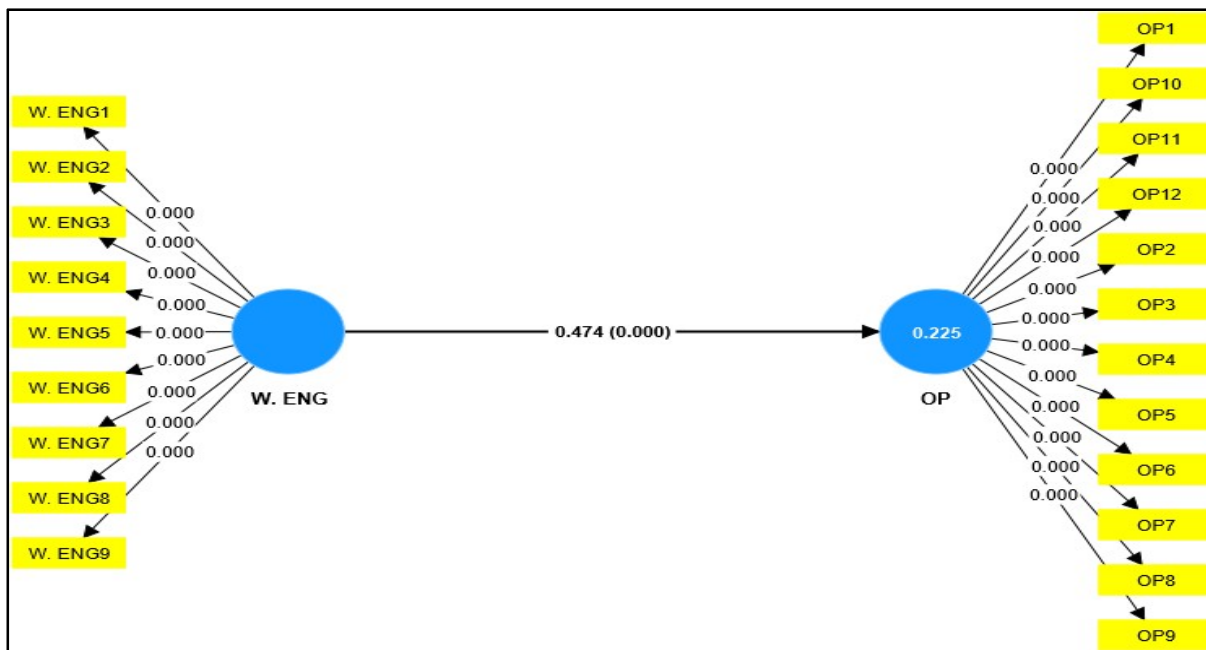


Figure Error! No text of specified style in document..1: Path Model Significance Results

Table Error! **No text of specified style in document..9** presents the analysis findings on the path coefficient of the structural model, explicitly focusing on the direct influence.

The current research adopts the recommendation proposed by Hair et al. (2017), which stipulates that a “p-value less than 0.05 ($p < 0.05$, corresponding to a 95% Confidence Interval) and a t-value exceeding 1.96 ($t > 1.96$ for two tail)” indicate the presence of a significant direct relationship between variables examined in the study.

Table Error! No text of specified style in document..9: Hypothesis Evaluation Results

NO. H	H. Direct effect	Path Coefficient	S-Deviation	T-V	P-V	Results
H1	WE -> OP	0.474	0.063	7.571	0.000***	Supported

Note: **Significant at 0.05 (two-tailed), *** Significant at 0.01 (two-tailed)

Work Engagement (WE), are supported by the analysis results ($\beta = 0.474$, $t = 7.571$, $p < 0.01$), positing a significant positive relationship between WE and private universities' Performance (OP) in Malaysia.

4.7 Assessing R Square (R^2)

Various criteria exist for interpreting R^2 values, and the acceptability threshold depends in the study context and complexity of model (Ringle et al., 2023). Falk and Miller (1992), for example, proposed a minimum acceptable R^2 value of 0.10, while Chin (1998) categorized R^2 values of 0.67, 0.33, and 0.19 as representing substantial, moderate, and weak relationships, respectively. Cohen (1988) suggested R^2 values of 0.26, 0.13, and 0.02 to denote substantial, moderate, and weak relationships in PLS-SEM. Additionally, J. F. Hair Jr et al. (2022) recommended R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables in the structural model to be considered as substantial, moderate, or weak, respectively.

Table Error! No text of specified style in document..10: Assessing R square in the Endogenous Variable

Independent Variables (endogenous)	R^2	Assessment		
		Cohen (1988)	Chin (1998)	Hair et al. (2022)
Organizational Performance (OP)	0.225	Moderate	Weak	Weak

According to the data showcased in Table Error! **No text of specified style in document..10**, the values of R^2 about the independent factors, namely the performance of private universities (OP) and WE, signify that the model of study elucidates 22.5%, within private universities Thus, within the scope of this study, the values of R^2 for these independent factors align with the acceptable benchmarks delineated by Falk and Miller (1992), as well as falling within the weak and moderate ranges as delineated by Chin (1998); Hairet al. (2022), and the moderate and substantial ranges as outlined by Cohen (1988).

4.8 Assessing Effect Size (F^2)

According to Abdulsamad et al. (2020); Jandab et al. (2019); Ringle et al. (2023), the effect size f^2 serves to evaluate the extent to which a specific independent variable (s) influences an dependent variable (s) by measuring the change in R^2 if the exogenous construct is removed from the model. In essence, f^2 quantifies the strength of an exogenous construct's impact on an endogenous construct in terms of R^2 . The rule of thumb for interpreting effect size proposed by Cohen (1988) suggests values of “0.35 for substantial effect, 0.15 for medium effect, and 0.02 for small effect.” Table Error! **No text of specified style in document.** presents the outcomes of f^2 of independent factors on dependents factors.

Table Error! No text of specified style in document..11: The Results of f^2 of Independent Factors

Variables		Effect Size	Effect
Independent	Dependents		
Work Engagement	Organizational Performance	0.290	medium

According to the results presented in Table Error! No text of specified style in document., it is observed that WE exhibit medium effects on the performance of private universities (OP) in Malaysia, with effect sizes of 0.290.

4.9 Goodness of Fit of The Model (GOF)

According to Tenenhaus et al. (2005), the Goodness of Fit (GOF) is an all-encompassing metric that signifies the degree to which a structural model fits globally. The value is determined by averaging the R^2 values of the endogenous variables and the average variances extracted (AVE), which are integral components of the geometric mean. By providing insights into the overall adequacy of the model, this metric is intended to provide an evaluation of the study model at both the conceptual and measurement levels.

The determined GOF value, as shown in Table 4.12, is 0.368 within the framework of the research document. The significance of this finding lies in its ability to inform researchers about the overall performance of their structural model, highlighting areas of strength and areas that may require further refinement.

Table Error! No text of specified style in document..12: Goodness of Fit of The Model (GOF)

Variables	R Square	AVE
Organizational Performance	0.225	0.599
Work Engagement		0.606
The Average	0.225	0.6025
GOF	0.368	

It is worth noting that Henseler et al. (2015) have established criteria for interpreting GOF values, distinguishing between small, medium, and large values to determine the extent to which a Partial Least Squares (PLS) model can be considered globally valid. These criteria are benchmarks for assessing the adequacy of the model's fit and its potential applicability in representing real-world phenomena.

The GOF calculation formula involves taking the geometric mean of the AVE and the average R^2 values of the endogenous variables. This formula encapsulates the measurement quality, represented by the AVE, and the model's explanatory power, indicated by the R^2 values. By considering these two components together, researchers gain a holistic understanding of the model's fit and ability to accurately represent the underlying theoretical constructs (Hair et al., 2019).

5.0 Discussion

There are multiple underlying reasons for the favourable impacts of employees who are highly engaged to their work performance in private higher education institutions. Firstly, employee engagement represents a rich comprehension of how employees related to job duties (Yalabik et al., 2017). Employee engagement in private higher education, associated with a lower absenteeism, accidents, and staff turnover rate, shows positively impacts on both employee and organisational performance (Ahmed et al., 2022). Secondly, we have observed those employees exerted high commitment on their job as high level of productivity and effectiveness. As a consequence, it directly caused better academic administrative processes leading to improved performance including on time and zero error completion of workload, quality teaching and efficient administrative support..

Another possible reason for the positive effect of work engagement on organizational performance in private higher education institutions is that work involvement promotes a positive workplace environment with increased morale, teamwork, and collaboration (Bailey et al., 2022). Employees actively involved and committed to their work are more willing to provide mutual assistance, share knowledge, and contribute innovative ideas, thus improving the organization's general efficiency (Ahmed et al, 2022). The cooperative environment fosters problem-solving, decision-making, and adaptation, crucial for achieving organizational success in a dynamic higher education scene.

However, the result of the current study is consistent with the previous studies that examined the association between work engagement and organizational performance such as Bano, Khatun, and Kumar (2024) found that communication and work-life balance were significant factors in fostering employee engagement in the banking sector in Hyderabad, ultimately positively impacting organizational performance. The current result is in line with Ahmed et al. (2020). Their results indicate a positive and significant impact of employee engagement and knowledge sharing on organizational performance, with knowledge sharing fully mediating the relationship between employee engagement and performance. In addition, the result of the current study is consistent with Juevesa and Castino (2020), whose findings indicated a positive relationship between employee engagement and organizational performance across all generations within a private, non-sectarian school. Cheche et al. (2019) explored that employee engagement significantly impacts the organizational performance of research and training state corporations in Kenya, which is influenced by age, education, and tenure.

However, the current finding of the positive effect of work engagement on organizational performance is consistent with previous studies in the higher education sector, such as Ahuja and Gupta (2019); their results revealed a direct relationship between work engagement and organizational commitment and facilitated sustaining higher education professionals. Extended lengths of employment can be achieved by connecting the organization's focus on desired results with employees' personal and professional preferences. The study concluded that higher education institutions should develop new techniques to align these orientations, which will

promote faculty retention and maximize their job engagement. The current finding aligns with Anyalor, Nwali, and Agbionu (2018), who found that work engagement positively affects lecturers in higher education institutions in Nigeria. The current result is also consistent with Abdelwahed and Doghan (2023), who found that work engagement positively and significantly affects productivity in educational Society.

6.0 Conclusion

Research has shown that one of the most critical factors that determines the performance of an organization is employee engagement. When people are engaged in their work, they are more likely to demonstrate higher productivity, inventiveness, and devotion to the organization's goals. This results in a reduction in the costs associated with employee turnover because they are more likely to remain with the organization over the long run. In light of this, it is important for enterprises to build a working environment that encourages employee involvement to improve the firm's performance.

References

- Abdelwahed, N. A. A., & Doghan, M. A. A. (2023). Developing employee productivity and performance through work engagement and organizational factors in an educational society. *Societies*, 13(3), 65.
- Abdulsamad, A., Ali, N. A., Mahomed, A. S. B., Hashim, H., Jandab, A., & Al-Sharif, A. M. (2020). The Importance of Entrepreneurial Orientation's Dimensions in Influencing the Organizational Performance of Food and Beverage SMEs. *Advances in Social Sciences Research Journal*, 7(12).
- Abdulsamad, A., Ali, N., Hashim, H., Shah, A., Jandab, A., Hamdan, A., (2021). The Impact of Market Orientation Components on Organizational Performance of SMEs. The single-industry approach "Food and Beverage Sector". *Advances in Social Sciences Research Journal*, 8, 504-516. doi: <http://dx.doi.org/10.14738/assrj.85.10231>
- Abu-Mahfouz, S., Halim, M. S. A., Bahkia, A. S., Alias, N., & Tambi, A. M. (2023). Sustainable human resource management practices in organizational performance: The mediating impacts of knowledge management and work engagement.
- Ahmed, U., Yong, I. S. C., Pahi, M. H., & Dakhan, S. A. (2022). Does meaningful work encompass support towards supervisory, worker and engagement relationship?. *International Journal of Productivity and Performance Management*, 71(8), 3704-3723.
- Ahuja, S., & Gupta, S. (2019). Organizational commitment and work engagement as a facilitator for sustaining higher education professionals. *International Journal of Recent Technology and Engineering*, 7(6), 1846-1851.
- Al-Sharif, A. M., Ali, M. H., Jaharuddin, N. S., Abdulsamad, A., & Jandab, A. (2023). The Role of Innovation Capability in the Relationship between Entrepreneurial Leadership and Innovation Performance in the SMEs Service Industry. *Advances in Social Sciences Research Journal*, 10(1). doi:10.14738/assrj.101.13802

- Al-Sharif, A., Ali, M., Jaharuddin, N., & Abdulsamad, A. (2023). Effects of Innovation Capability and Environmental Dynamism on the Relationship between Entrepreneurial Leadership and Innovation Performance in the SMEs Service Industry. *International Journal of Academic Research in Business and Social Sciences*, 13, 1547-1570. doi:10.6007/IJARBS/v13-i10/19011
- Al-Zubaidi, R., Ariffin, K., Abdulsamad, A., Raqee, A., Ismail, I., & Ahmad, K. (2022). The Effect of Self-efficacy on Sustainable Development: The PetroMasila in Yemen. *Advances in Social Sciences Research Journal*, 9, 35-49. doi:10.14738/assrj.912.13555
- Anyalor, M., Nwali, A. C., & Agbionu, U. C. (2018). Employee engagement and performance of lecturers in Nigerian tertiary institutions. *Journal of Education and Entrepreneurship*, 5(2), 69-87.
- Arif, T. B., Munaf, U., & Ul-Haque, I. (2023). The future of medical education and research: Is ChatGPT a blessing or blight in disguise?. *Medical education online*, 28(1), 2181052.
- Bailey, C. (2022). Employee engagement: do practitioners care what academics have to say—and should they?. *Human Resource Management Review*, 32(1), 100589.
- Bano, A., Khatun, A., & Kumar, D. (2024). Examining Drivers Of Engagement And Employee Engagement In Relation To Organizational Performance-A Study Of Banking Sector In Hyderabad City. Bano, A., Khatun, A., & Kumar, D.(2024). Examining Drivers Of Engagement And Employee Engagement In Relation To Organizational Performance-A Study Of Banking Sector In Hyderabad City. *Migration Letters*, 21, 1067-1081.
- Baum, L. (2009). *Judges and their audiences: A perspective on judicial behavior*. Princeton University Press.
- Becker, J.-M., Cheah, J.-H., Gholamzade, R., Ringle, C. M., & Sarstedt, M. (2023). PLS-SEM's most wanted guidance. *International Journal of Contemporary Hospitality Management*, 35(1), 321-346. doi:10.1108/IJCHM-04-2022-0474
- Brynjolfson, E. (1993). The productivity paradox of information technology. *Communications of the ACM*, 36(12), 67–77.
- Carton, R. B. (2004). Measuring organizational performance: An exploratory study.
- Chan, J. I. L., & Muthuveloo, R. (2022). Strategic agility: linking people and organisational performance of private higher learning institutions in Malaysia. *International Journal of Business and Society*, 23(1), 342-358. doi:10.33736/ijbs.4616.2022
- Cheche, S. G., Muathe, S. M., & Maina, S. M. (2019). Employee engagement, demographic characteristics and performance of state research and training corporations in Kenya. *IUP Journal of Organizational Behavior*, 18(1), 55-70.
- 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 behavioral sciences* (2nd ed ed.). United States of America: Lawrence Erlbaum Associates
- Day, G. S., & Wensley, R. (1988). Assessing advantage: a framework for diagnosing competitive superiority. *Journal of marketing*, 52(2), 1-20.

- Douwe P. Flapper, S., Fortuin, L., & Stoop, P. P. (1996). Towards consistent performance management systems. *International journal of operations & production management*, 16(7), 27-37.
- Falk, R. F., & Miller, N. B. (1992). A primer for soft modeling: University of Akron Press.
- Field, A. (2024). *Discovering statistics using IBM SPSS Statistics*: SAGE Publications Limited.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. doi:<https://doi.org/10.1177/002224378101800104>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (Third Edition ed.)*. Thousand Oaks, California: Sage publications.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (p. 197). Springer Nature.
- Hair, J. F., Ringle, C. M., Gudergan, S. P., Fischer, A., Nitzl, C., & Menictas, C. (2019). Partial least squares structural equation modeling-based discrete choice modeling: an illustration in modeling retailer choice. *Business Research*, 12(1), 115-142.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24. doi:10.1108/EBR-11-2018-0203
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*: saGe publications.
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, 117(3), 442-458. doi:10.1108/IMDS-04-2016-0130
- 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(1), 115-135. doi:<https://doi.org/10.1007/s11747-014-0403-8>
- Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and social issues: what's the bottom line?. *Strategic management journal*, 22(2), 125-139.
- Ho, W. (2008). Integrated analytic hierarchy process and its applications—A literature review. *European Journal of operational research*, 186(1), 211-228.
- Jandab, A., Ali, N. A., Abdulsamad, A., & Al-Sharif, A. M. (2019). IT-Based Innovation and New Product Development Performance in Yemen: The Moderating Role of Intellectual Property. *International Journal of Business Society*, 3(11), 1-8. doi:<https://doi.org/10.30566/ijbo-bs-2019-11-1>

- Jaya, L. H. S., & Ariyanto, E. (2021). The effect of vigor, dedication and absorption on the employee performance of PT Garuda Indonesia Cargo. *European Journal of Business and Management Research*, 6(4), 311-316.
- Jon, M.N & Randy, L.D (2009). *Human Resource Development*. South –Western Cengage Learning.
- Juevesa, R. D., Juevesa, C. V., & Castino, J. M. P. (2020). Employee engagement, commitment, satisfaction and organizational performance among multigenerational workforce. *International Journal of Research in Engineering, Science and Management*, 3(7), 36-40.
- Jurison, J. (1996). Toward more effective management of information technology benefits. *The Journal of Strategic Information Systems*, 5(4), 263-274.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724.
- Kahn, W. A. (1992). To be fully there: Psychological presence at work. *Human relations*, 45(4), 321-349.
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system.
- Karafakioglu, E., & AfacanFindikli, M. (2024). The Mediating Role of Work Engagement in the Relationship Between Digital Leadership and Innovative Behavior and Organizational Agility. *International Journal of Organizational Leadership*, 13(1), 1-21.
- Katou, A. A. (2008). Measuring the impact of HRM on organizational performance. *Journal of Industrial Engineering and Management (JIEM)*, 1(2), 119-142.
- Khaw, T. Y., & Teoh, A. P. (2023). The influence of big data analytics technological capabilities and strategic agility on performance of private higher education institutions. *Journal of Applied Research in Higher Education*, 15(5), 1587-1599. doi:10.1108/JARHE-07-2022-0220
- Kumar, N., Scheer, L., & Kotler, P. (2000). From market driven to market driving. *European management journal*, 18(2), 129-142.
- Laitinen, E. K. (2002). A dynamic performance measurement system: evidence from small Finnish technology companies. *Scandinavian journal of management*, 18(1), 65-99.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of organizational behavior*, 2(2), 99-113.
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout*. San Francisco, CA, USA: Jossey-Bass.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual review of psychology*, 52(1), 397-422.
- McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological methods*, 7(1), 64-82. doi:10.1037/1082-989X.7.1.64
- Narver, J. C., Slater, S. F., & Tietje, B. (1998). Creating a market orientation. *Journal of market-focused management*, 2, 241-255.

- Noble, C. H., Sinha, R. K., & Kumar, A. (2002). Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of marketing*, 66(4), 25-39.
- Obilor, E. I., & Amadi, E. C. (2018). Test for significance of Pearson's correlation coefficient. *International Journal of Innovative Mathematics, Statistics & Energy Policies*, 6(1), 11-23.
- Paul, A. K., & Anantharaman, R. N. (2003). Impact of people management practices on organizational performance: analysis of a causal model. *The International Journal of Human Resource Management*, 14(7), 1246-1266.
- Purwanto, A. (2021). Partial least squares structural equation modeling (PLS-SEM) analysis for social and management research: a literature review. *Journal of Industrial Engineering & Management Research*.
- Richard, D., Clanet, C., & Quéré, D. (2002). Contact time of a bouncing drop. *Nature*, 417(6891), 811-811.
- Ringle, C. M., Sarstedt, M., Mitchell, R., & Gudergan, S. P. (2020). Partial least squares structural equation modeling in HRM research. *The international journal of human resource management*, 31(12), 1617-1643.
- Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief*, 48, 109074. doi:<https://doi.org/10.1016/j.dib.2023.109074>
- Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology & Marketing*, 39(5), 1035-1064.
- Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.).
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies*, 3, 71-92.
- Sedgwick, P. (2012). Pearson's correlation coefficient. *Bmj*, 345. doi:10.1136/bmj.e4483
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis*, 48(1), 159-205.
- Thomas, K. W. (2009). *Intrinsic motivation at work: Building energy and commitment*. Berrett Koehler Publishers
- Yalabik, Z. Y., Rayton, B. A., & Rapti, A. (2017, December). Facets of job satisfaction and work engagement. In *Evidence-based HRM: a global forum for empirical scholarship* (Vol. 5, No. 3, pp. 248-265). Emerald Publishing Limited.

Zhi, X., Yuexin, S., Jin, M., Lujie, Z., & Zijian, D. (2017, 20-22 Oct. 2017). Research on the Pearson correlation coefficient evaluation method of analog signal in the process of unit peak load regulation. Paper presented at the 2017 13th IEEE.