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The Effects of Educational Status, Religious Knowledge and Family Economy on Prayer Practices of Primary School Students in Setiu District, Terengganu

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Abstract: This study was conducted to determine the effectiveness of educational status, religious knowledge and family economy on student prayer practice primary school in Setiu District. A total of 175 secondary school students (level two) as the sample of the study. Data were analyzed using IBM-SPSS-AMOS (SEM) program version 21.0. SEM analysis consists of two main models: the measurement model and the Structural model. Prior to the SEM test, some adjustment tests were performed to ensure that the tested indicator actually represented the measured construct. Two analyzes in this study are prerequisites that have been met before the SEM analysis is done ie Factor Exploration Analysis (EFA) and Confirmatory Factor Analysis (CFA). The findings indicate that the educational status, religious knowledge and family economy on student prayer practice primary school. Furthermore, Inference analysis findings also show educational status, religious knowledge and family economy, have a positive and significant influence on student prayer practice. This shows that family education, especially in religious knowledge and economic family, plays a role in the practice of prayer in primary schools.

Keywords: Structural Equation Modeling (SEM), Education Status, Religious Knowledge, Family Economic, Prayer Practice.

INTRODUCTION

Prayers are the pillars of religion where prayer is the greatest of worship that brings the slaves to their Lord and is the steadfastness of the relationship of the creatures and their creators. The solat according to shari'ah is defined as some words and deeds commenced with takbir and endorsed with greetings and with the specified conditions. The five-day prayer is obligatory on the Muslim ummah and the obligations do not fall as long as life on the body. Word of the Prophet S.A.W. means "The prayer is the pillar of religion, whoever sets up prayers, indeed he has upheld religion and whoever abandons the solat actually he demeans religion". Indeed, the act of abandoning this prayer is the most difficult case because it is a pillar of all religious affairs as it is the relationship between a servant and his Creator, Allah SWT. It's bad for one's treatment to be influenced by his prayers. If the prayer is good, it is done with perfection that includes aspects of harmoniousness, condition, and understanding and then willfully it will prevent a person from being abusive. This is the answer to the various problems that arise in each individual. Prayer is also the most important and important worship that is first reviewed and judged by God S.W.T on Judgment Day. If our prayers are good and perfect then all other worship will be perfect. On the other hand, if the prayer is not perfect then it will be further examination of other worships ie fasting, zakat, pilgrimage and so forth. Word of the Prophet S.A.W: Meaning:

Abu Dawud narrated to us that he said, Harun (son of Ismail al-Khazzaj) told us, he said, tell us Hammam from Qatadah, Al-Hasan, Khuraist bin Qubaishah, he said: I came to Medina, I said: Allah bless me in a good place, then tell me the hadiths which you have heard from the Messenger of Allah, may Allah be pleased with me, said: I heard the Messenger of Allah (may peace be upon him) saying: The first one from a slave on the Day of Judgment is the prayer. When the prayers are good then good is the whole practice but if the prayer is broken then it breaks the whole practice. (Hammam said: I do not know from this problem of Qatadah or from other narratives, if in the prayer fardu not perfect, then said: Look, does it work (solat) Sunnah? If the prayer is not perfect, then it is said. Then the other fardu practices are calculated (HR An-Nasa'i).

Prayer is a worship that must be performed by every Muslim individual. Perfect prayer can keep people from all wrongdoing. According to Mohd (1999), prayers can strengthen the faith and become self-shielding from the abusive and wrong practices. Abandoning the solat five times is deliberately sinful and Allah SWT has unveiled this ritual in the Qur'an that who abandon the solat five times deliberately will be rewarded with a painful punishment not only in the world but also in the hereafter. Therefore, Muslims must remember each other not to abandon what is governed by Allah S.W.T. Do not abandon the five-day prayer which is the fortress and strength of ukhuwah between the servant and the Creator. Hence, let us both perform this fardu solely with sincerity and perfection. But how sad when we see a future generation who refuses to bow to the Creator by ignoring this mandatory practice. In fact, this issue needs to be further from the primary school so it will not spread to high school and higher levels.

In addition, the problem arises when there are Year Three pupils in the school who are still not fluent and do not master the reading in the prayer (Rukun Qauli). This can be detected when they take a long time to prepare each time, they are tested especially during the prayer test of prayer. This problem becomes very complicated when the teachers perform a reading test in the practice of fardu prayer. If the students practice fardu prayers five times a day yesterday istiqamah or persistent, they will not take a long time to prepare the recitation of the recitation in the prayer. The ignorance or lack of understanding of the practice of prayer is also one of the factors that cause them to do not pray. They are also less interested and lazy and do not have the passion for knowledge creation especially religious knowledge and deep knowledge of Islam. This ignorance caused them to not perform prayer. Thus, this study looks at whether the educational status, religious knowledge and family economy, affect the practice of the prayer of the Setiu District Primary Schools.

RESEARCH METHODOLOGY

This study is conducted descriptively and explains in relation to the impact of the study objective, to see the level and impact of education status, religious knowledge and family economics on the practice of prayer in the Setiu District Primary School. The method used is quantitative. Data were analyzed using Structural Equation Modeling (SEM) with IBM-SPSS-AMOS program version 21.0. SEM is formed with two main models namely measurement model and Structural model. Before the SEM test is tested, prior adjustment tests should be made to ensure that the tested indicator actually

represents the measured construct. There are two analyzes as prerequisites that must be met before the SEM analysis is performed: (1) Exploration Analysis Factor (EFA), and (2) Confirmation Factor Analysis (CFA). Validation factor analysis (CFA) is a test of measurement model to ensure that each construct meets procedures such as validity and reliability for each experiment being built (Awang, 2015; Chik et al., 2024; Chua, 2014d; Byrne; 2013; Hair et al., 2006; Kline, 2016; Schumucker & Lomax, 2004). Comparison of model measurement is essential to ensure that any latent construct in this study is compatible with the data studied before SEM can be continued (Awang, 2015; Chik et al., 2024; Kline, 2016; Schumucker & Lomax, 2004).

Using the CFA method can assess the extent to which factors are observed significantly to the latent construct used. This assessment is done by examining the stiffness value of the regression pathway from factor to observed variable (factor loading) rather than the relationship between factors (Byrne, 2001). Through the use of CFA, any item not conforming to the measurement model is derived from the model. This inequality is due to the low load factor value. Researchers need to apply the CFA process to all model-related construct, either separately or collectively (combined CFA models) (Alias & Hartini, 2017). The compatibility of the hypothetical models tested is verified using the Fitness Indexes to see the values of Root Mean Square Error of Approximation (RMSEA<0.08), Goodness of Fit Index (GFI>0.90), Comparative Fit Index (CFI>0.90) and Chi Square/Degree of Freedom (chisq/df <5.0). According to Hair et al. (2006) if the value of χ^2 is less than 2.00 but significant, it should be noted whether the sample is large or vice versa. Sample size above 200 can cause χ^2 to be significant (Hossen, 2023). Therefore, Hair and his colleagues propose two other indices namely CFI and RMSEA to ensure CFA analysis establishes a dimensionless research model. If the CFI value exceeds 0.90 and the RMSEA is less than 0.08 it is said that the existence of Unidimensionality exists for the formation of each construct.

RESEARCH FINDINGS

Confirmatory Factor Analysis (CFA)

There are two models that need to be analyzed in implementing the model of Structural Equation Modeling-SEM Measurement Model and Structural Model. Awang (2015); Chik et al. (2024); Hoque et al. (2017) suggests two steps to follow Structured Equation Modeling (SEM).

- Verification of the Measurement Model of all contracts involved through the CFA method.
- Model all constructs into Structural Models and Modeling Structural Equations.

According to Awang (2015); Awang et al. (2015a); Chik et al. (2024); Hoque et al. (2017); Kashif et al., (2016) the Measurement Model in accordance with the research data is important to verify the SEM. If the Measurement Model does not match the data from the field, the Built-in Structured Equation Model is invalid. Therefore, the first step in SEM analysis is to determine the Measurement Model according to the data from the field. Model Compatibility Model Measurements with field data were performed using CFA. Through the CFA approach, researchers examined statistically to validate the proposed construction model (Hossen & Pauzi, 2025).

- a) Validity and Reliability Test Model: Before evaluating the compatibility of built models, assessments for Unidimenceality, Validity, and Reliability Models The measurements of this study should be carried out first. Here's a little introduction to Unidimensionality, Validity and Reliability.
- **b)** Not Dimensionless: Awang et al. (2015a); Chik et al. (2024); Kashif et al. (2016) this requirement can be satisfied through a product deletion procedure that has a weighted value factor. Low Factor Loading to achieve a set of Fitness Index. Goods with a weight

value of less than 0.6 are considered unimportant for construct and need to be released (Awang, 2014; 2015).

- c) Validity: Awang et al. (2015a); Chik et al. (2024); Kashif et al. (2016) there are three types of validity to be achieved with constructive models of Construct Validity, Convergence Validity, and Discriminant Validation.
- d) Construct Validity: Construct Validity refers to the accuracy of the measuring instrument used to measure the construct intended in this study. The construct validity explains the extent to which a statement in the item used can measure the constructs that the researcher wants to measure (Awang, 2015; Chik et al., 2024; Hoque et al., 2017). Conformity is achieved when all Fitness Indexes for development meet the specified level (Awang, 2015). Table 1 shows the three categories of compatibility indexes that must be achieved by building Absolute Fit, Incremental Fit and Parsimonious Fit models.

Name of Category	Name of Index	Level of Acceptance
Absolute Fit Index	RMSEA	RMSEA < 0.08
	GFI	GFI > 0.90
Incremental Fit Index	AGFI	AGFI > 0.90
	CFI	CFI > 0.90
	IFI	IFI > 0.90
	TLI	TLI > 0.90
	NFI	NFI > 0.90
Parsimonious Fit Index	Chisq/df	Chi-Square/ df < 3.0
destado en la la		()

Table 1	Three	Compatibility	Index	Categories	as well o	as Recogniz	ed Index	Types
		, ,		5		5		

*** Index is always used by researchers. Source: Awang (2015)

- e) Convergence Validity: Convergent validity refers to the relevance of the measurement model to other theoretical measurement models. Validity Building a construct will be achieved if all Average Variance Extracted (AVE) values reach a minimum of 0.50 (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Hoque et al., 2017; Kashif et al. 2016).
- f) Discriminant Validity: Discriminant validity illustrates the extent to which the construct has no overlapping relationship with other constructs in the same model so that it can be said to be excessive from other constructs (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016). The validity of discrimination is assessed through the Discrimination Validity Summary Index. According to Awang (2015), Chik et al. (2024) and Hoque et al. (2017), the discriminant validity of the construct can be achieved if all diagonal matrix values are greater than the other values in row cells and column cells. The diagonal value of the matrix is the square root of the extracted average variance (AVE) while the value in the matrix is the correlation between the strings in the model.
- **g) Reliability:** SEM does not adopt Internal Reliability measurements or Internal Reliability as measured by Cronbach Alpha value. In contrast SEM adopts Reliability Composite value measured by CR value and also Average Value of Variance Extracted (AVE). There are two criteria to verify the reliability of the Measurement Model in this study:
- h) Reliability Composite (CR): CR values are measured using the Factor Loading factor of each item in construct. Each Latent construct must achieve a minimum CR value of 0.60 (CR>0.6) to be considered as having achieved Composite Reliability (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Hoque et al., 2017; Kashif et al., 2016).
- i) Average Variations Extracted or Average Variance Exceeded (AVE): The AVE value is also calculated by using the Factor Loading factor of each item under construct. The AVE value needs to reach the minimum limit of 0.50 (AVE>0.5) to prove the reliability of the latent construct model in this study that has been achieved (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Hoque et al., 2017; Kashif et al., 2016).

CFA Analysis for Conventional Educational Status Measurement Model

The Analysis of Fitness Index in Table 2 shows the Educational Status Construct Model has reached the level of Compatibility Index level as shown in Table 1 above. This means Building Validity for this construct has been achieved (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016). The Measurement Model for the construct of Educational Status has reached the level of Compatibility Index. This means Building Validity for this construct has been achieved (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016).

Table 2 Analysis to Determine Construct Validity						
Name Category	Name Index	Index value	Research Findings			
1. Absolute fit	RMSEA	0.069	Reached the set level			
2. Incremental fit	CFI	0.992	Reached the set level			
3. Parsimonious fit	ChiSa/df	2.221	Reached the set level			



Figure 1. Layout Measurement Model for Educational Status

CFA Analysis for Religious Knowledge Construct Measurement Model

The Analysis of the Fitness Index in Table 3 shows the Religious Knowledge Measurement Model has reached the level of Compatibility Level as shown in Table 1 above. This means Building Validity for this construct has been achieved (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016). The Measurement Model for Religious Knowledge construct has reached the level of Compatibility Index level. This means Building Validity for this construct has been achieved (Hossen & Salleh, 2024).

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Name Category	Name Index	Index value	Research Findings
1. Absolute fit	RMSEA	0.070	Reached the set level
2. Incremental fit	CFI	0.985	Reached the set level
3. Parsimonious fit	ChiSq/df	2.251	Reached the set level



Figure 2. Layout Measurement Model for Religious Knowledge

CFA Analysis for Family Economy Model

The Analysis of Fitness Index in Table 4 shows Measurements of Constructive Model Family Economy has reached the level level of Compatibility Level as shown in Table 1 above. This means Building Validity for this construction has been achieved (Hossen et al., 2023). The Measurement Model for the construction of the Family Economy has reached the level of Compatibility Index. This means Building Validity for this construct has been achieved (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016).

Table 4 Analysis to Determine Construct Validity						
Name Category Name Index Index value Research Findings						
1. Absolute fit	RMSEA	0.048	Reached the set level			
2. Incremental fit	CFI	0.996	Reached the set level			
3. Parsimonious fit	ChiSq/df	1.595	Reached the set level			

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Figure 3. Layout Measurement Models of Family Economy

CFA Analysis for Student Prayer Practice Model

The Analysis of Fitness Index in Table 5 shows Measurements of Constructive Model Student Prayer Practice has reached the level level of Compatibility Level as shown in Table 1 above. This means Building Validity for this construction has been achieved (Rahman, Hossain, et al., 2025). The Measurement Model for the construction of the Student Prayer Practice has reached the level of

Table 5 Analysis to Determine Construct Valiality					
Name Category Name Index Index value Research Findings					
1. Absolute fit	RMSEA	0.063	Reached the set level		
2. Incremental fit	CFI	0.990	Reached the set level		
3. Parsimonious fit	ChiSq/df	2.026	Reached the set level		





Figure 4. Layout Measurement Models of Student Prayer Practice

Confirmation Factor Analysis of All Measurement Models (Pooled CFA)

The Confirmation Factor Analysis (CFA) is required to evaluate the correlation value between constructs in the Discriminant Validity procedure (Rahman, Ismail, et al., 2025). If the correlation value between constructs exceeds 0.85, both constructs are said to be excessive (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016; Hoque et al., 2017). The procedural findings of Combined Factor Confirmation (Pooled CFA) are shown in Figure 5. As always, the value on a singleheaded arrow is the weighting factor of each item, while the value on the double-headed arrow is the correlation between the constructs. Through the Combined Validity Factor Analysis method, only one model of the compatibility index represents all the constructed constructs. The findings from Table 6 show the three categories of model compatibility indexes for all constructs model have been achieved.

Table 6 Comparison of Value Index Models for Three Compatibility Categories					
Name Category Name Index Index value Research Findings					
1. Absolute fit	RMSEA	0.074	Reached the set level		
2. Incremental fit	CFI	0.927	Reached the set level		
3. Parsimonious fit	ChiSq/df	2.401	Reached the set level		

Table 6 Comparison of Vo	lue Index Models for Three	Compatibility Categories
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Figure 5. Findings of Results from the CFA Construct Combinations Procedure (Pooled Construct CFA)

Another requirement of the validity that all constructs in the model need is Discrimination Validity. Discriminatory validity is necessary to prove that all constructs in the model do not have a strong relationship with each other causing multicollinearity problems (Awang, 2015; Awang et al., 2015a; Chik et al., 2024; Kashif et al., 2016; Hoque et al., 2017). This verification requires researchers to develop the Discrimination Index Validity Summary table. Table 7 shows the Summary of Discrimination Validity Index among all constructs in the model. Root values of the Index of Concentration Validity (AVE) for each construct on the diagonal matrix. Another value in the table is the correlation between the two constructs. According to Awang (2015); Awang et al. (2015a); Chik et al. (2024); Hoque et al. (2017); Kashif et al. (2016), Discrimination Validity will be achieved if all the root values of convergence validity (AVE) (Diagonal) are greater than other values of both rows and columns. Findings from Table 7 show Discrimination Validity for all constructions in the model achieved.

Table 7 Summary of Discrimination Validity Index							
Construct Educational Religious Family Student F							
	Economy	Practice					
Educational status	0.834						
Religious Knowledge	0.530	0.820					
Family Economy	0.380	0.710	0.851				
Student Prayer Practice	0.500	0.760	0.700	0.849			

Analysis of the Impact between Constructs Educational Status, Religious Knowledge and Family Economy on Student Prayer Practice

Analysis by using SEM yields a standard regression value between the construct and the usual regression value and both have their own utility. Figure 6 shows the standardized estimates regression weight findings, whereas Figure 7 shows a typical unstandardized estimates regression value as a result of the SEM procedure. An important summary of the SEM findings in Figure 6 (standardized estimates regression):

2) The correlation value between two free constructs on the model shown by double-headed arrows is as follows. The correlation between ES and RK is 0.47, ES and FE is 0.42 and RK and FE is 0.70. This shows that the SEM model is valid and has no multicollinearity problem.



Figure 6. SEM Findings Indicate the Standardized Regression Value between Constructs



Figure 7. SEM Findings Indicate the Unstandardized Regression Value between Constructs

Figure 7 shows the findings of regression values between the constructs in the model, to build the required regression equation and to test the next hypothesis. An important summary of the SEM findings in Figure 7 (Unstandardized estimates regression value). Regression equations for ES, RK, FE and SPP are as follows:

SPP = 0.19ES + 0.46RK + 0.27FE (R² = 0.67)

Furthermore, the researcher will test every hypothesis proposed in this research. Table 8 shows the approximation of the direct effects of the effects of each independent construct on the dependent construct in the model as shown in Figure 7 above.

Table	o negri	ession coejjic	ients betwee	en consti	uct vuiue		<i>μ</i> οιπτ <u>γ</u> (μ)
Construct		Construct	Estimate	S.E.	C.R.	Р	Label
SPP	<	ES	0.191	0.060	7.809	***	Significant
SPP	<	RK	0.456	0.072	2.561	* * *	Significant
SPP	<	FE	0.270	0.066	5.057	***	Significant

Table & Regression Coefficients between Construct Value and Probability (n)

*** Significant value at the level of significance, p<0.001

Table 9 shows the results of hypothesis testing of the direct effect of independent construct on dependent construct. Hypothesis testing in Table 9 is based on the SEM findings from Figure 7 above.

Table 9 Hypothesis Test of Direct Impact between Constructs



Direct Effect Hypothesis	Р	Decision
H ₁ : The status of family education has a significant direct impact on the practices of the Setiu District Primary School students	0.000	Supported
H ₂ : Family religious knowledge has a significant direct impact on the practices of the Setiu District Primary School students.	0.000	Supported
H ₃ : The family economy has a significant direct impact on the practice of prayer of the Setiu District Primary school students.	0.000	Supported

Impact of Educational Status on Student Prayer Practice

Educational status has a significant direct impact on the Student Prayer Practice with estimated regression value (β) is 0.191 at significant level 0.000 (Estimate=0.191, SE=0.060, CR=7.809, p<0.05). This means that the construct of educational status has a positive and significant influence on the construct of Student Prayer Practice. This means that if the educational status increased by 1 unit, the Student Prayer Practice will increase by 0.191 units. The findings of this study indicate that the construct of Student has a positive and significant influence on the construct of educational status has a positive and significant influence on the rayer Practice.

Impact of Religious Knowledge on Student Prayer Practice

Religious Knowledge has a significant direct impact on the Student Prayer Practice with an estimate of regression value (β) is 0.456 at a significant level of 0.000, (Estimate=0.456, SE=0.072, CR=2.561, p<0.05). This means that the construct of Religious Knowledge has a positive and significant influence on the construct of Student Prayer Practice. This means that if the Religious Knowledge increases by 1 unit, the Student Prayer Practice will increase by 0.456 units. The findings of this study indicate that the construct of Religious Knowledge has a positive and significant influence on the construct of Religious Knowledge has a positive and significant that the construct of Religious Knowledge has a positive and significant influence on the construct of Student Prayer Practice.

Impact of Family Economy on Student Prayer Practice

Family Economy has a significant direct impact on the Student Prayer Practice with an estimate of regression value (β) is 0.270 at a significant level of 0.000 (Estimation=0.270, SE=0.066, CR=5.057, p<0.05). This means that the construct of Family Economy has a positive and significant influence on the construct of Student Prayer Practice. This means that if the Family Economy increased by 1 unit, Student Prayer Practice will increase by 0.270 units. The findings of this study indicate that the construct of Family Economy has a positive and significant influence on the construct of Student Prayer Practice.

CONCLUSION

Overall, the CFA analysis carried out on the measurement model for the construction of educational status, religious knowledge, family economy and student prayer practice, has been shown to have reached the fitness index. While the combined factorization analysis of all measurement models (Pooled CFA) shows that the three categories of model compatibility indexes for all models of constructs have been achieved and discriminant validity for all constructs in the model has also been achieved. Inference analysis findings also show educational status, religious knowledge and family economy, have a positive and significant influence on student prayer practice. This shows that family education, especially in religious knowledge and economic family, plays a role in the practice of prayer in primary schools.

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REFERENCES

- Alias, H & Hartini Husain (2017). Structural Equation Modelling (SEM) & manual AMOS graphic (edisi Bahasa Melayu) Modul 1.
- Awang, Z. (2015). SEM Made Simple: A Gentle Approach to Learning Structural Equation Modeling. Bandar Baru Bangi, MPWS Rich Resources.
- Awang, Z., Afthanorhan, A., Mohamad, M., & Asri, M. A. M. (2015a). An evaluation of measurement model for medical tourism research: the confirmatory factor analysis approach. *International Journal of Tourism Policy*, 6(1), 29-45.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS and SIMPLIS: Basic concepts, applications and programming.* Mahwah, New Jersey: Lawrence Erlbaum Assiociates.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Eribaum Associates.
- Byrne, B. M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.
- Chik, Z., & Abdullah, A. H. (2018). Developing and validating instruments for measurement of motivation, learning styles and learning disciplines for academic achievement. *International Journal of Academic Research in Business and Social Sciences*, 8(4), 594–605.
- Chik, Z., & Abdullah, A. H. (2018). Effect of motivation, learning style and discipline learn about academic achievement Additional Mathematics. *International Journal of Academic Research in Business and Social Sciences*, 8(4), 772–787.
- Chik, Z., Abdullah, A. H., Ismail, M. S. & Mohd Noor, A. Z. (2024). Impact of Industrial Revolution 4.0 (IR4.0) Knowledge, Application Learning, University Policy, Commitment to Study and Motivation on Assimilate IR4.0 in Education. *Journal of Economics, Finance and Management Studies*, 7 (4), 3884 – 3889.
- Chua, Y. P. (2014d). Kaedah dan statistik penyelidikan: Ujian regresi, analisis faktor, dan analisis SEM, Buku 5 (edisi 2). Selangor: McGraw-Hill Education (Malaysia) Sdn. Bhd.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivatiate data analysis* (6th ed.). New Jersey: Pearson Education International.
- Hossen, M. S. (2023). Triumphing in the Art of Aging: Key Determinants. Int J Geriatr Gerontol, 7(166), 2577–2748.
- Hoque, A.S.M.M, Awang, Z., Jusoff, K., Salleh, F., and Muda, H (2017). Social Business Efficiency: Instrument Development and Validation Procedure using Structural Equation Modelling. International Business Management, 11(1), 222-231.
- Hossen, M. S., & Salleh, S. F. B. (2024). Social influences on the psychological well-being of elderly individuals. *Journal of Humanities and Applied Social Sciences*, 6(4), 1–18. <u>https://www.emerald.com/insight/content/doi/10.1108/jhass-01-2024-0010/full/html</u>
- Rahman, M. K., Hossain, M. A., Ismail, N. A., Hossen, M. S., & Sultana, M. (2025). Determinants of students' adoption of AI chatbots in higher education: the moderating role of tech readiness. *Interactive Technology and Smart Education*.
- Rahman, M. K., Ismail, N. A., Hossain, M. A., & Hossen, M. S. (2025). Students' mindset to adopt AI chatbots for effectiveness of online learning in higher education. *Future Business Journal*, *11*(1), 30.

- Kashif, M., Samsi, S. Z. M., Awang, Z., & Mohamad, M. (2016). EXQ: measurement of healthcare experience quality in Malaysian settings: A contextualist perspective. *International Journal of Pharmaceutical and Healthcare Marketing*, *10*(1), 27-47.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York: The Guilford Press.
- Hossen, M. S., Pauzi, H. B. M., & Salleh, S. F. B. (2023). Enhancing Elderly Well-being Through Age-Friendly Community, Social Engagement and Social Support. *American J Sci Edu Re: AJSER-135*.
- Hossen, M. S., & Pauzi, H. M. (2025). Bibliometric Analysis of Social Support for the Older Adults. *Ageing International*, *50*(1), 1–24.
- Schumucker, R. E. & Lomax, R. (2004). *A beginner's guide to structural equation modeling* (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaun Associates Publishers.
- Usop, R., Zainol, F. A., Chik, Z., Daud, W. N. W., Rashid, N., & Afthanorhan, A. (2018). Competitive Advantage and Performance: Empirical Investigation on Demographic Factors of Malaysian Hotel Entrepreneurs. *International Journal of Academic Research in Business and Social Sciences*, 8(12), 810–819.



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