icrrd
ICRRD QUALITY INDEX RESEARCH JOURNAL
INTERNATIONAL CENTER FOR RESEARCH AND RESOURCES DEVELOPMENT
article
ISSN Number: 2773-5958, https://doi.org/10.53272/icrrd, www.icrrd.com

Developing and Validating Instruments for Measuring System Economic Conventional, System Economic Islam, Marketing Digital and Perfection Gold Marketing

Md Shuhaimi Ismail[1], Razi Yaakob[2*], Zamri Chik[3]

[1 2] Faculty of General Studies and Further Education, Universiti Sultan Zainal Abidin, Gong Badak Campus, 21300 Kuala Terengganu, Terengganu, Malaysia
[3] Faculty of Islamic Contemporary Studies, Universiti Sultan Zainal Abidin, Gong Badak Campus,21300 Kuala Terengganu, Terengganu, Malaysia

**Corresponding author; Email: raziyaakob@unisza.edu.my*

Received: 10 February 2025 **Accepted:** 03 March, 2025
Revision: 19 March 2025 **Published:** 14 April 2025. **Vol**-6, **Issue**-2

Cite as: Ismail *et al*. (2025). Developing and Validating Instruments for Measuring System Economic Conventional, System Economic Islam, Marketing Digital and Perfection Gold Marketing. *ICRRD Journal, 6*(2), 142-155.

Abstract*:* The rapid development of information technology invites us to move forward quickly in line with the progress of the times. Business systems and concepts in the field of product marketing are now thriving beyond national and continental boundaries. The use of Digital Marketing Systems has torn apart traditional marketing systems. Local marketing has changed to global marketing, from a small business scale to a larger and wider scale. This study was conducted to develop and validate an instrument based on the Exploratory Factor Analysis (EFA) process for measuring the constructs System Economic Conventional, System Economic Islam, Marketing Digital and Perfection Gold Marketing. This study uses quantitative research methods based on Structural Equation Modeling (SEM) to analyze various relationships between variables in the study model. Before the data is analyzed using SEM, EFA is carried out to identify the appropriateness of the items used in the research instrument. This study describes in detail the procedure of conducting EFA analysis for each construct. The findings of this study show validity values based on Kaiser-Meyer-Olkin (KMO), Total Variance Explained (TVE), Factor Loading and reliability values based on Cronbach's Alpha, have met all the required values.

Keywords: Validity, Reliability, System Economic Conventional, System Economic Islam, Marketing Digital.

INTRODUCTION

In the construction and evaluation of economic theory today, western economic philosophy is used as the starting point for world economic philosophy. For the study of improving the economic philosophy used by the Muslim community, the study of Islamic economic philosophy is needed and used to strengthen the existing conventional economic philosophy as a comparison and to see the effectiveness of creating the elements of expansion and development in the construction of an up-to-date economic philosophy. The construction of this theory should include research from the

perspective of tassawur (worldview), ontology, epistomology and axiology which differ in philosophy. Islamic transactions are often misunderstood and criticized trivially because the understanding of the implementation is not clear about the difference between the concept of implementation and conventional transactions. The negative perception of the ability of Islamic teachings from non-Muslims as well as from Muslims themselves failed to play a role in explaining the confusion and confusion. Now it is still found that people do not or lack understanding of the concept of real Islamic muamalat. The concept of Islamic economic development is inclusive as outlined by al-Quran and al-Sunnah which calls on its people to progress in all aspects of life. The progress demanded includes development in the economic and financial fields. These advances are material and spiritual, including not only economic development, but also human, social, cultural development and so on.

The concept of economic development according to the Islamic perspective put forward by Islamic scholars and scholars is different from the concept of conventional economic development expressed by western thought. The notion of well-being and success in the context of the western economy is assessed by measuring the individual's material ability to satisfy various needs for goods and services alone. Or in short, only evaluate the material profit. Such a view is different from the concept of Islamic economics. Human will by nature, is without limits. The ethical value of Islamic economics reduces human need for excessive material things. Therefore, the problem of waste, race for status, debt culture and inflation causing various social problems can be avoided. The Qur'an emphasizes the welfare of the poor and low-income groups.

Explortory Factor Analysis (EFA)

EFA is conducted to identify some components that exist in the set of questionnaires that have been formed. EFA is a statistical technique that transforms a set of original construct data linearly into a set of smaller constructs that can give a comprehensive picture of all the information contained in the original construct (Duntemen, 1989). The purpose of EFA is to reduce the dimensions of the original data to several smaller components that can be interpreted more easily and meaningfully (Duntemen, 1989; Lewis-Beck, 1994 & Field, 2006). According to Tabachnick and Fidell (2007), EFA needs to go through several stages. The first stage calculates the correlation matrix between all the factor-analyzed constructs. The next stage involves extracting some factors from the correlation matrix and determining the number of factors formed (Hossen & Mohd Pauzi, 2023). The rotation of the factors is done to improve the interpretation so that the factors are more meaningful and can be interpreted. The final and most important stage in factor analysis is to interpret the results of the factors obtained and give an appropriate name to each factor (Rana et al., 2024).

According to Chik & Abdullah (2018) and Hoque et al (2017), if researchers adapt instruments that have been built by previous researchers and modify statements to fit the current study, then they need to re-run the EFA procedure. This is because the current study area may be different from previous studies, or the current study population is significantly different from previous studies in terms of socioeconomic status, race and culture (Rahman, Ismail, et al., 2025). Thus, there may be some items that have been constructed before, no longer suitable for the current study or there may also be a different item structure in the current study compared to the structure in the previous study. Therefore, researchers need to recalculate the Internal Reliability value of the current instrument, which is the new Cronbach's Alpha value (Chik & Abdullah, 2018; Hoque et al., 2017). In this study, the researcher conducted a pilot study on 100 gold buyers and re-conducted EFA on the items that measure the construct (Rahman, Hossain, et al., 2025).

FINDINGS

Exploratory Factor Analysis (EFA) for System Economic Conventional Construct

Each item in the System Economic Conventional construct uses a total of 10 items and is labeled EK1 to EK10. Next, the use of an interval scale for measuring the items is between one (1) (Strongly Disagree) to 10 (Strongly Agree). The EFA procedure using the Principal Component Analysis (PCA) method with Varimax Rotation was conducted on 10 items that measure the System Economic Conventional construct. The results of Table 1 below show that the value of Bartlet's Test is significant (P-Value < 0.05). Measure of Sampling Adequacy by Kaiser-Meyer-Olkin (KMO) is 0.872 which is above the minimum value of 0.6 (Chik & Abdullah, 2018; Hoque et al., 2017). Both of these achievements (Bartlet's Test significant, & KMO value>0.6) reflect the observed data is suitable for the next procedure in EFA (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 1: KMO Values and Bartlet's Test for System Economic Conventional Construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.872
Bartlett's Test of Sphericity	Approx. Chi-Square	1288.841
	df	41
	Sig.	0.000

Total Variance Explained (TVE) is important for researchers to know what percentage of the items used can measure a research construct. Table 2 below shows the total variance value estimated by the items used to measure the System Economic Conventional construct (Hossen et al., 2023). Reading from Table 2 below found that System Economic Conventional construct measured using 10 items in one component can measure System Economic Conventional construct as much as 88.370%. This value is sufficient because it exceeds the minimum requirement of 60% (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 2: Total Variance Explained for System Economic Conventional Construct

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	5.470	88.370	88.370

Findings from Table 2 above show that System Economic Conventional construct is measured by only one component. Thus, the researcher wants to know the selected items to measure the component. Table 3 below shows the distribution of items accepted to measure System Economic Conventional construct. All items have a factor loading value exceeding the minimum limit of 0.6 and items that are less than 0.6 should be discarded because they do not contribute to the measurement of the construct (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 3: Factor Loading for One (1) Component System Economic Conventional Construct

Component Matrix[a]	
Items	Component
EK1	0.918
EK2	0.961
EK3	0.921
EK4	0.964
EK5	0.991
EK6	0.967
EK7	0.918
EK8	0.911
EK9	0.971
EK10	0.928

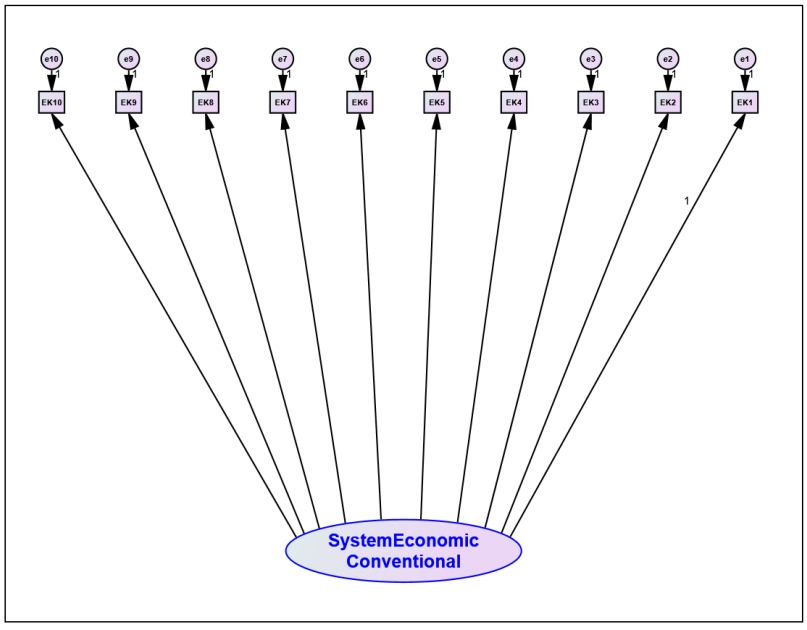

Figure 1: Position of Components and Items for System Economic Conventional Construct (Before and After EFA)

Another piece of information that researchers need to report is the reliability value of the items that have been built to measure that construct. The measure of instrument reliability is estimated through

Cronbach's Alpha value that exceeds the minimum limit of 0.7 to be adopted in the study. Table 4 below shows the value of Cronbach's Alpha equal to 0.977, for each item in the Conventional System Economy construct that exceeds 0.7 and can be used in this study (Chik & Abdullah, 2018 and Hoque et al., 2017).

Table 4: Cronbach's Alpha Value for Each Item in the System Economic Conventional Construct

Component	Number of Items	Cronbach's Alpha
1	10	0.977

Exploratory Factor Analysis (EFA) for System Economic Islam Construct

Each item in the System Economic Islam construct uses a total of 10 items and is labeled EI1 to EI10. Next, the use of an interval scale for measuring the items is between one (1) (Strongly Disagree) to 10 (Strongly Agree). The EFA procedure using the Principal Component Analysis (PCA) method with Varimax Rotation was conducted on 10 items that measure the System Economic Islam construct (Hossen & Salleh, 2024). The results of Table 5 below show that the value of Bartlet's Test is significant (P-Value < 0.05). Measure of Sampling Adequacy by Kaiser-Meyer-Olkin (KMO) is 0.943 which is above the minimum value of 0.6 (Chik & Abdullah, 2018; Hoque et al., 2017). Both of these achievements (Bartlet's Test significant, & KMO value>0.6) reflect the observed data is suitable for the next procedure in EFA (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 5: KMO Values and Bartlet's Test for System Economic Islam Construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.943
Bartlett's Test of Sphericity	Approx. Chi-Square	1176.684
	df	41
	Sig.	0.000

Total Variance Explained (TVE) is important for researchers to know what percentage of the items used can measure a research construct. Table 6 below shows the total variance value estimated by the items used to measure the System Economic Islam construct. Reading from Table 6 below found that Application Learning (Software) construct measured using 10 items in one component can measure System Economic Islam construct as much as 72.544%. This value is sufficient because it exceeds the minimum requirement of 60% (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 6: Total Variance Explained for System Economic Islam Construct

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	6.529	72.544	72.544

Findings from Table 6 above show that System Economic Islam construct is measured by only one component. Thus, the researcher wants to know the selected items to measure the component. Table 7 below shows the distribution of items accepted to measure System Economic Islam construct. All items have a factor loading value exceeding the minimum limit of 0.6 and items that are less than 0.6 should be discarded because they do not contribute to the measurement of the construct (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 7: Factor Loading for One (1) Component System Economic Islam Construct

Component Matrix[a]	
Items	Component
EI1	0.911
EI2	0.961
EI3	0.959
EI4	0.981
EI5	0.993
EI6	0.958
EI7	0.919
EI8	0.952
EI9	0.973
EI10	0.942

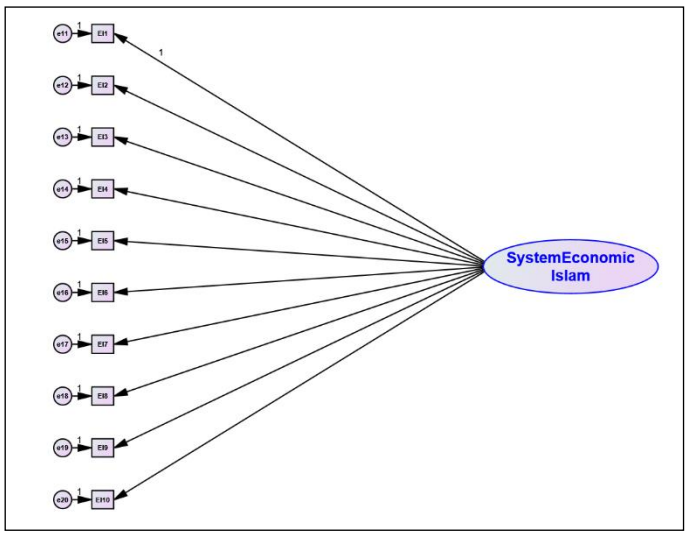

Figure 2: Position of Components and Items for System Economic Islam Construct (Before and After EFA)

Another piece of information that researchers need to report is the reliability value of the items that have been built to measure that construct. The measure of instrument reliability is estimated through Cronbach's Alpha value that exceeds the minimum limit of 0.7 to be adopted in the study (Hossen & Pauzi, 2025). Table 8 below shows the Cronbach's Alpha equal to 0.911 for each item in the System Economic Islam construct that exceeds 0.7 and can be used in this study (Chik & Abdullah, 2018 and Hoque et al., 2017).

Table 8: Cronbach's Alpha Value for Each Item in the System Economic Islam Construct

Component	Number of Items	Cronbach's Alpha
1	10	0.911

Exploratory Factor Analysis (EFA) for Marketing Digital Construct

Each item in the Marketing Digital construct uses a total of 10 items and is labeled PD1 to PD10. Next, the use of an interval scale for measuring the items is between one (1) (Strongly Disagree) to 10 (Strongly Agree). The EFA procedure using the Principal Component Analysis (PCA) method with Varimax Rotation was conducted on 10 items that measure the Marketing Digital construct. The results of Table 9 below show that the value of Bartlet's Test is significant (P-Value < 0.05). Measure of Sampling Adequacy by Kaiser-Meyer-Olkin (KMO) is 0.888 which is above the minimum value of 0.6 (Chik & Abdullah, 2018; Hoque et al., 2017). Both of these achievements (Bartlet's Test significant, & KMO value>0.6) reflect the observed data is suitable for the next procedure in EFA (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 9: KMO Values and Bartlet's Test for Marketing Digital Construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.888
Bartlett's Test of Sphericity	Approx. Chi-Square	925.149
	df	42
	Sig.	0.000

Total Variance Explained (TVE) is important for researchers to know what percentage of the items used can measure a research construct. Table 10 below shows the total variance value estimated by the items used to measure the Marketing Digital construct. Reading from Table 10 below found that Marketing Digital construct measured using 10 items in one component can measure Marketing Digital construct as much as 72.955%. This value is sufficient because it exceeds the minimum requirement of 60% (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 10: Total Variance Explained for Marketing Digital Construct

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	3.584	72.955	72.955

Findings from Table 10 above show that Marketing Digital construct is measured by only one component. Thus, the researcher wants to know the selected items to measure the component. Table 11 below shows the distribution of items accepted to measure Marketing Digital construct. All items have a factor loading value exceeding the minimum limit of 0.6 and items that are less than 0.6 should be discarded because they do not contribute to the measurement of the construct (Chik & Abdullah, 2018).

Table 11: Factor Loading for One (1) Component Marketing Digital Construct

Component Matrix[a]	
Items	Component
PD1	0.881
PD2	0.911
PD3	0.815
PD4	0.816
PD5	0.913

PD6	0.893
PD7	0.899
PD8	0.931
PD9	0.873
PD10	0.927

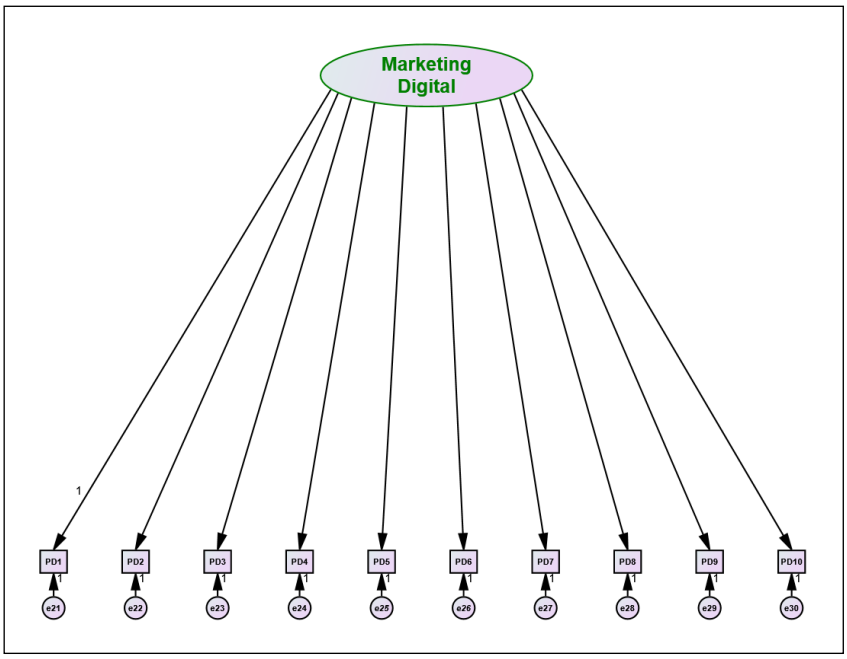

Figure 3: Position of Components and Items for Marketing Digital Construct (Before and After EFA)

Another piece of information that researchers need to report is the reliability value of the items that have been built to measure that construct. The measure of instrument reliability is estimated through Cronbach's Alpha value that exceeds the minimum limit of 0.7 to be adopted in the study. Table 12 below shows the Cronbach's Alpha equal to 0.901, for each item in the Marketing Digital construct that exceeds 0.7 and can be used in this study (Chik & Abdullah, 2018 and Hoque et al., 2017).

Table 12: Cronbach's Alpha Value for Each Item in The Marketing Digital Construct

Component	Number of Items	Cronbach's Alpha
1	10	0.901

Exploratory Factor Analysis (EFA) for Perfection Gold Marketing Construct

Each item in the Perfection Gold Marketing construct uses a total of 10 items and is labeled PE1 to PE10. Next, the use of an interval scale for measuring the items is between one (1) (Strongly Disagree) to 10 (Strongly Agree). The EFA procedure using the Principal Component Analysis (PCA) method with Varimax Rotation was conducted on 10 items that measure the Perfection Gold Marketing construct.

The results of Table 13 below show that the value of Bartlet's Test is significant (P-Value < 0.05). Measure of Sampling Adequacy by Kaiser-Meyer-Olkin (KMO) is 0.951 which is above the minimum value of 0.6 (Chik & Abdullah, 2018; Hoque et al., 2017). Both of these achievements (Bartlet's Test significant, & KMO value>0.6) reflect the observed data is suitable for the next procedure in EFA (Chik & Abdullah, 2018).

Table 13: KMO Values and Bartlet's Test for Perfection Gold Marketing Construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.951
Bartlett's Test of Sphericity	Approx. Chi-Square	1183.542
	df	42
	Sig.	0.000

Total Variance Explained (TVE) is important for researchers to know what percentage of the items used can measure a research construct. Table 14 below shows the total variance value estimated by the items used to measure the Perfection Gold Marketing construct. Reading from Table 14 below found that Perfection Gold Marketing construct measured using 10 items in one component can measure Perfection Gold Marketing construct as much as 85.768%. This value is sufficient because it exceeds the minimum requirement of 60% (Chik & Abdullah, 2018; Hoque et al., 2017).

Table 14: Total Variance Explained for Perfection Gold Marketing Construct

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	4.019	85.768	85.768

Findings from Table 14 above show that Perfection Gold Marketing construct is measured by only one component. Thus, the researcher wants to know the selected items to measure the component. Table 15 below shows the distribution of items accepted to measure Perfection Gold Marketing construct. All items have a factor loading value exceeding the minimum limit of 0.6 and items that are less than 0.6 should be discarded because they do not contribute to the measurement of construct (Chik & Abdullah, 2018).

Table 15: Factor Loading for One (1) Component Perfection Gold Marketing Construct

Component Matrix[a]	
Items	Component
PE1	0.811
PE2	0.891

PE3	0.827
PE4	0.841
PE5	0.883
PE6	0.872
PE7	0.867
PE8	0.838
PE9	0.864
PE10	0.895

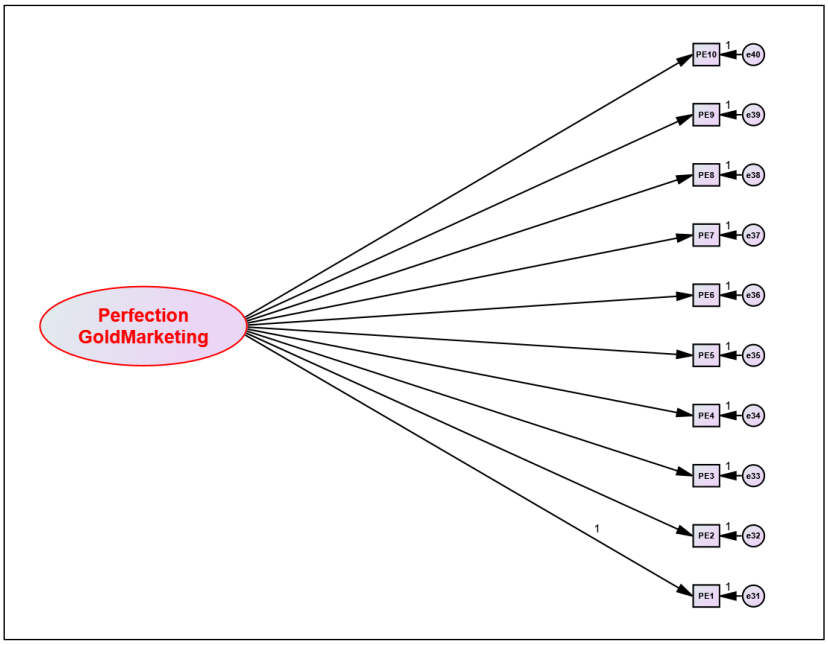

Figure 4: Position of Components and Items for Perfection Gold Marketing Construct (Before and After EFA)

Another piece of information that researchers need to report is the reliability value of the items that have been built to measure that construct (Hossen, 2023). The measure of instrument reliability is estimated through Cronbach's Alpha value that exceeds the minimum limit of 0.7 to be adopted in the study. Table 16 below shows the Cronbach's Alpha equal to 0.882, for each item in the Perfection Gold Marketing construct that exceeds 0.7 and can be used in this study (Chik & Abdullah, 2018 and Hoque et al., 2017).

Table 16: Cronbach's Alpha Value for Each Item in the Perfection Gold Marketing Construct

Component	Number of Items	Cronbach's Alpha
1	10	0.882

CONCLUSION

Overall, the requirements of the items in each construct as a whole meet the achievement of Bartlet's Test (significant), KMO value (> 0.6), factor loading value exceeds the minimum limit of 0.6 and Cronbach's Alpha exceeds the minimum limit of 0.7 to be used in the study. This reflects that the items are not set aside and qualified to be used in this study (Chik & Abdullah, 2018). Figure 5 shows all the items in the study model after EFA.

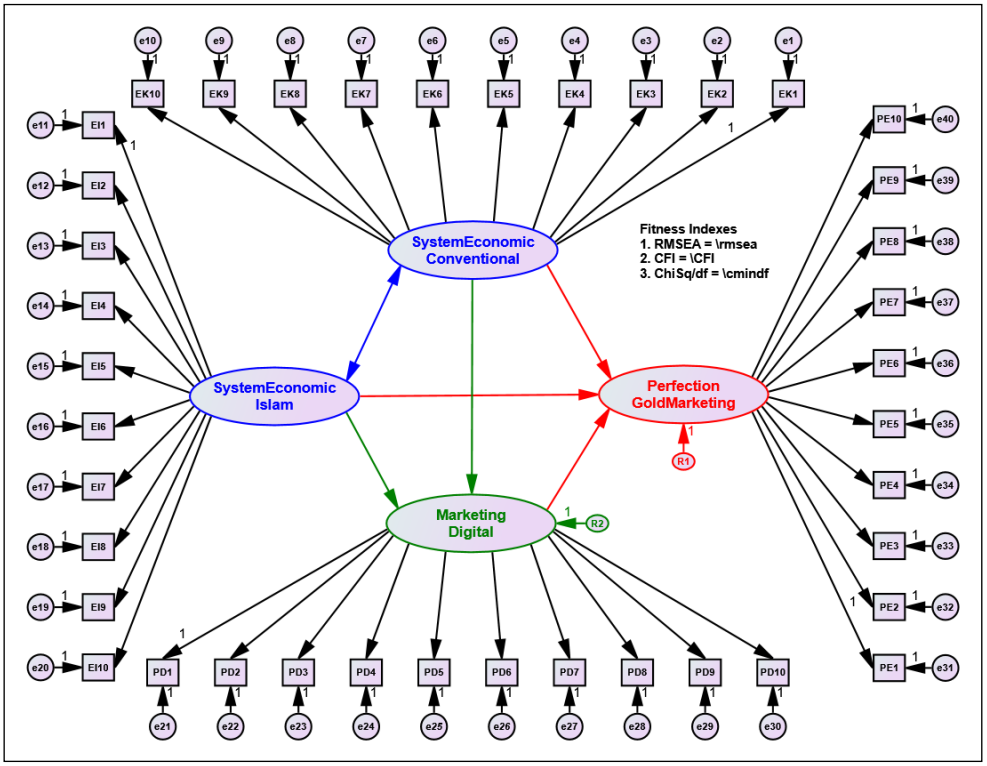

Figure 5: Overall System Economic Conventional, System Economic Islam, Marketing Digital and Perfection Gold Marketing Constructs

Acknowledgement: Special appreciation is owed to Universiti Sultan Zainal Abidin (UniSZA), Research Management, Innovation & Commercialization Centre (RMIC) UniSZA & Ministry of Higher Education Malaysia (MOHE).

Funding: The research did not receive financial assistance from any funding entity.

Conflicts of Interest: The author has no conflicts of interest to disclose concerning this study.

Declarations: This manuscript has not been published to any other journal or online sources.

Data Availability: The author has all the data employed in this research and is open to sharing it upon reasonable request.

References

Awang, Z. (2014). *A handbook on SEM for academicians and practitioners: the step by step practical guides for the beginners*. Bandar Baru Bangi, MPWS Rich Resources.

Awang, Z. (2015). *SEM Made Simple: A gentle approach to learning Structural Equation Modeling*. Bangi: MPWS Rich Publication Sdn. Bhd.

Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107* (2): 238 - 246.

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. https://www.emerald.com/insight/content/doi/10.1108/jhass-01-2024-0010/full/html

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*.

Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In: Bollen, K. A. & Long, J. S. (Eds.) *Testing structural equation models*, 136 - 162. Newburry Park, CA: Sage.

Byrne, B. M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.

Hossen, M. S. (2023). Triumphing in the Art of Aging: Key Determinants. *Int J Geriatr Gerontol*, *7*(166), 2577–2748.

Hossen, M. S., & Mohd Pauzi, H. B. (2023). Embracing Housing Alternatives for the Enhancement of Wellbeing in the Aging Population: A Qualitative Study J Aging Neuro Psychol 4: 120. *DOI*, *10*, 2688–6499.

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.

Duntemen, G. H. (1989). *Principles components analysis: Quantitative applications in the social sciences*. California: Sage Publications, Inc.

Field, A. (2006). *Discovering statistics using SPSS*. London: Sage Publications Ltd.

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.

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.

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.

Rana, M. M., Sultana Jahan, M. S., Rashid, A., & Hossen, M. S. (2024). Poetic Alleviation from Turmoil: A Critical Analysis of Wallace Stevens‟ Selected Poems. *World*, *14*(4), 372.

Lewis-Beck M. S. (1994). *Factor analysis and related techniques*. London: Sage Publication, Ltd. Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics (6th ed.).* Boston, MA: Pearson.