Measurement Validation of Factors Influence SME Business Performance in Malaysia

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Abstract: - Organizations are increasingly under pressure to shift their production methods from traditional to sustainable, reinforcing the requirement to monitor their sustainability performance. The slow performance growth of Malaysian manufacturing companies remains a concern. The goal of this research is to highlighted the measurement used in the Malaysian SME context. Data were collected using survey method. A survey method was employed to collect a total of 1,071 responses in SME firms using proportional stratified sample technique. Using statistical packages for the social sciences (SPSS) version 27, this research focused on data validity and reliability. Findings of factor analysis confirmed 3 factors for the ICT adoption variable, were formed while 1 factor for the innovation variable, 4 factors for the competitiveness variable and 1 factor for the business performance. Only 2 items were dropped due to the weak loadings. Meanwhile the reliability analysis also indicates all the constructs and dimensions achieve good reliability value at more than 0.8. This research demonstrates the measurement validity and reliability of the research variables were inconsistent due to culture setting. This research highlighted the measurement used in the Malaysian SME context. The findings of this research withdraw a conclusion that the validity and reliability of item and construct of this research is proficient and consistent with the previous studies.

Key-Words: - ICT Adoption, Innovation, Competitive Advantage, Business Performance, Small and Medium Enterprise (SME).

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1 Introduction

SMEs are vital to Malaysia's economy [1]. SMEs provide one-third of the country's GDP and employ over 4 million people, or 60% of overall employment [2]. With current development, SMEs will contribute 41% of GDP by 2020 [3]. According to [4], the SME Annual Report 2012/2013 indicates that Malaysian SMEs are doing better than SMEs in developed and high middle-income nations such as Japan, Singapore, and China. Malaysian SMEs are less productive than SMEs in other high-income nations like Singapore and the US, which are four and seven times more productive [5]. According to the SME Master Plan 2012-2020, 42% of businesses will cease to exist by 2005. Consequently, Malaysian SMEs only have a 58 percent survival rate. By 2005, 16% of large companies had shut down, while 13% of medium and small firms had decreased [6].

The World Bank identifies six factors that influence Malaysian SMEs' success. Human capital development, market access and financial access are a few of these factors. The research found that adoption of innovation and technology has a significant effect on overall productivity. The importance of innovation and technology in promoting the development of Malaysian SMEs is emphasised [6].

Also, competitive advantage is vital and may influence company success. Firms that wish to

survive must continuously adjust to changing market conditions [7]. Previous research [8], showed competitive advantage to be a factor in improving company performance and skills of SMEs with limited resources. Given the country's reliance on SMEs, research is required to assist them improve their performance. Thus, this research aimed to validate the measurement of ICT adoption, innovation, competitive advantage, and firm performance.

2 Literature Review

2.1 ICT Adoption

[9] Defines ICT adoption as the use of e-commerce and apps to assist businesses in their operations, management, and decision-making. The research measures ICT adoption on three dimensions: technical, organisational, and external. Technological considerations include aspects such as the quality of Internet services, the cost of Internet connection, and security. While the organisational factor dimension is the firm's willingness to adopt new technology in accordance with its strategy and direction. The external assistance dimension refers to external expert, training, and government assistance, while the external factors dimension refers to the assumption of external pressure from consumers, rivals, and the government [10].

2.2 Innovation

The term "innovation" is often used to refer to a newly discovered function, feature, or technology. Other academics associated the word with the specifications of new goods and how consumers may express their identities [11]. Additionally, [12] defined innovation management as the process of discovering and implementing a management function aimed at achieving organisational objectives. Additionally, the relevant literature established that innovation improves an organization's performance [11] [13]. Meanwhile, another research found that a company's capacity to discover, acquire, and complete tasks (including processes, goods, services, management and administration systems, organisational structure, and marketing methods) in a novel and improved manner is associated with innovation [14].

2.3 Competitive Advantage

Competitive advantage refers to substantial economies inside a business that are difficult to duplicate and, when appropriately leveraged, position the business to achieve high performance [15]. Competitive advantage is quantified in this research utilising four dimensions: product differentiation, market sensing, customer market response, and competition market responsiveness. [16]. The first dimension is that differentiated goods relate to distinct items that are the outcome of a variety of skills capable of increasing competitive advantage [16]. The second component is that market sensing refers to the proactive process of acquiring and disseminating information about market requirements and feedback, such as how to understand rivals' roles and capabilities [16][17]. While the third and fourth dimensions are the market reaction of consumers and competitors, which refer to the rapidity with which companies respond to client demands while taking competing offerings into consideration [17][18].

2.4 Business Performance

Successful businesses are critical to the development of emerging countries. Numerous economists see them as an engine that drives their economic, social, and political growth. To thrive in a competitive business climate, every company should function under performance-based criteria [19]. The absolute performance of a corporate entity is defined not only by the organization's internal efficacy in executing the selected strategy, but also by the characteristics of the industry and the organization's own strategy choices [20]. [20] define business performance as the rate of growth in sales, market share, operating profit, profit to sales ratio, cash flow from operations, return on investment, new product development, market development, research and development activities, cost-cutting programmes, and staff development. Business performance measures are subjective, and these comparisons are made based on the expectations of the firm's owner for those things.

3 Methodology

This research employed quantitative approach where it is particularly suitable to determine the relationships between the variables studied because the results of this approach are measurable and objective in nature. In addition, quantitative studies can produce comprehensive, accurate and reliable result [21] [22].

The data of this research were obtained through a questionnaire distributed using survey method.

Due to the large population of this research, the collection of data from the entire population is impractical [22]. As a result, sampling should be carried out to estimate the sample size.

The researcher used a sample size of 375 SME enterprises in Malaysia for this research, based on the sample size determination table created by [23], which assesses it to be a fair number to reflect a population. However, the questionnaire was distributed to 1,071 respondents due to overcoming the problem of low response rate [24][25].

The selection of the research sample was also made based on propotional stratified sampling technique. Propotional stratified sampling has higher statistical efficiency and is easier to perform than unpropotional stratified sampling [26]. An element of fairness or representation that cannot be disputed and is considered practical when the research aims to obtain different information from various stratums [21][27][28].

This research focuses on SMEs in Malaysia's manufacturing industry. The researchers utilised SPSS version 26 to analyse the data in this research. This research's proportional stratified sampling method selects respondents. A total of 1,071 sets of questionnaires were sent to SMEs in Malaysia's manufacturing sector. 175 questionnaires (16.3%) were successfully returned. After data verification and cleaning, only 155 questionnaires could be utilised for analysis in this research.

4 Findings

4.1 Descriptive Analysis

Tables 1 and 2 provide the results of the discussion on the demographic profile of the respondents and the background of the SME business involved in this research. Findings postulates a total of 76 (49.5 percent) male respondents and 79 (51.0 percent) female respondents who took part in this research. A total of 30.3 percent of respondents were aged under 30 years, 32.3 percent were aged between 31 and 40 years, 21.9 percent were aged between 51 and 60 years, and 12.3 percent were aged over 60 years (3.2 per cent).

Table 1. Respondent Profile

Category	Frequency	Percentage (%)
Gender		
1. Male	76	49
2. Female	79	51
Age		
1. Below 30 years	47	30.3
2. 31- 40 years	50	32.3
3. 41- 50 years	34	21.9
4. 51- 60 years	19	12.3
5. 61 years and above	5	3.2
Race		
1. Malay	115	74.2
2. Chinese	30	19.4
3. Indian	5	3.2
4. Others	5	3.2
Maritial Status		
1. Single	41	26.5
2. Married	113	72.9
3. Divorce	1	0.6
Educational Level		
1. Master Degree	9	5.8
2. Bachelor Degree	55	35.5
3. Diploma	51	32.9
4. Secondary School	39	25.2
5. Primary School	1	0.6
Position		
1. Owner	10	6.5
2. Chairman	1	0.6
3. Director	25	16.1
4. CEO	2	1.3
5. Manager	117	75.5
Service Period		
1. Less than 5 years	75	48.4
2. 6 – 10 years	32	20.6
3. 11 - 15 years	16	10.3
4. 16 - 20 years	13	8.4
5. More than 21 years	19	12.3

Following that, the analysis discovered that majority of respondents (74.2 percent) were Malays, followed by Chinese (19.4 percent), Indian (3.2 percent), and other nationalities (3.2 per cent). In terms of marital status, the vast majority of those who answered the survey were married (72.9 percent). According to the findings of the research, most respondents (35.5 percent) had a bachelor's degree, followed by a diploma (32.9 percent), secondary school (25.2 percent), a master's degree (5.8 percent), and only 0.6 percent had completed primary school. The majority of those who answered the questionnaire on behalf of their companies were managers (75.5 percent), directors (16.1 percent), owners (6.5 percent), CEOs (1.3 percent), and the chairman of SME firms accounted for 0.6 percent of all respondents. According to the findings of the research, nearly half of respondents have served less than 5 years (48.4 percent), followed by groups who have served between 6 and 10 years (20.6 percent), 11 to 15 years (10.3 percent), 16 to 20 years (8.4 percent), and more than 21 years (25 percent) (12.3 percent).

Table 2 postulates the distribution of respondents in this research consists of all states in Malaysia. Statistics show that most respondents are from the state of Selangor (30.3 percent), followed by the state of Kedah (18.1 percent) and the Federal Territory of Kuala Lumpur (13.5 percent).

Table 2. SME Profile

Category	Frequency	Percentage (%)
State		
1. Perlis	2	1.3
2. Kedah	28	18.1
3. Pulau Pinang	17	11.0
4. Perak	8	5.2
5. Kuala Lumpur	21	13.5
6. Selangor	47	30.3
7. Negeri Sembilan	5	3.2
8. Melaka	1	0.6
9. Johor	7	4.5
10. Pahang	3	1.9
11. Terengganu	8	5.2
12. Kelantan	1	0.6
13. Sabah	5	3.2
14. Sarawak	2	1.3
Operating Years		
1. Less than 5 years	32	20.6
1. 6 - 10 years	25	16.1
2. 11 - 15 years	23	14.8
3. 16 - 20 years	14	9.0
4. More than 21 years	61	39.4
No of employees		
1. 5 – 75 employees	114	73.5
2. 76 – 200 employees	41	26.5
Subsector		
1. Textiles and apparel	9	5.8
2. Wood and furnitures	6	3.9
3. Food and beverages	70	45.2
4. Chemicals	4	2.6
5. Transport Equipment	13	8.4
6. Metal Prooducts	13	8.4
7. Electrical and electronics	8	5.2
8. Rubber and plastics	8	5.2
9. Non-metal mineral products	1	0.6
10. Machinery equipment	4	2.6
11. Paper and printing	9	5.8
12. Beauty and health (Others)	10	6.5

Meanwhile, respondents from the states of Melaka and Kelantan were the lowest at 0.6 percent each. The results of the analysis found that many firms involved have been operating for more than 21 years (39.4 percent), less than 5 years (20.6 percent), 6 to 10 years (16.1 percent), 11 to 15 years (14.8 percent) and 16 to 20 years. by 9.0 percent. The results of the analysis also showed that the firms involved in this research consisted of small sized SME firms (5 to 75 employees) by 73.5 percent compared to medium sized SME firms (76 to 200 employees) by 26.5 percent.

For this research, the researcher has categorized 23 major sub sectors based on the importance of each sector as proposed by [3]. However, only 12 major sub sectors were successfully categorized for analysis in this research after the respondents returned the questionnaire to the researcher. The results of the research found that firms from the food and beverage sub sector were among the highest percentage at 45.2 percent, while the non-metallic mineral products sub sector was among the lowest at 0.6 percent. For other subsectors involved in this research are shown in the Table 2.

4.2 Factor Analysis

A factor analysis was conducted on all items in each construct of dependent variables (business performance), independent variables (ICT adoption and innovation), and moderating variables (competitive advantage). To verify the measuring scale and calculate the components for each measurement item or dimension [21].

Researchers must meet certain statistical assumptions while analysing the data. First, the item's MSA score must be higher than 0.50 [29]. Second, the KMO number must be higher than 0.60[30]. Third, the Bartletts' test of sphericity must be significant at $p < 0.05$ to establish correlation. Fourth, select the number of variables to be retrieved, as recommended by [29][31][32]. The first method uses eigenvalues. Factors with eigenvalues less than 1 should be discarded.

The second method is to look at the scree plot. Cut off point where the curve pattern changes as it approaches latitude determines optimum amount of components to be extracted [29][31][32]. For each item, the researcher utilised Principal Component Analysis (PCA) to estimate the number of components [30][33] and Varimax rotation operation with a rotation load value of +0.33. The number + 0.33 was selected since the square of this value reflects the total variance change surpassing 10% for the build and it satisfies the minimum factor analysis rotation load criterion [33]. In addition, [29][30] recommended a rotation load of +0.4 for 155 responders. [30] agrees that item removal is possible if item homogeneity or communality is less than 0.3.

This research used 24 questionnaire items to measure ICT adoption variables. The KMO value for ICT adoption variables was 0.918, exceeding the set value of 0.6, and Barlett's test of sphericity [34] was significant at p0.01, with an estimated value of Chi-Square 4535.77 at degrees of freedom 276. Also, the value of homogeneity or communalities is above 0.3. Individual item MSA values of 0.878 to 0.976 also indicate the data matrix is appropriate for factor analysis. The first instrument used in the research of [10], include technical (9 items), organisational (8 items), and external influences (7 items).

Table 3. Result of Factor Analysis for ICT Adoption

		Factor Loading		
		1	2	3
Factor 1: Technology Factor				
Ftechnology14	Internet service providers are readily available (e.g. TMNet, P1 WIMAX, YES, Celcom, Maxis etc..).	0.815		
Ftechnology15	Internet connections are reliable.	0.824		
Ftechnology16	Internet downloading/access speed is fast.	0.815		
Ftechnology17	E-commerce involves low initial set-up costs.	0.725		
Ftechnology18	E-commerce involves low maintenance costs.	0.701		
Ftechnology19	E-commerce involves low access costs.	0.715		
Ftechnology20	E-commerce increases the risk of unauthorized access.	0.815		
Ftechnology21	Online payments pose security risks.	0.672		
Ftechnology22	Computer viruses pose a considerable risk to our firm.	0.820		
Factor 2: Organisation Factor				
Forganization23	Our firm provides adequate funding for implementing e-commerce		0.793	
Forganization24	IT infrastructure is adequate to support e-commerce.		0.873	
Forganization25	Competent manpower is needed to manage e-commerce applications.		0.822	
Forganization26	Adoption of e-commerce is aligned with our firm's business strategy.		0.778	
Forganization27	Adoption of e-commerce is aligned with our firm's marketing strategy		0.757	
Forganization28	Our firm has a tradition of trying out new business technological developments		0.762	
Forganization29	Our firm keeps abreast with the latest technological developments.		0.844	
Forganization30	Our firm feels that the use of e-commerce is voluntary and not compulsory		0.751	
Factor 3: External Factor				
Fexternal31	External e-commerce expertise is readily available.			0.774
Fexternal32	External training in e-commerce is readily available			0.882
Fexternal33	Government support for e-commerce is readily available			0.645
Fexternal34	Customers			0.680
Fexternal35	Suppliers			0.678
Fexternal36	Competitors			0.641
Fexternal37	Government			0.886
Eigenvalues		13.222	3.554	1.367
Percentage Variance		55.091	14.807	5.695
KMO		0.918		

With an eigenvalue of 13.222, technology accounted for 55.091 percent of the overall variance. The factor load for these components ranges from 0.672 to 0.824. The organisational component contributed 14.807% of the variance, with eigenvalues of 3.554. The factor loading varies from 0.751 to 0.873. Third, external variables accounted for 5.695 percent of total variance with 1.367 eigenvalues. It has factor loads of 0.641 to 0.886. The anti-image matrices correlation findings indicated that all variables had adequate loads and were kept in the research. Table 3 illustrates the factor loading values for each construct of ICT adoption variables evaluated using factor analysis.

Meanwhile, contains 10 questionnaire items, and the KMO value is 0.928, exceeding the set value of 0.6, and Barlett's test of sphericity [34] is significant at p0.01, Chi-Square 1028.005 at degrees freedom 45, indicating the items in these variables are correlated. It also exceeds 0.3 for homogeneity and communality. These values indicate that the data matrix is suitable for factor analysis.

Table 4. Factor Analysis Innovation

		Factor Loading 1
Factor 1: Inovation		
Inovation38	Our firm frequently tries out new ideas.	0.765
Inovation39	Our firm introduces a number of new products lines, services, processes or organization/ management systems.	0.829
Inovation40	Our firm is first to market with new products or services	0.610
Inovation41	Our management always seeks out new ways to do things	0.826
Inovation42	Our firm is creative in its methods of operations	0.840
Inovation43	Our firm uses up-to-date technologies	0.739
Inovation44	Our firm develops new market segments	0.816
Inovation45	Our firm uses new marketing methods	0.838
Inovation46	Our firm develops new ways of establishing relationships with customers	0.821
Inovation47	Our firm spends resources on research and development and development for new products, services, or processes	0.744
Eigenvalues		6.175
Variance Percentage		61.749
KMO		0.928
df		45
BTOS Test		1028.005
Sig.		0.000

The measurement scale for the innovation variable The construct innovation variable has one component or factor, according to [14] original tool. The factor loading for these products is 0.610 to 0.840. Total variance contribution was 61.749 percent with an eigenvalue of 6.157. All variables have adequate loads, according to the anti-image matrices correlation findings.

Findings of factor analysis for competitive advantage variable produced a KMO value of 0.793, surpassing the set value of 0.6, and a Chi-Square value of 1689.090 at 36 degrees of freedom, the KMO value for the competitive advantage variable was found to be significantly associated with the KMO value for sphericity [34]. The MSA values varied from 0.744 to 0.943, suggesting that the data matrix for factor analysis was acceptable. The original instrument used in [35] included four components or factors. Product differentiation (3 items), market sensing (4 items), customer response (3 items), and competition responsiveness (3 items) were identified (2 items). Table 5 shows the results of competitive advantage factor analysis.

Table 5. Factor Analysis Competitive Advantage

		Factor Loading			
		1	2	3	4
Factor 1: Market Sensing					
MSensing51	Our ability to track changes in customer needs and wants is good.	0.952			
MSensing52	Our analysis of customer satisfaction with the competitors' products is good.	0.956			
MSensing53	Our surveillance of competitors is good.	0.949			
MSensing54	Our collection of strategic information about customers and competitors for use with strategic planning is good.	0.812			
Factor 2: Customers Market Responsiveness					
CusMR55	Quickness of response to meeting change in customer needs and wants?		0.893		
CusMR56	Response to customer complaints?		0.934		
CusMR57	Efforts to make product/service changes to overcome customer dissatisfaction with existing products?		0.938		
Factor 3: Differentiated Products Development					
DiffPD48	Our products are difficult for competitors to copy.			0.843	
DiffPD49	Our product designs are unique.			0.828	
DiffPD50	Products do not have a significant advantage over those of our competitors.			0.883	
Factor 4: Competitors Market Responsiveness					
CompMR58	Speed of dissemination of information in-house about competitors?				0.939
CompMR59	Response to competitive moves in the market places?				0.945
Eigenvalues		4.327	3.165	1.807	1.124
Variance Percentage		36.062	26.375	15.057	9.364
KMO		0.793			
BTOS Test		1689.09			
df		0			
		66			
Sig.		0.000			

The first factor is that market sensing, with an eigenvalues value of 4.327, contributed 36.062 percent of the overall variance. The factor loading ranges from 0.812 to 0.952 for the elements in this factor. With eigenvalues of 3.165, the second component, customer market responsiveness, generated 26.375 percent of the total variance. The factor loading ranges from 0.893 to 0.938 for the items in this factor. With eigenvalues of 1.807, differentiated product development contributed 15.057 percent of the overall variance. Items in this factor have factor loadings ranging from 0.828 to 0.843. The fourth factor is market responsiveness of competitors, which contributes for 9.364 percent of total variation and has eigenvalues of 1.124. Items in this factor have factor loadings ranging from 0.939 to 0.945. The results of the observations in the anti-image matrix correlation suggested that all factors had sufficient loads and were maintained in the research. As a result, no items were removed. Table 5 shows the factor load values for each construct of competitive advantage variables that were tested using factor analysis tests to determine the content validity of the items.

For the construct of business performance variables, factor analysis was used to determine the content validity of the items, and the test results are shown in Table 6. The measurement scale for the business performance variable consists of 9 items of questionnaire (2 items were issued namely Performance60, Performance61). This is because both items have low/weak factor loading values of 0.088 and 0.178. According to [29][30,] factor loading values exceeding 0.40 were taken into account in this analysis. After reanalysis, the test revealed that the KMO value was 0.904, exceeding the set value of 0.6 and Barlett's test of sphericity [34] was significant at $p < 0.01$ Chi-Square estimated value of 949.045 at 36 degrees of freedom indicating that the items in these variables are correlated.

Table 6. Factor Analysis Business Performance

		Factor Loading 1
Factor 1: Business Performance		
Performance62	Operating profit.	0.798
Performance63	Profits to sales ratio.	0.803
Performance64	Cash flow from operations.	0.829
Performance65	Return on investment.	0.793
Performance66	New product development.	0.763
Performance67	Market development.	0.835
Performance68	Research & development activities.	0.799
Performance69	Cost reduction programs	0.716
Performance70	Personnel development	0.721
Eigenvalues		5.548
Variance Percentage		61.647
KMO		0.904
BTOS Test		949.045
df		36
Sig.		.0000

In addition, the value of uniformity or communalities also gives a value of more than 0.3. MSA (Measure of Sampling Adequacy) values ranging from 0.855 to 0.938 for individual items also suggest that the data matrix is suitable for factor analysis. According to factor analysis, there is one component or factor for business performance, which is consistent with the original instrument used in [20].The factor loading ranges from 0.716 to 0.835 for the elements in this factor. This component was found to contribute for 61.647 percent of the variance change for the business performance variable with eigenvalues of 5.548. Observations results in the anti-image matrix correlation suggested that all factors had sufficient loads and were maintained in the research. As a result, no items were removed.

4.3 Reliability Test

A measurement's reliability is the degree to which the result is steady and consistent across time [22][27]. Overall, the research's Cronbach Alpha

score varied from 0.875 to 0.961, indicating excellent and dependable dependability of research items [30]. The connection between questionnaire questions is shown by Cronbach Alpha values greater than 0.7 [29]. The alpha values for each variable construct are compared to the results of actual and pilot research in Table 7.

Table 7. Cronbach Alpha Values Reliability Tests

Variables	No. of Item	Alpha Values
ICT of Adoption		
i) Technology Factor	9	0.963
ii) Organiation Factor	8	0.936
iii) External Factor	7	0.942
Inovation	10	0.928
Competitive Advantage		
i) Differentiated Products Development	3	0.876
ii) Market Sensing	4	0.939
iii) Customers Market Responsiveness	3	0.961
iv) Competitors Market Responsiveness	2	0.875
Business Performanace	9	0.921

Findings indicates the adjusted item-total correlation for ICT adoption variables is between 0.762 and 0.791, and for technical factors is also between 0.762 and 0.791. Whereas the values of adjusted item-total correlation for organisational and external variables varied from 0.658 to 0.865. The adjusted item-total correlation for innovation varied from 0.540 to 0.794.
The value of adjusted item-total correlation various product development ranged from 0.738 to 0.812. As for market sensing, it ranges from 0.702-0.916, market responsiveness (customers) from 0.902-0.922, and market responsiveness (competitors) from 0.781-0.781. The adjusted item-total correlation for company success varied from 0.648 to 0.784. A corrected item-total correlation value of 0.3 or above is considered excellent by [30], whereas a value of 0.3 or less is considered poor and should be removed. Delete weak entries until the measured variable's Cronbach Alpha value reaches 0.7 [29]. According to [30], all items in the research variables examined had adjusted item-total correlation values above 0.3, which is excellent and acceptable.

5 Conclusion

This research contributes to the measurement of variables that influence the SME firms' performance in Malaysia. According to the findings of the research, the ICT adoption variable has three components or three factors in line with the original instrument as used in the research of [10]. These factors are technological factors (9 items), organizational factors (8 items) and external factors (7 items). As for the innovation variable, factor analysis has revealed that there is only one component or one factor that is innovation, in line with the original instrument as in the research of [14].

For the competitive advantage variable, factor analysis also reported that there were four components or 4 resulting factors, in line with the original instrument as adopted in the [35] research. The factors were named as differentiated product development (3 items), market sensing (4 items), customer market responsiveness (3 items), and competitor market responsiveness (2 items). While for business performance variables, factor analysis has revealed that there is only one component or one factor that is business performance, in line with the original instrument as in the research of [20]. However, (2 items were removed namely Performance60, Performance61) because both items have a low/weak factor load value which is less than 0.40 and the items were deleted in this analysis. Reliability analysis found that the level of reliability or Cronbach Alpha value for each variable in this research was at a good and reliable.

The purpose of this article is to verify the measuring item that was utilized in this research. Following the outcomes of this research findings, it is possible to conclude that the validity and reliability of the items and constructs in this research are competent and compatible with the findings of prior studies.

References:

[1] Mohd Zulkifli Muhammad, Abdul Kamal Char, Mohd Rushdan Yasoa, & Zakiah Hassan, Small and Medium Enterprises (SMEs) Competing in the Global Business Environment: A Case of Malaysia, *International Business Research* 3(1), 2010, pp. 66–75.

[2] Bank Negara Malaysia (2014). Laporan Kestabilan Kewangan dan Sistem Pembayaran 2013. Retrieved from http://www.bnm.gov.my.

[3] SME Corporation Malaysia Official Website, (2015). Laporan Tahunan PKS 2014/15. Retrieved from http://www.smecorp.gov.my.

[4] SME Corporation Malaysia Official Website, (2013). Laporan Tahunan PKS 2012/13. Retrieved from http://www.smecorp.gov.my.

[5] SME Corporation Malaysia Official Website, (2012). Pelan Induk PKS 2012-2020. Retrieved from http://www.smecorp.gov.my

[6] SME Corporation Malaysia Official Website, (2012). Laporan Tahunan SME Corp Malaysia 2011.Retrieved from http://www.smecorp. gov.my

[7] Passemard, D., & Kleiner, B.H. (2000). Competitive advantage in global industries: Management Research News, 23(7/8), 111–117.doi 10.1108/01409170010782307

[8] Sulistyo, H., & Ayuni, S. (2020). Competitive advantages of SMEs: The roles of innovation capability, entrepreneurial orientation, and social capital. Contaduría y administración, 65(1).

[9] Chaffey, D., Edmundson-Bird, D., & Hemphill, T. (2019). Digital business and e-commerce management. Pearson UK.

[10] Thi, L.S. (2006). Eletronic commerce adoption among manufacturing SMEs in Malaysia (Tesis PHD, Loughborough University Institutional Repository, 2006).

[11] Arif, M.R. & Hasan, D., (2021). Relationship Between Innovation Activities and Business Performance: A Case Research in Indonesia. The Journal of Asian Finance, Economics and Business, 8(4), pp.307-315.

[12] Birkinshaw, J., Hamel, G. & Mol, M.J.(2008). Management innovation. *Academy of management Review*, *33*(4), pp.825-845.

[13] Hameed, W.U., Nisar, Q.A. and Wu, H.C., Relationships between external knowledge, internal innovation, firms' open innovation performance, service innovation and business performance in the Pakistani hotel industry. *International Journal of Hospitality Management*, 92, 2021, p.102745.

[14] Yahya Al-Ansari., Pervan S., & Xu. J (2013). Innovation and business performance of SMEs: the case of Dubai. Education, Busines and Society: Contemporary Middle Eastern Issues, 6(3/4), 162-180. doi:10.1108/EBS-04-2013-0012.

[15] Al-naqeeb, M.A.S. and Ismael, I.K., 2021. The Impact of Organizational Silence on a Sustainable Competitive Advantage: A Case Research of the Electrical Industries Company. Mediterranean Journal of Social Sciences, 12(3), pp.34-34.

[16] Ramaswami, S.N., Bhargava, M. & Srivastava, R. (2004). Market-based assets and capabilities, business processes, and financial performance. Marketing Science Institute Report (04-102). Issue One, Working Paper Series.

[17] Day, G.S. (1994a). The capabilities of market-driven organizations. Journal of Marketing, 58(4), 37-52.

[18] Ramaswami, S.N., Bhargava, M. & Srivastava, R. (2006). Market-based assets and capabilities, business processes, and financial performance. ZIBS Technical Report (03-43). Zyman Institute of Brand Science.

[19] Taouab, O. and Issor, Z., 2019. Firm performance: Definition and measurement models. European Scientific Journal, 15(1), pp.93-106.

[20] Gupta, A. K., & Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness. Academy of Management Journal, 27(1), 25-41.

[21] Hair Jr., J. F., Money, A. H., Samouel, P., & Page, M. (2007). Research method for business. West Susssex: John Wiley & Sons.

[22] Zikmund, W. G. (2000). Business Research Method (6th Ed.): Forth Worth, Texas: The Dryden.

[23] Krejcie, R.V. and Morgan, D.W., 1970. Determining sample size for research activities. *Educational and psychological measurement*, *30*(3), pp.607-610.

[24] Sany Sanuri Mohd Mokhtar. (2007). The relationship between market orientation and quality orientation and its impacts on the performance of Malaysia manufacturing firms. (Thesis PHD, Universiti Utara Malaysia, 2007).

[25] Shuhymee Ahmad. (2011). Hubungan antara orientasi keusahawanan, gaya kepimpinan

dan persekitaran luaran dengan prestasi perniagaan: Satu kajian empirikal mengenai PKS di Malaysia (Tesis PHD, Universiti Utara Malaysia, 2011).

[26] Cooper, D. R., & Schindler, P. S. (2006). Business research method: (11th ed). United States: McGraw-Hill International Edition.

[27] Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). Applied business research: Qualitative and quantitative methods. Milton, Old: John Wiley & Son Australia.

[28] Sekaran, U. (2003). Research method for business: A skill-building approach. New York: John Wiley & Sons.

[29] Hair Jr, J.F., 2006. Successful strategies for teaching multivariate statistics. In *Proceedings of the 7th international conference on teaching statistics*.

[30] Pallant, J., 2011. Survival manual. *A step by step guide to data analysis using SPSS*, *4*.

[31] Hair, J.F., Black, W.C., Babin, B., Anderson, R.E. and Tatham, R.L., 1998. Multivariate Data Analysis, 7th Edn New Jersey.

[32] Tabachnick, B.G., Fidell, L.S. and Ullman, J.B., 2007. Using multivariate statistics (Vol. 5, pp. 481-498). Boston, MA: Pearson.

[33] Chua, Y.P., 2009. Advanced research statistics: Regression test, factor analysis and SEM analysis.

[34] Barlett, J., 1954. Rg, Bohr, Vc, Helmendach, Rh, Foster, Gl And Miller, Ma. Amer. J. Physiol, 179(16), pp.343-346.

[35] Martinette, L.A., 2006. The relationship between learning orientation and business performance: The moderating effect of sources of competitive advantage (Vol. 67, No. 11).

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

Nur Yuhainis Ab Wahab was responsible for data curation, formal analysis, methodology, validation, and writing the original draft.

Rusnifaezah Musa was responsible for conceptualization, funding acquisition, project administration, review and editing of the article.

Siti Haryani was responsible for methodology, resources, and supervision.