

IDENTIFYING IMPORTANCE-PERFORMANCE MATRIX ANALYSIS (IPMA) OF INTELLECTUAL CAPITAL AND ISLAMIC WORK ETHICS IN MALAYSIAN SMES

S. M. Zin^{1,2,*}, R. C. Mat¹, K. A. Manaf¹, N. Muhammad¹, F. A. Mansor¹ and M. Z. Hashim¹

¹Faculty of Business and Management, Universiti Teknologi MARA, Kelantan, Malaysia

²Research Institute for Islamic Products and Malay Civilization (INSPIRE), Universiti Sultan

Zainal Abidin, Terengganu, Malaysia

Published online: 15 January 2018

ABSTRACT

The creation of intangible assets such as intellectual capital and Islamic ethics are crucial to cope with firm competitiveness issues. Five components of intellectual capital (human capital, organizational capital, relational capital, spiritual capital and technological capital) and Islamic work ethics were identified to model their impact on SME business performance in Malaysia. In doing so, survey questions from previous studies were adopted and customized to collect data. The sample of 445 SME entrepreneurs was utilized and the data were analyzed using SmartPLS 3.2.6. The results of the study revealed that human capital, organizational capital, technological capital and Islamic work ethics significantly influenced business performance. Then, this study explored the use of the Importance-Performance matrix analysis to identify priority factors that can be enhanced to increase business performance.

Keywords: Importance-Performance Matrix Analysis (IPMA); SME; intellectual capital; Islamic work ethics.

Author Correspondence, e-mail: sakin405@kelantan.uitm.edu.my

doi: <http://dx.doi.org/10.4314/jfas.v10i1s.58>

1. INTRODUCTION

Intellectual capital, the catchword in the economic world, is crucial for sustainability [1] and



considered as the most important resources for competitive organizations in the knowledge-based economy [2]. Accordingly, instilling Islamic work ethics to Muslim SME entrepreneurs is crucial as to assist them gain competitive advantages in an open economic onslaught. A holistic system in Islamic economic business guidelines contains every part of life [3]. Intrinsically, in finding Islamic institutions (for business loan application) for instance, SME entrepreneurs should base it on the encouragement of faith to submit to Allah SWT, not merely following the recent trend to go for something Islamic [4]. Coupled with Islamic work ethics, intellectual capital investment allows firms to gain competitive advantage over their competitors, as it is difficult to imitate.

Intellectual capital is a strategic successful feature for all types of organizations [5], including small and medium enterprises (SMEs). However, compared to large firms, SME labour productivity is quite insignificant. SME's survival rate was about 58%, in which approximately 42% of the business establishments in year 2000 stopped operations by year 2005 [6]. These issues must be fixed to avoid SME entrepreneurs from being bankrupt [7].

Therefore, a research study needs to be conducted in an attempt to know to the associations between intellectual capital, Islamic work ethics and business performance among SME entrepreneurs in Malaysia. In order to postulate intellectual capital and Islamic work ethics within the comprehensive area of entrepreneurship studies, the first section begins by presenting the literature review and hypothesis formulation. In the second section, the paper endeavors to elucidate the methodology and results. This study will also explore the use of the Importance-Performance matrix analysis to identify priority factors that can be enhanced to increase usage. Finally, discussion, implications and limitations are discussed.

2. INTELLECTUAL CAPITAL, ISLAMIC WORK ETHICS AND BUSINESS PERFORMANCE

Despite its multidimensionality, this study has defined intellectual capital as including human capital, organizational capital, relational capital, spiritual capital and technological capital.

Numerous scholars recognize the decisive role of human capital in increasing firm's business performance [8-10]. In [11] discovered that human capital is positively and significantly

related to business performance of the pharmaceutical sector of Jordan. Similarly, in [12] statistical result corroborated a positive relationship between human capital and organizational performance. Furthermore, many researchers support the direct influence of organizational capital on firm performance and enterprise value [13-15]. Likewise, the empirical results of [16] show that organizational capital is positively connected with the performance of the organizations in Malaysia. Besides that, firms need to create and maintain relational capital in order to be successful [17]. In essence, relational capital allows entrepreneurs to enhance their knowledge of opportunities, obtain access to critical resources and deal with business difficulties [18], therefore business profitability is achieved. Spiritual capital is also an important drive to SME business performance, in a way that it raises affirmative greater influence on corporate performance [19]. In [20] also found that spiritual capital and SME business performance have a strong relationship. Moreover, the application of technological capacities is positively correlated with business performance and can give organizations competitive advantage [21]. A study conducted on fables firms in Taiwan found that IT and innovation have positive impact on the organizational performance [22]. Based on the literature review, the following propositions are made:

H1: Human capital has a positive relationship with SME business performance.

H2: Organizational capital has a positive relationship with SME business performance.

H3: Relational capital has a positive relationship with SME business performance.

H4: Spiritual capital has a positive relationship with SME business performance.

H5: Technological capital has a positive relationship with SME business performance.

From the Islamic work ethics perspective, the involvement in entrepreneurship is an obligation [23]. Muslim's desire for profit seeking in entrepreneurship and high business performance is well recognized by Islam [24]. Entrepreneurs can be good Muslims and at the same time rich people. Islamic work ethics denotes business activities undertaken by entrepreneurs, for the purpose of generating profits, in a determined atmosphere; later will result in higher performance and great success [25]. Islamic work ethics influences organizational performance in a positive way [26]. Therefore, to get clearer picture of the relationship between Islamic work ethics and business performance, the following hypothesis

has been developed:

H6: Islamic work ethics have a positive relationship with SME business performance.

Thus, the following hypotheses are posited in Fig. 1.

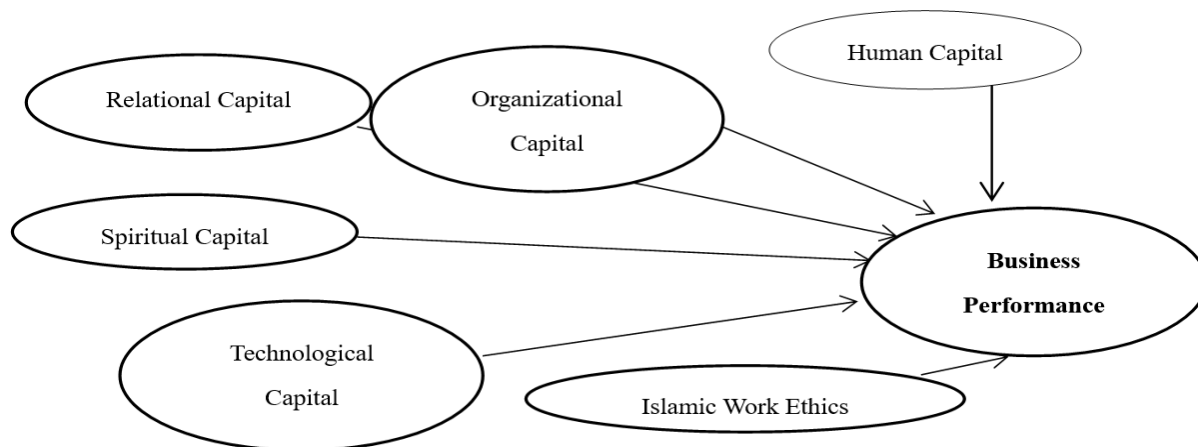


Fig.1. Conceptual model

3. METHODOLOGY

For human capital, organizational capital and relational capital, questionnaires earlier developed and tested by [27] were adapted. Spiritual capital and technological capital were measured using [28]. Items for Islamic work ethics were from [29]. Business performance was measured using the works of [30]. As suggested by [31], all constructs were measured using the same scale which is a 7-point Likert-type scale with anchors on 1 = strongly disagree and 7 = strongly agree. The questionnaire was validated through expert interviews and a panel of practitioners. The reliability of the instrument was further tested to find out whether it consistently measured the study variables on the scales used [32]. Cronbach alpha coefficients results of intellectual capital components and Islamic work ethics together with business performance exhibited that all measures have excellent reliability coefficients ranging from 0.864 to 0.876, which were above 0.75 respectively signify that the scales used were reliable. After going through preliminary evaluations, the data of 445 SMEs in Kelantan are ready for further analysis.

To analyze the research model, the Partial Least Squares–Structural Equation Modeling (PLS-SEM) analysis using SmartPLS 3.2.6 [33]. PLS-SEM model contains two inter-related models; a measurement model and structural model, which are assessed separately in a

two-phase process [34]. To test the significance of the path coefficients and the loadings, a bootstrapping method (1000 resamples) was employed [35]. In the last step, the analysis of importance-performance matrix of path modelling was performed. By assessing IPMA, the impact of exogenous latent variables (human capital, organizational capital, relational capital, spiritual capital, technological capital and Islamic work ethics) with a relatively high importance and relatively low performance on an endogenous latent variable (i.e. business performance) would be identified [36]. Consequently, IPMA results deliver managerial acumens to address and improve the recognized areas with high importance and low performance [37].

4. RESULTS AND DISCUSSION

4.1. Measurement Model

Convergent validity is the extent to which several items assessing the same concept are in agreement [38]. The convergence validity of the measurement is usually determined by observing the loadings, average variance extracted and composite reliability [35]. For this study, the AVE value was higher than 0.50 or indicating an adequate degree of convergent validity, meaning to say that the construct explains more than half (50%) of its indicators' variance. Furthermore, all constructs exhibited composite reliability which is well above the threshold value of 0.7 [34]. Then, researcher utilizes Heterotrait-Monotrait Ratio (HTMT) technique developed by proposed by [39] to determine the discriminant validity of measurement. The result of HTMT inference also shows that the confidence interval does not demonstrate a value of 1 on any of the constructs, which also confirms discriminant validity.

4.2. Structural Model

Structural model shows the causal relationships among constructs in the model (path coefficients and the R^2 value). Together, the R^2 and the path coefficients (beta and significance) indicate how well the data support and hypothesized model [39]. The R^2 for business performance exhibits that human capital, organizational capital, technological capital and Islamic work ethics explained 52.2% of the variance in business performance. Table 1 and Fig. 2 show the results of the structural model from the PLS output. Human capital,

organizational capital, technological capital and Islamic work ethics seem to have impacts on business performance. In contrast, relational capital and spiritual capital do not influence business performance.

Table 1. Path coefficients and confidence interval

Exogenous Constructs	Endogenous Construct	Path (β)	Std. Error	t-Values	Confidence Interval		Decision
					Lower Level (LL)	Upper Level (UL)	
Human Capital	-> Business Performance	0.18	0.053	3.392**	0.087	0.303	Supported
Organizational Capital	-> Business Performance	0.183	0.065	2.828**	0.065	0.316	Supported
Relational Capital	-> Business Performance	-0.005	0.053	0.102	-0.106	0.097	Not Supported
Spiritual Capital	-> Business Performance	0	0.055	0.001	-0.115	0.104	Not Supported
Technological Capital	-> Business Performance	0.326	0.05	6.532**	0.229	0.423	Supported
Islamic Work Ethics	-> Business Performance	0.21	0.048	4.344**	0.106	0.304	Supported

Note: ** $p < 0.01$, * $p < 0.05$.

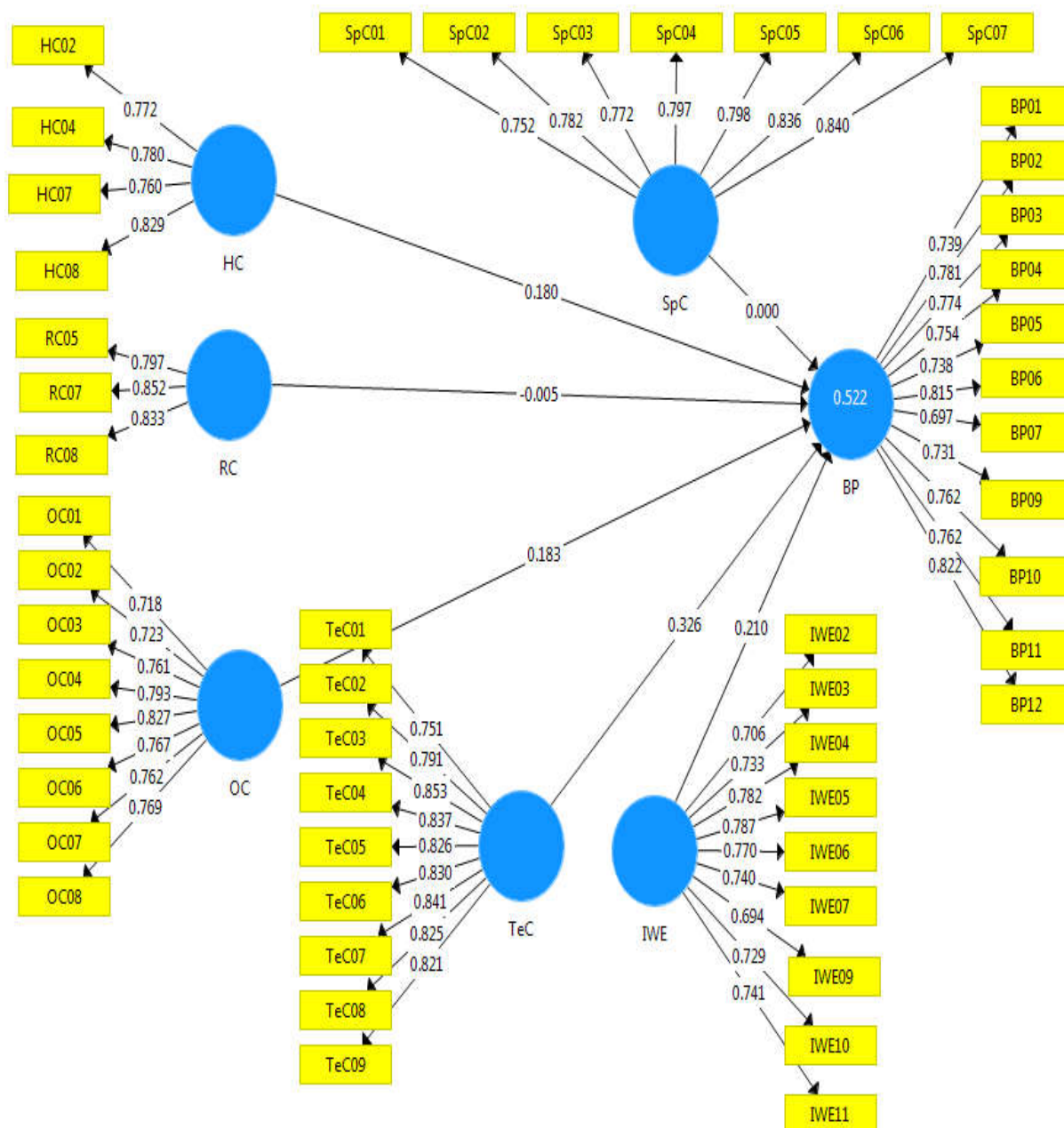


Fig.2. Structural model from the PLS output

Furthermore, this study found that human capital, organizational capital, technological capital and Islamic work ethics influenced business performance significantly. The finding is supported by [40, 42]. Similar to the results of [41, 28], the finding of this study implies that relational capital and spiritual capital are not important predictors of the company’s successful performance. Relational capital incorporates the character and qualities of the relationship or network between individuals, which is frequently categorized through trust and commitment [43]. A likely explanation for this is that SME entrepreneurs failed to gain trust and commitment from shareholders, customers, suppliers and community.

4.3. Importance-Performance Matrix Analysis (IPMA)

Fig. 3 and Table 2 show the IPMA of SME business performance. The IPMA analysis highlighted three most important variables namely Islamic work ethics, human capital and technological capital. Relational capital and spiritual capital are not significantly influencing business performance. Even though organizational capital has high performance, it is not an important variable in the prediction of business performance. Hence, entrepreneurs should not focus much on this capital. Nevertheless, Islamic work ethics reveals the most important and possess the highest performance among the three constructs. SME entrepreneurs should therefore integrate Islamic work ethics into human resource system of their organization.

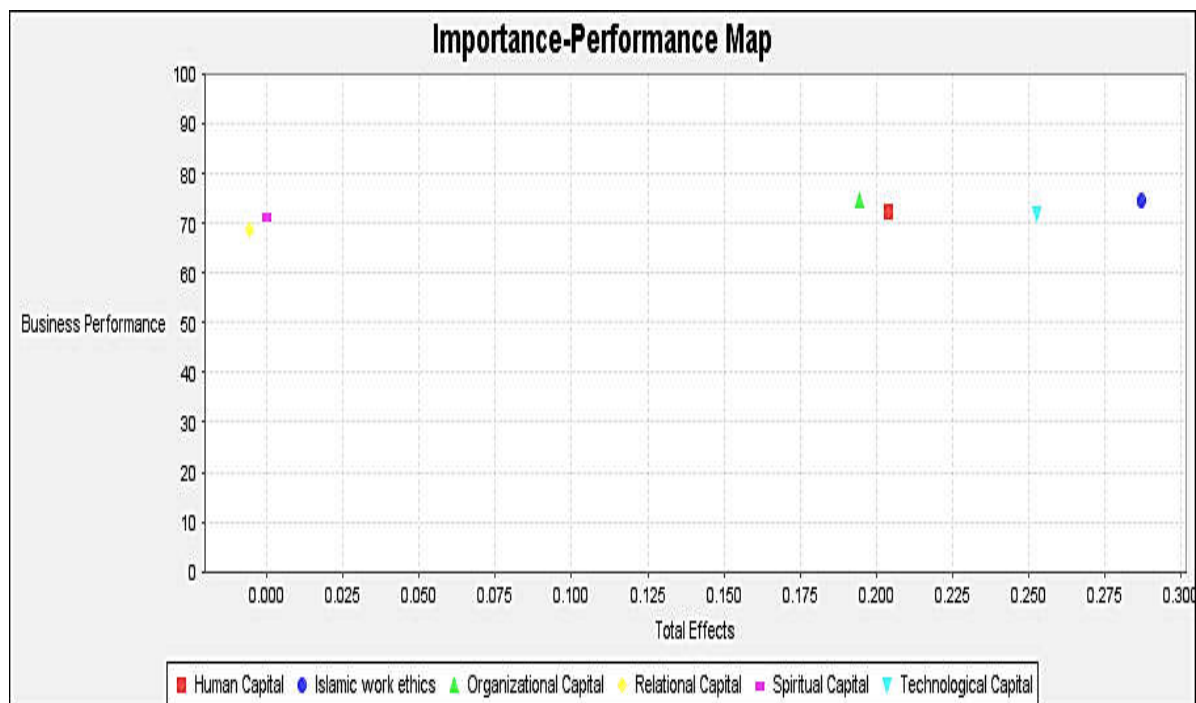


Fig.3. The importance-performance map

Table 2. Importance and performance matrix (IPMA) result

Construct	Importance (Total Effect)	Performance (Index Values)
Human Capital	0.204	72.28
Islamic work ethics	0.287	74.573
Organizational Capital	0.194	74.572
Relational Capital	-0.006	68.832
Spiritual Capital	0	71.193
Technological Capital	0.253	71.76

5. IMPLICATIONS AND LIMITATIONS

For the theoretical implications, not many researchers have previously explored intellectual capital and Islamic work ethics of Malaysian SMEs. So, this study emphasized on the components of intellectual capital and details of Islamic work ethics and expounded their contents which resulted in further improvements. Therefore, it would inspire prevailing consideration of taking a broad view intellectual capital and Islamic work ethics into industries of SMEs. Looking at the practical implications, SME entrepreneurs can utilize the intellectual capital and Islamic work ethics to increase business competitiveness and react to market demand. But, more emphasis should be given to Islamic work ethics since it appears as the most important and highest performance. Finally, policy makers will be able to comprehend the issues of intellectual capital and Islamic work ethics better and offer support for SMEs in their effort to stimulate those internal resources.

The results of this study should be considered in light of the two limitations. First, the sample size of 445 covered respondents from one region in Malaysia (Kelantan) while the other 12 regions were not included due to geographical distance. Second, since the study was conducted in snapshot, additional research efforts are needed to evaluate the validity of the investigated models and our findings across time.

6. REFERENCES

- [1] Chen M C, Cheng S J, Hwang Y. An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 2005, 6(2):159-176
- [2] Muhammad K, Abu Hassan M I, Jamal A N, Adel A. Challenges faced by the small and medium enterprise (SMEs) in Malaysia: An intellectual capital perspectives. *International Journal of Current Research*, 2011, 3(6):398-401
- [3] Juma'h A H, Campus M, Abu-Mounes R N. An introduction to the Islamic perspectives of conducting business. *Revista Empresarial Inter Metro/Inter Metro Business Journal*, 2011, 7(1):58-68
- [4] Adnan A A. Analisis hubungan antara penentu pemilihan bank menurut Muslim ideal

dengan gelagat pemilihan bank Islamik dalam kalangan Muslim di Terengganu. *Jurnal Kemanusiaan*, 2017, 10(2):97-114

[5] Lönnqvist A, Mettänen P. Criteria of sound intellectual capital measures. In 2nd International Workshop on Performance Measurement, 2002, pp. 1-10

[6] SME Corporation Malaysia. Summary SME masterplan 2012-2020: Catalysing growth and income. Kuala Lumpur: SME Corporation Malaysia, 2017

[7] Omar C M, Azmi N M. Factors affecting the success of Bumiputera entrepreneurs in small and medium enterprises (SMEs) in Malaysia. *International Journal of Management Science and Business Administration*, 2015, 1(9):40-45

[8] Zin S M, Adnan A A. How do intellectual capital and Islamic values relate to small business performance? A conceptual framework. *Journal of Applied Environmental and Biological Sciences*, 2016, 6(3S):42-9

[9] Mention A L, Bontis N. Intellectual capital and performance within the banking sector of Luxembourg and Belgium. *Journal of Intellectual Capital*, 2013, 14(2):286-309

[10] Jardon C M, Susana Martos M. Intellectual capital as competitive advantage in emerging clusters in Latin America. *Journal of Intellectual Capital*, 2012, 13(4):462-481

[11] Sharabati A A, Naji Jawad S, Bontis N. Intellectual capital and business performance in the pharmaceutical sector of Jordan. *Management Decision*, 2010, 48(1):105-131

[12] Ahmadi A A, Ahmadi F, Shakeri S. The survey of relationship between Intellectual capital (IC) and Organizational performance (OP) within the National Iranian South Oil Company. *European Journal of Business Management*, 2013, 1(1):12-28

[13] Wang F S, Yuan B. Research on the impact of intellectual capital on corporate value-based on the panel data of companies listed on GEM. *Journal of Computational and Theoretical Nanoscience*, 2017, 14(1):151-156

[14] Aminu M I, Mahmood R, Muharram F M. The intangible resources and small firms' multilevel performance: A partial least squares approach. *Asian Social Science*, 2015, 11(16):187-195

[15] Sydler R, Haefliger S, Pruksa R. Measuring intellectual capital with financial figures: Can we predict firm profitability? *European Management Journal*, 2014, 32(2):244-259

-
- [16] Hashim M J, Osman I, Alhabshi S M. Intellectual capital contribution to organizational performance in Malaysian banking and non-banking sectors. *Advanced Science Letters*, 2017, 23(1):406-409
- [17] Joshi M, Cahill D, Sidhu J, Kansal M. Intellectual capital and financial performance: an evaluation of the Australian financial sector. *Journal of Intellectual Capital*, 2013, 14(2):264-285
- [18] Floyd S W, Wooldridge B. Knowledge creation and social networks in corporate entrepreneurship: The renewal of organizational capability. *Entrepreneurship: Theory and Practice*, 1999, 23(3):123-143
- [19] Khalique M, Isa A H, Shaari JA. Predicting the impact of intellectual capital management on the performance of SMEs in electronics industry in Kuching, Sarawak. *IUP Journal of Knowledge Management*, 2013, 11(4):53-61
- [20] Ariawan, Made S, Djumahir, Ghozali. The role of spiritual capital, human capital, structural capital, and relational capital of SMEs to improving on performance: Study literature. *South East Asia Journal of Contemporary Business, Economics and Law*, 2016, 11(2):87-94
- [21] Kamukama N, Ahiauzu A, Ntayi J M. Competitive advantage: Mediator of intellectual capital and performance. *Journal of Intellectual Capital*, 2011, 12(1):152-164
- [22] Lu W M, Wang W K, Tung W T, Lin F. Capability and efficiency of intellectual capital: The case of fabless companies in Taiwan. *Expert Systems with Applications*, 2010, 37(1):546-555
- [23] Yousef D A. Islamic work ethic-A moderator between organizational commitment and job satisfaction in a cross-cultural context. *Personnel Review*, 2001, 30(2):152-169
- [24] Mohsen N R. Leadership from the Quran, operationalization of concepts and empirical analysis: Relationship between Taqwa, trust and business leadership effectiveness. PhD thesis, Pulau Pinang: University Sains Malaysia, 2007
- [25] Ali A J, Al-Owaihian A. Islamic work ethic: A critical review. *Cross Cultural Management: An International Journal*, 2008, 15(1):5-19
- [26] Kumar N, Che Rose R. Examining the link between Islamic work ethic and innovation

capability. *Journal of Management Development*, 2010, 29(1):79-93

[27] Bontis N. Intellectual capital: An exploratory study that develops measures and models. *Management Decision*, 1998, 36(2):63-76

[28] Khalique M, Md Isa A H. Intellectual capital in SMEs operating in boutique sector in Kuching, Malaysia. *IUP Journal of Management Research*, 2014, 13(2):17-28

[29] Ali A. Scaling an Islamic work ethic. *Journal of Social Psychology*, 1988, 128(5):575-583

[30] Mahmood R. Prestasi perusahaan kecil: Satu kajian perbandingan ke atas program mikro kredit Amanah Ikhtiar Malaysia (AIM) dan Tabung Ekonomi Kumpulan Usaha Niaga (TEKUN). PhD thesis, Kuala Lumpur: Universiti Malaya, 2009

[31] Taylor S, Todd P A. Understanding information technology usage: A test of competing models. *Information Systems Research*, 1995, 6(2):144-176

[32] Nunnally J. *Psychometric methods*. New York: McGraw-Hill, 1978

[33] Ringle C. M., Wende S., Becker J. M. *SmartPLS 3*. Boenningstedt: SmartPLS GmbH, 2015

[34] Hair J F, Ringle C M, Sarstedt M. PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 2011, 19(2):139-152

[35] Gholami R, Sulaiman A B, Ramayah T, Molla A. Senior managers' perception on green information systems (IS) adoption and environmental performance: Results from a field survey. *Information and Management*, 2013, 50(7):431-438

[36] Hock C, Ringle C M, Sarstedt M. Management of multi-purpose stadiums: Importance and performance measurement of service interfaces. *International Journal of Services Technology and Management*, 2010, 14(2-3):188-207

[37] Schloderer M P, Sarstedt M, Ringle C M. The relevance of reputation in the nonprofit sector: The moderating effect of socio-demographic characteristics. *International Journal of Nonprofit and Voluntary Sector Marketing*, 2014, 19(2):110-126

[38] Ramayah T, Rahbar E. Greening the environment through recycling: An empirical study. *Management of Environmental Quality: An International Journal*, 2013, 24(6):782-801

[39] Henseler J, Ringle C M, Sarstedt M. A new criterion for assessing discriminant validity

in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 2015, 43(1):115-135

[40] Ramayah T, Lee J W, In J B. Network collaboration and performance in the tourism sector. *Service Business*, 2011, 5(4):411–428

[41] Andreeva T, Garanina T. Intellectual capital and its impact on the financial performance of Russian manufacturing companies. *Foresight and STI Governance*, 2017, 11(1):31-40

[42] Khalique M, Pablos P O. Intellectual capital and performance of electrical and electronics SMEs in Malaysia. *International Journal of Learning and Intellectual Capital*, 2015, 12(3):251-269

[43] Muniady R A, Mamun A A, Mohamad M R, Permarupan P Y, Zainol N R. The effect of cognitive and relational social capital on structural social capital and micro-enterprise performance. *SAGE Open*, 2015, 5(4):1-9

How to cite this article:

Zin SM, Mat RC, Manaf KA, Muhammad N, Mansor FA, Hashim MZ. Identifying importance-performance matrix analysis (IPMa) of intellectual capital and Islamic work ethics in Malaysian SMEs. *J. Fundam. Appl. Sci.*, 2018, 10(1S), 793-805.