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1	Bank Specific as Moderator between Intellectual Capital and
2	Malaysian Microfinance Institutions Performance
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7 Abstract

16

institutions (MFIs). This study also attempts to uncover the effect of microfinance institution 8 specification (banks or non-banks) as a moderating variable in the association between 9 intellectual capital and MFIs performance. Out of 300 respondents, only 156 managers 10 answered the structured questionnaires that were sent out using the purposive sample 11 technique. The partial least square structural equation was used to analyze the research 12 model in this study (PLS-SEM). The findings show that customer capital and structural 13 capital have a favorable impact on MFI performance. This influence, however, does not extend 14 to the MFIs' human and social capital. Furthermore, the research model can explain 59.9 15

17 Index terms— intellectual capital, MFI specific, microfinance institutions performance, PLS-SEM.

18 1 Introduction

hroughout the world, experience has resulted in a major reorientation of companies' innovation and creativity 19 patterns, resulting in a change in firm valuation away from tangible assets and intangible assets. According to 20 [1], intellectual capital (IC) is a multidimensional term used to characterize intangible assets that constitute the 21 firm's expertise. Thus, IC is a significant factor in the growth of a knowledge-based economy and enhanced 22 competition in both profits-and non-profit-oriented businesses [2]. Companies are currently facing significant 23 24 obstacles to remain competitive in the current economic climate. In this vein, market dynamism drives an 25 enormous demand for information (intangible asset) [3]. Not only are businesses struggling to add value, but the critical role of intellectual capital as a significant factor in determining a nation's economic and financial 26 success has been ignored [4]. In a rising economy, [5] claimed that resources are scarce, cannot be replaced 27 and provide a competitive advantage. Resources also contribute to value creation, and act as growth drivers, 28 ultimately improving the company's performance; both of these traits are found in intellectual capital [6], [7]. 29 Regrettably, senior management is dubious whether the firm's valuable resources will contribute to the success 30 of new plans. As a result, disregarding IC will place the business in ineffective employees, substandard service, 31 a lack of knowledge, and poor client relations. 32 IC has developed into a valuable asset in today's financial world. To thrive in today's economy, managers must

33 compete in an increasingly competitive environment. One of the aspects that the organization must examine 34 35 to continue to exist is its IC. By investing in IC, a business can increase its productivity and efficiency [8]. As 36 a result, microfinance institutions (MFIs) should prioritize their IC, enabling institutions to function effectively 37 and stay sustainable in the long run. Banks and non-bank microfinance institutions (MFIs) are both types of microfinance providers [9]. Both providers are assessed in this study to serve as an excellent illustration of how 38 the industry's demand and supply sides interact to support its rapid expansion. Thus, the study's objective was 39 divided into two halves. In its first section, the current research examines the importance of IC in microfinance 40 institutions' (MFIs) performance. The study's second component looked into the effects of MFI specific (banks 41 versus non-banks) as a moderating variable on the relationship between IC and MFIs performance. The study 42 is aimed to raise MFIs' awareness of the necessity of focusing on human resources, such as staff and customer 43

perspectives, in addition to financial and commercial factors [10]. The economy will profit from this employee-44 customer strategy since it will increase customer motivation to repay a loan as a result of the high-quality 45 service provided by employees, resulting in greater revenue output. The researchers also hope that this study will 46 47 contribute to and improve awareness about MFIs among human resource managers in particular and microfinance 48 policymakers, government officials, and non-governmental organizations (NGOs) in general, as well as recommend areas for future research. T Academic scholars have increasingly accepted the resource-based view (RBV) [11]. 49 Strategic management, human capital management, and economics are used to develop this theory [12]. The 50 fundamental concept of the RBV is that company resources are heterogeneous, not completely transportable, 51 and robust. MFIs resources are considered as the basic building elements of its operation and success. These 52 assets, which comprise both tangible and intangible assets like financial capital, qualified people, and machinery, 53 would influence MFIs production quality. The RBV theory is relevant to this study since it explains the optimal 54 strategy for improving MFIs efficiency by using readily available assets and capabilities to achieve or increase 55 sustainable competitive advantage [13]. According to the RBV, a firm's productivity and effectiveness are highly 56 dependent on its capital [14]. Thus, applying the RBV perspective in Malaysian MFIs, it can aid in identifying 57 its critical capabilities, depict their potential development, and their relationship to explicit indicators of the 58 59 institution's competitive advantage [15]. As a result, it is argued that the RBV theory provides the best way 60 for the MFIs to gain a competitive edge over its competitors, resulting in increased profit opportunity [16]. The 61 research framework of this study is depicted in Figure 1.

⁶² 2 Literature Review a) Malaysian Microfinance Institutions ⁶³ Performance

Microfinance institution (MFI) is a 'social enterprise' with a principal mission to assist the poor by improving 64 their lives through the means of financial services provision [17]. As posited by [18], the MFIs' growth and 65 their sustainability are substantially depending on not only external funds that are available to them, but also 66 the efficiency of their operations. Ahmed further added that if MFIs' train their employees regularly to acquire 67 and hone relevant skills, MFIs are highly likely to operate efficiently. According to [19], MFIs must identify 68 the primary issues in order to maintain their operations and remain sustainable. Due to the knowledge-based 69 economy, a complete transformation has taken place in the current business. The determination of the MFIs' 70 71 wealth and also its sustainability are very crucial indeed. Thus, the practice by firms in recognizing its intangible 72 assets, particularly the capabilities and expertise of the employees must be encouraged and nurtured [20].

⁷³ 3 b) Intellectual Capital

74 Intellectual capital (IC) is essential to a knowledge-based economy's success [21]. To maintain the firm's competitiveness, a move from a labor-based to a knowledge-based business model is required [22]. IC is important, and it significantly impacts a company's financial results [23]. According to the accounting principle -Intangible Asset Standard (IAS 38), intangible assets are described as patents and copyrights. However, the IAS 38 does not recognise the capitalization of a company's human capital, structural capital, or consumer capital, all of which are components of IC and can obscure the company's overall value [24].

Additionally, [25] demonstrated that intangible assets and capacities contributed significantly more to firm 80 success than tangible assets. Confronted with the rise of the "information-based economy" in the twentieth 81 century, it drew attention to the importance of knowledge. IC is transforming into a significant generation factor, 82 displacing conventional forces. It is directly responsible for nations' economic and financial growth and core 83 drivers of businesses' ability to maintain competitive advantages [4]. The IC is composed of four components: 84 human capital, structural capital, customer capital and social capital [26]. [27] previously clarified the three 85 dimensions: human capital, structural capital, and customer capital. Combining all four dimensions strengthens 86 MFIs ability to compete in a competitive market, as opposed to those that depend on a single source of IC 87 [28]. MFIs will benefit from a longer-term competitive advantage as a result of this. MFIs can also demonstrate 88 prudence toward their institutions by preserving intangible assets and fostering the practice of acknowledging 89 intangible assets, especially their personnel' skills and competences [20]. 90

91 4 i. Human Capital

92 Human capital (HC) includes the knowledge, skills, education, experience, and attitude of hired people and their 93 capacity to do their duties, which ultimately results in the attainment of organizational objectives [29], [30]. In 94 other words, HC is a composite of the experience and talents of a firm's personnel [31]. As a result, human 95 resources are frequently regarded as a firm's most valuable asset. However, it is frequently overlooked [32]. MFIs 96 must retain their employees' competency while also respecting their work by identifying and maintaining their degree of happiness, since this will increase their satisfaction and encourage them to stay with the company. 97 According to [33], humans can be either a burden or a valued asset within a business. As such, MFIs must retain 98 and value their expertise. Therefore, MFIs ensure that their staff feel more at ease and are more likely to remain 99 loyal to the institution. MFIs should conduct satisfaction surveys to maintain the employees' loyalty to the 100 institution. Furthermore, according to [34], organizations must invest in developing entrepreneurial leadership 101

(human capital), improving management procedures (structure capital), and expanding ties with other enterprises to compete in the global market (customer capital). According to [35], HC has the most significant impact on the IC of the Turkish banking sector. Employees with a thorough understanding of Shari'ah (Islamic law) will increase their credibility and reputation in the capital market. In MFIs, HC includes senior management, such as CEOs, managers, executives, and other staff. Therefore, MFIs should seize opportunities to hire efficient and effective personnel or enhance their ability to play a substantial and successful role in the sector. As so, the hypothesis was:

¹⁰⁹ 5 H1: Human capital (HC) has a positive influence on MFIs ¹¹⁰ performance ii. Customer Capital

Customer capital (CC), also known as relational capital, is composed of two components: capability and 111 alliance, the latter of which refers to an organization's intermediation with internal and external forces like 112 as employees, suppliers, customers, and competitors [27], [30], [34]. Businesses must improve their interactions 113 with stakeholders, particularly their clients [23]. Recent evidence confirms the considerable positive association 114 between customer and Malaysian MFIs, which results in increased performance of their small and micro 115 companies. According to [36], this relationship also benefits customer at the household level, not just in terms 116 of asset purchase, but also in income generation. According to [32], customer, supplier, and local community 117 support is critical for MFIs' performance and, in the long run, this support enables MFIs to remain sustainable. 118 As a result, the following hypothesis was developed: 119

¹²⁰ 6 H2: Customer capital (CC) has a positive influence on MFIs ¹²¹ performance iii. Structural Capital

According to [29], [34], structural capital (SC) refers to knowledge that is contained within a business but is 122 not owned by its employees, such as systems, norms, structure, culture, strategy, trademarks, and patents, all 123 of which contribute to the organization's innovative capability. In a nutshell, an MFI is made up of its internal 124 structure and personnel. When an MFIs' technology is strengthened, its processes are developed, and other 125 internal initiatives are launched, structural capital is improved. Thus, structural capital can be defined as the 126 capacity of a business to meet client needs. According to recent data, [37] argue that a microfinance institution 127 with a strong organizational structure will perform better, provided the institution has skilled personnel who 128 deliver high-quality service. [38] argue that even if an institution has competent and knowledgeable people, 129 ineffective SC will prevent the firm's IC from being stretched to its full potential. As a result, the following 130 hypothesis was developed: 131

T H3: Structural capital (SC) has a positive influence on MFIs performance

iv. Social Capital Social capital (SO) is defined as the relationships and the norms that produce the quality and 134 135 quantity of social interaction of a society with people. According to [26], SO is one of the crucial components of IC. [39] explained that the critical roles of SO are that they enable adoption and disables human, natural 136 capital, and financial constraints. Furthermore, SO is the institutions' sum that underpins society and a crucial 137 adhesive agent that holds them together. The creation of microfinance is believed to assist those who are poor. 138 Nonetheless, the determination of poverty is frequently based on the social instead of financial factor [40]. Such a 139 determination is due to socioeconomic factors concerned with customers. For example, language differences, lack 140 of numerical skills, borrowers' locations, accounting practices, customers being unfamiliar with documentation, 141 and ethnicity are the contributing factors to unproductive operations. Therefore, the hypothesis was: 142

¹⁴³ 8 H4: Social capital (SO) has a positive influence on MFIs ¹⁴⁴ performance v. Bank Specific

Bank specific refers to two types of institutions namely, bank-based and non-bank-based MFIs [41]. The non-145 bank MFIs, are regarded as government agencies and non-governmental organizations. They provided outstanding 146 microcredit programs for microenterprises. These MFIs have offered development assistance to entrepreneurs, 147 which is critical for young and inexperienced entrepreneurs. The non-bank MFIs required the fewest supplemental 148 documentation for loan applications, resulting in a reduced cost and more efficient resource allocation [42]. 149 150 Regarding bank-based MFIs, they continue to request specific documentation to back loan applications, which 151 are frequently impossible for consumers to produce. This suggests that the latter MFIs are more selective in their customer selection and operate similarly to traditional commercial banks. Hence, evidence suggests that IC's 152 effects on company performance vary per firm [34]. Furthermore, it was discovered that the banking industry 153 has the least impact on IC (intellectual capital), insurance companies, and brokerage firms compared to non-154 financial institutions whose IC has a favorable correlation with their success [43], [44]. As so, the hypothesis was: 155 H5: Bank Specifics as moderator has a positive influence on HC and MFIs performance H6: Bank Specifics as 156

moderator has a positive influence on CC and MFIs performance H7: Bank Specifics as moderator has a positive influence on SC and MFIs performance H8: Bank Specifics as moderator has a positive influence on SO and

159 MFIs performance IV.

160 9 Methodology

The current study explored MFIs in the setting of Malaysia. The study collected data through the use of a 161 standardized questionnaire administered to respondents. The questionnaire is divided into three pieces, the first 162 of which contains questions on IC components (human capital, structural capital, social capital, and customer 163 capital). The second portion of the questionnaire includes questions about the performance of MFIs. The third 164 segment includes things that delve into the respondents' profiles. The items in the questionnaire's first and 165 second parts are graded on a seven-point Likert scale. The scale is between 1 and 7, with 1 indicating strongly 166 disagree and 7 indicating strongly agree. The exogenous variable, IC, that represent four dimensions: human 167 capital, structural capital, customer capital, and social capital was quantified using 29 items. 168

On the other hand, the endogenous variable, MFIs' performance, was evaluated using 11 items. The questionnaire was distributed to 300 managers of Malaysian MFIs. Purposive sampling was used to choose the sample for this study. The researcher retains the right to select suitable respondents to represent their companies [45]. The data gathering period for this study was October to December 2019.

The current study's target group was made up of managers and senior executives from Malaysian MFIs 173 responsible for the institution's internal management and played a role in its development. The G-power software 174 was used to establish the required minimum sample size. The research model was built with a maximum of five 175 predictors for the performance of MFIs, and the effect size was assessed to be moderate (0.15), while the required 176 power was set at 0.80. According to [46], the acceptable minimum in social science is established at 80%. 177 Because the needed sample size was 114, the obtained data were slightly larger than the required number. Only 178 156 managers answered the questionnaire out of 300 eligible respondents. This sample size represents a response 179 rate of 52%, which [47] consider to be satisfactory. The model shown in Figure 2 was calculated employing Smart 180 PLS 3.2.8 and is focused on path modelling and bootstrapping [48], [49], [50]. The PLS analysis consists of two 181 stages: the measurement model and the structural model. It is necessary to conduct a reliability and validity 182 analysis on the measurement model. Convergent and discriminant validity are used to assess the measurement 183 model's validity, while the Composite Reliability Index is used to assess the model's reliability (CR). Following 184 the development of the measurement model, a structural model testing with 500 resamples was done to examine 185 the hypothesis regarding the links between important success variables and MFIs performance. 186 \mathbf{V} 187

188 10 Result and Findings

Although 300 surveys were given, only 156 respondents (52 percent) returned the questionnaires in a useable 189 condition. According to Table 1, 71 respondents (45.5 percent) indicated they were in a senior management role, 190 52 respondents (33.3 percent) indicated they were in a middle management position, and 33 respondents (21.2 191 percent) claimed they were in a top management position. 143 (91.7 percent) of the 156 responders were male. 192 while the remaining (8.3 percent) were female. The majority of respondents (83 or 53.2 percent) are between the 193 ages of 26 and 35, 50 (32.1 percent) are between the ages of 36 and 45, 15 ??9.6 percent) are between the ages 194 of 46 and 55, six ??3.8 percent) are between the ages of 20 and 25, and only two (1.3 percent) are over the age 195 of 56. Regarding the managers of MFIs who answered, 132 were employees of bank-based MFIs (84.6%) and 24 196 were workers of non-bank-based MFIs (15.4%). To determine the reliability, discriminant validity, and convergent 197 validity measures, the confirmatory factor analysis (CFA) was conducted. As suggested by [51], factor loadings 198 should be used in assessing the convergent validity. On the other hand, to assess convergent validity, Composite 199 Reliability (CR) and Average Variance Extracted (AVE) could be used. Table 2 shows that most item loadings 200 are higher than 0.5 (significant at p < 0.01), and all Average Variance Extracted (AVE) exceed 0.5, while the 201 Composite Reliability (CR) for all the variables are more than 0.7 [52]. 202

²⁰³ 11 Note: HCS5wasdeleted due to low loading

Additionally, as indicated by [53], the current study used the Heterotrait Monotrait (HTMT) as the discriminant 204 criterion for validating discriminant validity. According to [53], a correlation value of less than one between 205 constructs shows the achievement of discriminant validity. Nonetheless, we used a more cautious criterion of 0.85 206 207 to imply a much stronger distinction between the conceptions, as suggested by [54], [55]. Correlation estimates 208 for HTMT evaluations are shown in Table 3. Correlation coefficients between the tested constructs were less than 209 0.85. As a result, this finding demonstrates that the requisite degree of discriminant validity was attained through 210 the evaluation of HTMT. The R2 value of the endogenous variable is used to calculate the explained variance. According to [56], an R2 value greater than 0.60 indicates a high value, 0.30 to 0.60 indicates a moderate value, 211 and less than 0.30 indicates a low value. The R2 value reported in Figure 2 indicates that all exogenous factors 212 (HC, CC, SC, and SO) could account for 59.9 percent of the MFI's performance. 4 summarizes the hypothesis 213 testing results and illustrates the routes for each hypothesis in terms of their coefficients, observed t-statistics, 214 and significance levels. According to previous research [57], [58], the appropriate t-values for a one-tailed test are 215

1.28 (10 percent significance at p < 0.10), 1.645 (5 percent significance level at p < 0.05), and 2.33 (1 percent 216 significant level at p < 0.01). The study's findings indicate that four of the eight hypotheses evaluated strongly 217 connected with the endogenous variable. In terms of MFI performance as an endogenous variable, HC (?=0.134, 218 t = 1.764, p < 0.05) and SC (? = 0.343, t = 3.965, p < 0.05) exhibit positive and statistically significant correlations 219 with MFI performance. Consequently, H1 (HC has a significant positive influence on the performance of MFIs) 220 and H3 (SC has a significant positive influence on the performance of MFIs) are supported. The findings of the 221 HC and SC corroborate those of prior investigations [20], [31], [32], [35], [37], [38]. However, CC (? = 0.145, 222 t = 1.447, non-significant) and SO (? = 0.172, t = 1.632, non-significant) have no discernible effect on the 223 performance of MFIs. As a result, H2 (CC has a significant positive influence on the performance of MFIs) and 224 H4 (SO has a significant positive influence on the performance of MFIs) are not supported. The moderating 225 effect is explored in Table 5 using a t-statistic with pooled standard errors. According to [59], this is a strategy 226 known as a parametric approach. The findings indicated that investing in human capital (HC) in non-bank 227 MFIs will improve performance. Additionally, the data revealed that increased social capital (SO) of bank-based 228 MFIs results in improved MFI performance. In general, there is an effect of HC and SO on the performance 229 of banks and non-bank MFIs. As a result, H5 (MFI Specific as moderator has a positive influence on HC and 230 231 MFIs performance) and H8 (MFI Specific as moderator has a positive influence on SO and MFIs performance) 232 are supported.

²³³ 12 Discussions and Conclusion

The current study met its research aims by examining the impact of IC dimensions and the moderating effect 234 of bank-specific on the performance of Malaysian MFIs. As a result, the conclusion was reached based on the 235 study's findings, derived during the study's process. Numerous studies have demonstrated that IC dimensions 236 may be utilized to assess an organization's performance [60], [61], [62], [63]. Additionally, [64] found a positive 237 correlation between intellectual capital and firm performance in the Indonesian banking sector, meaning that 238 banks with a higher degree of intellectual capital efficiency would perform better. [65] discovered a positive link 239 between intellectual capital efficiency and firm performance in Indian public and private banks, implying that 240 banks with higher intellectual capital efficiency typically perform better. As for [66], their study on Thailand's 241 listed banks, [5] on Islamic banks in the Gulf, and [7] on Indonesian banks, all of which demonstrated a positive 242 and statistically significant relationship between intellectual capital and company performance. It may be stated 243 that IC dimensions can be utilized to compare the performance of MFIs, and that among the four IC dimensions, 244 human capital and structural capital are the most predictive of MFI success. The relationship between resources 245 is critical to RBV theory [67]. As a result, the findings indicate that enhancements to IC elements enhanced 246 their association with financial performance. 247

The current study's findings corroborate previous findings [26], [32], [35], [39]. The overall findings of this study indicate that all four components of IC (HC, CC, SC, and SO) have a considerable impact on the financial success of MFIs in Malaysia. These findings reflect the work of scholars such as [68], who argue that the primary necessity for a firm to succeed in a competitive market is to use resources that are not only distinctive, but also specific to the firm. Additionally, MFIs foster entrepreneurial education and training, skill development, asset accumulation, self-sufficiency, and communal services, all of which improve business performance [69].

Therefore, it can be concluded that financial capital and physical assets are no longer necessary for an 254 organization to maintain a sustained competitive edge; instead, it is contingent on the institution's ability to 255 channel its distinctive intellectual assets effectively. Earlier research has established distinctions between different 256 types of firms, including a study of sector banks in Pakistan, which found that public sector banks operated worse 257 than the private sector banks due to insufficient capital utilization or inefficient intellectual capital management 258 ??70]. Thus, managers of MFIs should address organizational issues expeditiously regardless of whether the 259 MFI is bank-based or not. On the other hand, managers must exercise sound judgement on behalf of their 260 organizations by emphasizing intellectual capital and recognizing intangible assets, most notably their employees' 261 capabilities and knowledge. As an extension to the current study, future research should incorporate the location 262 of MFIs (urban or rural) as a variable to ascertain its effect on the performance of microfinance institutions in 263 the Malaysian setting. 264



Figure 1: Figure 1 :



Figure 2: Figure 2:

 $\mathbf{1}$

Frequency

%

Figure 3: Table 1 :

$\mathbf{2}$

Constituens	Loadin	gCRAVE
HumahlCS1Employeespossessrelevant academic qualifications and Voca-	0.736	0.8706587
Cap- tional training.		
ital		
HCS2Employeesare competent in handling matters about microfinance transactions.	0.726	
HCS3Employeesarehighlymotivatedself-learners.	0.831	
HCS4Employeesfocus on the quality of service provided.	0.791	
HCS6 Our employees are committed to achieving the organization's vision and mission	0.742	
Customer's complaints	0.720	0.920620
Cap-	0.120	0.040.020
ital		
CC2 Our customers select a broader range of our products or services	0 794	
CC3 Our customers show levelty towards our organization	0.734 0.737	
CC4 Our organization game about sustainer expectations	0.131	
CC4 Our organization cares about customer expectations.	0.000	
CC5 Our customers are satisfied with the derivery of our services.	0.829	
CC6 Our customers have trust in our staff capability.	0.818	
CC7 Our products or services are market-driven.	0.753	
CC8 Ourorganization keep track of customers 'feedback survey.	0.801	
StructSCal Efficient and integrated management system for customers.	0.750	0.945659
Cap-		
ital		
SC2 Organization's knowledge contains in manuals, data bases, etc.	0.781	
SC3 Knowledge and information are transferred in structures, systems, and processes.	0.867	
SC4Our organizational system and procedure support innovation.	0.879	

Figure 4: Table 2 :

3

Constructs	$\mathbf{C}\mathbf{C}$	HC	MFIsP	er\$O S	SC
CustomerCapital(CC)					
HumanCapital(HC)	0.744				
MFIsPerformance(MFIsPerf)	0.705	0.624			
SocialCapital (SO)	0.818	0.741	0.719		
StructuralCapital(SC)	0.826	0.689	0.750	0.833	
b) Partial Least Square -Structural Equation Modeling					
(Structural Model)					

Figure 5: Table 3 :

$\mathbf{4}$

Hypot	a Resia tionship	Std	Std	T Val-	PValues LL		UL	Decision
		Beta	Error	ues				
H1	Human Capital-> MFI Perf	0.134	0.076	1.764	0.039	0.016	0.26	Supported
H2	Customer Capital -> MFI Perf	0.145	0.100	1.447	0.074	-	0.298	Not
						0.029		Supported
H3	Structural Capital-> MFI Perf	0.343	0.086	3.965	0.001	0.21	0.486	Supported
H4	Social Capital ->MFI Perf	0.172	0.105	1.632	0.052	-	0.325	Not
						0.023		Supported

Figure 6: Table 4 :

$\mathbf{5}$

Hypothe Rislationship		Std	Std Er-	T Val-	PValues	LL	UL	Decision
		Beta	ror	ues				
H5	$\mathrm{HC*S}$ -> MFI Perf	-0.113	0.067	1.686	0.046	-0.235	-0.018	Supported
H6	$\rm CC^*S \rightarrow MFI$ Perf	0.021	0.095	0.225	0.411	-0.129	0.183	Not
								Supported
H7	$SC*S \rightarrow MFI$ Perf	-0.088	0.071	1.242	0.107	-0.200	0.031	Not
								Supported
H8	SO*S->MFI Perf	0.233	0.095	2.458	0.007	0.081	0.391	Supported
VI.								

Figure 7: Table 5 :

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12 DISCUSSIONS AND CONCLUSION

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