INTEGRATION OF INTELLECTUAL CAPITAL AND INNOVATION IN SMEs’ PERFORMANCE: A CONCEPTUAL FRAMEWORK

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ABSTRACT

Businesses or organizations are persistently searching for the most effective methods in order to stay competitive in the global market. In this research paper, literature and models of related innovation factors integration with the intellectual capital are adopted in proposing an extended model for the analyzing the human innovation capability in measuring the SMEs performance. SMEs are expected to shift their current practice into the global knowledge-based economy with the presence of liberalisation intervention. A discussion on the innovation factors and intellectual capital integration on SMEs performance with liberalisation intervention is presented and conceptual framework and model are proposed.

Keywords: SMEs; intellectual capital; innovation; performance; liberalisation.

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1. INTRODUCTION

1.1. Small and Medium Enterprises (SMEs)

The Small and Medium Enterprises (SMEs) is currently struggling with severe survival ability in delivering the product offerings that requires additional competitive strength in liberalisation market. Moreover, the slow progress of country’s economy with the slashing down of the budget by the government at the recent budget 2017 announcement, it does also affect the government agencies as well as the SMEs indirectly. SMEs are also in susceptible position due to increasing of global and fierce modern business competitors in the open market. Resulting from this interruption, SMEs must strive hard in conforming the excellent product and services at a very competitive price through their reformation of human innovation capability. The importance of human innovation was translated into the innovation adoption research that has been broadly carried out by the academia, industry and the public sector [1].

However, one way to get out of the crisis is to inculcate the innovation culture, for example by supporting the so-called innovated intellectual capital which includes all areas of human activity based on own individual original creativity and the innovation value resulting from it. Innovative culture, forming the core of the creative environment in the workforces and will tremendously modifies the business process into an excellent final output. Innovations which have their origin in individual creativity, skills and talent have the potential for creating wealth of the firms. Innovation in common synergy with a knowledge-based economy creates conditions for a strong and sustainable creative economy via better product or services that could simplify the business process efficiently and more cost effective where most of the time able to change the routine of doing tasks. Particularly, technologies collaboration is also needed a different approach as they are not progressing as fast or as broadly as expected. The acceptance of new technologies in SMEs requires input from individual and managerial or organizational levels [2]. In this study, the appropriate integration between innovation factors and intellectual capital to lead towards reformation of human capability can be assured by an extended model that analyzing the individual or human innovation capability towards the SMEs business performance.
1.2. Importance of Innovation
Innovation embarks as the support of an excellent product improvement that has been viewed as an efficient tool in the problem solving or adding value initiatives into the current product and services offerings. Since the developed world is aware of the importance of innovation, this has forced the organizations and firms focusing into more efficient, cost saving and profitable inventions that adding value to the stakeholders. Moreover, there is an increasing demand from the consumers overwhelmed with a comfortable and practical living environment. However, innovation requires a kind of permissible flexibility in the process or otherwise the creativity of a person could be retarded when he was negatively tortured on mistakes which finally disturbing the whole process of a business growth. Any criticisms in innovation must allow some reasonable faults in constructive instead of the destructive method that could carry weight at the end of a process by developing human capability through the innovation integration with the intellectual capital elements.

In the marketing field, the influences of marketing and purchasing aspects of the product and services innovation offerings that the most demanding are those which embedded with economical and practical features. Nevertheless, in order to develop a successful market orientation, firms are required to formulate their strategies even in a very simple daily activity of consumer. Notably, producers have great synergising power emphasizing wealth after undergone techniques of know-how and the value of reinforcing innovation on the intellectual capital that has made millions of profits yearly. Otherwise, the limitations of product offerings feature, chances for consumer shifting for another brand is high if they find the innovations of the product features are not encouraging for repeat sales. Additionally, aggressive advertising alone in gaining high rating viewers from TV stations will sustain only a short period of the advertising program only.
SMEs globally competitive across sectors enhance wealth creation and contribute to the social well-being. Innovation expected to increase the business formation, high growth innovative firms, raise productivity and intensify formalization. Innovation and technology are the focus areas identified as growth levers where constraints need to be addressed which highlighted by SMECorp in 2015. Among the constraints to growth are access to national innovation system, low commercialization and R&D and poor technology uptake. Innovation is a component of
six High Impact programmes (HIPs) of SMECorp. Increasingly, the knowledge-based innovation often centered on technology as the requirement and main driver of competitiveness [3]. Thus, SMEs must be able to absorb new knowledge of innovation and intellectual capital in developing robust research for increasing the firms’ performance.

1.3. Intellectual Capital

Intellectual capital is an intangible asset entrenched in human or workforces. Undoubtedly, the successful allocation of intellectual capital within the region requires a high-quality base of innovative workforces. Intellectual capital does not belong to how many certificates a person has, nor the highest education attainment but from a positive and effective experienced person. However, developing and retaining excellent human capital is the most challenges part for SMEs. Intellectual capital is an important and invaluable asset that is similar to the physical asset. Moreover, intellectual capital and system capabilities are the elements that shaping the productivity of a firm than its assets [4] where intellectual capital at the earlier stage describes as profit derived from knowledge [5]. Nevertheless, it should be stressed that those profit made has the direct link to the firm’s performance.

Intellectual capital is the ability to create values for a firm through its total stock of collective knowledge, information technologies, property rights, experience, organisational learning, competence, communication system and customer relations [6]. In general, intellectual capital consists of human capital, structural capital and relational capital. Human capital consists of skills, capabilities, experience and expertise of employees. Structural capital involves non-physical assets components such as databases, organization chart, management processes and business strategies. Whereas, relational or customer capital refers to all intangible assets which regulate and manage the relationships of an organization with its customers, suppliers, shareholders and other stakeholders [7]. Thus, the intellectual capital is introduced into practice through innovation factors integration for further explored.

1.4. Integration of Intellectual Capital and Innovation

In managing SMEs, the firms have to utilise innovation factors of their internal ideas and external path for success. In the rapid competitive advantages edge, it is necessary for SMEs to sustain through the new process and new growth methods especially in their close relationship improvement of production process [8]. Knowledge and resources limitation has
forced SMEs assessing their innovation capabilities for further business improvement. In this study, the most important innovation factors model developed by [9], research on determining innovation factors for SMEs was adopted. The government sectors are more capable fulfilling all the innovation capacity in the resources due to the availability of fund even though becoming lesser at present. In this context, the elements of financial, firm size, market orientation, and competitive advantage, cultural and economic factors are released as they are no more appropriate elements of intellectual capital as they have already been covered for selection as the elements of innovation factors.

Additionally, SMEs has to be more innovative in initiating collaboration with the government sectors, for instance in order to lessen the financial obstacles in various angles in innovation especially in bringing the business into varieties target market shares. The corporations and government authorities are the bodies that normally had a ready built-in reputation with the community. Nevertheless, SMEs may have to look into the elements that expected to cover the whole aspect of innovation factors for SMEs which under the intellectual capital.

1.4.1. Institutional Factor

Institutional factors are important for SMEs’ innovation capability because these factors related to innovation and performance. This institutional factor falls under the structural capital of intellectual capital whereby the organizational procedures, systems, cultures, along with the general use of information technology and organizational learning capacity that has been established by the competence of its employees are the result of innovation created over time. A weak institutional environment may affect institutional structures; such as violation of intellectual property rights will endanger performance, ineffective contract enforcement and a lack of political and economic stability [9]. The exclusivity of the institutional factors of the firm is when the intellectual property rights are legally protected.

Innovation integration with the intellectual capital under the structural capital is required in order to review the existing procedures that perhaps have been superseded over time and they are greatly important in holding and guiding the policy of every firm when there are changes in its offerings. Therefore, firm’s infrastructure must have an innovation of effective operation procedure, improved response speed and excellent information systems towards the operational and financial benefits for the SMEs’ performance. The workforce must be capable
to create and introduce the firm with innovative procedures of new systems for leading, organizing, controlling and monitoring the firm such as having introducing services that compliance with government’s or country’s regulatory policy. For instance, the services charge imposed on certain services must be in the stipulated regulatory when designing a contract with the customer as the end user.

1.4.2. Technological Capability Factor

The technological innovations of the enterprise are based on in-house technological capability and training of labor was a continuous process [9]. But yet, developing new product innovation is very costly and competitive relations are not easy and involve high costs and risks [9]. In this case, the technological capability factor is relating to the human capital of the organization or firms. Human capital is the intangible resource of individual knowledge, competence, how the management utilized and has been treated at the working environment [10, 5]. Therefore, the individuals’ character, knowledge, qualification, experience, competency, motivation and creativity should be managed efficiently and effectively toward getting of new value-added of the company. So, most of competing firms are forced to bring together their mutual resources and competencies and combine them to speed up the product development task and to develop unique products or technologies [9].

Technological capability demands the intangible quality in human capitals, especially in their character towards the success of the firm. Individuals’ attitude in knowledge has driven of possessing invaluable experience as enabler and competence for the technologically capable of firms’ performance. Knowledge is exception basing on the qualification but also from years of actual experience in the firms themselves. So, it is very hard that technological capability could standalone without the human assistance. How high the technology is, the human capital is still the priority and very first issue in innovation factors who create and manning the technology. Thus, technology capability has to be developed on the inner side of the human capital or employees of all SMEs.

1.4.3. Consumer Preference Factor

Consumers’ preference is also important development tool for innovation of product and services offerings. Their influences are particularly important in new product ideas, new product launches, process innovation, cross-functional teamwork, interdepartmental
connection and to a lesser extent, in business strategy. The significant indicators and factors of an overall firm performance of SMEs include strong brand awareness, expression of consumer preferences and high level of market share [9]. Thus, the third component of intellectual capital which is relational capital integration role is very important as relational ties that exhibit relational aspects such as trust and trustworthiness [11]. Building the relational capital with customers or partners, firms are benefits of new and improved business process advanced experiences externally and becoming more innovative [12-13]. Therefore, the new insights of strong relational capital led to the increase of quality, reduction of cost, responsiveness, productivity and asset management. Nevertheless, the flow of useful information and high-quality relational capital are expected from the knowledge sharing and learning [13]. As such, the human skill for the relational capital is required for employees in innovating new product offerings by knowing the additional value expected by them which come in a package with reasonable price, quality and features. This integration of relational capital and the innovating factor is expected to boost the performance of SMEs in the liberalisation era.

1.4.4. Management Skill Factor

The management style of the firm will shape the innovation culture of the workforce. The open mindedness Managers will allow the workforce to create innovation environment besides facilitating the innovation entrepreneurial activities that benefit the firms. Thus, the workforces do understand outcome results. The comprehensive management actions can increase accessibility in innovation through the organizations' culture and value systems [9]. The management skill is guided by the competency required by a leader in terms of skills, knowledge and personal attribute in a human capital. However, managing partnerships can be the main indicator for Manager to enhance their capabilities and performance [14]. In addition, the proportions of human capital derived from the contribution of persistent growth of facts, idea and ability of physical and non-physical assets of employees' health and motivation [15]. Therefore, in creating an innovative working environment the management skill has to be developed, especially in knowledge and personal attribute so the welfare of the workers or employees would be taken care. Healthy and motivated employees may contribute such huge monetary and non-monetary value in the firms’ system, where creative ideas are
escalating in existing and new product and services offers to the consumers. Hence, engaging the high-class human capital in the workforce becomes an obligation in the globalisation context [15]. Human capital is now mostly entering to the job with the literacy of information technology as medium of communication so that the style has changed in speed, a minute late means you will lose your business. The customers are more demanding nowadays because they have a variety of sources and choices to fulfill their needs. As such, the management skill has also been sharpened with new skill of technology that in line with the current demand. Thus, intellectual resources skill especially for the leaders in the management must constantly strengthen the large high caliber talents to meet the growing complexity of the global competitive market.

1.4.5. Learning Capability Factor
SMEs are obliged in learning the relationship with their external stakeholders. The latest technology needs of speedy decision-making in order to grab business opportunities. However, they face more challenging innovation situation with the creation of varieties medium of information technology widgets that shorten the communication relays. So, learning capability more important for SME’s in responding to the current competitive market needs better than competitors as well as underpins the SMEs’ competencies for developing new products [9].

However, learning capability needs competence of human capital in the form of skills, knowledge and personal attributes [4]. Convincingly, they are the source of innovation with great vision in contributing to the development of productivity and growth [16]. Interchangeably, human capital is the experts’ workforce experience in drilling out their marketplace value [15]. Personal attributes of the workforces are the enabler for them to accept a new way or innovation of doing thing effective and efficiently. As a result, the knowledge they possess leading to a high motivational workforce with good skill on the job.

1.5. Liberalisation
Liberalisation is a world or global market issue that is not very popular in the business management discipline. The beauty integration of intellectual capital and innovation may be tarnished by the unavoidable liberalisation market interferences. So, that this study is to see how far the liberalisation issue could interfere or mediate the innovation of the SMEs
performance. Liberalisation has opened up new markets abroad while increasing competitive pressure in the domestic market, which likely to affect the innovation rate in the economy growth. Accordingly, large and positive effects on innovation resulting from improving market access and tougher import competition. For example, firms exposed to high-tariff reduction countries may innovate more even in the absence of trade liberalisation. In the increasing competition of trade liberalisation, firms are forced to exit the market or releasing the acquisition to other firms [17]. This shows that not all of these firms are capable in the highly competitive market and stay resilient in their performance.

Liberalisation has both the positive and negative impacts on domestic SMEs firms. Therefore, the foreign competition has resulted in positive and significant effect on product modification and marketing innovation. In other words, it helps the SMEs' innovation in improvement activities [18]. While in the other part of literature, it was stressed that exporting is a new knowledge accumulation, exposure to international competition and acquiring important new knowledge through the exporting learning process [19]. The introduction of liberalisation for this study as the mediator is expected to get a full view of significance result that benefits to SMEs as a whole.

1.6 Organisational Performance
Performance of SMEs is all about attaining the aims for the final direction businesses regardless of disciplines or sectors. It is for sure that all businesses are looking for success of wealth creation as it is not much difference between them. However, a performance measurement of many SMEs has not been well established as compared to large firms. Even though, plenty definition of performance enhancement measurement, yet the utmost factors that SMEs’ performance success factor which is highly considered is the financial. Precisely, performance is determined by two mechanisms to consist of financial and non-financial or qualitative measures. Both are interdependent for the successful performance of the SMEs. For instance, customer satisfaction could not be measured by a firm via monetary value. Although, the elements of indicators classified under different sections, in this study, the author has chosen to adopt [20] model that consists of the following performance measurement indicators: (i) operational performance measurement that consists of the organization’s internal operation such as productivity, product quality and customer
satisfaction and (2) business performance measured by the enlarged domain of performance related to financial and marketing aspects such as sales growth, profitability and market shares. Researchers testing performance should include performance measures such as market share, sales growth and profitability.

2. THEORETICAL MODEL

The proposed theoretical model constructs of the integration between the intellectual capital components by [7] and innovation factors that were adopted from a model of A Research on Determining Innovation Factors for SMEs by [9] for the SMEs’ performance as shown in Fig. 1. In this research, the three components of the intellectual capital are remaining the same. However, only 5 innovation factors are considered which consist of technological capability, management skill, learning capability, institutional factor and consumer preferences. The researcher found that the rest of innovation factors are not suitable for the integration with the human capital and some already exist in the main five innovation factors chosen. The classification integration as shown in Fig. 2 where technological capability, management learning capability is parked under the human capital, institutional is under the structural capital and consumer preferences is in relational capital’s umbrella.

The intellectual capital integration is introduced to suit with the new economy transformation. This transformation requires more holistic quality of the workforces. Although, many see that innovation is crucial but the person who handles the overall process of innovation should be first be identified in the value of character, skill and knowledge. In addition to the first issue of integration, the SMEs competitiveness measurement in the world market of liberalisation will also cover the overall objective of this study. The proposed constructs to be further investigated for a complete set of measurement for the dimension of integration of intellectual capital and innovation in SMEs performance.
Fig. 2 depicts the hypothesized model that links the intellectual capital and innovation factors of SMEs performance in the global market in liberalisation era. Infusing the innovation capability becomes priority in achieving more efficient and effective intellectual capital in the business process and performance. Innovated human capital requires individual acquiring the technological capability, management skill and learning capability which essentially needed for firm’s performance. The integration of innovation human capability expected to efficiently reduce cost in resources, lessen the duration of business process, and gaining the consumers’ trust. Excessing time is available to create more in production volumes and contribute more profit to the firms. Meanwhile, the institutional innovation of structural capital benefits the firms as the firm judiciously aware of good practice; intellectual property right and legal protection. All the non-physical assets if properly managed would not put the firm at risk or liability. Thus, unnecessary expenses incurred to the firms can be avoided and increase the firm financial performance. Further, the relational capital is intangible assets that could assist the firm in the innovation of consumer preferences whom are becoming more knowledgeable and demanding. The relational capital represents the relationship between the firm, customers,
suppliers, strategic partners and stakeholders. Hence, in ensuring their loyalty and trusts, firms must maintain its current customers and more focus to new customers in boosting the sales growth and market share besides gaining trusts from all the stakeholders.

Fig. 2. Proposed conceptual framework of human innovation capability

3. METHODOLOGY

The SPSS statistics software version 21 is adopted for analyzing the demographic profile of the respondents. Then, the underlying items of each factor are identified in exploratory factor analysis (EFA). The items were loaded onto factors with eigenvalues greater more than 1.0 just after EFA completion. Then, the item will be grouped into their constructs once iterations and deletion of items are completed. Next, the developments of items are set at acceptable minimum value of 0.60 in measuring the the value of Cronbach's α to ensure the internal consistency of reliability analysis.

The factorial analysis will be firstly analysed in reducing the complexity of a multivariable data set for the development of theory [21]. Then, the analysis of correlation among a large number of items where the contribution of items with highly correlated would be grouped into a few representative constructs or factors. The uncorrelated items would be deleted. The resulting constructs would be then analysed to determine their significant level by using structural equation modeling (SEM), as well as the best predictors of measurement for the
dimension of integration of intellectual capital and innovation in SMEs performance.

4. DISCUSSION AND CONCLUSION

The main contribution of this study is the proposed model to represent the integration of intellectual capital and innovation factors in SMEs performance. The innovation factors prioritize the intellectual capital shall survive in their own group factor and the researcher decides to remove the few variables that unrelated to intellectual capital, which possesses by human because the main focus is on human characteristics. Liberalisation is the mediating role to measure the awareness of SMEs in Malaysia as most of them are less adaptable to the global pressure. Furthermore, building the capacity of SMEs is the utmost actions that can be taken towards enhancing skills, productivity, ensuring the resilience of business sustainability over a long term in the uncertain external competition from the liberalisation markets [22].

This paper has described the conceptual framework relating to the integration of intellectual capital and innovation in SMEs performance by incorporating between relationships of the independent and dependent variables. A modified model was introduced with an expectation to be more focus on developing the human capital, which is the most important factor of handling the innovation of product and services from the view of the effective business model component. However, this is just a conceptual paper; it suggests that an empirical study should be conducted in future by using this conceptual framework to see the impact of the mediator’s integration between the intellectual capital innovations in SMEs performance.

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REFERENCES


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