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The Mediating Role of Intrapreneurship on Knowledge Acquisition, Knowledge Protection and Private Higher Education Institutions’ Performance

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Abstract

The dawn of Fourth Industrial Revolution (4IR) has shifted the landscape of private higher education industry in Malaysia. It becomes more liberalized and competitive, raising the issue of sustainability among the private higher education institutions (PHEIs). Working within the theory of resource-based view (RBV), PHEIs need to develop their knowledge acquisition process, knowledge protection process and intrapreneurial skills among their academicians to enhance organizational performance. The purpose of this paper is to develop a better understanding on the claim that knowledge management influence PHEIs’ performance, and intrapreneurship mediates the relationship between them. Data are collected from 261 respondents from 19 PHEIs and analyzed using SmartPLS. The result suggests that both knowledge acquisition (KA) and knowledge protection (KP) have significant impact on PHEIs’ performance. It is also found that intrapreneurship mediates the relationship between KMPC and PHEIs’ performance. The results provide valuable insights, which may assist PHEIs to focus on developing intrapreneurial skills among their academicians.

Keywords: (knowledge management process; knowledge acquisition; knowledge protection; intrapreneurship; private higher education institutions’ performance)

1. Introduction

The world has geared to the next level as the Fourth Industrial Revolution (4IR) became the recent talk-of-the-town topic in many field of studies. In 4IR, there are intense needs to digitalization of the production processes, which leads to the self-organized value creation network and promotes the changes in economic activities (Wilkesmann & Wilkesmann, 2018). 4IR is expected to change the economic environment we are living today because it offers a fully automated production processes, new machines and artificial intellect that ignore the participation of human (Piccarozzi, Aquilani, & Gatti, 2018). However, it is also crucial to realize that 4IR requires training to support the digitalization processes in the workplace (Wilkesmann & Wilkesmann, 2018). Therefore, higher education is required to play a crucial role in supporting the 4IR and the presence of human interaction is still needed in its early stage.

According to D’Souza & Mudin (2018), 4IR is expected to push private higher education institutions (PHEIs) to change the way knowledge is delivered. It is also crucial for the universities to equip their graduates with value-added knowledge that will enhance their marketability. As a result, PHEIs in Malaysia
have to become innovative, proactive and ready to take risks associated in delivering values to their stakeholders.

However, the private higher education industry in Malaysia was in turbulence in this rising competitive market to support the 4IR. Although the establishment of PHEIs in Malaysia were encouraged in the early 2000 because of their role as “supplementary and complementary” to the tertiary education, the overall productivity performance of PHEIs declined (MPC, 2017). According to Harun (2015), sustainability has become the main problem among PHEIs. This statement was supported by the Minister of Higher Education, Datuk Seri Idris Jusoh, when he announced that 33 PHEIs were closed in 2017 due to the failure to manage their financial efficiently (Mohd Pilus, F.A., 2017).

Previous literatures have identified that knowledge management capability (Gold, Malhotra, & Segars, 2001; Singh, Chan, & McKeen, 2006; Chang & Chuang, 2011; Tseng & Lee, 2014; Tseng, 2016) and intrapreneurship (Covin & Slevin, 1991; Benitez-Amado, Llorens-Montes, & Perez-Arostegui, 2010; Antoncic & Antoncic, 2011; Zahra, 2015; Fuentes-Fuentes, Bojica, & Ruiz-Arroyo, 2015; Skarmeas, Lisboa, & Saridakis, 2016) are among the elements that contribute to increase organizational effectiveness. Therefore, there is a need to study the impact knowledge management and intrapreneurship on PHEIs performance. This study aims to elaborate the claims that knowledge management process capability (KMPC) influence the PHEIs' performance in Malaysia with the presence of intrapreneurship as a mediating variable. Hence, this study seeks to answer these questions:

RQ1 : Does KMPC influence intrapreneurship among academicians in PHEIs?
RQ2 : Does intrapreneurship influence PHEIs' performance?
RQ3 : Does intrapreneurship mediate the relationship between KMPC and PHEIs' performance?

The next section discusses the literatures on how KMPC, intrapreneurship and PHEIs' performance are weaved together within the research context. This is followed by a discussion on the research methodology employed. Then, the data analysis section will elaborate on the findings to answer the research questions developed earlier. The final section will discuss the implications of the findings to the PHEIs in Malaysia.

2. Literature review

2.1 Private Higher Education Institutions’ Performance
Since 1998, the liberalization of higher educations in Malaysia has forced the universities to measure their performance in the competitive environment. Purbey, Mukherjee, & Bhar (2007) emphasized that performance measurement assists PHEIs to gauge its progress towards preset objectives, recognize their strengths
and weaknesses and decide future plans with goals to improve performance. Hamid (2015) opines that financial tools and measures such as ROI and cash flow, are crucial in measuring business performance. However, this viewpoint alone is shallowing the measuring of PHEIs’ performance because of the diversity on PHEIs’ objectives when they were formed. For instance, there are PHEIs established by state governments with purpose to enhance the accessibility to tertiary education, with profitability became the minor focus.

On the other hand, non-financial measurement for a university’s performance was introduced, which came in many dimensions such as the effectiveness and efficiencies of university education (Sahney & Thakkar, 2016; Albekov, Romanova, Vovchenko, & Epifanova, 2017), input-process-output approach (Chinta, Kebritchi, & Ellias, 2016), and research activities (Kidwell, Linde, & Johnson, 2000; Alcaine, 2016; Tee, 2016). Abdullah (2012) identified several critical agenda projects (CAP) that may assist the achievement of the Malaysian’s National Higher Education Strategic Plan 2007-2020 such as the number of academics with double appointments, number of expert-based councils established and number of joint publications. Thirumanickam & Ahmad (2012) supported the notion of non-financial performance to avoid a firm’s measurement system being derailed from the organization’s vision, mission and strategic direction. Furthermore, Bhusry & Ranjan (2011); Demchig (2015); Esposito, Nito, Iacono, & Silvestri (2013); Warwick (2014) and Tee (2016) studied the strategies pursued by HEIs, whereas Goi & Goi (2009) explained the importance of rebranding in HEIs and Spender (2005) focused on the roles of academicians in HEI.

This study uses Balanced Scorecard (BSC) model in measuring perceived PHEIs’ performance. BSC model was used to measure universities’ performance such as in India (Umashankar & Dutta, 2007) and Lebanon (Aljardali, Kaderi, & Levy-Tadjine, 2012). As PHEIs are knowledge organizations (Wiig, 1997), the implementation of the BSC model to measure performance rather than current quality is useful to ensure that the organizational knowledge will be preserved (Esposito et al., 2013). The four constructs of BSC model are internal business process, customer, learning and growth, and financial.

2.2 Knowledge management process capability

KM Process Capability (KMPC) is the ability of firms to manage and use their internal and external knowledge assets in order to generate new knowledge, which is valuable to the firm (Chang & Chuang, 2011; Wu & Chen, 2012). Gold et al. (2001) outlined that KMPC comprises of knowledge acquisition, knowledge conversion, knowledge application and knowledge protection. These four elements of KMPC have proven to embrace wide elements of knowledge processes and have been adapted by many in KM field of study (Kiessling, Richey, Meng, & Dabic, 2009; Allameh, Zare, & Davoodi, 2011; Mills & Smith, 2011; Mahmoudsalehi, Moradkhannejad, & Safari, 2012; Pérez-López & Alegre, 2012; Tseng & Wu, 2012; Fullwood, Rowley, & Delbridge, 2013; Pandey &
Dutta, 2013; Cohen & Olsen, 2014; Tseng & Lee, 2014). KMPC is also considered as determinants to successful KM program because it determines how the organizations will optimize their knowledge assets to enhance performance. This paper introduces two constructs of KMPC, namely knowledge acquisition and knowledge protection.

2.2.1 Knowledge acquisition process
Agostini & Filippini (2019) asserted that 4IR technologies require a deep knowledge of processes and lean philosophy to assist in the knowledge acquisition. The acquisition process is defined as the capability to obtain new knowledge, which might origin from internal sources (Rusly, Sun, & Corner, 2015) or external sources (Fuentes-Fuentes et al., 2015). In the opinion of Davenport & Prusak (1998), knowledge acquisition aims to make the right knowledge available at the right person and at the right time. Therefore, Parker (2012) asserts that knowledge acquisition has become the most crucial process in knowledge and technology-intensive industries because of the high rate of innovation those industries require.

In the context of PHEIs, factors such as information technology literacy (Boulianne, 2014), students, facilities, program content, and lecturers (Boateng, Dzandu, & Tang, 2014) were identified to influence knowledge acquisition. However, these studies focused on the process of knowledge acquisition from the students’ perspectives, which cannot be the same with organizational perspective because of the differences in knowledge processes. Furthermore, they also failed to look at the impact of acquisition on further knowledge processes. Reviews on several studies also indicate that organizational and external factors are influencing knowledge acquisition (e.g. top management support in ICT infrastructure as explained by García-Sánchez, García-Morales, & Bolívar-Ramos (2015). Fuentes-Fuentes et al. (2015) demonstrated that knowledge acquisition has an indirect positive influence on a firm’s financial performance. Park, Giroud, Mirza, & Whitelock (2008) and Papa, Dezi, Gregori, Mueller, & Miglietta (2018) also asserted that highly applied knowledge acquisition process will enable firms to enhance their performance.

Linking knowledge acquisition to intrapreneurship, it is proven that organizational learning is critical in nurturing the intrapreneurship within an organization (Alipour, Idris, & Karimi, 2011). Bicknell, Francis-Smythe, & Arthur (2010) emphasized on the role of intrapreneurship to realize the transfer of knowledge from research and recognize business opportunities. According to Haase, Franco, & Félix (2015), intrapreneurship supports organizational learning by challenging the conventional paradigms through the use of employees’ insights to face change and risk. Blanka (2018) asserted that intrapreneurs acted as pre-requisite in developing internal and external knowledge, which will open more business opportunities and develop brokering competencies.
From the reviewed literatures, a hypothesis is developed to explain the relations between knowledge acquisition process and perceived PHEIs' performance, which is as follow:

**H1**: Knowledge acquisition process has a positive and significant impact on intrapreneurship.

### 2.2.2 Knowledge protection process

PHEIs need to value and protect organizational knowledge to sustain in the competitive industry (Estrada, Faems, & de Faria, 2014). Knowledge protection is defined as the firm’s effort to secure its organizational knowledge so that it is saved from inappropriate use or lost to competitors. It is a significant process considering knowledge must protected from external parties (Estrada et al., 2014). Lee, Chang, Liu, & Yang (2007) suggested that protecting knowledge could hinder loss of organizational knowledge, which will contribute to firm’s competitive advantage. Mills & Smith (2011) also confirmed that knowledge protection process has a significantly positive effect on organizational performance

However, if knowledge is being protected internally, it obstructs the knowledge sharing process (Khamseh & Jolly, 2008) and fails the process of embedding intrapreneurial traits among the academicians. According to Uslu, Eryiğit, & Çubuk (2015), knowledge protection has a significant relationship with intrapreneurship. Bican, Guderian, & Ringbeck (2017) also asserted that proper protection of knowledge will encourage open innovation, which is one of the traits of intrapreneurship. Therefore, this study links knowledge protection process to the intrapreneurship with this hypothesis:

**H2**: Knowledge protection process has a positive and significant impact on intrapreneurship.

### 2.3 Intrapreneurship

The concept of intrapreneurship started to emerge in 1996 when the concept of “entrepreneurial orientation” (EO) was introduced as a new perspective in strategic management (Lumpkin & Dess, 1996). It is defined as an entrepreneurship within an existing organization, includes entrepreneurial behaviors and orientations of existing organizations. According to Morgan (2015), intrapreneurial trait among employees is among the requirements in future jobs. He opines that the passion and creativity that entrepreneurs have must be instilled among the employees.

The dimensions of intrapreneurship are differed across literatures. This study adapts three dimensions of intrapreneurship from Jong, Parker, Wennekers, & Wu (2011), namely innovativeness, proactiveness and risk taking behavior, which are more applicable among academicians in the education industry.
Innovativeness is defined as the capability of organizations to manage and deploy their resources to innovate in new ideas or products (Alpkan, Bulut, Gunday, Ulusoy, & Kilic, 2010). It has been proven to influence organizational performance. Subramanian & Nilakanta (1996) assessed the role of organizational innovativeness and discovered that it improves organizational performance. Ağca, Topal, & Kaya (2012) also explained that innovativeness influence Turkish manufacturing firms in terms of financially (e.g., profitability) and non-financially (e.g., customer and employee satisfaction). The second dimension of intrapreneurship is proactiveness, which refers to the degree to which firms seek to lead rather than to follow the competitors in an industry (Covin & Slevin, 1986). In a study by Felício, Rodrigues, & Caldeirinha (2012), proactiveness has been confirmed as one of the intrapreneurship elements that positively influenced organizational performance. According to Ağca et al. (2012), proactiveness influences customer satisfaction in a positive and significant way, which will contribute to higher organizational performance (Han, Kim, & Srivastaka, 1998). The third dimension of intrapreneurship, risk taking behavior, is defined as an act of taking instant actions although there are risks to tolerate (Antoncic & Hisrich, 2003). Felício et al. (2012) proposed that risk taking has been found to influence organizational performance. In addition, Rauch, Wiklund, Frese & Lumpkin (2004) proved that the risk-taking dimension is positively related to performance.

From the literatures, this study developed the third hypothesis, which is:

**H3: Intrapreneurship has a positive and significant impact on PHEIs’ performance.**

### 2.4 Linking intrapreneurship to KMPC and PHEIs’ performance

Intrapreneurship has been studied in various context within social study domain. The basic notion of intrapreneurship assumes that innovative behaviors will influence organizational performance via access of new resources and skills (Blanka, 2018). Therefore, this study strongly suggest that intrapreneurship is studied from various perspectives. According to Antoncic & Antoncic (2011), intrapreneurship mediates the relationship between employee satisfaction and firm growth. They also proposed that intrapreneurship should be studied as mediator in different context. Fuentes-Fuentes et al. (2015) studied on intrapreneurship as a mediator between knowledge acquisition and firm’s performance and found a significant positive link among them. Furthermore, Bakar, Mahmood, & Lucky (2015) proposed that intrapreneurship mediates between knowledge sharing behavior and performance of academic leaders. Therefore, this study proposes these hypotheses:

**H4: Intrapreneurship mediates the relationship between knowledge acquisition process and PHEIs’ performance.**
H5: Intrapreneurship mediates the relationship between knowledge protection process and PHEIs’ performance.

3. Methodology
A structured questionnaire was used to obtain data through convenience sampling. The respondents were targeted among academicians at management levels who are aware of and able to describe the PHEIs’ policies levels (Gold, Malhotra and Segars, 2001; Mills and Smith, 2011; Alaajr, Abidin-Mohamed, & Bustamam, 2016). Subsequently, 291 answers were received and after the screening processes, only 261 usable responses were further analyzed. The sources of the measurement instruments and number of items are shown in Table 1.

Table 1: Sources of measurement items

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of items</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge acquisition process</td>
<td>12</td>
<td>Gold et al., (2001)</td>
</tr>
<tr>
<td>Knowledge protection process</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Intrapreneurship</td>
<td>9</td>
<td>Jong et al. (2011)</td>
</tr>
</tbody>
</table>

4. Data analysis

4.1 Demographic information
The demographic information of respondents of this study is shown in Table 2.

Table 2 Respondents’ demographic information

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Label</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender</td>
<td>Male</td>
<td>87</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>204</td>
<td>70.1</td>
</tr>
<tr>
<td>2.</td>
<td>Age</td>
<td>Below 25</td>
<td>27</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 - 34</td>
<td>93</td>
<td>32.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35 - 44</td>
<td>96</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45 - 54</td>
<td>63</td>
<td>21.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55 and above</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td>3.</td>
<td>Race</td>
<td>Malay</td>
<td>201</td>
<td>69.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chinese</td>
<td>45</td>
<td>15.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Indian</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others</td>
<td>33</td>
<td>11.5</td>
</tr>
<tr>
<td>4.</td>
<td>Religion</td>
<td>Islam</td>
<td>207</td>
<td>71.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buddha</td>
<td>27</td>
<td>9.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hindu</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Christian</td>
<td>42</td>
<td>14.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>5.</td>
<td>Years of working</td>
<td>3 – 5 years</td>
<td>64</td>
<td>24.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 – 10 years</td>
<td>101</td>
<td>38.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 – 20 years</td>
<td>78</td>
<td>29.9</td>
</tr>
</tbody>
</table>
The table above concludes that a typical respondent was a Malay Muslim female, aged under between 25 to 44 years old who has been in the higher education industry for more than three years. This demographic information also concludes that academicians in Malaysian PHEIs came in diverse ethnicity and religions.

4.2 Analysis of multivariate assumptions
Five tests were conducted to fulfill the multivariate analysis assumptions: normality, linearity, homoscedasticity, multicollinearity, and common method bias. The results have shown that the data set is satisfactory for further multivariate analysis.

4.3 Measurement model analysis
This study analyzed the reflective measurement model using SmartPLS 3.0. Four criteria were assessed as proposed by Hair, Hult, Ringle & Sarstedt (2014), namely internal consistency, indicator reliability, convergent validity, and discriminant validity. As shown in Table 3, the Cronbach’s alpha (CA) values and composite reliability (CR) values were greater than 0.70 as suggested by Hair et al., (2014), signaling a high internal consistency. Four indicators (AC7, AC9, PP5 and INT9) have loadings values between 0.40 and 0.70. However, as the AVE values were higher than 0.50, thus the four loadings were retained. Therefore, this study achieved construct reliability and convergent validity.

<table>
<thead>
<tr>
<th></th>
<th>Cronbach's Alpha</th>
<th>rho_A</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapreneurship</td>
<td>0.947</td>
<td>0.971</td>
<td>0.956</td>
<td>0.713</td>
</tr>
<tr>
<td>Knowledge acquisition</td>
<td>0.924</td>
<td>0.932</td>
<td>0.935</td>
<td>0.546</td>
</tr>
<tr>
<td>Knowledge protection</td>
<td>0.952</td>
<td>0.955</td>
<td>0.959</td>
<td>0.704</td>
</tr>
<tr>
<td>PHEIs’ performance</td>
<td>0.975</td>
<td>0.976</td>
<td>0.977</td>
<td>0.658</td>
</tr>
</tbody>
</table>

For discriminant validity, three approaches were engaged. First, this study examines the cross-loading test. It was found that each indicator’s outer loadings on a construct is higher than all its cross loadings with other constructs as proposed by Hair et al. (2014). Secondly, Fornell & Larcker criterion has shown that the square root of the AVE of each construct are higher than its highest correlation with any construct (Hair et al., 2014). To overcome the critics that Fornell & Larcker criterion do not reliably detect the lack of discriminant validity (Ramayah, Yeap, Ahmad, Halim, & Rahman, 2017), this study used a third approach in the form of heterotrait-monotrait (HTMT) ratio of correlations. The HTMT ratio values as shown in Table 4 were all below the cut-off of 0.85 as proposed by Kline (2011). Therefore, discriminant validity has been ascertained.
Table 4 HTMT ratio

<table>
<thead>
<tr>
<th>Intrapreneurship</th>
<th>Knowledge acquisition</th>
<th>Knowledge protection</th>
<th>PHEIs’ performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge acquisition</td>
<td>0.717 (0.646, 0.767)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge protection</td>
<td>0.644 (0.573, 0.704)</td>
<td>0.676 (0.614, 0.741)</td>
<td></td>
</tr>
<tr>
<td>PHEIs’ performance</td>
<td>0.65 (0.572, 0.721)</td>
<td>0.678 (0.614, 0.736)</td>
<td>0.66 (0.593, 0.724)</td>
</tr>
</tbody>
</table>

4.4 Structural model analysis
To estimate the structural model, this study employed a bootstrapping procedure. Table 5 and Figure 1 shows the results of regression analysis for hypotheses testing. It was found that both knowledge acquisition and knowledge protection processes have significant relationships with intrapreneurship ($\beta=0.556$, $p<0.05$ and $\beta=0.278$, $p<0.05$ respectively). Therefore, H1 and H2 are supported. Furthermore, a positive and significant relationship was found between intrapreneurship and PHEIs’ performance ($\beta=0.255$, $p<0.05$). This confirms the H3. The results also reveal that knowledge acquisition process is a stronger predictor of intrapreneurship than knowledge protection process.

Table 5 Results of hypothesis testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Causal Path</th>
<th>Original Sample</th>
<th>Standard Deviation</th>
<th>T Statistics</th>
<th>P Values</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Kn.Acq -&gt; INT</td>
<td>0.556</td>
<td>0.079</td>
<td>7.065</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>H2</td>
<td>Kn.Prot -&gt; INT</td>
<td>0.278</td>
<td>0.082</td>
<td>3.411</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>H3</td>
<td>INT -&gt; PPerf</td>
<td>0.255</td>
<td>0.093</td>
<td>2.746</td>
<td>0.003</td>
<td>Yes</td>
</tr>
<tr>
<td>H4</td>
<td>Kn.Acq -&gt; INT -&gt; PPerf</td>
<td>0.142</td>
<td>0.058</td>
<td>2.458</td>
<td>0.007</td>
<td>Yes</td>
</tr>
<tr>
<td>H5</td>
<td>Kn.Prot -&gt; INT -&gt; PPerf</td>
<td>0.071</td>
<td>0.031</td>
<td>2.268</td>
<td>0.012</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note: $p<0.05$; Kn.Acq=Knowledge Acquisition; Kn.Prot=Knowledge Protection; INT=Intrapreneurship; PPerf=PHEIs’ Performance

This study employed Preacher & Hayes’ (2008) bootstrapping method to test the indirect effect of intrapreneurship between knowledge acquisition and PHEIs’ performance. After a bootstrapping procedure, it was revealed that the indirect effect ($\beta=0.556*0.255=0.142$) was significant with a t-value of 2.458. The mediation indirect effect was confirmed given that the indirect effect 0.142, 95% Boot CI: [LL=0.051, UL=0.235] does not span a 0 in between. Therefore, this study concludes that the mediation effect of intrapreneurship on the relationship between knowledge acquisition process and PHEIs’ performance is statistically
significant, thus supporting the H4. The same procedure was repeated to examine the indirect effect of knowledge protection process on PHEIs' performance. With a t-value of 2.268, the indirect effect ($\beta=0.278*0.255=0.071$), 95% Boot CI: [LL=0.021, UL=0.125] was significant and does not straddle a 0 in the interval, thus indicating a mediation effect. We can similarly surmise that intrapreneurship significantly mediate the relationship between knowledge protection process and PHEIs’ performance. Hence, H5 is supported.

Figure 1 Analyzed research model

5. **Discussions**

Intrapreneurship is an emerging field of study that gains attention in recent organizational practices. This paper identifies intrapreneurship as a mediating factor that enable PHEIs to increase their performance. Despite the capability in managing organizational knowledge, PHEIs must strategize to equip their academicians with intrapreneurial skills (i.e. innovativeness, proactiveness and risk taking behavior). The result of analysis on the role of intrapreneurship as a mediating variable supports previous literatures such as Antoncic & Zorn (2004), Benitez-Amado et al. (2010) and Shukri Bakar & Mahmood (2014). It also fulfilled the suggestion from Alipour, Idris, Ismail, Uli, & Karimi (2011) and Bakar et al. (2015) that intrapreneurship should be tested as a mediating variable.

The exposition of intrapreneurship’s mediating role in this research lies on the fact that organizational processes are important determinants that require direct and indirect control from the management to enhance intrapreneurship and organizational performance (Antoncic, 2001). In a PHEI, the processes involved in acquiring and protecting the knowledge from being stolen have become extremely important. However, the processes became more meaningful if the
academicians have the intrapreneurial traits. For example, innovativeness can add value to the KM processes by promoting continuous improvement, introducing new process designs. Academicians who are proactive and risk takers will also be able to explore, identify and grab new opportunities that will enhance the internal KM processes.

This study also reveals a link between intrapreneurship and KM Capability unto PHEIs' performance. To the author’s knowledge, this study is among the earliest to link intrapreneurship with KMPC empirically. Intrapreneurship is highlighted and considered as a firm’s internal capability, which will enhance the PHEIs’ performance. Therefore, integrating intrapreneurship into the Gold’s KM Capability model will expand the application of RBV theory.

In the verge of competitive environment, PHEIs that offer Islamic studies as their core products (hereafter known as Islamic PHEIs) must find ways to create sustainable competitive advantage. In Malaysia, there are 18 registered Islamic PHEIs, competing with the giant players. This paper proposes that Islamic PHEIs must equip their processes in acquiring and protecting organizational knowledge, with their academicians instilled with intrapreneurial traits. Islamic PHEIs must prepare their systems to capture knowledge internally and externally and use them for the organizational effectiveness. Protecting knowledge is another crucial agenda. Organizational knowledge should be protected from leaking to other parties. This paper strongly proposed that Islamic PHEIs should create a formal network of knowledge to be able to compete with all the bigger rivals. On top of that, academicians should be exposed and nurtured with innovativeness, proactiveness and risk taking behavior. These intrapreneurial traits are expected to intervene the KMPC and contribute to increased PHEIs’ performance.

6. Conclusion and future works
This paper presents adequate evidence to support the hypothesis that intrapreneurship mediates the relationship between KMPC and PHEIs’ performance. Prior research has also focused on intrapreneurship, but has only investigated from corporate views. This paper provides an insight of how importance intrapreneurship’s role in enhancing PHEIs’ performance during the 4IR era. It points out that PHEIs’ managers must instill the intrapreneurial traits among their academicians to support knowledge management initiatives.

However, the generalizability of the findings should be interpreted with caution given that this is a cross-sectional research. Longitudinal and experimental studies may provide further support to the results. Furthermore, the convenience sampling method was applied in the data collection process, which contribute to problem of generalizability. As intrapreneurship is treated as a unidimensional variable, future research might also consider to test three dimensions of intrapreneurship as multidimension to identify the strongest predictor to increase PHEIs’ performance.
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