Does Individual Absorptive Capacity Matters in Individual Knowledge Acquisition?

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ABSTRACT
In MNCs, knowledge is effectively delivered from knowledge repositories to the potential recipients only when the respected parties possess sufficient absorptive capacity to acquire that specific knowledge. For local workers, knowledge acquisition in MNCs is an important element for their skill enrichment as it provides them with the avenue to enhance their skills and knowledge. This activity allows host-country national (HCN) workers to become expert or specialist in the related area. Hence, the presence of MNCs in Malaysia is perceived to be the best medium for the effective knowledge acquisition activities among locals who are employed in these organizations. Overall, the study investigates the relationship between two main variables, individual absorptive capacity and individual knowledge acquisition of HCN workers in foreign MNCs in Malaysia. For the purpose of testing the hypotheses, a total of 1245 questionnaires were distributed using mail survey and drop-and-collect approach. Of 1245 questionnaires, a total of 345 persons participated in the survey. Since only fully completed questionnaires were taken into account for further analysis, the final dataset comprising of 305 observations were finalized and accepted.

Keywords: Individual absorptive capacity, individual knowledge acquisition, knowledge management, MNCs

Introduction
Transforming an organization’s human capital from semi-skilled to skilled workers requires a comprehensive plan in developing and retaining the local competencies in various disciplines. Currently, the number of total skilled-labour in Malaysia is still inadequate to cater to the need of local and international firms (The World Bank, 2011). According to the statement made by Economic Planning Unit (2010) in Prime Minister’s Department, Malaysia is only able to produce 28 per cent of high-skilled labour from the total domestic labour. Based on the current situation, there is an urgent need for actions to be taken by the government to upgrade and augment the skill of the existing workforce through private sector participation in the training and development program as the aim is to increase the number of skilled-labour to at least 50 per cent of the total workforce by 2020 (The Economic Planning Unit, 2010).

Within this context, the presence of MNCs in Malaysia is expected to benefit the nation’s human capital development through training and knowledge transfer programs. The MNCs has been identified as an important conduit in providing the foundation towards human capital development of the nation due to MNCs capability in providing training on the latest technology to the local workforce. Individual knowledge acquisition in the workplace is effective, whether for production operator level or upper-level executives through on-site or off-site training. Therefore, in order to understand the effectiveness of individual knowledge acquisition within MNCs, it is crucial to examine the individual absorptive capacity of Host-
country National (HCN) workers. Hence, the study would be able confirm the linkages that exist between both variables.

**Literature Review**

**Individual Absorptive Capacity**

The concept of individual absorptive capacity was introduced by Cohen and Levinthal (1990), as they stressed that the organization’s absorptive capacity is always rely on the individual employee’s absorptive capacity. This implies that the individual absorptive capacity can significantly impact the firm’s learning capacity especially when the particular firm is actively involved in knowledge transfer activities. Therefore, it is important to examine the concept of absorptive capacity at the individual level especially in the cognitive domain as it reflects the organization’s competitive advantage and performance (Tang, Mu, & MacLachlan, 2010).

According to Hamel (1991) the individual capacity to absorb knowledge is not equally distributed among employees in the organizations itself. Everybody has different capability to absorb knowledge because individual capabilities rely on prior knowledge such as educational background and exposure to the specific area of work and the motivation of the individual workers. In certain situation, the skill and ability to observe, interpret, apply, and knowledge improvement belong only to a certain group of employees, while others might not possess the same skill and ability (Hamel, 1991). When this occurs, the effectiveness of either inter or intra-firm knowledge transfer activities will be hindered since individual employees in a firm plays a vital role in overall knowledge transfer process (Tang et al., 2010). This is supported by Kwok and Gao (2006) stating that individuals who possess better absorptive capacity will be more competent in learning, assimilating, and utilizing knowledge.

Conceptually, individual absorptive capacity is similar to organizational absorptive capacity as it refers to the ability of oneself to identify, assimilate, and apply knowledge that benefits the organization and those efforts can be utilized and commercialized by the organization (Cohen & Levinthal, 1990). The development of individual absorptive capacity will influence the development organizational absorptive capacity cumulatively since the individual workers in organization act as ‘gate keepers’ for inflow of external knowledge into the organization (Cohen & Levinthal, 1990). However, recent studies by Tang et al. (2010) have failed to highlight the role of individual absorptive capacity in assisting the workers to acquire knowledge. Table 1.0 below exhibits the summary of the absorptive capacity empirical studies made from 2007 to 2012.
Table 1
The Empirical Evidence on Absorptive Capacity Research

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Background of the Study</th>
<th>Study Setting/Level of Analysis</th>
<th>Methodology/Sample</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gururajan &amp; Fink (2010)</td>
<td>Study the knowledge transfer among academicians and factors that influence that activity.</td>
<td>Study Setting: Australia, Level of Analysis: Individual</td>
<td>Focus Group and survey/ 40 academic members</td>
<td>(+) Absorptive capacity</td>
</tr>
<tr>
<td>Hui &amp; Khairuddin (2009)</td>
<td>The role of firm’s absorptive capacity to achieve innovation capability.</td>
<td>Study Setting: Malaysia/Asia, Level of Analysis: Organizational Analysis</td>
<td>Survey/ 215 MSC status companies in Malaysia</td>
<td>Absorptive Capacity (IV)</td>
</tr>
<tr>
<td>Sazali, Raduan, Jegak &amp; Haslinda (2009)</td>
<td>Investigate the degree of Inter-firm technology transfer through IJV.</td>
<td>Study Setting: Malaysia/Asia, Level of Analysis: Organizational Analysis</td>
<td>Survey/ 145 IJV firms in Malaysia</td>
<td>(+) Absorptive capacity (IV)</td>
</tr>
</tbody>
</table>

Notes: (+) Positive relationship, (-) negative relationship, (u) u-shape relationship, (n) no relationship, (*) the absorptive capacity variable as dependent variable

Based on the above literatures, obviously, individual absorptive capacity studies are still limited especially in relation to management and international business domain. In the actual business and management scenario, business organizations are struggling to equip their
firms with skilled workers, with the ability to absorb newly disseminated knowledge within short time. Without this capability, the firms’ ability to survive in a highly competitive environment will be uncertain and it will also restrict knowledge transfer activities within or between organizations. This is supported by the argument made by strategic human resource scholars such as Wright, Dunford and Snell (2001) stating that individuals in organization possess different portfolio of skills, thus, implying that the individual workers have different level of absorptive capacities to capture knowledge imparted within the organization. Additionally, majority of knowledge management literatures postulate that the learning activities in organization begin with individual (Nonaka, 1994; Crossan et al., 1999). Therefore, it is possible to claim that organizational absorptive capacity relies on individual absorptive capacity (Narteh, 2008).

**Individual Knowledge Acquisition**

In general, the individual knowledge acquisition is known as the process by which the knowledge is obtained (Huber, 1991). Individual knowledge acquisition can be defined as the process of acquiring knowledge from domain expert or any authenticated source of knowledge (Mykytyn et al., 1994). Individual knowledge acquisition also refers to the activities by which the employees are involved in recognizing and acquiring tacit and explicit knowledge (Zahra & George, 2002).

Prior to knowledge acquisition activities, the internal capabilities such as prior related skills influence the effectiveness of the workers’ knowledge acquisition activities (Politis, 2002). At individual level, the interrelationship between the individual absorptive capacity and individual knowledge acquisition is perceived to have strong inter-relationship between both constructs (Murray & Chao, 2005). As a conclusion, the individual absorptive capacity is expected to influence the individual knowledge acquisition of the workers. Based on literature review, a hypothesis with three sub-hypotheses were formed to be test the inter-relationship between variables.

Further explanation concerning knowledge acquisition is also described in Anderson’s Skill Acquisition Model (Anderson, 1982; 1983). This model explains the flow in the acquisition process. During the first stage or at ‘declarative stage’, knowledge is acquired as a set of verbal facts. It is followed by ‘knowledge compilation stage’, referring to the conversion of knowledge into a procedural form of practice. The last stage refers to the ‘procedural stage’ involving application of knowledge in an appropriate manner (Anderson, 1982; 1983). In this study, knowledge acquisition will be portrayed as behaviour consistent with the social cognitive theory that explains the interaction between environment, individual, and behaviour.

**H1a: Individual absorptive capacity will positively influence individual knowledge acquisition of HCN workers in foreign MNCs in Malaysia.**

H1a1: The ability to identify knowledge will positively influence individual knowledge acquisition of HCN workers in foreign MNCs in Malaysia.

H1a2: The ability to assimilate knowledge will positively influence individual knowledge acquisition of HCN workers in foreign MNCs in Malaysia.

H1a3: The ability to apply knowledge will positively influence individual knowledge acquisition of HCN workers in foreign MNCs in Malaysia.

**Methodology**

The population of the study comprised of Malaysian workers employed by foreign MNCs in Malaysia, specifically in electrical and electronic industry. However, the ability to
get the reliable sampling frame is not achievable since there is no official published directory or data for HCN workers employed by MNCs in Malaysia. Due to the above constraint, the sampling technique used in this study is judgmental sampling. The judgmental sampling ‘involves the choice of subjects who are in the best position to provide the information required’ (Sekaran, 2000, p. 278). This sampling method is appropriate because the sample of the study requires specific attributes to be attached to it to make the interpretation of data is meaningful. In the process of determining the specific attributes to be attached to the samples, the researcher make judgment based on objective and context of the study. As to fulfill the objective to the study which to investigate the influence of individual absorptive capacity on individual knowledge acquisition, the samples chosen were among non-supervisory workers who work in foreign MNCs (non-Malaysian MNCs) in any technical or non-technical department.

For the purpose of testing the hypotheses, a total of 1245 questionnaires were distributed using mail survey and drop-and-collect approach. The reason for applying various techniques in data collection procedure is due to the ability of this combination technique to gain higher response rate (Parker, 1992; Schaefer & Dillman, 1998). For the data collection process, a total of five questionnaires were sent to each human resource manager and to be distributed to the respondents in the selected organization.

Of 1245 questionnaires, a total of 345 persons participated in the survey. Since only fully completed questionnaires were taken into account for further analysis, the final dataset comprising of 305 observations were finalized and accepted. Contingency tests in respect of the non-response bias (Morton-Williams, 1993) did not indicate any significant relationships. Consequently, the researcher did not regard the omitted questionnaires as a debilitating factor.

For the purpose of analyzing the data, the study applies PLS-SEM to examine the relationship between variables. This was due to the model estimation of its formal premises embody a greater range of flexible applications. In addition, the PLS-SEM is more appropriate for analyzing the predictive model rather than theory testing model (Hair et al., 2011). Moreover, the objective of the analysis was to determine the impact of latent variables that can be measured by reflective measurement models. In this aspect, the PLS approach emerged as the more suitable method. Since the hypotheses require the researcher to examine the two structural models, which refer to first order individual model and second order structural model. Figure 1 and Figure 2 below illustrate the network diagram for both models.
Figure 1. The First Order Structural Model for Individual Latent Variable

Note: The ‘ABS’ abbreviation refers to individual absorptive capacity. ABS1 = the ability to identify knowledge,
ABS2 = the ability to assimilate knowledge, ABS3 = the ability to apply knowledge.
The ‘IKA’ abbreviation refers to individual knowledge acquisition.

Figure 2. The Second Order Structural Model for Main Latent Variable

Note: The ‘ABS’ abbreviation refers to individual absorptive capacity. ABS1 = the ability to identify knowledge,
ABS2 = the ability to assimilate knowledge, ABS3 = the ability to apply knowledge.
The ‘IKA’ abbreviation refers to individual knowledge acquisition.

Figure 1 and 2 above illustrate the path model, T value for each relationship, and R² for the main effect model. Within the scope of structural equation modelling, the inner and
outer model assessment require the researcher to assess the reliability, validity, size effect, and goodness of fit of the model. In detail, the PLS path model evaluation steps consist of the outer model (measurement model) evaluation with regard to the reflective constructs’ reliability and validity while inner model (structural model) evaluation in respect of variance accounted for, path estimates and the predictive relevance of the inner model’s explanatory variables for the endogenous latent variable.

**Assessment of the Reflective Measurement Model**

All the requirements with regard to the reflective measurement model for the exogenous and endogenous latent variable have been clearly met. All factor loadings lie well above 0.60. The average variance extracted (AVE) for all constructs is satisfactory with value above 0.50. Internal consistency, both composite reliability and Cronbach’s Alpha are all above 0.70 which indicates good internal consistency of the variables. All communalities values are also exceeding 0.50 which implies good indicators’ reliability. Table 2 below summarizes the vital statistics of the study.

<table>
<thead>
<tr>
<th>Construct</th>
<th>AVE</th>
<th>Composite Reliability</th>
<th>R²</th>
<th>Cronbach’s Alpha</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS1</td>
<td>0.54</td>
<td>0.82</td>
<td></td>
<td>0.72</td>
<td>0.54</td>
</tr>
<tr>
<td>ABS2</td>
<td>0.61</td>
<td>0.86</td>
<td>0.20</td>
<td>0.79</td>
<td>0.61</td>
</tr>
<tr>
<td>ABS3</td>
<td>0.58</td>
<td>0.89</td>
<td></td>
<td>0.85</td>
<td>0.58</td>
</tr>
<tr>
<td>IKA</td>
<td>0.53</td>
<td>0.85</td>
<td></td>
<td>0.78</td>
<td>0.53</td>
</tr>
</tbody>
</table>

**Assessment of the Structural Model**

The central criterion for the assessment of the structural model is the coefficient of determination R². With a value of 0.20, the R² of the endogenous latent variable ‘Individual Knowledge Acquisition’ indicates a satisfactory level. The Stone-Geisser criterion Q² is established using the blindfolding procedure to compute cross-validated redundancy (Henseler et al., 2009). In the analysis, all Q² values range above the threshold value of zero, thus indicating the overall model’s predictive relevance. The evaluation of effect (f²) and also predictive relevance (q²) confirms the key role of exogenous the latent variables ‘the ability to identify and apply knowledge’ at f² 0.07 (significant but small effect size) and q² at 0.10 indicates significant but small predictive relevance. Meanwhile the global criterion of goodness-of-fit (GOF) value falls at 0.30, which indicates medium level of compromise between the quality of the measurement and structural models. Thus, the model is fit for further statistical analysis. The analysis indicates that all measures used are reliable and valid. Consequently, appropriate implications to explain the level of individual absorptive capacity which influences the individual knowledge acquisition can be derived from the analysis results.

**Hypotheses Testing**

The analysis of the structural model path coefficients shows that the predictor variables ‘the ability to apply knowledge’ exert a moderate influence on individual knowledge acquisition with path coefficient at 0.29. This is followed by the ability to identify knowledge, which exhibits noticeably lower path coefficients at 0.18. The results of a bootstrapping analysis show that main hypothesis which demonstrates between individual
absorptive capacity (ABS) and individual knowledge acquisition (IKA) is significant at significant level of p<0.01. The model also comes with sub-hypotheses, with two out of three sub-hypotheses within the structural model are significant (p<0.01, one-tailed).

Table 3

The Summary of Hypothesized Structural Relationship between Individual Absorptive Capacity and Individual Knowledge Acquisition

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Relationship</th>
<th>β</th>
<th>S.E</th>
<th>T</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>ABS → IKA</td>
<td>0.39307</td>
<td>0.051192</td>
<td>7.678**</td>
<td>Yes</td>
</tr>
<tr>
<td>H1a1</td>
<td>ABS1 → IKA</td>
<td>0.17820</td>
<td>0.061954</td>
<td>2.876**</td>
<td>Yes</td>
</tr>
<tr>
<td>H1a2</td>
<td>ABS2 → IKA</td>
<td>0.02602</td>
<td>0.074367</td>
<td>0.349</td>
<td>No</td>
</tr>
<tr>
<td>H1a3</td>
<td>ABS3 → IKA</td>
<td>0.29327</td>
<td>0.080582</td>
<td>3.639**</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Note: (**) Significant at p<0.01, based on one-tailed t-statistics table, as t-value greater 2.35.*

The result also indicates that the ability to identify knowledge has significant effect on the individual knowledge acquisition with coefficient value of 17.8 per cent with T=2.88 which is significant at p<0.01. However, the ability of the HCN workers to assimilate knowledge in MNCs does not affect the individual knowledge acquisition. This is proven by a very small T value which is only at 0.3 with coefficient value of 0.02 per cent. As for the ability to apply knowledge, there is a significant influence of this construct on individual knowledge acquisition, with beta value of 29 per cent (T =3.64) and significant at p<0.01 with. Overall, hypothesis H1a1 and H1a3 are supported while H1a2 is not supported.

Conclusions

The study has concluded the individual absorptive capacity acts as important catalyst for successful knowledge acquisition activities in MNCs. Specifically, the HCN workers need to have the ability to assimilate knowledge, in addition to the ability to identify knowledge and the ability to apply knowledge in order to acquire knowledge. In conclusion, Malaysian workers who work in foreign MNCs in Malaysia have sufficient capability to acquire knowledge from various knowledge transfer activities in their current organization.

References


