

The Influence of Librarians' Opportunity Recognition in Demonstrating Innovative Behavior in Malaysia Higher Education Sector

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Abstract—Academic librarians should demonstrate their entrepreneurial competencies toward innovative behavior in order to support their parent universities' work and nation development as required by the government. This paper identifies recognizing opportunity and the outcomes measured as innovative behavior practiced in academic libraries. By using a literature review, purposive sampling, multiple case studies and interviews it was discovered that the most relevant antecedents of recognizing opportunities for this study are prior knowledge and experience, self-awareness and social network. These antecedents influence academic librarians' innovative behavior which was evaluated based on idea generation, idea championing and idea application. This paper explores recognizing opportunity and innovative behavior in Malaysian higher education sector.

Index Terms—recognizing opportunity, innovative behavior, academic librarian, research university, entrepreneurial

I. INTRODUCTION

The Malaysian higher education system is in the midst of introducing and implementing numerous reforms required by the National Innovation Agenda which has its roots from the Economic Transformation Programme (ETP). The aim is to transform Malaysia into a high-income nation by 2020 whereby knowledge and "know-how" become the main drivers for economic growth. The innovation agenda within the ETP programs has not only affected the private sector but also the public sector inclusive of the universities and their academic libraries. One of the many requirements stipulated in the Malaysian government reforms programs is for all agencies in the public sector to implement the Quality Management System (QMS) Standard (MS ISO 9001:200) as a tool to practice evidence-based management. Therefore, Malaysia, through the Higher Education Ministry put all efforts to ensure the education sector, especially universities and colleges experiment with this international standard that focuses on the quality and reliability of processes that create products and services.

Due to the fact that the universities and academic library system in Malaysia are organized differently and operate in different administrative and cultural contexts, research is needed to learn more about how the academic librarians' assigned roles and responsibilities affect their potential entrepreneurial skills and innovative behavior. [1] argues that in the public sector, value creation is not, and should not, be confined to the pursuit of economic profit. Therefore, it is plausible to argue that entrepreneurial competencies in the public sector context should be studied in a broader sense encompassing individuals from all organizational levels and emphasizing activities aiming at getting things done in an innovative way [1].

Libraries are responsible to bring communities together, to provide centers for learning, research and leisure activities. Similarly, academic libraries and librarians provide information, education, cultural and recreational needs of the faculty members and students. In other words, they support the needs of the universities and various categories of users to acquire related books, publications and other educational materials. Other than their professional job parameters, the unique function of libraries and librarians also could contribute to the economic development of modern society by making available necessary information on income generating projects, information consultation activities, research activities, special facilities and services. This is true in the case of academic libraries as they facilitate scientific studies, teaching and self-learning processes. They function as the repository of knowledge and provide storage and facilitate retrieval of research materials not only for their parent universities but also for the nation collectively.

The issues of entrepreneurial competencies and innovative behavior among the academic librarians emerged as a result of the Malaysian Quality Assurance Policies when the Ministry of Higher Education translated the National Economic and Social policies of the ETP and the National Innovation Model to coincide with plans, programs, and projects of the public universities in accordance with the national aspirations and objectives. In addition, the Ministry of Higher Education formulated

policy guidelines for the implementation and management of programs and projects by university libraries to align with the roles and responsibilities of their parent universities.

II. OVERVIEW OF FOCUSING ON ACADEMIC LIBRARIANS' ENTREPRENEURIAL COMPETENCIES AND INNOVATIVE BEHAVIOUR IN THE CONTEXT OF CURRENT GOVERNMENT REFORMS

[2] opines that libraries assist in finding, using and interpreting appropriate information that opens up opportunities for lifelong learning, literacy enhancement, informed citizenship, recreation, creative imagination, individual research, critical thinking, and ultimately, empowerment in an increasingly complex world. The US Association of South-eastern Research Libraries (ASERL) published a set of competencies for research librarians in regards to the "attributes of a successful research librarian which include intellectual curiosity, flexibility, adaptability, persistence, and the ability to be enterprising" (p. 5).

This suggests that the power to effect significant educational change is always connected and correlated to the libraries' prominent role in supporting higher education to fulfil objectives of its parent institution.

Students in higher education are to be provided with the facilities necessary for mastering the subject matter, techniques, skills, habits of thought, and methods of work in their chosen field. Classroom instructions alone will not provide all the opportunities needed for attaining all these complex educational objectives. It is here that libraries come to help students. The university library is a collection of sources, services and the building in which it is housed. It provides access to various resources in order to support teaching, learning and research activities associated with innovation and invention [3].

Therefore, academic librarians' understanding, capability, competencies, skills, knowledge, commitment play a crucial role in improving their libraries as the center of learning. [4] states that improvement in the academic libraries will never happen without improving the skills and abilities of the librarians within them. In other words as stated in the National Innovation Model change should be seen as an individual process and there needs to be willingness to invest in the intellectual capital of those individuals who staff the public services. In the Malaysian context, the Vision 2020 together with the ETP and the implementation of the National Innovation Agenda as well as the subsequent higher education reforms required by the federal government have posed greater challenges for academic librarians than ever before. Within this context, it is perceived that efforts by the academic librarians to implement their entrepreneurial competencies leading to innovative behavior are crucial. There are studies conducted in Malaysia which show that academic librarians face problems implementing new ideas and improving their practices as prescribed by the reforms to experiment with international standard that focuses on the quality and reliability of processes that create products and services leading to new innovation and invention.

There are relatively few studies in Malaysia examining whether and how academic librarians practice recognizing opportunity as one of the entrepreneurial competencies antecedents leading to innovative behavior and specifically how they support their parent universities' work and development as required by the ETP and the National Innovation Model. Thus, this paper is intended to explore how academic librarians demonstrate opportunity recognition as part of entrepreneurial competencies leading to innovative behaviour in their workplace.

III. OVERVIEW OF RECOGNIZING OPPORTUNITY, ENTREPRENEURIAL COMPETENCIES AND INNOVATIVE BEHAVIOR

According to the literature on entrepreneurial competencies and innovative behavior, recognizing opportunity is one of the constructs or dimensions of entrepreneurial competencies (knowledge, skills and attributes). It is being defined as a solid cognitive psychology perspective of the ability for recognizing opportunity embedded in the development of an individual's cognition shaped by prior experience, self-efficacy, beliefs and values which impact and provide insights in the decision process [5]; [6]. [7] outline recognizing opportunity definition as a process to identify, recognize, and discover potential opportunities for new business, ventures, and market and technology creation. The requirements for recognizing opportunity could be categorized into three different perspectives as follows: (i) a cognitive psychology perspective as proposed by [8] states that the ability for recognizing opportunity is embedded in the development of an individual's cognition including prior experience, self-efficacy, beliefs and values which impact and provide insights in the decision process. In addition, cognitive ability is also important to one's ability to exploit specific bits of information in order to create opportunities for innovative services/products [9]. Other cognitive elements such as self-alertness [10] prior knowledge [11] and self-efficacy [12] are also parallel pre-requirements for recognizing opportunity; (ii) the social network perspective explains an individual's interpersonal networks, including weak-tie networks and strong-tie networks and their contribution to information flow about the tasks of individuals in an organization. Strong-tie is important in promoting information flow within an organization whereas weak-tie is useful for encouraging information flow outside an organizational structure [13]. In this light, weak-tie networks and strong-tie networks facilitate access to diversity in people, information and benefits in the learning and information dissemination process which leads to the discovery of further opportunities and new contacts [14]; and (iii) the environmental perspective describes the external environment such as new technology and social values which would motivate individuals to recognize opportunities required by any reform movement [15]. From the context of academic librarians, information technology (IT) skills such as IT infrastructure enable them to contribute to acquisition

processing, storage and dissemination, use of information, digital content, and acquiring new knowledge resources to meet users' expectation. [16].

[6] argue that the execution of higher order thinking skills and creative and critical thinking of recognizing opportunity do not suffice without the execution of personal attributes of creative and innovative behaviors. [17] develops a model of innovative behavior comprising idea generation, idea championing, and idea implementation which may lead academic librarians in the research universities (RU) to implement and practice their entrepreneurial skills. Many case studies on entrepreneurial competencies in different contexts and environments reveal how the presence or absence of this kind of knowledge, skills and personal attributes affects the opportunities that workers provide for their work place and establishments [6].

While the changes in job routines according to the reforms, demand the academic librarians in the RUs to practice flexible understanding of their traditional professional librarianship by incorporating the various constructs and dimensions of recognizing opportunity, there is reason to predict that Malaysian public librarians in general lag far behind in this domain. The subject matter, knowledge and skills of most of the librarians are rather limited to what they have learned and gained during their undergraduate student days. Even though a majority of the librarians in Malaysia are graduates who secured their librarian post immediately after graduating with their professional degrees, it is reasonable to predict that they lack additional knowledge, skills and attributes of recognize opportunity as part of the constructs and dimensions of entrepreneurial competencies.

It is not known how easily the academic librarians can transform their subject matter on librarianship into something that is practicable in the context of entrepreneurship and commercialization as required by the government transformation programs and the RU's standards. Research conducted on the competencies of the Malaysian public librarians which found that the librarians strictly practiced their traditional librarianship job do not guarantee that they have the subject matter knowledge, skills and attributes of entrepreneurship leading to innovative behaviors.

IV. RESEARCH METHODOLOGY

This study used a qualitative interview method which focused on gaining an understanding from the academic librarians' points of view, experiences and interpretations. The methodology may provide insights into competencies from a process perspective that traditional quantitative methods may not bring to light [18]. Furthermore, [19] affirm that due to the broad concept of competencies, it is a challenge to measure something which is elusive and slippery and it manifests itself differently in different contexts, changes over time and is not directly observable. In using multiple case studies, academic libraries operating in two public-funded RUs located in Peninsula Malaysia were evaluated in this study. We sought through interviews the interpretations and viewpoints of the

academic librarians which we considered as vital data when exploring the aspects of recognizing opportunity and innovative behavior in the two academic libraries. The sample size in this study was set as suggested by [20] whereby 12 academic librarians of RUs were invited to participate. Permission to conduct the research was obtained from the top management of the academic libraries involved. A letter was sent to each of the academic librarians selected to inform them about the research and the date that the interview would take place. Each letter clearly explained the objectives of the research including the confidentiality of the responses. The data collection was based on a structured questionnaire and semi-structured interviews. The questions posed were focused on how academic librarians demonstrated entrepreneurial competencies and how innovative behaviors were measured by the top management. After a careful consideration of the various approaches to qualitative data analysis, the thematic analysis was deemed as the most suitable technique for this study as stated in [21], it forms of pattern recognition within data, where emerging themes become the categories for analysis. In this study, we adopted the methodological triangulation approach to strengthen the credibility of the findings.

V. FINDINGS

A. Cognitive Perspectives: a) Prior Knowledge and Experience

Interviewees from RU Case A and RU Case B demonstrated a high degree of cognizance of the strategic challenges presented by the RU requirements, particularly the strategic necessity of maintaining the ongoing assessment of the RU status. The informants from RU Case A agreed that academic knowledge and experience were critical to recognize opportunity to perform entrepreneurial skills leading to innovative behavior in their professional work. This was clearly emphasized in the following data:

My degree in Botanical Science and my exposure to the agricultural field and of course my second degree in Information Management help me in recognizing what is required from us where the mission and vision of the RU is concerned. (CSA, Q1, A1, Academic Librarian 1).

They also perceived that their individual's cognition which includes prior experience, self-efficacy, beliefs and value were impactful and provided insights in their decision making process as suggested in [8]. In this perspective, other academic librarians elaborated the importance of formal education in instilling the cognitive ability as explained below:

We understand that formal education and cognitive ability have strong connection to carry out all tasks from the simplest to the most complex. For instance, we need it for solving problems and making decisions where we choose the right method to then generate the most harmonious solution for betterment or situation improvements as required. This is very important because the parent organization is focusing in research activities

and invention of new products associated to scientific discovery. (CSA, Q1, A1, Academic Librarian 3)

However the informants from RU Case B perceived that their academic knowledge and experience were not sufficient to perform entrepreneurial competencies leading to innovative behavior to meet the requirements of the RU standards. They perceived that their top management should plan for new skills and additional formal and informal credentials through training. The data suggested that librarians from RU Case B had little professional preparation on entrepreneurial competencies and innovation skills. They were not given in-depth understanding of knowledge or theories related to entrepreneurship and innovation. This shortcoming in their preparation was not due to their individual failure to be innovative and entrepreneurial. Instead, it was due to systematic shortcomings.

B. Cognitive Perspectives: b) Self-Awareness

As one of the pre-requirements for recognizing opportunity, all the interviewees of RU Case A mentioned that self-awareness with its dimensions of self-efficacy, beliefs and value provided them insights into the decision making process in recognizing opportunity for the entrepreneurial and innovative practice.

On the other hand, the informants from RU Case B have different views on the domain of self-awareness by the adoption of ingenuity which they perceived as giving them the ability to innovate, to absorb new perspectives, to respond quickly to opportunity or threats as well as to let go of strategies that no longer worked and embrace the new ones and practice the traits of self-leadership. These traits were perceived by the informants of RU Case B as helpful for them to recognize opportunity for innovation. Conceptually, the literature suggests that self-awareness is perceived as part of emotional intelligence underlying cognitive guidance that may affect people's motivation and decision to improve or to change for the betterment [5]. Ingenuity, on the other hand is the personal trait of inventiveness, creativity, imagination, innovative, enterprise, insight, intuition, inspiration or cleverness or skillfulness in doing work or tasks [5]; [6].

C. Social Network Perspectives

Informants of RU Case A believed that social network was used as a channel for collaboration and leveraging their skills to assist other librarians who wanted their expertise and knowledge consultations. They perceived social network is the most suitable communication style for them to learn and practice their entrepreneurial skills leading to innovative behavior where they could exploit specific bits of information in order to create opportunities for innovative services/products [9].

However, there were sentiments among the RU Case A librarians, who believed that the organizational climate of the public sector where they were attached to was not conducive for practicing entrepreneurial competencies and innovative behavior. They perceived that the public service environment was so different from the entrepreneurial one as the procedures applied in the private sector companies and other similar organizations

could not be applied in the public services such as in the academic libraries [13], [14].

The informants of RU Case B on the other hand perceived that they had successfully used social network interaction with successful librarians and knowledge entrepreneurs from all over the world and were inspired by some successful venture projects by other librarians/libraries. The perceptions of informants from RU Case B were related to the social network conceptual perspective which explains an individual's interpersonal networks, including weak-tie networks and strong-tie network contribution to information flow about the task activity of individuals in an organization. Strong-tie is important in promoting information flow within an organizational whereas weak-tie is useful for encouraging information flow outside an organizational structure [13]. In this light, weak-tie networks and strong-tie networks facilitated access to diverse people, information and benefits in the learning and information dissemination process which led to the discovery of further opportunities and new contacts [14] such as in the case of RU Case A and RU Case B.

D. External Environment Perspectives

Informants of RU Case A admitted that the phenomenon of the external factor whether encouraging or challenging did motivate their venture in recognizing opportunity to innovative behavior in performing their tasks. The most relevant external factor is when the parent organization was granted as a RU where the university strived to become large and research-focused. The increased research intensity caused potentially detrimental added stress on employees including academic librarians. The recognition also pushed them to many unexpected tasks and automatically their culture of work changed tremendously. Thus, they were identified new possibilities and applied creative thinking to initiate new services or work process to boost up the performance. From the negative perspectives, they admitted that economics issues and funds cutting gave them difficulties in the subscription of library resources. The percentage increase in the cost of printed monographs was 87%, indicating reduced affordability for the library to maintain huge subscriptions of resources. To deal innovatively, the respondents mentioned they had to eliminate or minimize the subscription of printed resources in their annual strategic planning to cope with the constraints. They also cancelled the subscription of databases with duplicate content, negotiated and renegotiated contracts with vendors yearly and were looking more for free open sources.

The informants of RU Case B, however, reported they felt motivated to execute any given task as rapid technology induced them to surf the internet, adapt from the examples given to match the requirements from the top management. As the top management is just concerned about frugal spending i.e. not to spend unnecessarily and excessively, to avoid outsourcing, their decisions are based on their judgments and analysis. From the perspective of the environmental phenomena with regard to the information explosion, the informants

explained that the role of librarians are also included to co-create and to make the library a more active space of knowledge creation. They also agreed that librarians should embrace the skills in publishing in order to support the transformation of library's role as publishing agent. Libraries, even if they had the will and wherewithal to start service development, it would still require broader commitment of its parent organization leadership to foster effective capacity [16].

VI. CONCLUSION

The primary academic contribution of this study is the combination of existing theories and concepts underpinning opportunity recognition as one of the entrepreneurial competencies for the implementation of innovative behavior in academic libraries. Other internal and external factors tested among the academic librarians of the two Malaysian RUs were local in terms of context and environment. To support the Malaysian government innovation agenda within the ETP strategic framework, implementation was quite complicated and complex and the academic librarians required knowledge and entrepreneurial skills and innovation. They ought to have the knowledge and entrepreneurial skills and innovation should be implemented within the different contexts and environments. Many professionals who were not familiar with the complexities of entrepreneurship and innovative behavior remained baffled as to why great ideas were not routinely implemented to quickly achieve a high level of acceptance from the targeted user community [22]. Researchers have frequently studied entrepreneurship related to innovative behavior by concentrating on a single dimension, such as the organization complexity or size [23]. This study goes beyond the organizational context and size as it also includes other dimensions such as the influence of national policy on the opportunity recognition of Malaysian academic librarians in general.

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