

# A CRITICAL REVIEW AND AN ASSESSMENT OF UNIVERSITY INDUSTRY COLLABORATION FROM THE READINESS PERSPECTIVE

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## ABSTRACT

A massive body of work has been done in assessing University-Industry collaboration in Malaysia context. As a result, different sets of barriers and issues that impede the collaboration have been highlighted and recommendations have been proposed by researchers. However, up to date there is little critical review that looks into the subject matter from the lenses of readiness and specifically from the micro level perspective. This review paper will review the current position of University-Industry collaboration in Malaysia and will suggest a model that will pave the way to a better understanding of University-Industry collaboration from the readiness perspective.

**Key words:** *University-Industry Collaboration, Readiness, Malaysia*

## 1. INTRODUCTION

Scientists and researchers agree that knowledge is one of the most important asset of any organization, thus in order for companies to survive in the industry and to remain competitive, companies must ensure they manage their knowledge in the most effective way [1], [2]. On the other hand, university has always been known as an institution that its core aim is to educate the people, and to provide with knowledge. Although university and industry are two different and separate entities, the collaboration between the two has a long history, and researchers assert that the need for each other is increasing drastically. According to [3] in the era of knowledge economy the need for in university and industry to collaborate and share knowledge derives from the sense that this collaboration can be a fundamental cause of innovation which will benefit both sides.

Industries are increasingly looking at universities as the source of knowledge whereby they can innovate and gain competitive advantage, and at the same time, universities are also aware of importance of collaboration with industries, because such collaboration can lead to gaining funds through the

commercialization of their knowledge.

## 2. LITERATURE REVIEW

Universities are institutions that in fundamentals are to educate people, societies, and to generate knowledge. On the other hand, the main role of companies or industries is to develop the economy, to ease people's life by providing goods and services. Thus universities can help by providing human capital and knowledge, whereas industries do the implementation of the knowledge in service of people and societies. The collaboration between university and industry in the United States has started around 1920s and 1930s, where Massachusetts Institute of Technology (MIT) has started to collaborate with nonacademic institutions known as industry [5]. In other countries such as China, this collaboration predates since 1950 [6]. Similarly to the global context, there is collaboration between universities and industries in Malaysia and which has taken place ever since 1990s and even got stronger during the economic crisis in 2008 [7]. The collaboration between universities and industry in Malaysia has taken place such on conferences, seminars,

trainings, consultancy and joint research, and other projects [8]. Nevertheless, some researchers argue that collaboration between university and industry in Malaysia is not at good level. According to [9] with regard to commercializing their research, universities in Malaysia are behind as compared to universities in United States and United Kingdom. However, other researchers have different stand on this, like [8] found that 81% of industry practitioners in Malaysia have different engagement with universities. This claim has also been supported by other researchers who found that a massive number of different industries have direct relations with Malaysian universities [6]. It is also important to highlight that even multinational companies that operate in Malaysia do collaborate with Malaysian universities. Such collaboration was done by Intel Malaysia, who shared their success stories with collaboration with universities in Malaysia, whereby they have benefited in terms of publications, hiring, innovations and so on [10]. Therefore, industries are increasingly looking at universities as the source of knowledge whereby they can innovate and gain competitive advantage, and at the

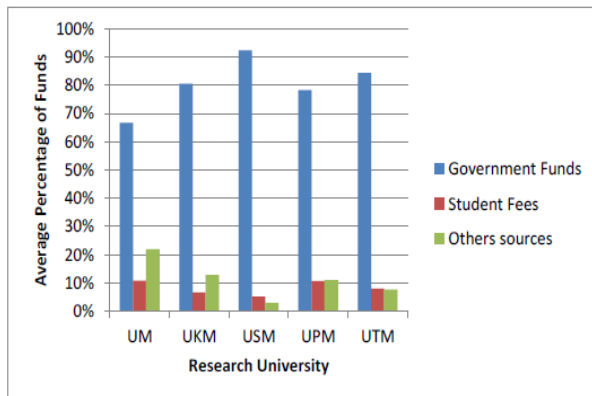
same time, universities are also aware of importance of collaboration with industries, because such collaboration can lead to gaining funds through the commercialization of their knowledge. Although commercializing the knowledge is important for universities to further gain funds, according to [4] university academics do also engage with industry to develop their research, rather than just commercializing it. In addition studies have shown that companies that collaborate with universities have higher productivity rates than companies that do not have such collaboration [11]. It is important to highlight that the government does understand that collaboration between university and industry fosters the development of the nation; therefore the government plays an important role in facilitating the collaboration between university and industry. For instance, the Malaysian government has implemented policies since 1990s to motivate research and development collaboration between universities and industry. The subsequent section will highlight some of the initiatives taken by Malaysian government in fostering a better collaboration between public universities with industries.

## **2.1 Malaysian Government's Initiatives to Support Collaboration between University and Industry**

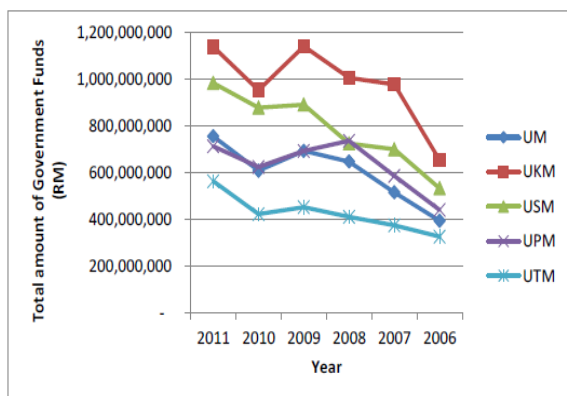
Malaysian government has taken initiatives to foster the collaboration between university and industry and this is particularly due to the pressure to achieve the status of a developed nation by year 2020. It is important to highlight two recent plans such as Ninth Malaysian Plan (2006-2010) and Tenth Malaysian Plan (2011-2015) which as a part of their strategy in achieving their mission of 2020 have emphasized on strengthening the collaboration of private and public sector in research area. The claim in the government's plan has also been empirically supported by prior researchers who have argued that there is a strong need for university and industry to collaborate in Malaysia and this collaboration must be very close as it can expedite the development of the country [8].

Researchers are often emphasizing on the importance of Malaysian government in facilitating the collaboration between universities and industries. According to [7] research academic institutions have been provided with better financial support by the Malaysian government in order to

enhance their research and to commercialize it. The same author argues that five research universities such as (UM, UPM, UTM, USM, UKM) have received funds from the government for their research. To shed more light in this subject, according to [12] the five announced research universities in Malaysia, are progressively receiving more funds by the Malaysian government.



**Figure 1.0** The average percentage of funds received by the Research University to finance innovations and research activities for year 2006 to 2011.



**Figure 1.1** The total amount of governments' funds received by the five Research Universities for year 2006 to 2012.

As depicted in both figures above, Malaysian government has increased funding on research universities. These findings were also supported by [13] who in addition found that universities were satisfied with government funding improvements specifically in R&D.

Though government funding are perceived important for universities to carry their research activities, and commercialize their knowledge, however, according to [11] Malaysian government should expedite an effective collaboration between university and industry and it should recognize the capability of university to collaborate with a particular industry.

## 2.2 Perceived Benefits of Collaboration by Malaysian Universities and Industries

Throughout the literature it is evident that universities and industries in Malaysia are significantly engaged in collaboration and there is a considerable awareness of the importance of having a mutual engagement. In addition, scholars claim that universities and industries in Malaysia are in need of each other, as the university contributes in human capital and the industry uses it to run their business, therefore, this collaboration

does benefits both sides [6]. The above mentioned statement has also been supported by an empirical study, which found that all industries in Malaysia have agreed that a better collaboration with university will benefit them [8] and especially small and medium companies which have some limitation in their R&D capabilities, they look at university as a mean to help them on seeking knowledge [14]. In addition, [7] found that research universities in Malaysia highlighted more benefits as compare to non-research universities. This might be because the Malaysian government emphasizes more in funding the research universities. However, this does not mean that non research universities do not get engaged with the industry; as the literature proves otherwise, but they rather solely depend on their budget and willingness of industries to pay for their service.

Seeing the collaboration from a superficial level or a bigger picture, it can be noticed that there is a need and willingness to collaborate by university as well as the industry. However, researchers claim that there is still a big gap when it comes to collaboration between university and industry in Malaysia [6] and these gaps are identified in the micro

level whereby individuals from university and industry are hesitant to practically get involved with each other [15].

The next section will discuss some of the current challenges perceived by universities and industries when it comes to collaboration, then followed by alternatives on addressing these issues.

### **2.3 Assessing Challenges of Collaboration by Malaysian Universities and Industries from micro level perspective**

Irrespective there is a willingness from the both sides university and industry to enhance their collaboration, there is evidence that there is a big divergence between the two [6]. To shed more light in the subject matter, the industry is reluctant to financially invest for collaboration with university with the belief that universities might not be capable of understanding the real problems in the industry [15]. The same study highlights that the arguments from industry side were, industry practitioners believe that they are more aware of the problems they were facing in the industry, but university representatives do not know the real problems. Similar to above mentioned issues [16] found that, time, main power and communication

were the main barriers that impede the collaboration between universities and industry. Researchers have suggested that there is a mutual willingness from both University and industry to collaborate and there is a need for a better communication and more engagement, such as talks, meetings, so that a better compromises and a better result shall be reflected [4,13] However, the problem seems to be due to a lack of communication and understanding of each other's capability. The barriers at individual level have also been highlighted by [18]. Therefore, since the scholars highlight the issue in micro level or individual level, the next section will discuss and propose a pragmatic approach on addressing this issue from the readiness perspective.

## 2.4 Readiness

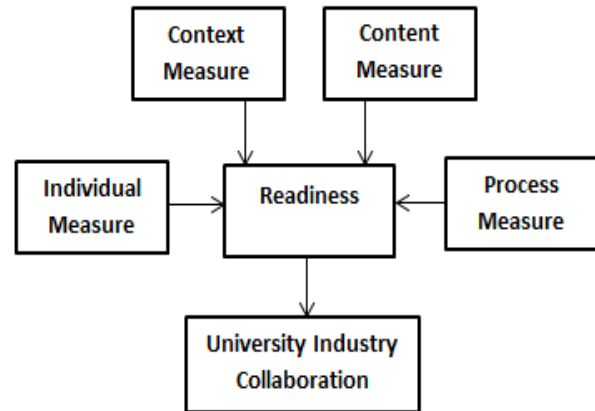
The prime objective of this paper is to critically assess the university industry collaboration and propose solution to the identified challenges from the lenses of readiness, thus, we firstly get some insights of what is readiness referring to. Scholars defined readiness as the degree to which those involved are individually and collectively primed, motivated and technically capable of

executing the change [19]. Similar to above given definition, in the context of this study, this research, from the micro level perspective, defines readiness as academicians and industry practitioner's state of being ready, motivated and technically capable for collaborating and transferring knowledge between them. In the case of Malaysia, when asked both university and industry regarding their collaboration, it has been empirically identified a significant willingness from both parties to collaborate [2,13] and there is ongoing collaboration. The mutual willingness and awareness from the both parties seems more as in macro level, however, there is still a wide mismatch or gap between university and industry and mostly identified in individual level. According to [6] industry practitioners seem to be hesitant when it comes to collaborating with university academicians with the belief that academicians are unable to understand challenges that industry faces. This indicates that there is a doubt on each other's capability that the collaboration can benefit both parties, or in other words, it is easier said than done. According to [20] companies should assess employee's readiness and

capabilities prior to embarking into collaboration activities. Although, this is in a different context other than university industry engagement, but the collaboration does include group of people or individuals working together.

Abovementioned scholars have highlighted that at individual level and readiness it is important to be investigated. Although some assessment of readiness from scholars side has been done, but their assessment is mostly related to individual capabilities using IT tools and also in other contexts than university industry. Therefore, the argument is that IT is not the only determinant of readiness. In the context of this study, this research argues that, readiness of both university academics and industry practitioners should be assessed when engaging in collaboration and even prior to doing so. As depicted in the figure below, this critical review paper has identified some of most important variables pertaining and measuring the individual's readiness which subsequently impacts the collaboration between university and industry practitioners.

### 3. PROPOSED FRAMEWORK



**Figure 1.2 Readiness of university and industry individuals towards collaboration**

As depicted in the above figure, from the literature review these variables are predominantly used to measure the readiness for change which also impacts knowledge exchange. Individual measure is a variable as per Holt's instrument which includes few elements that predominantly how individuals feel about their job. Whereas, context measure and process measure are variables to measure individuals perception towards origination support, respectively management support. On the other hand, the content measure is a variable is being used to measure individual's perception toward implementation of knowledge sharing with the other individuals. Putting it in the context of this study, the above

mentioned variables affect readiness of individuals from university and industry to collaborate. Therefore, this paper argues that we should measure how ready individuals from both universities are to collaborate, subsequently there is need to measure readiness and measure its impacts on collaboration.

#### 4. CONCLUSION

This research is important to give insights of the importance of collaboration between university and industry in Malaysia, in addition it specially highlights that prior to having university and industry collaboration it is essential to understand the readiness of all the stakeholders, university, industry, specifically from the micro level perspective. There is evidence that Malaysia government has taken initiatives, particularly in funding research universities to have more collaboration with industries, there is evidence that both university and industry actors in Malaysia agree that there is need for collaboration. However, there is also evidence that there is a wide gap between university and industry with regard to collaboration and this is due to uncertainty in believing that the collaboration is doable, actionable and with the believe that university and industry do not understand

each other or are not capable or ready to collaborate. Therefore, this research has critically touched these issues and also highlighted that understanding the readiness of individuals from both university and industry is crucial prior to engaging in collaboration. It would be very helpful if other researchers could investigate the subject, test variables and the model using primary data through surveys and interviews.

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