An Efficient Evaluation Model for the Assessment of University-industry Research Collaboration in Malaysia

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Abstract: University-Industry Research Collaboration (UIRC) is an essential, effective and dynamic factor not only for development of social community but also for the development of the nation. Despite the enormous importance of this research collaboration, there have been certain issues still remain in this domain. Several articles have been published to deal with the factors affecting this collaboration and to make the collaboration successful. However, the discussion about the concept of evaluation and its potential application to this collaboration has been excluded from the mainstream literature. In this study, we focused on the evaluation scheme to assess the strength or weaknesses of the collaboration. The contributions of this study are in threefold. First, it recognizes the highly influential constraints, evaluation parameters, success criteria and tangible outcomes of UIRC that are the core demand of the evaluation process. Second, it develops an evaluation model that illustrates the comprehensive review of Malaysian UIRC. Third, it provides a robust set of evaluation metrics that is responsible to evaluate the strength not only Malaysian UIRC but also any research collaboration between university and industry. This evaluation metrics can be utilized in term of checklist by simply following the set of generated evaluation metrics to check the strength and weaknesses of the collaboration. As far as, we aware of, this is the first time an extensive contribution is attempted in this area of research.

Keywords: Evaluation metrics, evaluation model, success criteria, tangible outcome, university-industry research collaboration

INTRODUCTION

Recently University-Industry Research Collaboration (UIRC) due to its great impact on innovation and economic growth gained the level of interest widely (Mitive, 2009; Guan and Zaho, 2013). Ample amount of knowledge have been raised about UIRC (Petruzzelli, 2011; Bruneel *et al.*, 2010). For instance, some of the researchers promote the knowledge about the importance of UIRC (Arvanitis *et al.*, 2005; Othman and Omar, 2012). Some provide the parameters to enhance the UIRC and some authors worked on the output of research collaboration (Etzkowitz and Leydesdorff, 2000; Rast *et al.*, 2012). While the research about to evaluate the strength of the collaboration is totally unattended in the main stream literature, especially in developing countries like Malaysia. Developed countries reserve a big amount of their budgets for the periodical evaluation of their UIRC (Boardman, 2009). As the UIRC have direct and significant impact on the economic growth of the nation and only the powerful collaboration between university and industry can enhance technological innovation and a precious source of progressive and prosperous society (Albuquerque *et al.*, 2008). Unfortunately research collaboration between university and industry in developing countries are totally deprived and immature. The reason of immaturity between their collaborations is the lack of knowledge about the process of evaluation. Although some of the authors provide indicators to assess the strength of the UIRC (Esham, 2008) however, according to Philbin (2008), evaluation process is the comprehensive review of the situation that search out all the constraints that limit the collaboration, build the criteria that make the collaboration more strengthen and mention all the outcomes that one powerful UIRC should provide. This statement raises two research questions that what are the constraints that are responsible to minimize the outcomes of the collaboration? And what are the success criteria that make the collaboration stronger and maximize the outcomes of the collaboration? In well developed nations, there exists a powerful research bond within U-I to carry out innovations in smooth and healthy way. But in developing countries, certain constraints limit the efficiency of university-industry research collaboration. Moreover, lack of periodical evaluation is also a big gap between university-industry collaboration while the periodical evaluation is the best practice to measure the efficiency and deficiency of any linkage (Barnes, 2002). Therefore, it is necessary for the developing countries to adapt important techniques

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