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Theme: Universities as interactive partners

Multiple dimensions of knowledge transfer value.

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Introduction

While the importance of universities' knowledge transfer (KT) mission is increasingly acknowledged, metrics to appropriately assess universities' knowledge transfer performance are lagging behind. In the UK, universities' knowledge transfer performance is measured – and, at least in part, rewarded – on the basis of a survey of universities' knowledge transfer activities (the HEBCI survey, launched in 2000) which, although comprehensive, presents several limitations (Kelly, 2008; Rosli and Rossi, 2013). In line with a view of knowledge transfer as a uni-directional and linear process, knowledge transfer performance is quantified in terms of the outputs produced (such as the number of patents and other IPR filed, sold and licensed, the number of contracts signed, the number of learner days delivered, the number of attendees to events, etc.) and the value generated is proxied by the income these activities have produced.

However, a more sophisticated view of knowledge transfer reveals that knowledge transfer is a complicated and complex process (Kingsley, Bozeman and Coker, 1996; Bekkers and Bodas Freitas, 2008; Hughes, 2010). Some observations show that (a) all the parties involved learn from the interaction, (b) active participation of the receiver is crucial for knowledge transfer to transpire and (c) the respective parties' prior knowledge base and absorptive

capacity strongly influence the outcome of the interaction. Additionally, knowledge transfer processes generate strong spill-overs which benefit agents that go well beyond those involved in the initial transfer.

Therefore, the value of knowledge transfer is likely to be a multidimensional concept from which only a part is captured by the income it generates. Value must then be considered from different perspectives in relation to the various beneficiaries. For example; the "receiver" of knowledge may derive benefits that are broader than those originally envisioned; the range of beneficiaries may be broader than intended – e.g. society at large, or simply a broader range of stakeholders, may benefit from the "unlocking" of knowledge promoted by such activities; the universities that "transfer" knowledge may also learn from the interaction. In this respect, these different interactions must be calibrated with regards to the degree of involvement of all parties (value co-creation) and the length of the time span in which benefits are accrued.

This research paper intends to critique the current metrics used to assess the universities' performance in knowledge transfer, particularly with respect to the measurement of its value, and launch an original line of enquiry into the different dimensions of knowledge transfer value with the objective to support the development of more accurate and comprehensive indicators of universities' knowledge transfer performance.

Literature Review

Governments are increasingly involved in the promotion of knowledge creation and knowledge transfer processes, in the belief that the creation of new knowledge underpinning innovation is a key stimulus to economic growth. Universities in particular are among the most important organizations where new knowledge is produced, and the important role they

play in processes of regional development and regional and national economic growth is increasingly acknowledged. Therefore, it is believed that ensuring that the knowledge they produce is efficiently transferred to the economic system is of paramount importance – universities are no longer "ivory towers" which produce knowledge in isolation, but active agents of economic development.

Consequently, while in the past governments believed that their main role with respect to the university was to provide funding for the production of new knowledge and the training of human capital (i.e. funding education and research, particularly basic research which is insufficiently funded by the private sector) nowadays they are increasingly attempting to devise ways to support and encourage processes of knowledge transfer from universities to industry and other stakeholders in the economy (Bozeman, 2000; Hughes, 2006). Some examples of interventions implemented in this broad policy area include, but are not limited to, (i) policies in support of networking between university and industry, (ii) reforms of IPR regulations in order to promote the commercialization of academic knowledge, (iii) support for the creation of technology transfer offices and other intermediaries in innovation processes. In many countries, these interventions are carried out in the context of an evidence-based policy (EBP) approach that aims to go beyond ideological stances and adopt sound empirical evidence as the leading rationale for decision-making in the policy field.

The focus on evidence implies that the monitoring and assessment of university-industry knowledge transfer activities, and the development of appropriate metrics to measure their impact, must be an integral part of policymaking. This monitoring allows policymakers to assess if and where interventions are needed, how to design appropriate incentives and also how and when to reward universities appropriately. Governments are increasingly devising metrics to measure universities' knowledge transfer performance, and the UK is a particularly relevant and striking example of this (Howlett, 2010; Kitigawa and Lightowler, 2012).

Capturing the intensity, impact and value of universities' knowledge transfer processes requires in-depth understanding of their nature and characteristics. Instead, current literature seems to suggest that the variables chosen by policymakers to measure knowledge transfer performance suffer from several limitations that reduce the universities' ability to accurately and fairly represent their engagement in knowledge transfer. Building upon a critique of the current approach to the measurement of knowledge transfer and upon original qualitative research, the present research proposes two main arguments.

First, it discusses how current measurement of universities' knowledge transfer performance fall short in a number of respects, mainly linking this to a problem with the theoretical framework driving the choice of measurements; in particular, it highlights how the attempts to measure the value of knowledge transfer rely upon indicators that are too narrow and fail the capture the complexity of this concept.

Second, it proposes a theoretical and empirical investigation into the multiple dimensions of knowledge transfer value, with a view to suggest ways to improve current measurements.

Methodology & Data Collection

We are employing a qualitative approach to this research. We begin by developing a critique of the current approach to the measurement of knowledge transfer, particularly focusing on the choice of indicators adopted in order to measure the value of knowledge transfer. We argue that the choice of indicators is influenced by

(a) what policymakers perceive the value of the outcome of universities knowledge transfer to industry and other stakeholders to be, which in turn often depends on their view of "what is" value and what are its main characteristics,

(b) what they believe the universities' objectives and roles should be, and

(c) their assumptions about how universities transfer knowledge in practice, which link to individualism, institutional, context and relationship.

But these theories can be contradictory and the assumptions may not be borne out in practice, which leads to several problems including the following

(i) some of these perceived values may be conflicting, leading to measurement which are appropriate for certain kinds of activities but not for others,

(ii) some institutions may have different objectives, leading to choose metrics that are not appropriate for all kinds of institutions and

(iii) the measurement only covers part of the value of knowledge transfer, or measure the "wrong things" which may not necessarily portray the real value that it has contributed.

We then carry out comprehensive literature review on the dimensions of knowledge transfer value and develop a conceptual framework (typology) to capture the different dimensions of knowledge transfer value. This framework is validated through several exploratory case studies (6-8 cases) involving different interaction settings. For this purpose, we will focus our attention on "Knowledge Transfer Programmes" (KTP) in order to validate and extend the framework. The case studies will rely primarily on exploratory interviews with representatives of the organizations involved in the knowledge transfer activities numbering at least 2 to 3 interviews per case study.

Analysis

As we are still in the midst of our research, the data sets are currently incomplete. However, our initial exploratory analysis shows that the "perceived value" of knowledge transfer is indeed a complex construct. This has led us to believe that the value typology that we are beginning to construct around knowledge transfer to be extensive, and this may impact on the

development of indicators supporting evaluative policies for future knowledge transfer funding.

Conclusion

In our study, we show how metrics to measure the performance of universities in the implementation and commercialization of knowledge transfer rely heavily on models of income generation. We discuss how this can lead to some undesirable outcomes because not all types of activities are suitable for this type of model. One major aspect is the different dimensions associated with the knowledge transfer value. This implies then that current measurement (evaluation) models may not be applicable to all types of universities and the actual practice of knowledge transfer processes may be in contrast with some of the assumptions upon which these metrics are based. Therefore, this study is important as there is a need to explore the different dimension of perceived value creation in the context of knowledge transfer in order to provide a more accurate and fair evaluation of future research funding.

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