

World Applied Sciences Journal 17 (6): 770-775, 2012

ISSN 1818-4952

© IDOSI Publications, 2012

Producing Useful Knowledge in Management Science - Facilitators and Barriers

Masoomeh Moharrer and Mariano Corso

Department Dipartimento di Ingegneria Gestionale,
Politecnico di Milano, Via Giuseppe Colombo 40, 20133, Milan, Italy

Abstract: In many conferences and meetings in management subjects today, some academic scholars blame themselves and their academic societies for not producing useful research. Here, usefulness refers to the type of a research that can be useful in real practice and lead to the improvement of organizations. Since the gap between academic research and industry practices has increased in recent years, there is a need to shed light on the causes of this issue and propose ways in which this challenge can be overcome. This is a critical step in enhancing applied science. This article analyzes the current trend in conducting management research and raises some issues that scholars should consider when implementing research to make their results practical. To this end, it utilizes institutional theory and introduces factors, which are mostly institutional, that needed to be considered in managerial studies in order to contribute to the practice. It introduces the factors which facilitate or impede producing useful knowledge. Additionally this article illustrates a network of academic researchers linked to industry and shows how the structural holes in the networks of academic scholars and industry can contribute to producing useful knowledge. The model of producing useful knowledge is proposed and the relationship between different methods of conducting research and the usefulness of the created knowledge for practitioners is illustrated in this paper.

Key words: Academic research • Management research • Industry link • Useful knowledge production • Scholars' network.

INTRODUCTION

The improvement in scientific knowledge is becoming increasingly important for new business development [1]. Universities can contribute to economic development both by interaction with existing industry and by commercialization of knowledge [2].

Policymakers believe that universities are tools for economic growth [3, 4]. As a consequence, policy makers' expectation of universities with respect to their production of useful knowledge for industries and the commercialization of their research results has increased. Few scholars have investigated how universities can meet these new expectations, in order to increase their responsibility as actors in regional and national economic development [5].

A significant portion of budget for university research is funded by industry, while in the current situation the share of basic funding is decreasing [6]. At the end of the 1900s and the beginning of the twenty-first century, there was a worry that increased industrial funding would result in more applied research and development work by universities [7, 8], which can

lead to "drift of epistemic criteria" [6]. This is when university professors neglect their important responsibility; to develop long-term knowledge [9].

In addition to that, during the late nineteen-hundreds the 'Triple Helix' perspective introduced a model at the institutional level in which the interaction between university, industry and government is symbolized by a triple helix of evolving networks. The model was built on the expectation of knowledge production [10]. In this model, universities play a critical role in the innovation of industries and hence the national system of innovation [11, 12]. Etzkowitz *et al.* [13] state that there are interactions among universities, governments and industries, while universities increasingly operate within this Triple-Helix.

However, today many academic scholars do not collaborate with industry and their contribution to industry is rare. This is especially noticeable in research in the management field. In fact despite the potential of this branch of science and the capabilities of management professors and their students, the interactions of university with industry is relatively low in this important field.

Corresponding Author: Masoomeh Moharrer, Department Dipartimento di Ingegneria Gestionale, Politecnico di Milano, Via Giuseppe Colombo 40, 20133, Milan, Italy.

In many conferences and meetings academic scholars blame themselves for not producing useful research for industry. This article argues that this is a reciprocal problem. The first side is that some academic scholars do not pay sufficient attention to producing knowledge that is useful for industry. The second is the challenge that scholars face in finding gatekeepers and entering industry in order to conduct useful research.

The latter problem is mainly related to data collection. There are many students and scholars who decide to fill the gap between importance of useful knowledge and lack of such research, by conducting research which contributes to industry. Thus, they design a methodology that could lead to the production of more useful research rather than just a theoretical study. In spite of spending much time on this design process, when they come to the implementation stage, they are not able to find any company willing to cooperate, unless they have good social capital and strong direct or indirect links to industry. Unfortunately access to such links is possible only for a few percent of scholars and it is rare for managers to cooperate with academic research. Therefore whose fault is the decrease in the production of useful knowledge? Is it the academic scholars, or the industry managers? Or is it both?

In order to analyze this problem we are going to shed some light on the reciprocal factors which create a loop in the process of conducting academic research in the management field. Scholars have used secondary data for a long time due to three main reasons. First, the existence of some constraints tied with the lack of required resources and capabilities to collect data lead to using secondary data. Budget and time are the main constraints that scholars are facing. Second, concerns the access to various databases containing large samples, which increases the usage of secondary data in academic studies. Many of these databases provide free access to users with some conditions such as citing the database source in the results of the finished paper. Social capital is the next determinant of using either secondary or primary data when performing research. A lack of ties in their social capital network is why some scholars inevitably use secondary data, which also increases the speed of producing academic research.

Among the various types of secondary data, patents data has received considerable attention in the management literature. In such studies, it is difficult to consider contingencies and the exact phenomena underling the achieved results. In this type of studies, scholars have to find a measure for their variables from a set of preexisting data. In the majority of cases the

measures do not properly represent the underlying variable. This can be seen in studies which have applied research and development (R&D) expenses as a measure in their analysis. This measure has been used as a measure of different variables in different studies. Some studies have used it as a measure of innovation; others have used the same figures as a measure of absorptive capacity etc. As a consequence, deriving results from measures which do not properly represent the variables creates a gap between reality and the result of such academic studies. In addition, it means that the research and results are not sensible for the industry managers. Managers find that the results of secondary data differ from reality. Therefore, their perception toward academic research is that it comprises a set of useless studies that in practice cannot be relied upon. As a result managers are not willing to cooperate with researchers in collecting data and the process of conducting research in the prospective research, even that which could create value for their organization. A loop is created here, where academic scholars have difficulty entering industry to conduct their research. This factor together with the availability of secondary data tempts scholars to use secondary data in implementing their research. As argued before, the results of secondary data use can be far from reality hence creating a reason why industry managers may not be willing to cooperate with academic researchers.

There are some studies which view the relationship between university and industry as a commercialization of knowledge [3, 14]. However few have considered other aspects of this interaction beyond the financial and commercial issue. In the current article we are trying to overcome this problem by looking at a broader aspect of this relationship which is more vital for the survival of academic research. This main aspect is the possibility of empirically testing their research dilemma, i.e. having access to data and even being able to collect data. The following sections illustrate the factors which impede the production of useful knowledge.

Management Journals and Practice: One factor which creates the gap between academic research and practice is the criteria of management journals' review process. Current selection criteria are more focused on theory or methodology issues and less so much on the contribution of the knowledge produced to industry and practice. However these criteria contradict the mission statement of the journals in many cases. The following statements illustrate this issue in a number of top management journals.

‘The mission of the *Academy of Management Journal* is to publish empirical research that tests, extends, or builds management theory and contributes to management practice.’

‘*Management Science* is a scholarly journal that publishes scientific research into the practice of management. Our scope includes articles that address management issues....’

‘It is devoted to the improvement and further development of theory and practice of strategic management and it is designed to appeal to both practicing managers and academics.’

As can be seen, the importance of management practice is addressed in the mission statement of top management journals. So why is it not considered or given sufficient weight in the selection process for articles? Competency trap and inertia are examples of concepts which are keywords of many articles in top management journals. But to what extent do journals themselves consider these in their selection criteria? Regarding the goal and mission statement of such journals, to what extent do they try to achieve this goal? How much could such journals attract practitioners? How much do practitioners read academic journals?

Based on this argument two questions are raised here which requires attention by the editors of management journals: What is the role of a Management Journal in creating useful knowledge? How can it be improved?

Social Capital: Academy -Industry Links: Social capital is another factor which influences the production of useful knowledge. The network of researchers and industry managers play a critical role in conducting research. Rasmussen *et al.* [2] investigated how different

universities and other public and private initiatives interact with each other as a network and create a system for promoting the relationship between them and increasing the commercialization of research at a university.

Figure 1 shows a typical network of industry and academic ties. It can be seen that ties in both academic and industry are too dense among themselves, while the ties which connect academics to industry are much fewer (only AC6). In other words, the intra-density in these two groups is high while the inter-density between groups is very low. The availability of ties to connect industry and academia would increase the chance of producing knowledge which can improve both types of organizations. We should work on improving the strength and density of the kind of ties which connect these two groups – academic and industry. Good relationships can enhance these ties and hence create a reciprocal trust between both groups. This would result in the enhancement of the willingness of both sides to collaborate with each other in conducting research.

Based on the above argument a valuable strategy to break the loop of not producing useful knowledge is to realize the power of structural holes (e.g. AC6 in Figure 1) that broker the network of academic scholars to the industry network. The structural holes are a part of social capital and are created by a network in which people can broker connections between otherwise disconnected segments [15]. Structural holes are individuals who can influence or act as brokers within their social networks by bridging two networks that are not directly linked [16]. These ties enable interested scholars to conduct more useful research by linking them and introducing them to the industry managers.

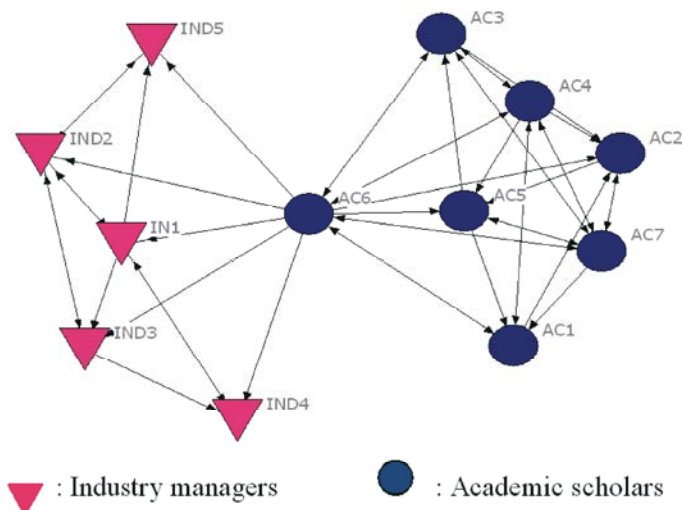


Fig. 1: (Structural Holes) Networks of academics scholars and industry managers

The economic crisis that occurred in recent years affected most businesses, industries, countries and people worldwide. The academics were not excluded from that. The budget of many universities was cut down during this crisis. Although this situation is harmful in many aspects, it could represent a good opportunity for academic and industry to converge again. Here the academic scholars who have some connections with industry (Structural holes e.g. AC6) should bear some challenges to rebuild this connection between academic and industry.

Although time and budget are the main constraints of many researchers, there are constraints related to other resources i.e. non-financial and human factors affect the implementation of research as well. In the process of removing constraints, usually it is not easy to expand the time and budget that is available, however sometimes it is possible to increase the efficiency of resources such as human skill in order to overcome the related problems. The following section explains the possibility of enhancing human skill resources to conduct more useful research.

Research Capability: Learning Collaborative Research

Method: In order to make research more appealing to the industry we must try to increase the role of industry in the process of creating knowledge. In fact, we should not bind ourselves to methodologies like surveys, without direct interaction with people from industry. In order to fill this gap some useful techniques exist which have received little attention by the academic scholars and PhD graduates alike. Collaborative Research Methodology (CRM) is one of the main methods. “Collaborative Research is an effort by two or more parties at least one of the which is a member of an organization or a system

under study and at least one of whom is an external researcher, with the intent of improving performance of the system and adding to the broader body of knowledge in the field of management” [17]. Action Science, Intervention Research, Clinical Inquiry and Appreciative Inquiry are some examples of this type.

Scholars can apply these methods in combination with other widely used methods in their studies. Therefore, some methods to produce more useful knowledge are already explored and thus it is only required to exploit and apply these when conducting research. Utilizing the reality and the organizational phenomenon for deriving theories leads to studies that are beneficial for both scholars and industry. Such studies attract the practitioners and would build the trust between academics and industry managers. In addition, it would stop creating the loop that impedes the production of useful knowledge which was mentioned at the beginning of this paper. The graph in Figure 2 shows the relationship between different methods of *doing research* (and data collection) for creating knowledge and *the usefulness of that knowledge for practitioners*.

Institutional Regulations: In addition to the aforementioned factors, institutional regulations play a key role in the creation and success of producing useful knowledge. Some governments set regulations which encourage collaborations between academia and industry. Although the problem raised is harmful for industry and limits them from using up to date scientific knowledge, from the university perspective, the challenge even is more critical and becomes threefold. First, the need to improve the extent of commercialization, second, the need to visualize their contribution to economic development and third the need to manage the relationship between commercialization and other core activities [18].

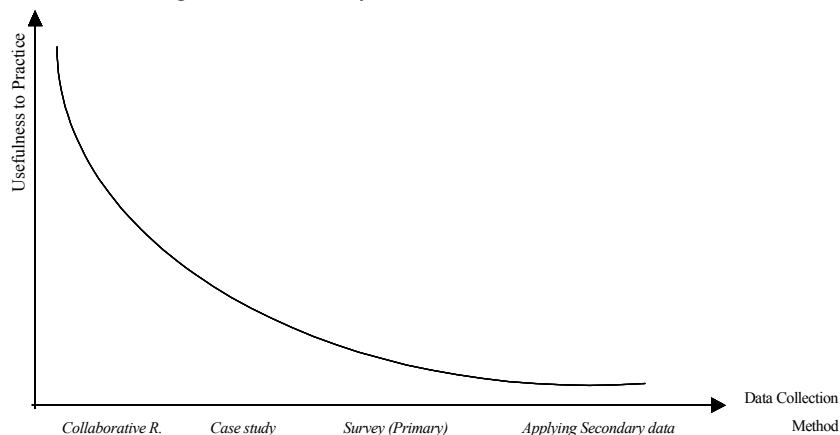


Fig. 2: The relationship between Data collection method and Usefulness of produced knowledge to practice

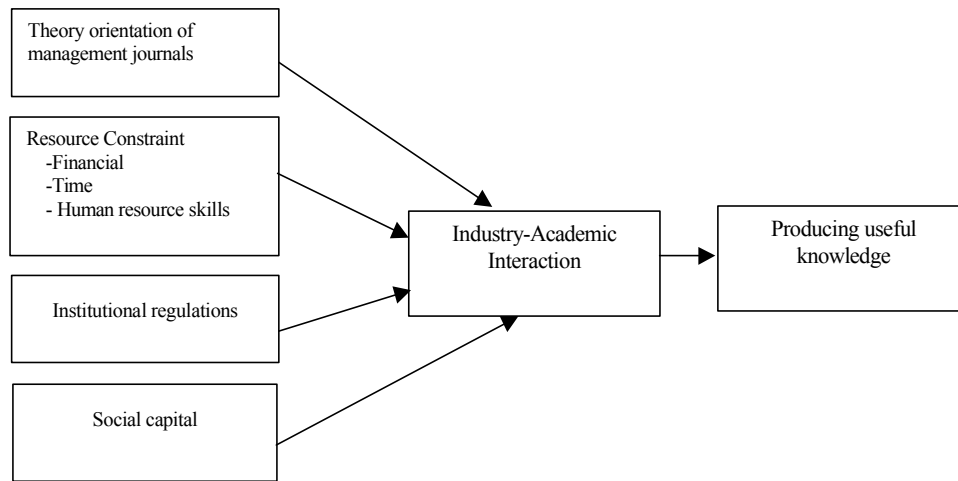


Fig. 3: Model of producing useful knowledge for Industry by Academics

In fact, universities should set some regulations to balance these three issues and their core responsibility of developing long-term knowledge.

Based on the aforementioned arguments, a model is formed for the production of useful knowledge for practice. Figure 3 represents the model of useful knowledge production. The model has a particular focus on institutional factors and illustrates that the orientation of management journals, resource constraints, institutional regulations like government incentives (which increase the interaction among universities and industry) and finally possession of a rich social capital (links between both industry and academia) would lead to a higher interaction among universities and industry. This increase in the interaction is a determining factor for.

CONCLUSION

There is an emerging need for contribution of management research to industry. We need to rebuild the trust of industry managers in the results of academic researchers. In addition due to the economic crisis, firms now have budget constraints against implementing the research that is sufficient for their growth and even survival; hence it is the role of universities to contribute effectively to the success of industries and improve the economic situation of the world. This is a good way to enhance social corporate responsibility. To this end, this paper raises some points which needed to be considered. They are regarding the factors which facilitate or impede the production of useful knowledge. It is argued that the structural holes in the networks of academic scholars and industry can positively contribute to this goal.

Future studies can be focused on comparing a sample of research which applies different research methods i.e. collaborative vs. others and considering whether they produce results with differing levels of usefulness from a management perspective. The perceived usefulness measure of Mohrman [19] can be applied in that research. In addition, by drawing the network of the researchers it can be empirically tested if there is any correlation between the position of the scientists in the network and the mentioned level of perceived usefulness of the research that they have produced. It is expected that the structural holes produce more useful knowledge compared with other research even compared with the scholars who are called star scientists and have highly cited papers.

To conclude, good interaction between universities and industry helps university scholars to conduct their studies and overcome data collection challenges. Applying more collaborative techniques such as Collaborative Research Methodology leads to a significant more of such interactions. In addition, the industry would benefit from receiving scientific solutions for their problems and learn novel methods to improve their current efficiency. Increases in the innovation of industries would be another factor resulting from collaboration among industry and university. Finally, increase in the attention of top management journals toward the production of useful knowledge for practice and considering that in manuscript acceptance criteria, would encourage scientists to work towards producing knowledge that is valuable for managers in industry.

REFERENCES

1. Mansfield, E. and J.Y. Lee, 1996. The modern university: contributor to industrial innovation and recipient of industrial R&D support. *Research Policy* 25(7): 1047-1058.
2. Rasmussen, E., Ø. Moen and M. Gulbrandsen, 2006. Initiatives to promote commercialization of university knowledge. *Technovation*, 26(4): 518-533.
3. Yaakub, N.I., W. Mohd Hirwani Wan Hussain, Mohd Nizam Abdul Rahman, Zinatul Ashiqin Zainol, Wan Kamal Mujani, Ezad Azraai Jamsari, Adibah Sulaiman and Kamaruzaman Jusoff, 2011. Challenges for Commercialization of University Research for Agricultural Based Invention, *World Applied Sciences J.*, 12(2): 132-138.
4. Phan, P.H. and D.S. Siegel, 2006. The effectiveness of university technology transfer: lessons learned from qualitative and quantitative research in the US and UK. *Foundations and Trends in Entrepreneurship*, 2: 66-144.
5. Martin, B.R. and H. Etzkowitz, 2001. The origin and evolution of the university species. *J. Science and Technology Studies*, 13: 9-34.
6. Gulbrandsen, M. and J.C. Smeby, 2005. Industry funding and university professors research performance, *Research policy*, 34(6): 932-950.
7. Geuna, A., 2001. The changing rationale for European university research funding: are there negative unintended consequences?, *J. Economic Issues*, 35: 607-632.
8. Geuna, A. and L. Nesta, 2003. University Patenting and its Effects on Academic Research, SPRU Electronic Working Paper Series No. 99, Brighton, SPRU.
9. Elzinga, A., 1983. Research, Bureaucracy and the Drift of Epistemic Criteria, Gothenburg University, Department of Theory of Science, Gothenburg.
10. Boardman, P.C., 2009. Government centrality to university-industry interactions: University research centers and the industry involvement of academic researchers, *Research Policy*, 38(10): 1505-1516.
11. Etzkowitz, H. and L. Leydesdorff, 1997. Introduction to special issue on science policy dimensions of the Triple Helix of university-industry-government relations. *Science and Public Policy*, 24(1): 2-5.
12. Etzkowitz, H. and L. Leydesdorff, 1998. The endless transition: a "triple helix" of university-industry-government relations. *Minerva*, 36: 203-208.
13. Etzkowitz, H., A. Webster, C. Gebhardt and B.R. Cantisano Terra, 2000. The Future of the University and the University of the Future: Evolution of Ivory Tower to Entrepreneurial Paradigm, *Research Policy*, 29: 313-330.
14. Wong, P.K., 2007. Commercializing biomedical science in a rapidly changing "triple-helix" nexus: The experience of the National University of Singapore, 32(4): 367-395.
15. Burt, R.S., 2001. Structural holes versus Network closure as social capital, Chapter of: Lin, N., Cook, K.S., Burt, R.S., De Gruyter, A., *Social capital: Theory and Research*.
16. Scott, J., 1991. *Social Network Analysis*. London: Sage.
17. Shani, A.B. (Rami), S. Mohrman, W.A. Pasmore, B. Stymne and N. Adler, (Eds.), 2008. *Handbook of Collaborative Management Research*, Thousand Oaks, CA: SAGE, pp: 7-31.
18. Rasmussen, E., 2006. Models for university technology transfer operation: patent agency and 2g, *International J. Technology Transfer and Commercialisation*, 4(5): 291-307.
19. Mohrman, S.A, C.B. Gibson and A.M. Mohrman, 2001. Doing Research that is Useful to Practice. *Academy of Management J.*, 44(2): 347-375.