Embracing Entrepreneurship: Impact of Knowledge Transfer Policies on Academic Profession in Hong Kong Higher Education

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Introduction

Over the past 20 years, the ethos of academic entrepreneurialism has significantly influenced the Hong Kong higher education sector (Chan and Lo 2007; Mok 2005; Mok and Jiang 2018; Yang 2012). The practices of commercialization of research and teaching activities, knowledge production and transmission, and contributions to economic growth are typical entrepreneurial behaviors. As entrepreneurialism is an increasingly popular restructuring strategy for Hong Kong universities, they have begun to shift their paradigms from purely upholding the mission of research and teaching to the third mission of promoting economic and social development (Mok 2005). Knowledge transfer (KT), which involves licensing, spin-offs, consultancy, collaborative research between universities and industry, is one common strategy to achieve such goal.

While the HKSAR Government and University Grant Committee (UGC) strongly encourages universities to develop closer collaboration with the local industry and community, the scale and complexity of KT activities has increased. One major concern being raised is the assessment on academics' performance. Under such academic entrepreneurship, academic profession in Hong Kong has encountered a range of challenges such as increased demand of performativity and accountability. To some extent, while this phenomenon seems able to alter their career prospects, status and even academic autonomy, research on exploring KT activities and their impact on academics is unexplored. This article focuses on knowledge transfer polices of Hong Kong universities and attempts to examine their impact on academic profession.

Entrepreneurial University and Third Mission

Academic entrepreneurship refers to "efforts undertaken by universities to promote commercialization on campus and in surrounding regions of the university" (Siegel and Wright, 2015). Entrepreneurial universities can be characterized in two major ways. First, it involves commercialization of knowledge and research findings (Jacob, Lundqvist and Hellsmark 2003; Roessner et al. 2013) Second, it provides entrepreneurship education to teach students for acquiring the skills and competencies needed to successfully start up and grow a business, and provision of start-up support (Hofer and Potter 2010). The establishment of knowledge transfer office (KTO) is one of characteristics of entrepreneurial university. It aims to encourage academics to consider commercializing their research output and to provide support through the process (O'Gorman, Byrne and Pandya 2008). The title of KTO varies across institutions, for example, technology transfer office (TTO) and the private research organization (PRO). In general, KTO places emphasis on two key dimensions of university knowledge transfer: 1) enterprising third mission with entrepreneur approach; 2) social innovation third mission with a non-profit orientation.

Enterprising Third Mission

Jana Krčmářová (2011) states that the enterprising aspect "is based on commercializing higher education institution (HEI) services, e.g. contractual research, education, faculty use or consultations and fundraising activities, which are especially important for HEIs without greater opportunities for commercialization but suffer from a similar budget shortage." Most HEIs nowadays face the challenge of limited public funding, they have to commercialize their intellectual capabilities

in order to get more external funding from their industry and business partners (Molas-Gallart, Salter, Patel, Scott and Duran 2002). Therefore, the commercialized activities have become the foundation of entrepreneurial university. As Burton Clark (1998) defines 'entrepreneurial university' as "university that actively seeks to innovate in how it goes about its business". The entrepreneurial universities play an active role in promoting innovation, technology and knowledge transfer to enhance the possibilities for financial sustainability (Urbano and Guerrero 2013). Moreover, entrepreneurship curricula such as enrichment programmes, study tour, internship programmes has been adopted in the university education in order to equip students with entrepreneurial competence and mindset at the outset of their careers (Klofsten and Jones-Evans 2000; Mok 2005).

Social Third Mission

Turning to the second dimension is the social third mission, innovation have been intrinsic to the achievement of the UN Global Goals and received high priority of the current European Commission mandate (Madelin and Ringrose 2016). Innovation refers to transforming the knowledge produced at HEIs (for instance, providing new ideas or technologies for helping to tackle environmental problems). It does exist from various disciplines ranging from natural sciences and technological to humanities and social science. In the recent years, the concept of social innovation arouses the public interest. According to Robert Madelin and David Ringrose (2016, 193), social innovation plays a key role to overcome "…some of society's biggest challenges – including greater social justice, environmental degradation, and building more resilient societies, capable of responding to shocks without falling apart."

The social innovation of HEIs is an essential focus on the HEIs agenda because the European Commission expects HEIs to support societal development through continuing education (European Commission 2011). Universities are embarking to partner with non-profit organization or public agency to execute research in order to generate new ideas and services to tackle complex global problem through social entrepreneurship.

As Watson (2003, 25) suggests, civic engagement is one of the common practice among social third mission, it implies "strenuous, thoughtful, argumentative interaction with the non-university world in at least four spheres: setting universities' aims, purposes, and priorities; relating teaching and learning to the wider world; the back-and-forth dialogue between researchers and practitioners; and taking on wider responsibilities as neighbors and as citizens." The expectation of the role of universities has been transformed to a more diversified way in which they serve the needs of the society and community with non-financial benefit orientation and focused on civic engagement (Boland 2011). On the other hand, the interpretation of social third mission provided by Montesinos et al. (2008) focuses on the international activities in higher education such as staff exchange programmes and international projects for developing countries. While Krčmářová (2011) defines the third mission as organise services or activities to society with non-financial benefit in order to cultivate society cohesion and develop responsible citizenship. Approaches for doing so include providing students opportunities with service learning programs, community outreach activities, teaching social and global issues and conducting community-engaged research.

Knowledge Transfer Activities Supported by the HKSAR Government

Hong Kong, as an entrepreneurial state, the government aims to foster an innovative-centric entrepreneurship role in tackling the social and economic changes in the city (Mok and Jiang 2018). The government announced plans for coordinating and promoting innovation, technology and commercialization or research in local universities by the establishment of an Innovation and Technology Bureau (ITB). Innovation and technology are not only economic drivers, they can also upgrade our quality of life and enhance the efficiency of our community. Promoting innovation and technological development can provide wider employment opportunities for our young people (HKSAR Government 2015). Over the years, the HKSAR Government strives to provide a

strategic environment for innovation and technology development through five core strategies, which include providing world-class technology infrastructure; offering financial support for research and development (R&D); nurturing talents; strengthening Mainland and international collaboration in science and technology; as well as fostering a vibrant innovation culture.

To encourage the universities for developing their third mission activities, the Innovation and Technology Fund has set up the Technology Start-up Support Scheme for Universities (TSSSU) initially for three years from 2014-15, to provide financial support to six local universities including The University of Hong Kong (HKU), The Hong Kong University of Science and Technology (HKUST), The Chinese University of Hong Kong (CUHK), The Hong Kong Polytechnic University (PolyU), City University of Hong Kong (CityU) and Hong Kong Baptist University (HKBU), to assist them to start technology businesses and commercializing their research results.

In the 2017 policy address, three initiatives are directly related to the university innovation and enterprise, first, the University Grant Committee (UGC)/Research Grants Council (RGC) increase funding support for university research from $4.46 billion in 2013-14 to over $5.28 billion in 2016-17; second, a $500 million "Technology Talent Scheme" will be launched in 2018 to provide financial support for enterprise to employ postdoctoral graduates for scientific research and product development; third, a tuition waiver scheme is provided by the Education Bureau for local research postgraduate students in order to encourage local students to engage in innovative research work (HKSAR Government 2017).

Furthermore, the UGC advocates the KT activities between universities and the society in order to bring the socio-economic impact and improvements to the community and business (UGC 2018). More specifically, the UGC sees KT as an important issue having implications on the international competitiveness of the local higher education sector and capable of enriching research policies. Therefore, the notion of KT has been incorporated into some of the UGC universities' mission statements:

The University of Hong Kong, Asia's Global University, delivers impact through internationalisation, innovation and interdisciplinary. It attracts and nurtures global scholars through excellence in research, teaching and learning, and knowledge exchange... (The University of Hong Kong)

To assist in the preservation, creation, application and dissemination of knowledge by teaching, research and public service in a comprehensive range of disciplines… (The Chinese University of Hong Kong)

Be a leading university that advances and transfers knowledge, and provides the best holistic education for the benefit of Hong Kong, the nation and the world. (The Hong Kong Polytechnic University)

Encouraging faculty and students to contribute to society through original research and knowledge transfer. (Lingnan University)

To nurture and develop the talents of students and to create applicable knowledge in order to support social and economic advancement. (City University of Hong Kong)

(Source: The webpages of the respective universities)

Knowledge Transfer Policies of Hong Kong Universities

With the government strong support, the KT activities become popular among the universities in Hong Kong. The universities have set up their own knowledge transfer office or centre to connect the business sector in order to increase the university-industry collaboration, entrepreneurship and technology commercialization. For example, the HKUST's office of knowledge transfer (OKT) was established in 2016 to monitor the KT activities organized by the Technology Transfer Centre (TTC), HKUST R&D Corporation Ltd

(RDC), Entrepreneurship Centre (EC) and two research centres in Mainland namely, the HKUST Shenzhen Research Institute (SRI) and Guangzhou HKUST Fok Ying Tung Research Institute (FYTRI). The OKT's mission is to provide contractual, financial and administrative support for the university's technology transfer, collaborative research and consultancy activities with the industry (HKUST, 2018). In 2016, there were eight industry-university-government collaboration projects were proposed by the HKUST-MIT research alliance Consortium.

Likewise, the Hong Kong Polytechnic University (PolyU) has set up the Institute for Enterprise (IfE) to serve as a platform for facilitating university-industry research collaborations. To promote the social innovation culture, PolyU set up the Social Innovation and Entrepreneurship Development fund (SIE fund) to promote cross-sector collaboration and to facilitate the development of social innovation ecosystem. The SIE fund aims to provide social services to people in need and promote social inclusion. In addition, the PolyU Technology and Consultancy Company Limited (PTeC) was established in 1996 in order to provide one-stop consultancy and technology transfer services to the government, business sectors and non-governmental organization. Recently, PolyU and Shenzhen University jointly set up The Greater Bay Area International Institute (GBAI) for technology and Innovation development (PolyU 2018). The above examples show that the local universities aim to increase their capacity to generate additional financial resources through various kinds of entrepreneurial activities. Moreover, with the Great Bay Area initiative, Hong Kong has the advantages in collaboration with the geographically proximate cities by making good use of their joint leading economic in order to promote innovation and sustainable development (Mok and Jiang 2018)

Discussion: Impact of Knowledge Transfer Activities on Academic Profession

Most of the United Kingdom (UK) or European universities under growing pressure to become more 'entrepreneurial' due the higher education funding cuts (Lambert 2003; Mowery and Sampat 2005; Higher Education Funding Council for England 2017). These pressures have resulted in the progressive institutionalization of research commercialization activities and other forms of governance for external engagement in KT activities (Geuna and Muscio 2010; Rossi & Rosli 2015).

Hong Kong public universities are not affected by the trend of diminishing government expenditure on higher education. Yet, research and KT activities are the key focuses in order to increase competitiveness. Therefore a new form of governance has emerged from promoting cross university-industry-community collaborations. For example, HKUST formed a Knowledge Transfer Committee to maximize its social impact through KT activities while maintaining proper governance to ensure public accountability. In order to enhance the knowledge transfer performance, HKUST designed a new budget model and appraisal system to measure the school-level performance to guide the resource allocation. The budget model is designed to count of each School/Interdisciplinary Program Office's performance based on teaching-related metrics, and the other 50 percent on research and knowledge transfer metrics. The knowledge transfer performance is now a key factor within HKUST to assess each academic unit's performance (HKUST 2018).

Similarly, the University of Hong Kong has learnt from UK universities in its Research Assessment Exercise (RAE) 2014, which gave 20 percent weighting to impact, in order to raise the awareness of researchers about the importance of achieving and corroborating impact beyond the academia. In 2016-2017 onward, KT has been added as an assessment element in the revised Performance Review and Development (PRD) process of professoriate and academic related staff, alongside teaching, research, and service/administration. For KT, reviewee should highlight the evidence of his/her meaningful contributions to the community, business/industry, or partner organizations, whether local or international. (HKU 2018). That said, researchers' previous experience of collaborative research and higher academic status have a significant and positive impact on the interactions with business sector (Geuna and Muscio 2009).

Challenges Face by Academics: Performativity and Accountability

Hong Kong higher education is going through the process of academic entrepreneurship which is affected by the notions and practices of managerialism and the market oriented approach since 1990s (Mok 2001). In other words, institutions are becoming more commercialised through the implementation of managerialism and the characteristics of managerialism is the demand for accountability, performativity, efficiency and effectiveness through the implementation of performance measurement schemes and quality assurance mechanisms. When HEIs are running in a market-driven environment, comparability and competition are more commonly found among academics (Macfarlane 2017; Tian & Lu 2017).

In addition, HEIs have adopted a corporate model in employing a larger number of part time staff which provides cost saving factors such as less benefits and more flexible hourly work charge as compared to full time staff (Park 2011). All of these bring about the question of vulnerability of the academic profession under the notion of managerialism. Some literature holds a pessimistic view on managerial culture in the higher education such as excessive evaluation on entrepreneurial research of individual academics resulted in work pressure, anxiety and job insecurity (Macfarlane 2017; Mok 2001; Tian and Lu 2017). Whereas, some argued that control and monitoring measures facilitate or enhance performance (Kolsaker 2008). HEIs are not purely forcing into private sector, but rather institutions and faculty members are actively embracing market-oriented environment (Park 2011).

Recently, KT activities have become a new scholarly mission in research polices for international competitiveness. During the process of academic entrepreneurship, agencies like government, universities and ranking system exercise the regulatory functions of setting standards and monitoring academic performances. By doing so, it has undermined academics' authority and determination. University rankings have been commercialised and represented as servicing the consumer-citizen's right-to-know (Osborne 2010). This has forced universities to shift from being 'a centre of learning' to becoming a 'business organisation with productivity targets' (Doring 2002, 140).

Moreover, academics have to tackle the problem of teaching-research balance (Park 2011). Notwithstanding that both research and teaching are supposed to take equal priority, attention has been overly inclined to scholars' research 'output' due to the fascination with social and economic impact. As discussed above, with a focus on KT, academics' research motivations at universities link to business needs. This focus has, perhaps, shifted the role of academics in the context of KT from a researcher provider or producer to a collaborator which means working 'with' industrial sectors or community (Watermeyer 2014). The change has challenged how academics use the research outputs rather than develop of what constitutes a good research study.

All these actions have led universities to design new indicators for monitoring and evaluating academics' KT engagement and performance. Nevertheless, the impacts of KT activities are difficult to quantify and observe due to its complex nature (Hughes 2011; Sorensen and Chambers 2008; Rossi and Rosli 2015). Getting involved in KT activities, according to Watermeyer (2014), academics have to build a good relationship with non-academic groups:

> …the success of partnership building often depends on the strength of character, charisma, skills of interpersonal negotiation and/or ability of the individual research to achieve rapport and a reciprocal dynamic with the non-academic community. (368)

Indeed, successful research collaborations require long-term partnership building. It is labor-intensive and time-consuming and is prohibitive for many academics whose contractual obligations are more than tied to KT activities (Watermeyer 2014).

Conclusion

With the ethos of 'from research to market', universities in Hong Kong are eager to commodify their academic research, though "selling the expertise of their

researchers" (Radder 2010, 4). The universities are seeing research and KT activities as the major income generator. Under the tide of entrepreneurship, positive connotations of introducing 'efficient' and 'effective' management style, being a 'modern' university and exhibiting 'excellence' are entailed. As a result, increased emphasis on performance assessment places focus on measureable output on research and KT activities rather than teaching. Privileged research and KT activities over teaching somewhat discourages teacher's professional development in the skill of teaching and eventually affects student learning experience. That said, the values of education, including caring and nurturing are being threatened (Lynch 2015). Academic profession are vulnerable under managerial practices. At the individual level, the increased regulation and surveillance through accountability measures imposes intensified work pressure on academics. At the institutional level, the decline in academic autonomy alters the perception that universities are a site of scholarship and learning.

References

Ball, Stephen J. 2012. "Performativity, Commodification and Commitment: An I-spy guide to the neoliberal university." *British Journal of Educational Studies* 60 (1): 17-28.

Boland, Josephine A. 2011. "Positioning Civic Engagement on the Higher Education Landscape: Insights from a civically engaged pedagogy." *Tertiary Education and Management* 17 (2): 101-115.

Cadez, Simon, Vlado Dimovskiv, and Maja Zaman Groff. 2015. "Research, Teaching and Performance Evaluation in Academia: The salience of quality." *Studies in Higher Education* 42 (8): 1455-1473.

Chan, David, and William Lo. 2007. "Running Universities as Enterprises: University Governance Changes in Hong Kong." *Asia Pacific Journal of Education* 27 (3): 305-322.

Chinese University of Hong Kong. 2018. Mission & Vision, Motto & Emblem. Available online at: http://www.cuhk.edu.hk/english/aboutus/mission.html

City University of Hong Kong. 2018. Vision and Mission. Available online at: https://www.cityu.edu.hk/cityu/about/vm.htm

Clark, Burton R. 1998. *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*. Oxford: IAU Press.

Doring, Allan. 2002. "Challenges to the Academic Role of Change Agent." *Journal of Further and Higher Education* 26 (2): 139-148.

Douglas, Alaster Scott. 2013. "Advice from the Professors in a University Social Sciences Department on the Teaching-Research Nexus." *Teaching in Higher Education* 18 (4): 377–388.

European Commission. 2011. *Modernisation of Higher Education in Europe: Funding and the Social Dimension*. Brussels: Education, Audiovisual and Culture Executive Agency.

Geuna, Aldo, and Alessandro Muscio. 2009. "The Governance of University Knowledge Transfer: A Critical Review of the Literature." *Minerva* 47 (1): 93-114.

Higher Education Funding Council for England. 2017. *Higher Education in England - Key Facts*. Available online at: http://webarchive.nationalarchives. gov.uk/20180322111538/http://www.hefce.ac.uk/pubs/year/2017/201720/

HKSAR Government. 2015. *So French So Innovative* [Press release]. Available online at: http://www.info.gov.hk/gia/general/201511/17/P201511170371.htm

HKSAR Government. 2017. The Policy Address 2017. Available online at: https://www.policyaddress.gov.hk/2017/eng/index.html

Hofer, Andrea-Rosalinde, and Jonathan Potter. 2010. *University Entrepreneurship Support; Policy Issues, Good Practices and Recommendations*, OECD Report. Available online at: http://www.oecd.org/education/imhe/46588578.pdf

Hong Kong Polytechnic University. 2018. *Institute of Entrepreneurship*. Available online at: https://www.polyu.edu.hk/ife/corp/en/index.php

Hong Kong Polytechnic University. 2018. *Motto, Vision and Mission*. Available online at: https://www.polyu.edu.hk/web/en/about_polyu/motto_vision_mission/index.html

Hong Kong University of Science and Technology. 2017. *Knowledge Transfer Annual Report 2016/17*. Available online at: https://www.ugc.edu.hk/doc/eng/ugc/activity/kt/HKUST16.pdf

Hong Kong University of Science and Technology. 2018. *Knowledge Transfer at HKUST*. Available online at: https://kt.ust.hk/en/overview

Hughes, Alan. 2011. "Current thinking in Impact Assessment." Presentation delivered at the Investigating Impact Conference, June 13, at the London School of Economics.

Jacob, Merle, Mats Lundqvist, and Hans Hellsmark. 2003. "Entrepreneurial Transformations in the Swedish University System: The Case of Chalmers University of Technology." *Research Policy* 32 (9): 1555-1569.

Jarvis, Darryl S.L. 2014. "Regulating Higher Education: Quality Assurance and Neo-Liberal Managerialism in Higher Education – A Critical Introduction." *Policy and Society* 33 (3): 155-166.

Klofsten, Magnus and Dylan Jones-Evans. 2000. "Comparing Academic Entrepreneurship in Europe – The Case of Sweden and Ireland." *Small Business Economics* 14 (4): 299-309.

Kolsaker, Ailsa. 2008. "Academic Professionalism in the Managerialist Era: A Study of English Universities." *Studies in Higher Education* 33 (5): 513-525

Krčmářová, Jana. 2011. "The Third Mission of Higher Education Institutions: Conceptual Framework and Application in the Czech Republic." *European Journal of Higher Education*, 1 (4): 315-331.

Lambert, Richard. 2003. *Lambert Review of Business University Collaboration*. Department of Trade and Industry: London.

Lingnan University. 2018. Vision, Mission and Core Values. Available online at: https://www.ln.edu.hk/about-lu/vision-mission-and-core-values

Lynch, Kathleen. 2015. "Control by Numbers: New Managerialism and Ranking in Higher Education." *Critical Studies in Education* 56 (2): 190–207.

Macfarlane, Bruce. 2017. "Publication and Performativity." In *The Changing Academic Profession in Hong Kong (Vol. 19, The Changing Academy – The Changing Academic Profession in International Comparative Perspective)* edited by Gerard.A. Postiglione and Jisun Jung, 97-108. Cham: Springer International Publishing.

Madelin, Robert and David Ringrose. 2016. *Opportunity Now: Europe's Mission to Innovate*. Luxembourg: The Publications Office of the European Union.

Mok, Ka Ho, and Jin Jiang. 2018. "Questing for Entrepreneurial University in Hong Kong and Shenzhen: The Promotion of Industry-University Collaboration and Entrepreneurship." In *The Sustainability of Higher Education in an Era of Post-Massification,* edited by Deane Neubauer, Ka Ho Mok, and Jin Jiang, 115-133. London: Routledge.

Mok, Ka Ho. 2005. "Fostering Entrepreneurship: Changing Role of Government and Higher Education Governance in Hong Kong." *Research Policy* 34 (4): 537-554.

Mok, Ka.Ho. 2001. "Academic Capitalisation in the New Millennium: The Marketization and Corporatisation of Higher Education in Hong Kong." *Policy & Politics* 29 (3): 299-315.

Molas-Gallart, Jordi, Ammon J. Salter, Pari Patel, Alister Scott, and Xavier Duran. 2002. *Measuring Third Stream Activities: Final Report to the Russell Group of Universities, Science and Technology Policy Research Unit*. Brighton: University of Sussex.

Montesinos, Patricio, Jose Miguel Carot, Juan-Miguel Martinez, and Francisco Mora. 2008. "Third Mission Ranking for World Class Universities: Beyond Teaching and Research." *Higher Education in Europe* 33 (2): 259-271.

Mowery, David C., and Bhaven N. Sampat. 2001. "University Patents and Patent Policy Debates in the USA, 1925-1980." *Industrial and Corporate Change* 10 (3): 781-814.

O'Gorman, Colm, Orla Byrne, and Dipti Pandya. 2008. "How Scientists Commercialise New Knowledge Via Entrepreneurship." *Journal of Technology Transfer* 33 (1): 23-43.

Osborne, Stephen P. 2010. "Delivering Public Services: Time for a New Theory?" *Public Management Review* 12 (1): 1-10.

Park, Toby. 2011. "Academic Capitalism and its Impact on the American Professoriate." *Journal of the Professoriate* 6 (1): 94-99.

Radder, Hans. 2010. "The Commodification of Academic Research." In *The Commodification of Academic Research,* edited by Hans Radder, 1-21. Pittsburgh: University of Pittsburgh Press.

Roessner, David, Jennifer Bond, Sumiye Okubo, and Mark Planting. 2013. "The Economic Impact of Licensed Commercialised Inventions Originating in University Research." *Research Policy* 42 (1): 23-24.

Rossi, Federica, and Ainurul Rosli. 2015. "Indicators of University-Industry Knowledge Transfer Performance and their Implications for Universities: Evidence from the United Kingdom." *Studies in Higher Education* 40 (10): 1-22.

Slaughter, Sheila, and Larry, Leslie. 1997. *Academic Capitalism: Politics, Policies, and the Entrepreneurial University*. Baltimore: The Johns Hopkins University Press.

Sorensen, Jill A.T., and Donald A. Chambers. 2008. "Evaluating Academic Technology Transfer Performance by How Well Access to Knowledge is Facilitated – Defining an Access Metric." *Journal of Technology Transfer* 33 (5): 534-47.

Tian, Mei, and Genshu Lu. 2017. "What Price the Building of World-Class Universities? Academic Pressure Faced by Young Lecturers at a Research-Centered University in China." *Teaching in Higher Education* 22 (8): 957-974.

University Grants Committee. 2018. *Knowledge Transfer*. Hong Kong: UGC.

University of Hong Kong. 2018. Annual report 2016/17 – Recurrent Funding for Knowledge Transfer for the 2016-19 Triennium. Available online at: https://www.ugc.edu.hk/doc/eng/ugc/activity/kt/HKU16.pdf

University of Hong Kong. 2018. *Vision and Mission*. Available online at: https://www.hku.hk/about/vision.html

Urbano, David and Maribel Guerrero. 2013. "Entrepreneurial Universities: Socioeconomic Impacts of Academic Entrepreneurship in a European Region." *Economic Development Quarterly* 27 (1): 40-55.

Watermeyer, Richard. 2014. "Issues in the Articulation of 'Impact': The Response of UK Academics to 'Impact' as a New Measure of Research Assessment." *Studies in Higher Education* 39 (2): 359-377.

Watson, David. 2003. *The University in the Knowledge Society*. Available online at: https://www.oecd.org/site/imhe2006bis/37477605.pdf