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Towards corporatized collaborative governance: the multiple networks model and entrepreneurial universities in Hong Kong

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ABSTRACT

Realizing the growing importance of universities in Knowledge Transfer and innovation-centric entrepreneurship, the Government of the Hong Kong Special Administrative Region (HKSAR) actively encourages government-funded universities in Hong Kong to work with the market and industry, as well as wider society to stimulate innovation and entrepreneurship. This article aims to examine the changing university governance in Hong Kong particularly when universities go beyond the academia to work with industries and businesses to promote innovation-centric entrepreneurialism. It begins with a conceptual framework for analyzing multiple sectoral collaborations for entrepreneurship with a focus on the role of universities. It will discuss how the HKSAR copes with the main challenges of university governance by adopting policies and measures to creating a hybridized ecosystem so as to embrace cross-sectoral collaborations. The article concludes by critical reflections on changing university governance in Hong Kong when responding to the quest for entrepreneurial universities.

KEYWORDS

Higher education; collaborative governance; quality education; entrepreneurship

1. Introduction

Against the context of the knowledge-based economy, entrepreneurship and innovation have become two important forces driving higher education development (Hawkins and Mok 2015). Moving beyond only conventional research and teaching, universities are encouraged to become entrepreneurial and engage in the 'third mission' activities by commercializing academic research and involving in socio-economic development, which are usually defined as knowledge transfer (KT) activities (Mok 2013a, 2013b, 2015; Mok and Jiang 2017, 2018). Realizing the growing importance of universities in KT and innovation-centric entrepreneurship, the Government of the Hong Kong Special Administrative Region (HKSAR) actively encourages government-funded universities in Hong Kong to work with the market and industry, as well as the wider society to stimulate innovation and entrepreneurship. This article aims to examine the changing university governance in Hong Kong particularly when universities go beyond the academia to work with industries and businesses to promote innovation-centric entrepreneurialism. It begins with a conceptual framework for analyzing multiple sectoral collaborations for entrepreneurship with a focus on the role of universities. Following the theoretical discussion, the article will discuss how the HKSAR copes with the main challenges of university governance by adopting policies and measures to creating a hybridized ecosystem to embrace cross-sectoral collaborations. Lastly, the article critically reflects upon the changing university governance in Hong Kong when responding to the quest for entrepreneurial universities.

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2. Quadruple Helix Model and multiple sectoral collaboration for entrepreneurship

2.1. Triple Helix Model

Conventionally, researchers and academics have adopted the Triple Helix model to analyze collaborations between universities and industries or businesses (e.g. Leydesdorff and Meyer 2006; Lawler 2011). These collaborations promote innovation and entrepreneurship, emphasizing the tri-lateral networks and hybrid organizations of government, universities, and industries (Powell and DiMaggio 1991; Etzkowitz et al. 2000).

Nonetheless, a closer examination of the working relationships among universities, industries, and the community at large indicated that the conventional Triple Helix model is no longer adequate for analysis of the current situation. More specifically, the Triple Helix model is rendered inadequate for conceptualizing university–industry–government collaborations which promotes technology transfer through the commercialization of research, as well knowledge transfer for social, economic and cultural development of societies.

2.2. Quadruple Helix Model

As KT is much more complex than technology transfer, collaborations across the multiple sectors, including the government, the university, industry, and business, as well the local community and even the wider society, are becoming increasingly important. Hence, we need to move beyond the Triple Helix Model to a ***Quadruple Helix Model*** when conceptualizing the changing university–industry–business–society relationships. Core to the Quadruple Helix Model is the significant contributions generated from the close interaction between the university sector, the local community, and society at large. The wide engagement of universities with society would inevitably require us to abandon the narrow definition of KT with the value of commercialization of research output (Miller, McAdam, and McAdam 2018; Mok and Jiang 2017; Rossi and Rosli 2015). The close collaborations forged between the government, universities, industries, and business could generate more revenues through the commercialization of technology (Lawler 2011). The Quadruple Helix Model by McAdam, Miller, and McAdam (2018) and Miller, McAdam, and McAdam (2018) was adopted to analyze the university technology transfer (UTT) (Figure 1).

Figure 1 shows that innovation-centric entrepreneurship is not only supported by technology-oriented disciplines. In the Quadruple Helix Model, the societal based innovation users have been integrated into the innovation process so as to ensure sustainable economic growth (MacGregor, Marques-Gou, and Simon-Villar 2010; Ivanova 2014: McAdam, Miller, and McAdam 2018; Miller,

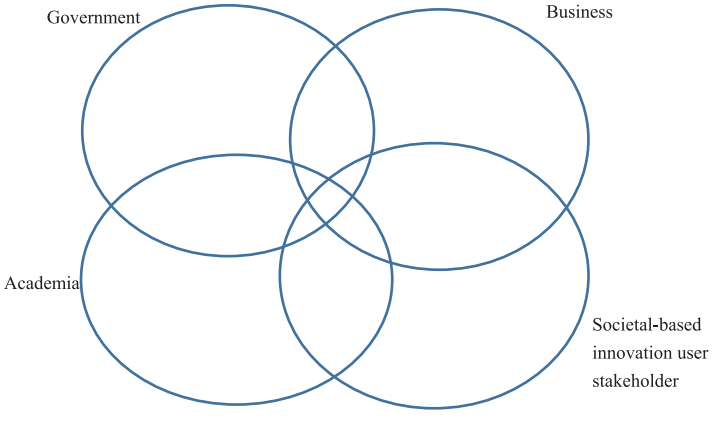

Figure 1. University technology transfer (UTT) quadruple Helix Model.

McAdam, and McAdam 2018). The addition of the fourth helix, namely, societal-based innovation, would energize the entrepreneurial university in promoting KT not only for commercial use but also for social development. More importantly, universities and industries/businesses should adapt their products to cater to the changing needs of customers and even for the entire community (Carayannis, Barth, and Campbell 2012; McAdam, Miller, and McAdam 2018).

Most important of all, successful engagement with the social sector (particularly users) would enable the entrepreneurial university to respond proactively and positively to the rapid socio-economic changes and also the changing expectations of users. Miller, McAdam, and McAdam (2018) note that, the involvement of user suggests an open innovation approach for exchanging knowledge from multiple stakeholders throughout UTT process. Similarly, other scholars proposed that the Open Innovation perspective would enrich researchers to translate their research findings into products/outputs that cater to the changing needs of users because of the absorptive capacity inherited from the Open Innovation system (Cooke 2005; Miller, McAdam, and McAdam 2018).

2.3. Multiple network model and 'corporatized collaborative governance'

Drawing on the Quadruple Helix Model (MacGregor, Marques-Gou, and Simon-Villar 2010; Ivanova 2014: McAdam, Miller, and McAdam 2018; Miller, McAdam, and McAdam 2018), this study proposes a Multiple Networks Model as a conceptual tool in analyzing the complex cross-sectoral collaborations. Indeed, these networks go beyond the commercialization of research/KT to put equal importance on the contributions of the community and entire society in terms of innovation-centric entrepreneurship. Figure 2 highlights the analytic framework of multiple sectors working together to sustain the hybridized ecosystems among universities, industries/businesses, and the society at large.

The above theoretical framework highlights the importance of 'multiple networks' owing to the involvement of many stakeholders who support innovation and entrepreneurship. Therefore, when promoting innovation and entrepreneurship, universities should go beyond engaging only the business and the industries but also to work closely with the wider society in enhancing community integration and fostering social harmony thus contributing to the well-being of humankind.

Analyzing the cross-sectoral collaborations that universities in Hong Kong have engaged, the present study suggests that the changing university governance in Hong Kong is moving towards the 'corporatized collaborative governance', which marries the 'corporate model' and the 'collaborative model' to create the necessary conditions for transforming Hong Kong into a smart city with

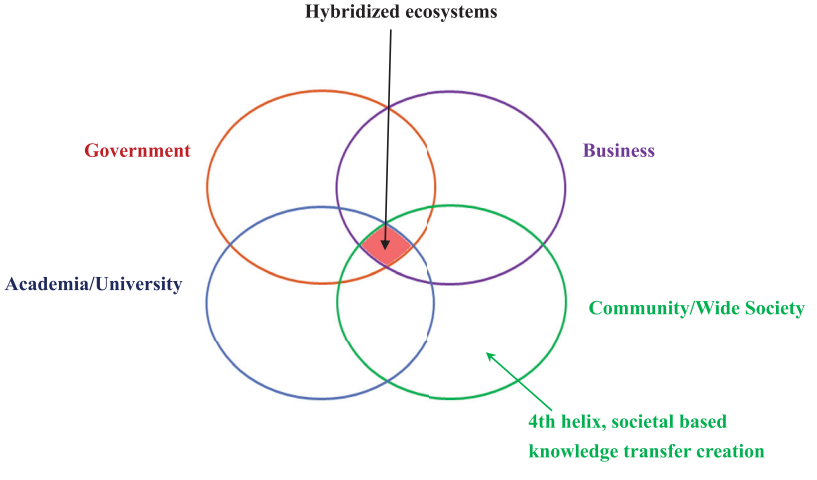

Figure 2. Multiple networks model for entrepreneurship.

strong urban innovation, creativity, and entrepreneurship. The 'corporate governance' stresses the importance of performance, whereby university senior management places emphasis on achieving enhanced performance and efficiency (Christopher 2014; Mok 2019, 165–166). Unlike the 'corporate governance', 'collaborative governance' rests heavily on the tradition of shared governance with emphasis on the participation of multiple sectors/actors (Mok 2019, 165–166). Having presented the conceptual framework of the study, the following discussion will critically examine how the HKSAR government has attempted to encourage universities to collaborate with industries/businesses and society to achieve the strategic development goals of co-producing innovation-centric entrepreneurship in Hong Kong.

3. Changing university governance in Hong Kong: challenges and practices

The scope of KT is not limited to the commercial value of knowledge creation and transfer. Building on the Quadruple Helix Model and the Multiple Network Model, innovation and KT could be based on societal-needs and contribute to betterment of humankind. As an independent professional advisor to the HKSAR government on the funding and development of the higher education sector, the University Grant Council (UGC) defines KT as 'the systems and processes by which knowledge, including technology, know-how, expertise and skills are transferred between higher education institutions and society, leading to innovative, profitable or economic or social improvements' (UGC 2019). The HKSAR has made serious attempts to formulate and launch measures to promote KT in universities while coping with the diversity of the higher education sector and competing for research excellence.

3.1. Funding support for universities' KT activities and research impact

Since 2009, an annual funding of HK$ 50 million (approximately US$ 6.4 million) was offered to the eight government-funded universities in Hong Kong to support capacity building, front-line KT activities, and knowledge generation. In 2016–2019, this funding was increased to HK$ 62.5 million (approximately US$ 8 million) per year (UGC 2019). Universities also match their own funds to the KT funds received from the government in developing their own strategy and plans for KT.

In addition, the Government has set up several large-scale funding schemes to support KT. For example, the Mid-stream Research Programme was developed to encourage universities to conduct mid-stream and applied research so as to facilitate downstream research or product development with a maximum funding of HK$10 million (approximately US$1.29 million) for one collaborative project (Innovation and Technology Commission [ITC], HKSAR Government 2020a). Turning research and development (R&D) deliverables into technology business in the form start-ups is also an important approach in the KT of universities. Hence, the ITC set up the Technology Start-up Support Scheme for Universities (TSSSU) since 2014 with an allocation of up to HK$8 million (approximately US$1.03 million) since 2019 (ITC, HKSAR Government 2020b).

KT is not simply about technology transfer, it is also about the research output that would benefit the society as a whole. A new competitive research funding scheme called New Research Impact Fund (RIF) was launched by the government in 2017 to encourage *impactful and translational research projects* that benefit the entire community and foster *collaborative efforts* among stakeholders beyond academia, such as government departments, businesses, and industries (UGC 2017c). A funding of HK$75 million (approximately USD9.66 million) was reserved for the RIF exercise of 2020/21 (UGC 2020a).

3.2. More cross-sectoral collaborations in promoting innovation and research impact

Responding to the call for more industry-university collaboration, senior university leaders in Hong Kong show their strong support to the initiatives. For example, Professor Joseph Sung, the former President of the Chinese University of Hong Kong remarked at the event promoting regional

development in the Greater Bay Area of South China through the Guangdong-Hong Kong-Macau University Alliance that:

> The last decade saw the rapid development of the Pearl River Delta (PRD) Region. The changes and initiatives, along with the present construction of the Hong Kong-Zhuhai-Macau Bridge, provide unprecedented opportunities for research and education development. Through the alliance partnership, we hope to expand space and enhance capacity for higher education institutions in the regions. Collaboration may include joint funding sources, student exchange programmes, internship and career opportunities, as well as sharing of major research facilities. We look forward to more concrete and substantial synergies in research and education cooperation. (The Chinese University of Hong Kong 2016)

Similarly, Professor Alex Wai, Deputy President and Provost of Hong Kong Polytechnic University (PolyU) said at the Food Safety Consortium (FSC) when PolyU became the first and only Codex Observer as a non-governmental organization in Hong Kong and Mainland China that:

> As the leading institution on food safety and quality in Hong Kong, with a voice in the Codex standard-setting process, FSC is set to make an impactful contribution in tackling world food safety issues and PolyU is proud to host FSC. FSC will continue to bring about synergistic collaborations among the supranational body, government, industry and academia. (The Hong Kong Polytechnic University 2020)

During a public event celebrating the success of social innovation through community-based projects, Mr. Howard Ling, Chief Consultant, Social Enterprise Business Centre of the Hong Kong Council of Social Service remarked that:

> The term 'knowledge transfer', or KT, may easily be taken by the literal meaning of 'passing on knowledge'. Rather, it is the extension of academic research beyond academia, so that research output is channeled to reach out in order to make valuable changes and create benefits. Nowadays, KT is not just technology transfer for economic value. The social, economic and cultural impact of research is an increasingly significant criterion of a university's overall performance. (Lingnan University 2015)

With more funding injection from the HKSAR Government, together with its evaluation measures, we have witnessed a steady increase of cross-sectoral collaborations between the university sector and industries / wider society. Figure 3 below clearly shows the number of collaborative research has increased from 525 to 977 in 2014–2019 respectively, having 452 more collaborative projects. Furthermore, the number of contract research has also increased during the same reporting period, with additional 230 projects. It is worth noting that the number of economically active spin-off companies has recorded a significant growth, increased by 242 companies. Putting the above quotations and figures together, it is obvious that collaborative projects across the university

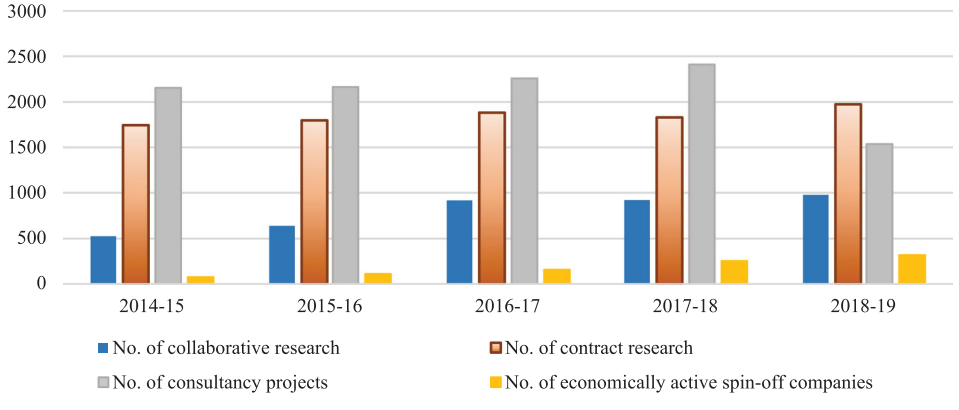

Figure 3. Number of consultancy projects, collaborative/contract research and spin-off companies, 2014–2019. Note: The numbers of respective projects and companies are the total numbers of eight UGC-funded universities. Source: The universities' Annual Report on Knowledge Transfer Recurrent Funding (http://www.ugc.edu.hk/eng/ugc/activity/knowledge.html).

sector, industries and wider society are on the rise, which provides strong evidence supporting the growing trend of cross-sectoral collaboration across the university and other sectors.

3.3. Effectively measure universities' KT performance while considering diversity

To evaluate government-funded universities' KT performance, the UGC required all government-funded universities to submit their annual report on KT Recurrent Funding since 2009. In 2007, the government further emphasized the assessment and requested the UGC to 'expand the assessment criteria to include research impact and effectiveness of knowledge and technology transfer' (HKSAR Government 2017). For the first time, the government asked the Innovation and Technology Bureau to work with the UGC to keep universities' implementation of their refinement programs under review. The review would be one of the criteria for fund allocation (HKSAR Government 2017).

As requested by the UGC, the eight government-funded universities need to report their performance on the UGC-required performance indicators. All reports are publicized on UGC's website and are publicly available. The indicators could be summarized into three main aspects: (1) patenting and licensing; (2) consultancy, collaborative/contract research, and spin-off; and (3) engagement with community and society.

The performance measurement of KT activities of universities in Hong Kong raises two challenges in university governance: (1) how can the evaluation be conducted while taking into account the diversity of universities; (2) whether and how can we move beyond using a simplistic indicator of income generation as the key measure? Drawing on the Quadruple Helix Model, the following discussion focuses on the practice of KT evaluation on Hong Kong universities and its implication.

3.3.1. Considering of the university diversity

Table 1 shows that the indicators of KT performance mainly focus on absolute measures, such as total income generated and total number of collaborative research projects. Less consideration is given to the size of universities. However, large variations are obvious across eight government-funded

Table 1. Summary of UGC required performance indicators of universities' KT.

Patenting and licensing		
1	Patents filed	Number
2	Patents granted	Number
3	Licenses granted	Number
4	Intellectual property rights (HK$)	Income generated
5	Expenditure involved in generating income from intellectual property rights	Expenditure involved
Consultancy, collaborative/contract research, and spin-off companies		
6	Economically active spin-off companies	Number of companies Net income generated
7	Collaborative research	Number of projects Income generated
8	Contract research	Number of projects Income generated
9	Consultancy projects	Number of projects Income generated
10	Equipment and facility service agreements	Number of agreements Income generated
Engagement with community and society		
11	Continuing Professional Development (CPD) courses	Income received Number of student contact hours
12	Public lectures/symposia/exhibitions and speeches to a community audience	Number
13	Performances and exhibitions of creative works by staff or students	Number
14	External advisory bodies including professional, industry, government, statutory or non-statutory bodies	Number of staff engaged as members

Note: The indicators were summarized by the authors from the universities' Annual Report on Knowledge Transfer Recurrent Funding (http://www.ugc.edu.hk/eng/ugc/activity/knowledge.html). The subheadings of the activities were added by the authors.

universities of Hong Kong in terms of the number of students, academic, and research staff. For example, the Chinese University of Hong Kong and the University of Hong Kong are two large-scale comprehensive universities with the largest UGC-funded student enrollment of 19,628 and 19,244, respectively, as well as the largest number of staff of 5633 and 5982, respectively, in the academic year 2018/19. In contrast, the sizes of Lingnan University and the Education University of Hong Kong (EdUHK) are relatively small, with 2,619 and 3,804 students enrolled, and 606 and 1463 staff, respectively (UGC 2020b). Considering the different sizes of universities, the KT performance of universities per capita may vary.

University diversity is not simply about scale, but also in terms of *their visions and missions*. Knowing how to measure universities' KT performance with their diverse visions and missions is important. The EdUHK, for example, emphasizes its primary mission to 'lead educational innovation, and to promote and support the strategic development of teaching, teacher education and disciplines complementary to education' (The EdUHK 2020). As a liberal arts university, Lingnan University aims to 'excel as a leading Asian liberal arts university with international recognition, distinguished by outstanding teaching, learning, scholarship and community engagement' (Lingnan University 2020). Universities with emphasis on non-STEM fields may not perform well in patents and licenses in their KT performance. However, a low performance in one area does not imply that they could not perform well in the KT performance.

3.3.2. Moving beyond a simplistic measure

Evaluating the KT performance of universities with diverse missions and visions calls for a comprehensive and holistic performance evaluation, instead of emphasizing commercial values. As discussed in the literature review, the Quadruple Helix Model emphasizes the deep collaboration not only across the multiple sectors of government, universities, and industries, but also the collaboration with the local community and entire society (Miller, McAdam, and McAdam 2018).

The indicators of patenting, licensing, and intellectual property rights mainly measure the KT performance in the science and technology fields. These indicators, together with the indicators of income generated from contract research and spin-off, evaluate the collaboration with the industry and market, as well as the commercial values of the KT activities of universities. According to the Quadruple Helix Model, the social dimensions of KT performance are also important. Thus, the UGC included indicators that measures engagement with local community and entire society, such as the number of professional training courses, public lectures, exhibitions, and art performances to community audience, and engagement in external advisory bodies. These comprehensive measures of KT activities move beyond simplistic economic measures.

Nevertheless, the number of KT activities does not fully capture social impact and community engagement, as the quality and popularity of KT activities are not fully reflected in the number of events. Thus, a comprehensive and holistic performance indicator is still needed to effectively quantify KT performance while considering the diversity of universities.

3.4. Develop entrepreneurial university while competing for research excellence

Although innovative and entrepreneurial activities are treated as the 'third mission' of universities, universities also face challenges in research excellence. Governments in Europe and Asia attempt to develop research universities to become 'world-class' universities (Deem, Mok, and Lucas 2008; Altbach and Salmi 2011). Universities are encouraged to produce world-leading research outputs and compete in the league table of world-class university rankings.

Since 1994, the HKSAR adopted the Research Assessment Exercise (RAE) to assess the research quality of local public universities with the aim to encourage world-class research. The results are used to decide on the allocation of the research portion of the UGC Block Grant to universities. In the new 2020 RAE, the research impact beyond academia is a new area in the assessment, and it accounts for 15 percent of the total assessment (UGC 2017b, 4). The RAE Framework 2020

emphasized impact as 'the demonstrable contributions, beneficial effects, valuable changes or advantages that research qualitatively brings to the economy, society, culture, public policy or services, health, the environment or quality of life' (UGC 2017a, 13). This description echoes our earlier discussion on the Quadruple Helix Model about the collaboration across the multiple sectors of government, universities, and industries, and more importantly, the community and society.

4. Discussion and conclusion

4.1. Asserting accountability and 'corporatized collaborative governance'

Calling for close collaboration between the university sector and other stakeholders, the UGC, as the key agency in allocating governmental funds to all the eight public universities in Hong Kong, completed a comprehensive university governance review in 2016. In addition, the UGC published the *Newby Report* to manage university performance through the University Accountability Agreement (UAA) signed between the UGC and the eight public universities. The proposed accountability framework is expected to integrate the key aspects of performance by including various measures, such as the quality of the student experience of learning and teaching, quality of research performance and of research postgraduate experience, KT and wider engagement, enhanced internationalization, and financial health and institutional sustainability.

Our discussion has clearly suggested that 'collaborative governance' across the multiple sectors would have transformed the ecosystem in promotion of innovation-centric entrepreneurship in Hong Kong. The government provides higher education institutions with the flexibility to manage their own business, but it does not mean that the government gives these institutions an entirely free hand, especially when they use performance-based allocation to reach the UAA with the UGC. This article attempts to conceptualize how the HKSAR has encouraged multiple sectors to 'hybridize' the ecosystem with the aim of fostering entrepreneurialism. Moreover, this article argues that the university governance in Hong Kong is changing whereby the 'corporate model' has combined with the 'collaborative model' forming the 'corporatized collaborative governance' in order to create the necessary conditions for transforming Hong Kong into a smart city with strong urban innovation, creativity, and entrepreneurship.

As Henkel noted that the university governance becomes a system of increasingly 'decentralized centralization'. Governments provides universities with more autonomy while controlling them through quality assurance and funding allocation mechanisms (Shin and Harman 2009; Hou et al. 2020). The call for accountability and performance-related pressure in Hong Kong are examples of the 'decentralized centralization' governance strategy in driving institutional excellence (Mok 2019). As an important measure for funding allocation to government-funded universities in Hong Kong, the RAE 2020 adopts a new area of the research impact beyond academia in the assessments. This governance strategy is not unique in Hong Kong but is quite popular among other governments. For example, the impact of research beyond academia is included as a distinct assessment criterion in the performance-based funding allocation system – Research Excellence Framework (REF) in the U. K. (Watermeyer 2016). Similarly, US National Science Foundation (NSF) assess research programmes and projects in terms of their socio-economic impacts (Bozeman and Youtie 2017).

Moreover, we should be aware of the limitations of the 'corporatized collaborative governance' model when promoting university–industry–business–society collaborations. The drive for performance management without proper contextualization of how different forms of cross-sectoral collaborations may lead to the potential risk of over-standardization of performance indicators for addressing public accountability. Although the above discussions have shown a growing trend of cross-sectoral collaboration driving for innovation-centric entrepreneurship, we must note that there is still a bias towards the commercial value of university-industry collaboration when assessing the performance of knowledge transfer. Even though the UGC has adopted a broader conception of

knowledge transfer, most of the academics still define knowledge transfer narrowly as technology transfer, measuring the economic and commercial values rather than the social and cultural values. Such a bias would inevitably disadvantage those working in the social sciences and humanities fields. For example, the Research Impact Fund has just been introduced with two rounds of funding allocations by the Research Grants Council in Hong Kong. Of the 41 projects funded so far, 35 of them (85 percent) are in Medicine, Science and Engineering. Apparently, this fund allocation is biased towards technology transfer and it is not fair to universities that do not offer the above disciplines. Given the different missions, visions, histories, and aspirations of the publicly funded universities in Hong Kong, the marriage between 'corporate governance' and 'collaborative governance' may turn into a 'standardization risk', particularly when investment returns of research and KT are purely measured in terms of economic returns or commercial values. If the UGC is keen on its call for 'role differentiation' across the eight publicly funded universities, the Grant Committee should not adopt only one governance model (particularly revealed by the 'standardization of performance measures') when evaluating university performance.

4.2. Hybridized ecosystems for entrepreneurialism

Putting the above developments and measurements of KT and research impact into perspective, the call for Entrepreneurial University in Hong Kong has caused not only quantitative change but also quality orientation when assessing the performance of Entrepreneurial University and its related activities in promoting innovation-centric entrepreneurship. In view of the growing complexity of university–industry–business–society collaborations, we should move beyond the Triple Helix Model when analyzing the relationship among multiple sectors.

The Multiple Networks Model for Entrepreneurship highlights the importance of 'multiple networks' owing to the involvement of many stakeholders who support innovation and entrepreneurship. Thus, governments should proactively promote synergy across different sectors and collaboration among multiple actors. Actors from industries and businesses, as well as local communities and the civil society must unite to encourage innovation and entrepreneurship. Recent research on public management practices in Asia Pacific has also suggested that new governance has evolved with the engagement of civil society and civic organizations, which goes beyond relying on the government and the market to manage the public sector and social service delivery/provision for promoting social cohesion (Minogue, Polidano, and Hulme 1998).

5. Conclusion

On the basis of our analysis of how universities in Hong Kong have responded to the call for collaborations with industries, businesses, and the society, this article adopts the Multiple Networks Model modified from the Quadruple Helix Model in analyzing innovation-centric entrepreneurship, especially with the growing importance of societal-based innovation. The call for private–public–community–civil society collaboration and cooperation for fostering innovation, creativity and entrepreneurship directs us to critically review how multiple networks and hybrid organizational arrangements have fostered collaboration for innovation-driven entrepreneurship and creative industries. Most important of all, this study has highlighted the emergence of 'corporatized collaborative governance' model that shapes the collaborations across universities, industries, businesses, and the wider society in Hong Kong.

Calling for multiple sectoral collaborations do not necessarily build upon 'shared governance' across different sectors. Steering university performance by setting out clear performance indicators, 'corporatized collaborative governance' is adapted to the Hong Kong university sector. Marrying 'corporate governance' which emphasizes on performance measures with 'collaborative governance' which attaches weight to 'share governance' may cause much difficulties in university governance and management. How the council leadership and university management work together with

other stakeholders/sectors beyond the academia would require special care, wisdom, and political/management skills to foster a productive working relationship.

While the analyses of 'corporatized collaborative governance' Model in this study focuses on how public universities in Hong Kong respond to the call for collaborations with industries, businesses, and the society, the responses of private higher education institutions among the multiple networks and hybrid organizational arrangements remain unclear. In future, it is worthy to investigate whether and how Hong Kong's Chinese society with a British colonial history affects the university governance model. It is equally interesting to further research on whether the university governance in Hong Kong is particularly unique when comparing to its counterparts in the region.

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Disclosure statement

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References

Altbach, P. G., and J. Salmi, eds. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington, DC: World Bank.

Bozeman, B., and J. Youtie. 2017. "Socio-Economic Impacts and Public Value of Government-Funded Research: Lessons From Four US National Science Foundation Initiatives." *Research Policy* 46 (8): 1387–98.

Carayannis, E. G., T. D. Barth, and D. F. J. Campbell. 2012. "The Quinuple Helix Innovation Model: Global Warming as a Challenge and Driver for Innovation." *Journal of Innovation and Entrepreneurship* 1 (1): 1–12.

Christopher, J. 2014. "Australian Public Universities: Are They Practising a Corporate Approach to Governance?" *Studies in Higher Education* 39 (4): 560–73.

Cooke, P. 2005. "Regionally Asymmetric Knowledge Capabilities and Open Innovation Exploring 'Globalisation 2' – A New Model of Industry Organisation." *Research Policy* 34 (8): 1128–49.

Deem, R., K. H. Mok, and L. Lucas. 2008. "Transforming Higher Education in Whose Image? Exploring the Concept of the 'World-Class' University in Europe and Asia." *Higher Education Policy* 21 (1): 83–97.

Etzkowitz, H., A. Webster, C. Gebhardt, and B. R. C. Terra. 2000. "The Future of the University and the University of the Future: Evolution of Ivory Tower to Entrepreneurial Paradigm." *Research Policy* 29 (2): 313–30.

Hawkins, J., and K. H. Mok. 2015. *Research, Development, and Innovation in Asia Pacific Higher Education*. New York: Palgrave Macmillan.

HKSAR Government. 2017. *The Chief Executive's 2017 Policy Address*. https://www.policyaddress.gov.hk/2017/eng/policy_ch03.html.

Hou, A. Y. C., C. Hill, Z. Hu, and L. Lin. 2020. "What is Driving Taiwan Government for Policy Change in Higher Education After the Year of 2016–in Search of Egalitarianism or Pursuit of Academic Excellence?" *Studies in Higher Education*, 1–14.

Innovation and Technology Commission (ITC), HKSAR Government. 2020a. *Midstream Research Programme for Universities (MRP)*. https://www.itf.gov.hk/l-eng/MRP.asp.

ITC, HKSAR Government. 2020b. *Technology Start-up Support Scheme for Universities (TSSSU)*. https://www.itf.gov.hk/l-eng/TSSSU.asp.

Ivanova, I. 2014. "Quadruple Helix Systems and Symmetry: A Step Towards Helix Innovation System Classification." *Journal of the Knowledge Economy* 5: 357–69.

Lawler, C. 2011. "The Capitalisation of Knowledge: A Triple Helix of University-Industry-Government." *Studies in Higher Education* 36 (6): 746–47.

Leydesdorff, L., and M. Meyer. 2006. "Triple Helix Indicators of Knowledge-Based Innovation Systems. Introduction to the Special Issue." *Research Policy* 35 (10): 1441–49.

Lingnan University. 2015. *Lingnan Recognises Scholars for Research and Knowledge Transfer Excellence*. https://www.ln.edu.hk/Lingnan-50th-anniversary/eng/highlight/highlight14.html.

Lingnan University. 2020. *Vision, Mission and Core Values*. Retrieved from: https://www.ln.edu.hk/about-lu/vision-mission-and-core-values.

MacGregor, S. P., P. Marques-Gou, and A. Simon-Villar. 2010. "Gauging Readiness for the Quadruple Helix: A Study of 16 European Organisations." *Journal of the Knowledge Economy* 1: 173–90.
McAdam, M., K. Miller, and R. McAdam. 2018. "Understanding Quadruple Helix Relationships of University Technology Commercialisation: A Micro-Level Approach." *Studies in Higher Education* 43 (6): 1058–73.
Miller, K., R. McAdam, and M. McAdam. 2018. "A Systematic Literature Review of University Technology Transfer From a Quadruple Helix Perspective: Toward a Research Agenda." *R&D Management* 48 (1): 7–24.
Minogue, M., C. Polidano, and D. Hulme. 1998. *Beyond the New Public Management: Changing Ideas and Practices in Governance*. Cheltenham: Edward Elgar.
Mok, K. H. 2013a. *The Quest for Entrepreneurial Universities in East Asia*. New York: Palgrave Macmillan.
Mok, K. H. 2013b. "The Quest for an Entrepreneurial University in East Asia: Impact on Academics and Administrators in Higher Education." *Asia Pacific Education Review* 14 (1): 11–22.
Mok, K. H. 2015. "Questing for Entrepreneurship and Innovation for Enhancing Global Competitiveness in Hong Kong." In *Research, Development, and Innovation in Asia Pacific Higher Education*, edited by John N. Hawkins, and Ka Ho Mok, 115–34. New York: Palgrave Macmillan.
Mok, K. H. 2019. "Governance, Accountability and Autonomy in Higher Education in Hong Kong." In *Transformations in Higher Education Governance in Asia*, edited by Darryl S. L. Jarvis, and Ka Ho Mok, 153–70. Singapore: Springer.
Mok, K. H., and J. Jiang. 2017. "Smart City, Innovation and Entrepreneurship: Policy Responses in Hong Kong." *Paper presented at the Seminar at King's College London*, London, March 2.
Mok, K. H., and J. 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 E. Neubauer, Ka Ho Mok, and Jin Jiang, 115–33. London: Routledge.
Powell, W. W., and P. J. DiMaggio. 1991. *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.
Rossi, F., and A. 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): 1970–91.
Shin, J. C., and G. Harman. 2009. "New Challenges for Higher Education: Global and Asia-Pacific Perspectives." *Asia Pacific Education Review* 10 (1): 1–13.
The Chinese University of Hong Kong. 2016. *CUHK Participates in Initiation of Guangdong-Hong Kong-Macau University Alliance to Promote Regional Developments*. https://www.cpr.cuhk.edu.hk/tc/press_detail.php?id=2396&t=中大參與發起粵港澳高校聯盟-與學界攜手提升區域合作.
The Education University of Hong Kong (EdUHK). 2020. *Vision & Mission*. https://www.eduhk.hk/main/about-us/vision-mission/.
The Hong Kong Polytechnic University. 2020. *PolyU Food Safety Consortium Becomes the First and Only Codex Observer as Non-Governmental Organisation in Hong Kong and Mainland China*. https://www.polyu.edu.hk/en/media/media-releases/2020/0702_polyu-food-safety-consortium-becomes-the-first-and-only-codex-observer/.
UGC. 2017a. *Documents on Previous RAEs*. https://www.ugc.edu.hk/eng/ugc/activity/research/rae/rae.html.
UGC. 2017b. *Framework for Research Assessment Exercise (RAE) 2020*. https://www.ugc.edu.hk/doc/eng/ugc/rae/2020/framework.pdf.
UGC. 2017c. *UGC Launches Research Impact Fund*. https://www.ugc.edu.hk/eng/ugc/about/press_speech_other/press/2017/pr15052017.html.
UGC. 2019. *Knowledge Transfer*. https://www.ugc.edu.hk/eng/ugc/activity/knowledge.html.
UGC. 2020a. *Application for RIF 2020/21*. https://www.ugc.edu.hk/eng/rgc/funding_opport/rif/application.html#objectives.
UGC. 2020b. *Statistical Tables of Student (Headcount) and Staff (Headcount)*. http://cdcf.ugc.edu.hk/cdcf/statSiteIndex.do.
Watermeyer, R. 2016. "Impact in the REF: Issues and Obstacles." *Studies in Higher Education* 41 (2): 199–214.