

## **Comparing doctoral education in China and Finland: an institutional logics perspective**

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## **Abstract**

This chapter explores and compares the institutional logics of Chinese and Finnish doctoral education systems through on-desk research of secondary data. Findings show that in both Chinese and Finnish doctoral education systems, there are five underlying institutional logics, namely state logic, profession logic, family logic, market logic and corporation logic; however, the differences lie in which of them are more dominant, and how they interact with each other. Findings also indicate that, to a large extent, the logics underlying Finnish and Chinese systems are compatible, and can serve as a solid foundation for developing cooperation between both countries. Based on the findings, we contend that in cooperation practice, stakeholders and practitioners in the cooperation need to be aware of the differences of logics.

Keywords: doctoral education, institutional logics, Finland, China, comparative study, cooperation

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## **Introduction**

Although higher education cooperation between China and Finland has, in recent years, strengthened due to reciprocal interests (Cai & Hölttä, 2014), it is still at a very preliminary stage, and cooperation at the doctoral level is even less developed. It has been argued that, in general, educational cooperation at the doctoral level between China and European countries is rather limited (Zheng & Cai, 2018). Some comparative and international education studies (e.g. Bray & Qin, 2001; Crossley & Jarvis, 2001; Yang, 2011) suggest that one key motive for comparing education systems is to enhance an understanding of the contexts of educational systems, which will contribute to cooperation development between the systems. While such a point can be easily assumed, the difficulty in research lies in the lack of an appropriate theoretical framework with which to analyse and to concretise the context of education systems, particularly in the field of doctoral education.

Some comparative research on Chinese and Finnish higher education systems (Cai & Kivistö, 2011; Cai & Kohtamäki, 2014) has shed light on our understanding of the doctoral education systems of both countries; however, among these collections of academic papers, none have ever adopted a consistent analytical framework for comparison. Meanwhile, the existing studies on either Chinese doctoral education (e.g. Ma, 2007; Wang, 2008; Yang, 2012) or Finnish doctoral education (e.g. Ahola, 2007; Hakala, 2009; Kivistö, 2011; Nummenmaa, Pyhältö, & Soini, 2008) have rarely explored the social and cultural contexts of each system. Rather, they deal mainly with the activities and functions of doctoral education.

According to institutional theory, the context of the higher education system is seen as an institutional environment (Cai & Mehari, 2015), which is composed of various aspects of institutions. 'Institutions can be generally understood as social orders, social rules, or taken-for-granted norms and beliefs, which are seen by actors as natural, rightful, expected, and legitimate' (Cai, 2013, p. 462). With an aim to concretise the very abstract concept of institution, an institutional logics perspective (Thornton, Ocasio, & Lounsbury, 2012) was developed which identifies a set of supra-organisational patterns that provide meaning to

actions and conflicts, largely reflecting the nature of institutions (Cai & Mehari, 2015). An institutional logic can be defined as ‘a set of material practices and symbolic constructions’ that constitute an institutional order’s ‘organising principle’ and are ‘available to organisations and individuals to elaborate’ (Friedland & Alford, 1991, p. 248).

To fill the aforementioned knowledge gap, our chapter systematically compares the Chinese and Finnish doctoral education systems, with a focus on their institutional contexts and their underlying institutional logics in particular. The primary research questions are the following: 1) *From the perspective of institutional logics, to what extent can the Chinese and Finnish doctoral education systems be compared?* 2) *To what extent are they compatible?*

To answer the research questions, we employed the perspective of institutional logics to make the institutional context of both doctoral education systems tangible through on-desk research of second-hand data, including relevant academic literature concerning doctoral education and higher education in China and Finland, government policy documents related to doctoral education reforms in both countries, some university strategy documents, news and the like.

The chapter is structured as follows. An introduction of the theoretical framework of the study, the institutional logics perspective, is followed by a brief description of the Chinese and Finnish doctoral education systems. Next, it respectively examines the underlying institutional logics of each of these doctoral education systems. It continues with an analysis of the compatibilities and differences of both systems from the institutional logics perspective and finally provides implications for cooperation between Finland and China in the field of doctoral education.

### **Theoretical framework: the institutional logics perspective**

The institutional logics perspective, a recent development in institutional theory, was introduced in the works of Alford and Friedland (1985) and Friedland and Alford (1991). The concept has become more popular in organisational studies, with contributions from Thornton and his co-authors (Thornton, 2004; Thornton et al., 2012; Thornton & Ocasio,

1999). There has been a recent trend in applying the institution logics perspective in higher education research (Cai & Mehari, 2015; Lepori, 2016), as well as in the context of Chinese higher education (Cai & Zheng, 2016) and in settings for comparing Chinese and European experiences (Zheng, Cai, & Ma, 2017).

In this chapter, we applied the framework developed by Zheng, Shen and Cai (2018), who used a typology of societal institutional logics proposed by Thornton, Ocasio and Lounsbury (2012), including logics of state, market, family, profession, religion, community and corporation, to identify multiple institutional logics in the field of Chinese doctoral education. This is also consistent with the argument of Thornton et al. (2012), which maintains that the actions and interactions at the organisational field level are subject to societal-level logics. An analysis of the extent to which these logics are reflected in Chinese doctoral education focused on the following six dimensions: admission, doctoral training, quality assurance, graduation, governance and funding; these dimensions have been commonly discussed in the literature on doctoral education systems (e.g. China's quality assessment group for doctoral education, 2010; Yang, 2012). Zheng, Shen and Cai (2018) also suggested that five logics (i.e. state logic, profession logic, family logic, market logic and corporation logic) are particularly relevant for understanding doctoral education systems, such as the Chinese system, while the religion and community logics are less salient.

By combining the five logics and the six dimensions of the doctoral education system, we constructed an analytical framework for understanding the institutional logics underlying the Chinese and Finnish doctoral education systems (see Table 9.1). Following the framework, by cross-examining each dimension of the doctoral education systems (Y-Axis) with the type of institutional logics (X-Axis), it is possible to identify the reflections of the underlying institutional logics in each dimension of a doctoral education system. As the framework was originally modified based on the Chinese context, when conducting a comparative analysis in this chapter, we paid special attention to its relevance to other contexts, such as the Finnish context.



Table 9.1. Analytical framework for understanding institutional logics in doctoral education systems

		X-Axis: ideal types of institutional logics				
		state logic	profession logic	family logic	market logic	corporation logic
Y-Axis: dimensions of doctoral education systems	admission					
	doctoral training					
	quality assurance					
	graduation					
	funding					
	governance					

Source: Modified from Zheng, Shen and Cai (2018)

In addition to proposing the two-dimensional framework, Zheng, Shen and Cai (2018) interpreted the five logics in the context of doctoral education. As these are crucial for the analysis of the current study, each of the doctoral education logics is explained in the following paragraphs.

- State logic

According to Thornton et al. (2012), the state is understood as a redistribution mechanism. With respect to state logic in the field of doctoral education, actors with bureaucratic power, such as state governments and university administrators, have the dominant influence. They intend to construct a doctoral education system through government policies and regulations, routine administration and the redistribution of resources. Doctoral education is deemed a public good and should represent the interest of the state government.

- Profession logic

Driven by profession logic, a person's status in doctoral education is built on his/her personal expertise in disciplined research. Doctoral supervisors who have more advanced expertise in the discipline enjoy a higher reputation in the academic community and have more authority in doctoral education. In terms of profession logic, actors in the field of doctoral education, both doctoral supervisors and doctoral students, seek to enhance their personal expertise, get recognised by their peers and enhance their status in the academic community.

- Family logic

In the context of doctoral education driven by family logic, a supervision group, which comprises a supervisor and his/her supervised doctoral students, becomes a family unit in which the doctoral supervisor acts as the patriarchal leader, and the supervised students become sisters and brothers. The relationship between a doctoral supervisor and the supervised doctoral students is a patronage relationship based on reciprocity. Doctoral students and doctoral supervisors behave like family members, express their unconditional loyalty towards their supervision family and seek to enhance the family honour together.

- Market logic

According to the market logic, doctoral education, doctoral degrees and doctoral graduates become profitable commodities and valuable assets in the market. The pursuit of a doctoral education is driven by the intention to increase the stakeholders' profits. Market and market-like activities are introduced, which increases competition in the context of doctoral education and promotes applied doctoral research, especially industry-collaborative research.

- Corporation logic

Driven by corporation logic, the efficiency of doctoral education is emphasised, and performance-based management is implemented, in the organisation of doctoral education. Hence, on-time graduation, academic publication and other activities that can manifest the effectiveness and efficiency of doctoral education management are encouraged. An employment relationship between universities and doctoral students is established as a part of the process of managing doctoral education.

### **The Chinese and Finnish doctoral education systems**

The sections below present a brief introduction of the doctoral education systems in China and Finland, which will facilitate the readers' understanding of the analysis that follows.

#### **The Chinese doctoral education system**

The Chinese doctoral education system was established in 1981 (China Academic Degrees and Graduate Education Development Center, 2014). During the nearly four decades since its inception, it has developed into one of the largest doctoral education systems in the world (Yang, 2012). By 2015, out of the 1,129 Chinese universities that provide higher education offering degrees (Ministry of Education of China, 2016), 335 universities have been granted the authority to provide doctoral education and to confer doctoral degrees. According to the latest statistics (2015), the Chinese doctoral education system as a whole had 326,600 doctoral students, with 53,000 outgoing doctoral graduates and 74,400 newly-recruited doctoral students (Ministry of Education of China, 2016).

In alignment with the Chinese educational system's examination tradition, doctoral students in China are recruited mainly through entrance examinations. However, the admission system has been under reform in recent years and now allows more diverse means for recruiting students, such as application materials, constituted mainly of candidates' research proposals (Ministry of Education of China, National Development and Reform Sector of China, & Ministry of Finance of China, 2013). More and more

universities are adopting this means for recruiting students. The duration of doctoral study in China, usually 3 to 4 years, has recently extended to a maximum of 8 years.

The state plays a decisive role in the system's governance by approving the universities' applications to offer doctoral education, being involved in deciding the annual recruitment number of doctoral students and acting as the major funder of the doctoral education system (Zheng et al., 2018). Nevertheless, with the launch of the 'Supervisors' Accountability Policy' and the 'Supervisors' Financial Support Policy' in 2006 (China's quality assessment group for doctoral education, 2010), more autonomy has been given to doctoral supervisors and universities. Currently, in many Chinese universities, doctoral supervisors act as the decision makers and quality assurers (J. Guo, 2009); this includes deciding whom to recruit, approving doctoral students' research plans, evaluating their performance, examining their dissertations, allocating financial resources and even arranging for their employment after graduation (Zheng et al., 2018).

Further, a unique *shi-men* phenomenon can be observed in current Chinese doctoral education. Literally, *shi* translates from Chinese as 'a supervisor' or 'a teacher', and *men* translates as 'group' or 'family'. A *shi-men* is a supervision family that includes a doctoral supervisor and his/her supervised (doctoral/master's/bachelor's) students. Within a Chinese *shi-men*, the relations between doctoral supervisors and their supervised students are patronage relationships, which means that as the group leader, the supervisor 'takes care of the group within a hierarchical governance mode' (Leisyte & Dee, 2012, p. 157).

Since 2014, Chinese universities have begun to charge doctoral students tuition fees (maximum 10,000 RMB per year; Ministry of Education of China, 2014; Ministry of Finance of the People's Republic of China, 2013). Nevertheless, through a national postgraduate student financial-support system, the government financially supports individual doctoral students with various subsidies, grants and scholarships (Ministry of Finance of the People's Republic of China, 2013). For instance, the state government subsidises each individual doctoral student with a minimum of 10,000 RMB per year (Ministry of Finance of the People's Republic of China, 2013), which means that eventually the tuition fees of doctoral students are covered by the state government. The state government also funds the universities based on the annual number of full-time

doctoral students (Ministry of Education of China, 2014) with an amount of 28,000 RMB per student per year.

In recent years, Chinese doctoral training activities have transformed under the impact of internationalisation and marketisation. Doctoral students are encouraged to participate in all kinds of international doctoral training activities, such as international conferences, student exchanges and international publications, to gain advanced knowledge in research areas and to become involved in the international academic community (Sun & Liang, 2009). Meanwhile, along with the marketisation of higher education in China, the funding structure of doctoral education has been diversified, and one of its increasingly important resources has been funding from industry. As a result, more applied doctoral research has been conducted in doctoral training in close collaboration with industry. Changes can also be seen in the career choices of doctoral graduates. In the 1980s, 80% of doctoral degree holders entered into academic careers; however, in the 21<sup>st</sup> century, only around 40% of doctorates are expected to continue with academic careers after graduation even though an academic career remains the main career choice for doctorates (Z. Liu & Luo, 2015).

### **The Finnish doctoral education system**

Currently, there are 14 research universities (including one university of arts) in Finland that have been granted the authority to offer doctoral training and to award doctoral degrees. Annually, Finnish universities award 1,800 to 1,900 doctoral degrees, which is about 5%–6% of all the degrees granted (Vipunen Education Statistics Finland, 2016).

Doctoral students are recruited into the Finnish doctoral education system through application, a process which assesses the applicants' research proposals, academic transcripts, application letters, etc. The target duration established for each doctoral programme is 4 years; basically, however, doctoral students have an almost unlimited right to continue their studies longer if necessary (cf. Ahola, 2007). Doctoral students do not pay any tuition fees, but the national student aid system does not offer coverage as wide as that offered for bachelor's- and master's-level students.

Universities are highly autonomous in terms of how they organise their doctoral training with respect to government steering. More importantly, universities are able to determine their enrolment numbers, contents of the curriculum and fields and programmes of doctoral training (within the pre-determined disciplinary fields in which a university has the right to offer its degrees). However, the government rewards universities with a funding formula that includes the number of doctoral degrees awarded. Currently, the formula is 9% of the core funding allocated to universities (Ministry of Education and Culture of Finland, 2015). In their performance negotiations, which take place every 4 years, universities and the Ministry of Education and Culture agree on the specific degree targets for each of the universities. These negotiations are one of the few instruments available to the government in steering doctoral training in Finland.

There is no accreditation required for the doctoral programs. Instead, quality assurance processes are integrated into the institutional quality assurance systems of the universities, which are subject to external reviews (quality audits) conducted by the Finnish Education Evaluation Centre, the national quality assurance agency responsible for evaluations of higher education, every 6 years.

Traditionally, doctoral training in Finland follows the form of supervisor–student individual apprenticeships. To internally coordinate their doctoral education more effectively, over the past 5 years, most universities have established ‘graduate’ or ‘doctoral’ schools that are based partly on the example offered by the graduate school model of U.S. universities. In many universities, this has resulted in stricter internal rules for admission criteria, supervision of doctoral theses, designing of curricula and grading of the completed doctoral theses. The current trend in many universities is to emphasise ‘quality over quantity’ with respect to the admission and supervision of doctoral students.

### **Analyses**

Our data analysis reveals that both Chinese and Finnish doctoral education systems are underlined by the multiple logics of state, profession, family, market and corporation even though the extent of the logics’ impacts varies with respect to the different dimensions of doctoral education in each system. In the next section, we first present the reflections and

impacts of the five underlying logics, one by one, for both doctoral education systems and then compare the findings of the two systems, analyse their similarities and differences and explore the possible reasons behind these.

### **Institutional logics of Chinese doctoral education**

As Zheng, Shen and Cai (2018) have provided vivid illustration on the institutional logics of the Chinese doctoral education system based mainly on their interview data, our chapter will further testify to and enrich the findings based on a review of literature.

#### ***State logic***

The state logic of the Chinese doctoral education system stems from the historical development of the system, which was established for the development of the socialistic modernisation of the country (Office of the State Council Academic Degrees Committee of China, 1980); its developmental path also indicates strong promotion and tight control by the Chinese central government (Yang, 2012). Currently, the impact of state logic is reflected largely in the government's stringent control of the system's size through a series of admission and external quality assurance policies, the government's role as the decision maker in the system's governance and financial resources distribution and, to a lesser extent, in the regulation of doctoral training and graduation requirements.

The state controls the size of the doctoral education system strictly by deciding which institutions are qualified to offer doctoral training and the enrolment scale to which the universities can admit students (Yang, 2012). Since 2005, institutions that were approved to offer doctoral education were also under the state's regular evaluation every 6 years (Ministry of Education of China, 2005). Further, the expansion of the system since the 1990s has also been driven and strategically planned by the state government (Zhao & Shen, 2013). Most universities still utilise entrance examinations to recruit students, which is also a reflection of the state logic in doctoral student admission. Except for the strong regulation of entrance of the doctoral education system (for both students and institutions), the state tries to externally assure the quality of the outcomes of doctoral education. For example, a random assessment of doctoral dissertations at the national level is conducted annually by the National Academic Committee; if any dissertations are found to be unqualified, the degree holders lose their degrees, and their supervisors and institutions lose their

supervisory rights (China Academic Degrees and Graduate Education Development Center, 2016b).

The state government not only acts as a gatekeeper or external quality assurer of the doctoral education system, but it is also a system scenario designer. On one hand, through the promotion of the elite universities policy, such as Project 985 and Project 211, the development of graduate schools in some selected universities and the implementation of the key disciplines policy, the Chinese government has constructed a hierarchical pyramid of the Chinese higher education system. As Figure 9.1 shows (Cai & Yan, 2015; X. Guo, 2003), universities at the top receive more government financial support and enjoy more autonomy (Wang, 2008). On the other hand, following the guidance of the State Council of China, a national-provincial-institutional three-layer governance structure of the Chinese degree management system was established, as Figure 9.2 shows (China Academic Degrees and Graduate Education Development Center, 2016a). In so doing, the state government has extended its influence on doctoral education from system governance to institutional governance.

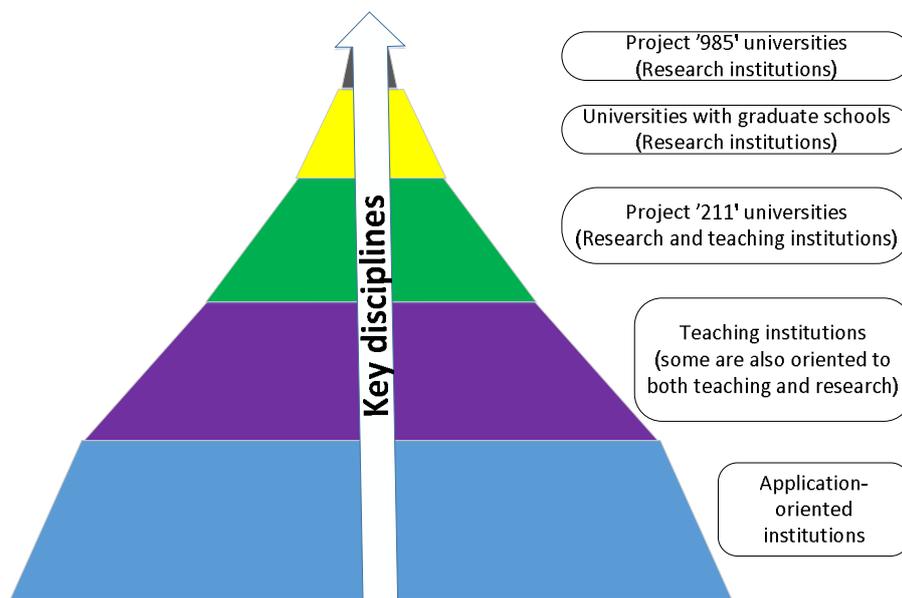


Figure 9.1. Pyramid of the Chinese higher education system

Source: Cai & Yan (2015), X. Guo (2003)

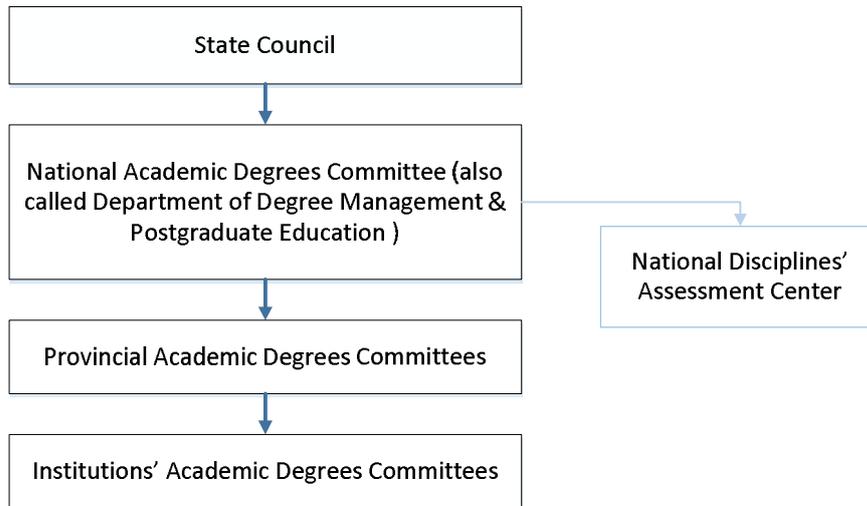


Figure 9.2. Governance structure of Chinese academic degree management

Source: China Academic Degrees and Graduate Education Development Centre (2016a)

Further, through providing special funding to universities via Project 985 and Project 211, research project funding to supervisors and financial support to doctoral students directly through the national financial support system and indirectly through support universities based on doctoral students numbers, the state government influences the doctoral education system as a major funder and resources redistributor, which is also a reflection of state logic. In addition, the impact of state logic can be discerned in the state's promotion of international doctoral training activities (Han, 2010) and its general requirement of politics education.

### ***Profession logic***

Like state logic, profession logic has been embedded in the context of Chinese doctoral education since the system's establishment, which lies at the base of doctoral education, i.e. scientific research (European University Association, 2010). The impact of profession logic in Chinese doctoral education is seen in all the dimensions of its system. Mainly, it is reflected in the emphasis on research capacity in the whole life-cycle of doctoral education from admission to graduation, the development of a strict quality assurance process and strong academic power in terms of institutional governance.

Driven by profession logic, the majority of doctoral supervisors in China understand the quality of doctoral education to be exceptional (China's quality assessment group for doctoral education, 2010; Zheng et al., 2017). Underlined by this concept, a doctoral candidate's research capacity is regarded as the main indicator of the quality of a doctoral education programme (China's quality assessment group for doctoral education, 2010), and it is highlighted in the whole life-cycle of doctoral education in China. For instance, during doctoral admission, many doctoral supervisors in China prefer to enrol students based on evaluations of the candidates' research outputs and their performance in personal interviews (China's quality assessment group for doctoral education, 2010). As mentioned, more and more universities are recruiting students based on the evaluation of an applicant's research proposal, which is an indicator of the applicant's research capacity. When it comes to doctoral training, enhancement of the research capacity of doctoral students is deemed the core of doctoral training. Doctoral students in China are seen as both students and junior academics (China's quality assessment group for doctoral education, 2010). In order to upgrade the research capacity of Chinese doctoral candidates and get them recognised by international academic peers, doctoral training activities in China have been internationalised in recent years; for instance, doctoral candidates are encouraged to participate in international conferences, to publish in international peer-reviewed journals and to be involved in international projects (Sun & Liang, 2009). Accordingly, academic publication in peer-reviewed journals is seen as an important performance indicator of doctoral candidates, and doctoral dissertations must be sent to external reviewers for evaluation before final submission (China's quality assessment group for doctoral education, 2010).

Meanwhile, driven by profession logic together with state logic, the deans of graduate schools, the government and some doctoral supervisors, see quality as perfection/consistence (China's quality assessment group for doctoral education, 2010; Zheng et al., 2017). Hence, process-oriented quality assurance approaches have been adopted in China, and a strict procedure of quality assessment (starting with doctoral admission and continuing with research proposal defence, midterm examination, pre-defence, external review and public defence, and ending with the random quality assessment of doctoral dissertations after graduation) has been well established in the

Chinese doctoral education system (China's quality assessment group for doctoral education, 2010).

In the last decade, along with the implementation of the Supervisors' Accountability Policy, the autonomy of doctoral supervisors has been gradually increased within institutions, especially concerning academic issues. For instance, doctoral supervisors in China are fully responsible for selecting doctoral students among applicants and for evaluating their performances via the established quality assessment procedure. With the Supervisors' Financial Support Policy, project funding allocated by supervisors has been an increasingly important funding source for doctoral study, which has strengthened the influence of doctoral supervisors.

With the exception of that which has been discussed here, the impact of profession logic can also be observed in the fact that an academic career is still the main career choice among doctoral graduates and that some national scholarships are merit-based, that is, allocated based on the evaluation of a doctoral candidate's research capacity.

### ***Family logic***

Family logic has a long history in the Chinese education system. As the old Chinese saying, 'one-time teacher, life-long father', indicates, in Chinese tradition, the relationship between teacher and student is similar to that between parents and children (Li, 2002). Under the influence of this tradition, along with its embedded family logic, the unique *shi-men*, or supervision-family culture, is formed in the Chinese doctoral education system, which affects the practices of doctoral education, including admission, supervision, quality evaluation, graduates' employment choices and the institutional governance of supervision groups.

Driven by family logic, supervisors in China are patriarchal leaders of their supervision families, and the relationship between supervisors and students is hierarchical (Yue & Zhou, 2008). Even the relationships between different cohorts of the supervised students are hierarchical. For instance, latecomers to the supervision groups call the older cohorts *shi-xiong* or *shi-jie*, which literally means 'elder academic siblings', and respect them as their seniors. Supervisors have the full autonomy to decide how to supervise students (Yue & Zhou, 2008), and the supervision is not limited to academic issues; it may also include life

guidance (Zhou, 2009). Further, driven by family logic, nepotism can be observed in the admission process of doctoral students in China (Yue & Zhou, 2008) even though, in recent years, it has been reduced due to state interference. The same phenomenon can be seen in the employment of doctoral graduates who wish their supervisors to act as their sponsors in the academic labour market and to help them with employment issues, as parents help their children in China. The impact of family logic can also be seen in the quality evaluation process. In the last decade, the reciprocity between supervisors and students has affected the quality of the evaluation process of doctoral student performance; as a result, some supervisors have lowered their academic standards to allow students to pass even though the students are not sufficiently qualified (Yue & Zhou, 2008), which contributes to the high completion rate of doctoral education in China.

### *Market logic*

Market logic and corporation logic, in conjunction with the global trend of academic capitalism, were introduced into the Chinese doctoral education system in the mid-1990s (Slaughter & Leslie, 2001). This market logic has mainly affected Chinese doctoral education in the aspects of its funding system, doctoral training and the employment of doctoral graduates. Driven by market logic, financial resources for doctoral education have been diversified in recent years. Industry and the private sector in general have become important stakeholders for doctoral education, as they are now allowed to financially support doctoral education, especially in applied sciences, through research projects led by related supervisors (Peng, 2009). Through the implementation of the Supervisors' Financial Support Policy in 2006, supervisors can directly financially support their doctoral students through their project funding (China's quality assessment group for doctoral education, 2010); this means project funding has gradually become an important financial resource for doctoral students (Peng, 2011a). In return, the doctoral students participate in the supervisors' research projects as research assistants and improve their research expertise through the projects' work (Peng, 2011b). This has led to the reform of doctoral training from traditional apprenticeships to project-based supervision. Further, in response to the needs of markets, knowledge production in universities has been transforming from 'Mode 1' to 'Mode 2', which diversifies the profiles of doctoral degrees and encourages the development of professional doctoral degrees (Chen, 2010). Along with the change in

the knowledge mode and the diversification of funding, more connections with industry have been established in the process of doctoral training and have transformed the ways of doctoral training (Chen, 2010). With the changes in doctoral training, both students and supervisors realise and expect that continuing with an academic career is not the only option for doctoral employment (Chen, 2010). More and more graduates enter the non-academic market (Z. Liu & Luo, 2015).

Another reflection of market logic in doctoral education is that the doctoral degree is regarded as a profitable asset in career development, thus devaluing its academic essence. In some extreme cases, the doctoral degree has become a 'visa' through which politicians advance their political careers. Since most of these politicians do not have the interest in or capacity for doing proper academic research, they plagiarise the work of others (X. Liu, 2016). This no doubt distorts the academic value of a doctoral degree. Similarly, the establishment of a doctoral programme is regarded as a valuable and profitable asset for universities, which enables them to gain more research funding from the state. As a result, many universities, even those that are not research institutions, have attempted various means to gain the government's approval to provide doctoral education (Gu & Chen, 2007).

### ***Corporation logic***

Compared to other logics, the impact of corporation logic on doctoral education in China is rather limited and is focused mainly on doctoral training and graduation. Driven by corporation logic, the relationship between supervisors and students is changing towards one of quasi-employment (Yue & Zhou, 2008). Doctoral students get paid for their work on their supervisors' research projects and even call their supervisors 'boss' (Yue & Zhou, 2008). Nevertheless, as the state remains the main funder of doctoral education, the management of universities has never been fully corporationalised, and a real employment relationship between institutions/supervisors and doctoral students has not been established in Chinese universities (Yue & Zhou, 2008). The nature of the relationship between supervisors and students remains one of patronage based on reciprocity. Further, under the impact of corporation logic, efficiency and performance management are increasingly emphasised in China's doctoral education. As a result, students are encouraged to have at least one published academic paper before graduation, and most doctoral students want to

graduate and enter the labour market as soon as possible (Zheng et al., 2018). Supervisors also hope that their students will graduate within the expected duration, without any delays. Table 9.2 summarises the key points of reflections of institutional logics of the Chinese doctoral education system.

Table 9.2. Institutional logics in the Chinese doctoral education system

Y-Axis: dimensions of doctoral education system	X-Axis: ideal types of institutional logics					
		state logic	profession logic	family logic	market logic	corporation logic
admission	state's regulations regarding admission: entrance examination system, decision-making power regarding number of enrolled students	emphasis on research capacity in recruitment of students	nepotism phenomenon	(no obvious reflection)	(no obvious reflection)	
doctoral training	state's support of international training activities state's requirements for politics and ideological philosophy courses	emphasis on enhancement of research capacity in doctoral training internationalisation of doctoral training activities	supervision of doctoral training + life guidance	(applied) project-based doctoral supervision	quasi-employment relation between supervisors and students	
quality assurance	state's regulation over which institutions can provide doctoral education and regular evaluations of approved institutions random checks of doctoral dissertations	seeing quality as exception and perception research capacity as the major performance indicator of doctoral students the establishment of strict quality assurance procedures	possibility of supervisors lowering their academic standards in the quality evaluation	(no obvious reflection)	(no obvious reflection)	
graduation	state's general regulations for graduation requirements	graduates' entry into academic careers	supervisors as sponsors in the academic labour market nepotism phenomenon	doctoral degree = a profitable asset in career development increase of graduates in non-academic sectors	academic publication as a graduation criterion graduation as a general plan without postponement	
funding	the state as the major funding resource	(no obvious reflection)	(no obvious reflection)	increase of research funding from industry-collaborative research projects doctoral education = a tool for gaining financial resources	(no obvious reflection)	
governance	state as the gatekeeper and scenario designer of the system represents the will of the state and serves the socialistic modernisation	strong academic power in institutional governance	supervisors' strong academic power in institutional governance, especially within supervision group: supervisors = patriarchal leaders; doctoral students = family members (children) hierarchical relation in supervision groups	(no obvious reflection)	(no obvious reflection)	

Source: The authors

## **Institutional logics of Finnish doctoral education**

### *State logic*

For many years in Finland, the state's approach to doctoral education has been strongly characterised by certain founding principles rooted deeply in the Humboldtian tradition and the Nordic welfare state model (Ahola, 2007). This includes free tuition, substantial autonomy of universities to arrange their doctoral training in a way they deem appropriate and a high overall emphasis on equality (Hölttä, Jansson, & Kivistö, 2010). The state plays a minor role in regulating and governing doctoral education compared to the level of regulation they perform at the undergraduate level. National level legislation sets a very broad and loose regulative framework, which universities then supplement with their own internal rules and policies. Current legislation regulates doctoral education only by prescribing minimum admission qualifications (applicants for doctoral studies need to hold applicable types of master's degrees), what elements are needed for completion of a doctoral degree and details related to the student's right to appeal during the grading process of a doctoral dissertation (Universities Act 558/2009; Government Decree on University Degrees 794/2004). Moreover, the legislation prescribes that universities must participate in external evaluations of their activities and quality assurance systems on a regular basis, but it does not include any specifications about what these evaluations should contain and how they should be performed.

The state, however, has a strong role in funding doctoral education. This is realised through the national funding model, which is heavily performance-driven (currently 75% of the state funding is performance-based) (Ministry of Education and Culture of Finland, 2015). Universities are able to generate more state funding mainly by awarding more doctoral degrees but also by producing more highly-rated publications and accumulating more competitive research funding, which are all measurable performance indicators included in the funding formula. Moreover, the state has indirect and non-binding means of influence through information steering by publishing policy documents (e.g. reviews and evaluation reports, planning documents and strategies) and by offering recommendations for ways in which to develop doctoral education, especially with respect to its labour market relevance.

### ***Profession logic***

According to the principles of the Humboldtian tradition, academics, most specifically professors, are considered to be the guardians of academic quality. This is particularly evident in admission practices, where the professor's judgement of an applicant's quality plays a key role. Admission processes vary to some extent among universities; in most cases, however, central criteria for admitting students are the quality and relevance of a research proposal. This proposal is reviewed and approved/rejected by the professor or other senior academics in charge of the field of study. The academic power also extends to the final stages of the doctoral training; the supervising professors have traditionally played a role—sometimes stronger, sometimes weaker—in grading the theses they have themselves supervised.

Finnish doctoral education still follows the 'dissertation-centred model' originating from the German-based Humboldtian tradition in contrast to the American tradition, which is characterised by an emphasis on systematic training based on coursework. For this reason, doctoral students are considered primarily as junior members of the academic profession rather than as students to be educated. A student's main task is to work on his or her dissertation under the supervision of one or more senior academics, thereby forming a kind of master-apprentice relationship (Hakala, 2009). However, disciplinary differences also have an influence on supervisory relationships. In the natural sciences, the novice researcher is a part of a hierarchically organised research group; however, in the social sciences, doctoral students are often given more freedom and are treated more strongly as colleagues (Delamont, Atkinson, & Parry, 2000; Hakala, 2009).

Even though students are required to complete courses as a part of their training, most of their time is dedicated to writing their dissertations and to other publishing activities. In addition, many full-time doctoral students work as graduate assistants in those cases in which the academic units do not have enough senior staff to fulfil all the teaching responsibilities. While doing this, the students learn a wide variety of skills and gain confidence and independence. This approach continues the Finnish tradition of unstructured research training, which places a high level of emphasis on individual

capability and self-initiative (Hakala, 2009). At the same time, professors and other supervisors can benefit by having extra workforce for easing their teaching loads.

The format of the doctoral dissertation has changed over the years. Dissertations consisting of articles published in international refereed journals or of book chapters (typically 3–5) and an integrating summary became almost the norm in the 1980s and 1990s in ‘hard sciences’ such as medicine (Hakala, 2009). Now, 20-30 years later, this practice has also become an accepted alternative to the monograph-type of dissertation in the social sciences and humanities. This is at least partly due to the fact that the current state-funding model rewards publishing activity in highly ranked journals more than before. Sometimes the articles are published together with the thesis supervisor and possibly with other members of a research group. This offers more incentives for the professors to provide their supervision in the form of co-authorship, in which the essential part of the training of a student is ‘learning by doing’ together with the supervising professors.

The graduation of a student brings academic merit for the supervisor, which is counted as one important aspect of academic expertise. In addition, doctoral graduates who leave academia to work in business or in the public sector are often in leading or highly rated expert positions immediately after the graduation or a few years after getting more non-academic work experience, although the unemployment of doctoral graduates has been rapidly increasing in recent years (Haila, Karinen, Kaihovaara, Eronen, & Haapakorpi, 2016).

### ***Family logic***

In Finland, strong welfare state ideals, a high level of individualisation and, simultaneously, the erosion of the role of the extended and nuclear family as a basic societal unit are all significantly lessening the influence and meaning of family logic as a motivational factor. This is highlighted in many ways; outright nepotism of any sort is strictly prohibited by the legislation, and it is considered socially unacceptable in all parts of the society, including in the academic world. At the same time, supervisor-student relationships are formal in the

sense that their scope of activity does not typically extend beyond what is considered professional. For instance, giving advice on how students should live their lives outside academia would be considered, in most cases, unethical and intrusive behaviour.

However, all of this does not make Finnish universities and doctoral education totally immune to practices that can be connected to the idea of family logic. For instance, the admission of doctoral students is always at least partly based on the research interests and fields of expertise of the professors in charge in addition to the 'objective quality' of a research proposal. This directs, at least to some extent, the research interests of prospective doctoral students according to the existing research interests of their potential supervisors; it thereby resembles reciprocal and unconditional obligations oriented to the reproduction of the interests of 'family members'. Moreover, when it comes to training and quality assurance, given the high autonomy of professors in monitoring the quality of the education/supervision they themselves offer, one cannot escape the idea that students who are closer to their supervisors, either in terms of their research subjects or in personal relationships, could get more and better opportunities for higher quality supervision or for training throughout their studies as a sign of 'patronage'.

In a similar vein, this relationship can affect getting more and better letters of recommendation as a sign of the 'supervision family's' loyalty. For instance, higher-profile/higher-paid positions in research projects led by their thesis supervisor could be examples of family-type professional nepotism. Unfortunately, empirical, research-based information in the Finnish context is totally absent in the literature, thereby restricting the discussion on this topic here to the level of anecdotal evidence and presumptions based on common sense.

### ***Market logic***

To a large extent, market logic has been absent from Finnish higher education in many ways; education at all levels from primary school to doctoral education has been more like a basic right rather than a commodity to be bought or sold (Hölttä et al., 2010). However, especially over the past decade, the role of markets and market logic as such has effectively penetrated doctoral education in several ways. For instance, transformation towards a more competitive and commercialised climate in Finnish academia has, in many fields, led to a

situation in which doctoral students are seen primarily as cheap labour to be utilised in externally funded projects (Hakala, 2009; Kuoppala, Pekkola, Kivistö, Siekkinen, & Hölttä, 2015). At the same time, the ability to generate competitive research funding is considered an indicator of the capacity to conduct high-quality research. Further, research projects result in an increasing number of publications that are, again, crucial impressions of scholarly productivity in research markets.

Success in generating more research funding can increase the possibility of more doctoral education. At the same time, the volume of attracted project funding and publication productivity can be considered representations of success symbols in winning ‘market shares’ in research markets. Successful professors have the talent to combine entrepreneurial activities (more research funding) and academic excellence (better quality training); unfortunately, however, the relationship is not always that straightforward. Competition is an essential part of academic life, and it is reflected throughout all stages of doctoral studies. According to extreme views, the Finnish higher education system is increasingly based on a ‘tournament model’ in which students play something akin to a zero-sum game as they compete against each other in admissions, scholarships, fixed-term paid positions, roles and responsibilities in research projects and so on (Ylijoki & Henriksson, 2015). However, this competition does not end with graduation. As the number of PhD holders has grown rapidly over the past 20 years, increasing numbers of qualified junior academics wishing to continue their academic careers after graduation constantly compete both for university positions and for external research funding from national research councils, the EU and other funding bodies (Ylijoki & Henriksson, 2015).

Another remaining under-studied aspect of market logic is related to practices in which graduates do professional favours for their former supervisors. Driven by the thinking that ‘market exchange is loyalty’, some professors can expect that their graduates are their personal ‘business cards’ and would pay back the services and opportunities students received from them throughout their training by offering professional counter-favours of different kinds. Indeed, some professors likely expect to benefit in many ways by having

their former students in positions that bring them visibility, prestige or joint undertakings (e.g. lucrative consultation or research projects, prestigious expert roles in committees and visibility in media).

### ***Corporation logic***

Corporation logic is closely manifested in the ongoing performance-based management practices of Finnish universities. Since the latest reform of Finnish university legislation, universities have gained significantly more autonomy in their staff management, for example, in terms of recruitment, promotions, salaries and workloads. The University Act of 2010 separated Finnish universities from the state budgeting bureaucracy and transformed them either into independent corporations under public law or foundations under private law, thereby granting universities financial autonomy and liability. At the same time, civil-service employment relationships were changed to contractual relationships (Pekkola & Kivistö, 2012; Ylijoki & Henriksson, 2015). This, along with several other transformations, such as the introduction of a performance-based salary system, has intensified management orientation in doctoral training.

Here we provide some examples to further illustrate this point. For instance, in admissions procedures, the trend towards more selective admissions is perfectly in line with the increased emphasis on institutional efficiency and productivity (e.g. improved throughput and graduation rate and prospective publishing productivity). Some doctoral students have an employment relationship with the university either as full-time and paid doctoral students or as part-time/full-time project researchers. In both cases, remuneration and other terms of employment are at least partly related to output. Since employee behaviour guided by the managerial orientation is much stronger than student behaviour guided by supervisory orientation, conflicts between these two simultaneously existing roles may appear. At the same time, the institutional value of doctoral education can be determined with a cost-benefit approach, that is, how much money or prestige it creates for the institution as an exchange for the resources it consumes.

The main analysis of logics within the Finnish doctoral education system is summarised in Table 9.3.

Table 9.3. Institutional logics in the Finnish doctoral education system

		X-Axis: ideal types of institutional logics				
		state logic	profession logic	family logic	market logic	corporation logic
Y-Axis: dimensions of doctoral education system	admission	weak state regulation in admissions; only indirect influence on number of enrolled students	selection of the most academically qualified and promising applicants by professors	student admissions partly based on research interest and fields of expertise of the professoriate	(no obvious reflection)	selection of students with best prospects for publication productivity, project-building capacity and on-time graduation
	doctoral training	setting broad, non-binding recommendations for skills acquired through doctoral training and about relevance to labour market	co-publishing with supervisors; incorporating students into graduate training	possibility of giving more and better supervision to students who have formed closer personal relationship with the supervisor	integration of students with research projects and other activities that generate external revenue (project funding)	emphasises employee role of a student
	quality assurance	legislation requiring universities to take part in external evaluation of their activities and quality assurance systems on a regular basis	supervision in progression of studies, grades and publishing activity	possibility of lowering academic standards and violation of good ethical conduct in cases of students who have formed more closer personal relationships with supervisors	attract project funding and publication productivity as success symbols and winning 'market shares' with good-quality outputs	(no obvious reflection)
	graduation	loose requirements in terms of basic requirements for completing a doctoral degree and a student's right to appeal during the dissertation grading process	number of graduated students under supervision as an academic merit	reproduction of own scholarly identity in students	exchange of favours between supervisors and graduates	completed doctoral degree as measured institutional performance
	funding	state-funding model that rewards universities based on the number of conferred doctoral degrees, publication productivity and the amount of competitive research funding acquired	supervisors assist students to gain scholarships or research funding	supervisors play a stronger role in securing funding for the 'inner-circle' students under their supervision	role of doctoral students in projects generate income from the markets, with positive and negative effects	value of doctoral education determined based on how much money or prestige it creates for the institution
	governance	state governance via the use of three policy instruments: loose regulative instruments, strong financial instruments, and persuasive informational instruments	strong academic power determines all the phases of doctoral education	(no obvious reflection)	(no obvious reflection)	doctoral education governed as one of the performance areas of a university

Source: The authors

### ***Comparison and discussion***

We compared the aforementioned findings of both systems and found that similarities and differences co-exist between the two systems.

On one hand, similarities between the two systems mainly concern profession logic, market logic and, partly, state logic. First, in both systems, the impacts of profession logic pervade all dimensions of doctoral education. This is related to the basis of doctoral education (i.e. research) and to the nature of doctoral candidates (i.e. often future academic professionals), which are beliefs shared by both countries. Second, along with the global trend of academic capitalism, the force of market logic has been transforming doctoral education systems in both countries with respect to many aspects, such as the emergence of project-based doctoral training, the increase of doctoral graduates in the non-academic sector and the popularity of competitive project funding. Third, although sternly influenced by state logic, doctoral education continues to be regarded as public goods in both countries, thus decoupling the effect of market logic on governance as well as on admission in both systems. Further, driven by state logic, the states in Finland and China both have a very strong role in funding doctoral training in that they both provide most of the resources and allocate these resources to universities.

On the other hand, differences between the two systems relate to state logic (partly), family logic and corporation logic. First, in terms of state logic, the regulative role of the state is significantly weaker in Finland than it is in China, where the state plays an active role in all dimensions of the doctoral education system, most notably in regulating admission, quality assurance and governance. In contrast, the level of autonomy of Finnish universities in terms of organising doctoral education is significantly higher, as the state has almost no role in regulating doctoral education by legislation or other binding norms.

Second, due to the different extent of the impact of family logic, there is a huge difference between the two countries with respect to understanding the relationship between supervisors and students. While in Finland, the relationship between supervisors and

students is professional and usually contractual in the sense that the scope of supervision activity does not normally extend beyond academic issues, the doctoral supervisor-student relationship in China follows a hierarchical patronage model which allows the supervisors to extend their influence to students' non-academic issues. This difference may date back to the two countries' deeply rooted societal and cultural traditions, which inevitably are generally reflected in understanding the roles and relationships between individuals, families and society.

Third, differences concerning corporation logic are rather noticeable between the two systems, as the impact of corporation logic on the Finnish side can be revealed in most of the dimensions, whereas in China, it is just slightly reflected in doctoral training and graduation. When the practice of performance-based management is deeply rooted in Finnish universities, stemming from the 20-year tradition of state-driven performance-based funding, it has not penetrated the educational system to a similar extent in China, despite the strong marketisation of higher education in general. This is also related to the stronger influence of other institutional logics, such as state and family logics, in the Chinese system.

### ***Conclusion***

By using an analytical framework grounded in the insights of institutional logics, this chapter provides a comprehensive analysis of both Chinese and Finnish doctoral education systems in terms of the similarities and differences of underlying institutional logics. Although the analytical framework was originally developed by Zheng, Shen and Cai (2018) and used only in the Chinese context, our present study has proved the usefulness of the framework in comparing Chinese and Finnish doctoral education systems. Hopefully, this framework has the potential to be applied in efforts to understand and to compare doctoral education systems in larger international contexts.

The results show that the two systems share some similarities in all dimensions of doctoral education. In terms of the underlying logics, both profession logic and market logic exist in the two systems and have wide impact. In this sense, both systems are potentially compatible. Meanwhile, some differences are particularly noticeable in relation to the impact of family logic on the supervisor-student relationship and relevant aspects, the

influence of state logic on system governance and matters of corporation logic concerning funding and system management.

Based on our comparative findings, we drew some implications for enhancing the practices of doctoral education cooperation between China and Finland.

First and foremost, when developing cooperation, policymakers and practitioners should be well aware of the dissimilarities and conflicts in the different logics of the two doctoral education systems and thus better reconcile them in practice.

Second, because of the different roles of the state as well as differences related to academic autonomy in the governance of Finnish and Chinese doctoral education, when establishing cooperation between both sides, actors should be well informed about Chinese state regulations and policies and try to comply with them. Meanwhile, the academic power and institutional autonomy from the Finnish side should be maximally utilised so as to guarantee the success of the establishment of cooperation.

Third, as the understanding of the supervisor-student relationship is different in China and Finland, when one supervisor supervises doctoral students from the other system, he/she should pay more attention to students' anticipation of supervisors' guidance. It may be influenced by the student's institutional context, which is different from that in the supervisor's system. Supervisors should try to adjust his/her supervision style to delimitate conflicts and to provide optimal supervision. For instance, when supervising Chinese students, Finnish supervisors should encourage and empower them to exchange ideas with supervisors about academic issues openly and critically without concern for the supervisors' authority. When supervising Finnish doctoral students, Chinese supervisors should adopt a formal and professional supervisory relation and avoid extending their supervision beyond education-related issues.

Fourth, because actors' roles with respect to the quality assurance of doctoral education are different in Finland and China, assuring the quality of doctoral education cooperation or joint provision of doctoral education between Finland and China will be one of the most challenging in their practices. One should be aware that while, in both countries, the state takes part in external quality assurance, the role of the Chinese government is more decisive than that of the Finnish government, in which the state acts more like a facilitator.

Supervisors are the primary actors in the internal quality assurance in both systems, but due to the impact of family logic in Chinese system, Chinese supervisors may lower academic standards to satisfy the needs of their ‘academic children’. As such, in order to tackle this challenge, the body responsible for the quality assurance of doctoral education cooperation or joint doctoral supervision between China and Finland, as well as their responsibility scope, should be clearly identified, and the quality of doctoral dissertations should be strictly assured via peer review.

## References

- Ahola, S. (2007). Doctoral education in Finland: between traditionalism and modernity. In S. Powell, & H. Green (Eds.), *The Doctorate Worldwide* (pp. 29-39). Berkshire England and New York: The society for Research into Higher Education, Open University Press and McGraw-Hill.
- Alford, R. R., & Friedland, R. (1985). *Power of Theory: Capitalism, the State and Democracy*. Cambridge, New York, and Victoria: Cambridge University Press.
- Bray, M., & Qin, G. (2001). Comparative Education in Greater China: Contexts, characteristics, contrasts and contributions. *Comparative Education*, 37(4), 451-473. doi:10.1080/03050060120091256
- Cai, Y., & Hölttä, S. (2014). Towards appropriate strategies for international cooperation with Chinese higher education: the Finnish case. In Y. Cai, & S. Hölttä (Eds.), *Transformation of Higher Education in Innovation Systems in China and Finland* (pp. 323-342). Tampere, Finland: Tampere University Press and the authors.
- Cai, Y., & Kohtamäki, V. (Eds.). (2014). *Transformation of higher education in innovation systems in China and Finland*. Tampere: Tampere University Press.
- Cai, Y., & Mehari, Y. (2015). The use of institutional theory in higher education research. In J. Huisman, & M. Tight (Eds.), *Theory and Method in Higher Education Research III* (pp. 1-25). Bingley: Emerald.

- Cai, Y., & Zheng, G. (2016). University academic promotion system and academic identity: An institutional logics perspective. In L. Leisyte, & U. Wilkesmann (Eds.), *Organizing Academic Work: Teaching, Learning, and Identities* (1st ed., pp. 243-261). London: Routledge.
- Cai, Y. (2013). Graduate employability: a conceptual framework for understanding employers' perceptions. *Higher Education*, 65(4), 457-469. doi:10.1007/s10734-012-9556-x
- Cai, Y., & Kivistö, J. (2011). *Higher Education Reforms in Finland and China: Experiences and Challenges in Post-Massification Era*. Tampere: Tampere University Press.
- Cai, Y., & Yan, F. (2015). Demands and Responses in Chinese Higher Education. In S. Schwartzman, R. Pinheiro & P. Pillay (Eds.), *Higher Education in the BRICS Countries: Investigating the Pact between Higher Education and Society* (pp. 149-169). Dordrecht: Springer Netherlands. doi:10.1007/978-94-017-9570-8\_8
- Chen, H. (2010). Transformation of knowledge production and quality crisis of doctoral education. *Journal of Higher Education*, 31(1), 57-63.
- China Academic Degrees and Graduate Education Development Center. (2014). Chronicle of Events in Chinese Academic Degree and Graduate Education Development. Retrieved from <http://www.cdgd.edu.cn/xwyyjsjyxx/xwbl/dsj/280886.shtml>
- China Academic Degrees and Graduate Education Development Center. (2016a). Chinese Academic Degrees Management Structure. Retrieved from <http://www.cdgd.edu.cn/xwyyjsjyxx/xwbl/gltz/gltz/260207.shtml>
- China Academic Degrees and Graduate Education Development Center. (2016b). National random check of doctoral education dissertations. Retrieved from <http://www.cdgd.edu.cn/xwyyjsjyxx/zlpj/bslwccps/>
- China's quality assessment group for doctoral education. (2010). *China's Doctoral Education Quality Report*. Beijing, China: Peking University Press.
- Crossley, M., & Jarvis, P. (2001). Introduction: Context Matters. *Comparative Education*, 37(4), 405-408.

- Delamont, S., Atkinson, P., & Parry, O. (2000). *The Doctoral Experience: Success and Failure in Graduate School*. London and New York: Falmer Press.
- European University Association. (2010). Salzburg II Recommendations: European universities' achievements since 2005 in implementing the Salzburg Principles. Retrieved from <http://www.eua.be/cde/publications.aspx>
- Friedland, R., & Alford, R. R. (1991). Bringing society back in: symbols, practices, and institutional contradictions. In W. W. Powell, & P. J. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis* (pp. 232-263). Chicago and London: University of Chicago Press.
- Gu, Y., & Chen, H. (2007). Control the size of doctoral education. *Academic Degree and Graduation Education, 1*, 30-32.
- Guo, J. (2009). Expansion of Doctoral Education, Quality Distribution and Quality Assurance of Doctorate in Chinese Universities: A Perspective of the Institutionalism. *Peking University Education Review, 7*(2), 21-46. doi:10.3969/j.issn.1671-9468.2009.02.003
- Guo, X. (2003). Chinese higher education development: through key units' development. *Academic Degree and Graduation Education, 11*, 2-4.
- Haila, K., Karinen, R., Kaihovaara, A., Eronen, A., & Haapakorpi, A. (2016). *Employment situation of people with PhDs (Miten tohtorit työllistyvät)*. (Publications of the Ministry on Education and Culture No. 3). Ministry of Education and Culture, Finland. doi:ISBN978-952-263-388-0
- Hakala, J. (2009). Socialization of junior researchers in new academic research environments: two case studies from Finland. *Studies in Higher Education, 34*(5), 501-516. doi:10.1080/03075070802597119
- Han, Q. (2010). *Internationalization of Chinese Doctoral Education: Strategic Analysis* (Master).
- Hölttä, S., Jansson, T., & Kivistö, J. (2010). Emerging markets in the Finnish system. In R. Brown (Ed.), *Higher Education and the Market* (pp. 123-134). New York and Oxon: Routledge.

- Kivistö, J. (2011). Developing doctoral education in EU and in Finland: using the U.S. system as a benchmark. In Y. Cai, & J. Kivistö (Eds.), *Higher Education Reforms in Finland and China. Tampere* (pp. 193-210). Tampere: Tampere University Press.
- Kuoppala, K., Pekkola, E., Kivistö, J., Siekkinen, T., & Hölttä, S. (Eds.). (2015). *Tietoyhteiskunnan työläinen: Suomalaisen akateemisen projektitutkijan työ ja toimintaympäristö*. Tampere: Tampere University Press.
- Leisyte, L., & Dee, J. R. (2012). Understanding academic work in a changing institutional environment; faculty autonomy, productivity, and the identity in Europe and the United States. In J. C. Smart, & M. B. Paulsen (Eds.), *Higher Education: Handbook of Theory and Research, Higher Education: Handbook of Theory and Research 27*, (pp. 123-206) Springer Science+Business Media B.V. doi:10.1007/978-94-007-2950-6\_3
- Lepori, B. (2016). Universities as hybrids: Applications of institutional Logics theory to higher education. *Theory and Method in Higher Education Research* (pp. 245-264) Emerald. doi:10.1108/s2056-375220160000002013
- Li, Y. (2002). New relationship between teachers and students in China. *Journal of Southwest University for Nationalities, Philosophy and Social Sciences*, 23(9), 233-235.
- Liu, X. (2016). Doubts on Chinese politicians' high-level academic profiles. *People's Tribune*, 7, 67.
- Liu, Z., & Luo, Y. (2015). Predicaments and Countermeasures in Doctoral Education in the Background of Knowledge Transformation. *Journal of Graduate Education*, 3, 38-49.
- Ma, W. (2007). The trajectory of Chinese doctoral education and scientific research. *Research and Occasional Paper Series: CEHE.12.07*, 1-12.
- Ministry of Education and Culture of Finland. (2015). University core funding from 2015. Retrieved from [http://www.minedu.fi/export/sites/default/OPM/Koulutus/yliopistokoulutus/hallinto\\_ohjaus\\_ja\\_rahoitus/liitteet/uni\\_funding\\_model\\_2015.pdf](http://www.minedu.fi/export/sites/default/OPM/Koulutus/yliopistokoulutus/hallinto_ohjaus_ja_rahoitus/liitteet/uni_funding_model_2015.pdf)

- Ministry of Education of China. (2005). Announcement of regular assessment of institutions that are approved to provide bachelor's, master's and doctoral education. Retrieved from [http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe\\_840/201002/82748.html](http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe_840/201002/82748.html)
- Ministry of Education of China. (2014). National Regulations on Doctoral Student Recruitment (since 2014). Retrieved from <http://www.moe.gov.cn/publicfiles/business/htmlfiles/moe/s3114/201404/167125.html>
- Ministry of Education of China. (2016). Overview of national educational system development in 2015. Retrieved from [http://www.moe.edu.cn/srcsite/A03/s180/moe\\_633/201607/t20160706\\_270976.html](http://www.moe.edu.cn/srcsite/A03/s180/moe_633/201607/t20160706_270976.html)
- Ministry of Education of China, National Development and Reform Sector of China & Ministry of Finance of China. (2013). Policies about deepen the graduate education reform in China. Retrieved from [http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/A22\\_zcwj/201307/154118.html](http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/A22_zcwj/201307/154118.html)
- Ministry of Finance of the People's Republic of China. (2013). Ideas about the Improvement of the Financial Support System for Postgraduate Education in China. Retrieved from [http://jkw.mof.gov.cn/zhengwuxinxi/zhengcefabu/201303/t20130301\\_743904.html](http://jkw.mof.gov.cn/zhengwuxinxi/zhengcefabu/201303/t20130301_743904.html)
- Nummenmaa, A., Pyhältö, K., & Soini, T. (Eds.). (2008). *Hyvä tohtori, Tohtorikoulutuksen rakenteita ja prosesseja*. Tampere: Tampere University Press.
- Office of the State Council Academic Degrees Committee of China. (1980). The People's Republic of China Regulations on Academic Degrees. Retrieved from [http://www.moe.gov.cn/s78/A02/zfs\\_\\_left/s5911/moe\\_619/tnull\\_1315.html](http://www.moe.gov.cn/s78/A02/zfs__left/s5911/moe_619/tnull_1315.html)
- Pekkola, E., & Kivistö, J. (2012). Reforming the Finnish university system: policies and institutional responses. In S. Bergan, E. Egron-Polak, J. Kohler, L. Purser & A.

- Spyropoulou (Eds.), *Leadership and Governance in Higher Education: Handbook for Decision-Makers and Administrators* (pp. 87-105). Berlin: Raabe.
- Peng, A. (2009). Changes and Reforms on Doctoral Candidates' Financial Aid System in China. *Academic Degrees & Graduate Education*, 5, 18-22. doi:10.3969/j.issn.1001-960X.2009.05.005
- Peng, A. (2011a). Doctoral students' financial situation survey. *Modern Education Management*, 1, 105-109.
- Peng, A. (2011b). An empirical study of factors influencing the amounts of doctoral financial aid. *Journal of Graduate Education*, 5, 17-24.
- Slaughter, S., & Leslie, L. L. (2001). Expanding and Elaborating the Concept of Academic Capitalism. *Organization*, 8(2), 154-161. doi:10.1177/1350508401082003
- Sun, Y., & Liang, J. (2009). Doctoral education reform in China in the context of higher education internationalisation. *Heilongjiang Researches on Higher Education*, 9(185), 94-96.
- Thornton, P. H. (2004). *Markets from Culture: Institutional Logics and Organizational Decisions in Higher Education Publishing* (1st ed.). Stanford, CA: Stanford Business Books.
- Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The Institutional Logics Perspective: A New Approach to Culture, Structure and Process*. New York: Oxford University Press.
- Thornton, P. H., & Ocasio, W. (1999). Institutional Logics and the Historical Contingency of Power in Organizations: Executive Succession in the Higher Education Publishing Industry, 1958–1990. *American Journal of Sociology*, 105(3), 801-843. doi:10.1086/210361
- Vipunen Education Statistics Finland. (2016). Students and degrees. Retrieved from <https://vipunen.fi/en-gb/university/Pages/Opiskelijat-ja-tutkinnot.aspx>
- Wang, J. (2008). The development and changes of Chinese graduate school education under globalisation. *China Mainland Studies*, 51(1), 67-95.

- Yang, R. (2012). Up and coming? Doctoral education in China. *Australia Universities' Review*, 54(1), 64-71.
- Yang, R. (2011). Self and the other in the Confucian cultural context: Implications of China's higher education development for comparative studies. *International Review of Education / Internationale Zeitschrift Für Erziehungswissenschaft / Revue Internationale De L'Education*, 57(3), 337-355.
- Ylijoki, O., & Henriksson, L. (2015). Tribal, proletarian and entrepreneurial career stories: junior academics as a case in point. *Studies in Higher Education*, 42(7), 1-17. doi:10.1080/03075079.2015.1092129
- Yue, J., & Zhou, G. (2008). Tutorial system and employer system. *Advanced Engineering Education Research*, 2, 117-123.
- Zhao, S., & Shen, W. (2013). A comparative analysis of the doctoral education expansion between USA and China: based on data from 1960s. *Educational Research*, 11, 169-181.
- Zheng, G., Cai, Y., & Ma, S. (2017). Towards an analytical framework for understanding the development of a quality assurance system in an international joint programme. *European Journal of Higher Education*, 7(3), 243-260. doi:10.1080/21568235.2017.1290877
- Zheng, G., & Cai, Y. (2018). Collaboration between Europe and China in doctoral education: historical development and future challenges. In A. Oleksiyenko, Q. Zha, I. Chirikov, & J. Li (Eds.), *International Status Anxiety and Higher Education: Soviet Legacy in China and Russia*. Hong Kong: Comparative Education Research Centre (CERC) and Springer.
- Zheng, G., Shen, W., & Cai, Y. (2018). Institutional logics of Chinese doctoral education system. *Higher Education*, 76(5), 753-770. doi:10.1007/s10734-018-0236-3
- Zhou, Y. (2009). Review on the research into the relationship between tutors and postgraduates in the international higher education institutions. *Journal of Xinyu College*, 14(1), 106-108.

