Higher Education
https://doi.org/10.1007/s10734-025-01420-4

Turning changes into chances in international academic collaboration: a case study of a joint Sino-German College in Shanghai

Andrea Braun Střelcová[1,2] · **Gaoming Zheng**[2,3]

Accepted: 17 February 2025

Abstract
To address a gap in understanding organizational level responses to complex shifts in international academic collaboration, we ask how a joint Sino-German college in Tongji University in Shanghai addressed challenges in international academic collaboration in one of its four key areas—mechanical engineering—from 2019 to 2024. Grounded in institutional theory and using a case study research design, supported by data from 22 interviews, over 70 documents, and fieldwork, we demonstrate that the challenges arose from the complexity of multiple logics imposed on the college by its Chinese and German actors. Our analysis revealed that since 2019, academic engagement between Germany and China faced increased costs and bureaucratic difficulties, exacerbated, but not caused, by a changing political relationship between the two countries. We further explored the organizational attempts to overcome these challenges as both German and Chinese actors leverage differences to benefit the joint organization. The college integrated its mechanical engineering curriculum more closely into its host university, while maintaining its coordinating role as a link to Germany. It emphasized newly launched small research centres, a new doctoral school, research into the green energy transition, new industry partnerships, and education in intercultural competencies. This study provides timely insights into how international academic organizations navigate complex environments and offers implications for future research on internationalization, particularly on Sino-foreign joint academic organizations.

Keywords International academic collaboration · Internationalization of higher education · Institutional arbitrage · Institutional logics · Germany · China

✉ Gaoming Zheng
gaoming.zheng@tuni.fi; gaoming_zheng@tongji.edu.cn

Andrea Braun Střelcová
astrelcova@mpiwg-berlin.mpg.de; andrea.strelcova@tuni.fi

[1] "China in the Global System of Science" Lise Meitner Research Group, Max Planck Institute for the History of Science, Berlin, Germany

[2] Higher Education Group, Faculty of Management and Business, Tampere University, Tampere, Finland

[3] Institute of Higher Education, Tongji University, Shanghai, China

Published online: 01 March 2025

Introduction

Over the past three decades, the Europe–China academic collaboration has resulted in a broad range of outcomes and actions including co-authored articles, co-patents, academic exchanges, joint research projects, and education programs (Frietsch et al., 2018; van der Wende, 2020). Some collaborations have also taken the form of joint laboratories, academic centres, institutes, colleges, or joint universities (Gao, 2020; Jonkers & Cruz-Castro, 2010).

Since the 1990s, the EU and some European governments have actively encouraged academic engagement with third countries, including China, through joint funding calls, or mobility programmes (Balbachevsky et al., 2021; Reillon, 2015; Shih, 2021). Although China's links to the EU were not as strong as with the USA, the UK, Canada, or Japan, Germany was one the most active countries within the EU in building ties with China (Kroll et al., 2022; Zhou & Glänzel, 2010). German and Chinese scientists have become key collaborators in natural sciences, physics, engineering, and advanced technology (Wang & Wang, 2017; Zhou & Bornmann, 2015). According to the Scopus database, in 2023, Sino-German publications accounted for about ten thousand co-authored papers across all fields—a rapid development considering that in 2000, authors from the two countries had jointly published only 62 papers (Zhou & Bornmann, 2015). Academic engagement extends beyond individual co-authorship. Partnerships between German and Chinese higher education institutions (HEIs) and research organizations—formalized in more than 1400 agreements in 2019—have been essential building blocks behind Sino-German academic engagement, driven by internationalization policies of both countries. In 2022, Germany hosted a diaspora of 39,000 Chinese students, in addition to 7200 PhD researchers, and 4000 Chinese staff in universities and research organizations (DAAD, 2024), contributing to the country being China's key partner in the EU.

China's growth in international higher education and research landscape has been particularly remarkable, as the country has become especially central on the global map in natural sciences. In China, 22.5% of research publications are the result of international collaborations (Shih & Forsberg, 2023). These developments have been tightly related to internationalization as a core dimension of higher education (HE) in China, which has played a pivotal role in the country's integration into global HE landscape (Cai, 2010, 2014; Yang, 2005). Since mid-1990s, the formation of Sino-foreign cooperative schools (中外合作办学), including joint programs and joint academic organizations, emerged as key means for internationalization at home in China. The approach got a further boost with the Double First-Class University Project since 2016, aiming for China becoming a leading global player in HE by 2050, increasing its international competitiveness (Ahlers & Christmann-Budian, 2023; Zheng & Li, 2024).

However, the recent changes in the environment surrounding Europe–China academic cooperation placed university partnerships under a radically different situation than before the pandemic. Since the mid-2010s, the political relationship between China and Western nations, mostly the USA, including those within the European Union (EU), began to change. In 2019, the EU designated China as "a partner, competitor and a system rival" (BMBF, 2022; European Commission, 2019), which Germany mirrored in its own China Strategy, released in 2023 (Auswärtiges Amt, 2023). Global upheavals induced by the pandemic and Russian invasion of Ukraine have underscored the growing distance between China and the EU. Due to growing geopolitical conflicts and national securitisation of HE, internationalization is no longer "normed as a universal good" (Marginson, 2024, p.

26). Across Europe, universities can increasingly reevaluate their engagement with China as risky (Plé et al., 2023), their relations with China becoming a controversial topic (Altbach & De Wit, 2021). As a result, the European research, innovation, and HE sectors pay greater attention to foreign interference and research security (Matthews, 2024; EC RTD, 2024). Some European actors perceiving changes inside China, such as diminishing academic freedom, lead them to reassess, limit or even terminate their involvement in the country (e.g. Blothwell, 2018). These changes may particularly affect those universities, which run a joint college, campus, or institute with their Chinese partner. For instance, two Sino-European institutes hosted by the Chinese Academy of Sciences (CAS), the Sino-German CAS-Max Planck Institute for Computational Biology and the Sino-French CAS-Institute Pasteur Shanghai, suspended operations in 2022 (Mallapaty, 2023). However, we face a critical gap in our understanding of how these Europe-China joint organizations react to these radical changes. Particularly, we lack research that considers the circumstances since the Covid-19 pandemic. Understanding this issue is essential to (a) know how the environment surrounding academic relations between China and Europe affects the practice of academic collaboration and (b) know how to create a safe and balanced academic collaboration between European and Chinese HEIs.

Despite the high relevance, Europe–China academic collaboration at the mesolevel/organizational level has been only scantly covered in academic research. Most studies on the Europe–China academic collaboration by far were conducted before the pandemic with a focus on historical review (e.g. Cai, 2019; Pinna, 2009), relevant policies and its impacts on the cooperation (e.g. Cai & Zheng, 2021; d'Hooghe et al., 2018; van der Wende, 2020), experiences and impacts of international mobility (e.g. Braun Střelcová et al., 2022; Shen et al., 2017), and practices in joint degree programs (e.g. Cai, 2013; Zheng et al., 2017). Another relatively small stream of research from an international comparative perspective examined the differences and similarities of various issues in HE between Europe and China, such as doctoral education (Bao et al., 2018; Zhu et al., 2017) and academic leadership (de Matos et al., 2022; Zhu & Zayim-Kurtay, 2018). Increasing research attention has been paid to the changes in the collaborative environment in Europe–China academic cooperation since 2019 (e.g. Braun Střelcová, 2021; Cai, 2024; Santiago et al., 2022). More recently, a handful of studies investigated the impact of the pandemic on the Sino-Foreign joint institutions or students experiences in navigating a complex geopolitical environment (Lai & Jung, 2024), teaching and learning (Miani & Picucci-Huang, 2023), cooperation modes (Zhang et al., 2024), and new challenges and potential response strategy at the macrolevel (Liu & Tu, 2023; Xue & Li, 2023). However, the reflections of these changes at the mesolevel or organizational level, as well as the organizational actions taken to address these changes and advance the academic collaboration in the Europe–China context, have not yet been explored.

To address this research gap, in this article, we focus on the practice of academic collaboration in a specific research field—mechanical engineering—within a particular joint organization, the Sino-German (Postgraduate) College at Tongji University (hereafter as "Tongji") in Shanghai. The college, known as *Chinesisch-Deutsches Hochschulkolleg* (CDHK) in German and 中德学院 in Chinese, was established in 1998 and is the oldest and largest joint Sino-German academic organization at the master's and doctoral levels. As such, it provides a unique insight into the practice of academic collaboration between HEIs in the two countries. We ask two research questions: (1) How did the actors in a Sino-German college perceive the changes in the environment surrounding German–Chinese academic collaboration since 2019? (2) What actions did the college undertake to address these changes? In order to answer the proposed questions, based on the theoretical

insights of institutional arbitrage of multiple institutional logics (Perkmann et al., 2022), we develop our analytical framework for understanding the responses of international academic joint organizations. Through a qualitative case study, we apply this framework and present our finding and proceed with recommendations for future research.

Theoretical perspective

In this study, we constructed an analytical framework, as shown in Fig. 1, from two strands of institutional theory—institutional logics and institutional arbitrage—to guide our analysis (Cai, 2022). Here, institutional logics refer to historically patterned assumptions, values, beliefs, and rules shaping social reality and organizing material practices (Thornton & Ocasio, 1999, p. 804). The logics approach is frequently used to understand how the institutional environment affects HE actors (Cai & Mehari, 2015). Previous study has identified seven ideal types of logics (state, profession, family, market, corporation, religion, and community logic) in the context of the society as a whole (Thornton et al., 2012). Societal-level logics contribute to the emergence of field-level logics (Mountford & Cai, 2022), such as in international HE (Lepori, 2016; Wang & Jones, 2021; Zheng, 2020). In line with Burton Clark's coordination triangle of HE (state, market, and profession) (1986), we assume the three main logics underlying the HE sector are the state logic (centred around redistribution of resources and regulation by bureaucratic rules), the market logic (with actions aim at competition, effectiveness, and profit generation), and the profession logic (advancing actors' individual expertise and upholding norms and practices in their given profession). These are also found in the institutional environment surrounding international HE cooperation.

When actors in an organization confront divergent, and even incompatible, demands stemming from multiple logics, the situation gives rise to institutional complexity (Greenwood et al., 2011). Facing incompatible prescriptions from different logics can lead to various challenges that affect an organization's capacity to act (Jay, 2013). However,

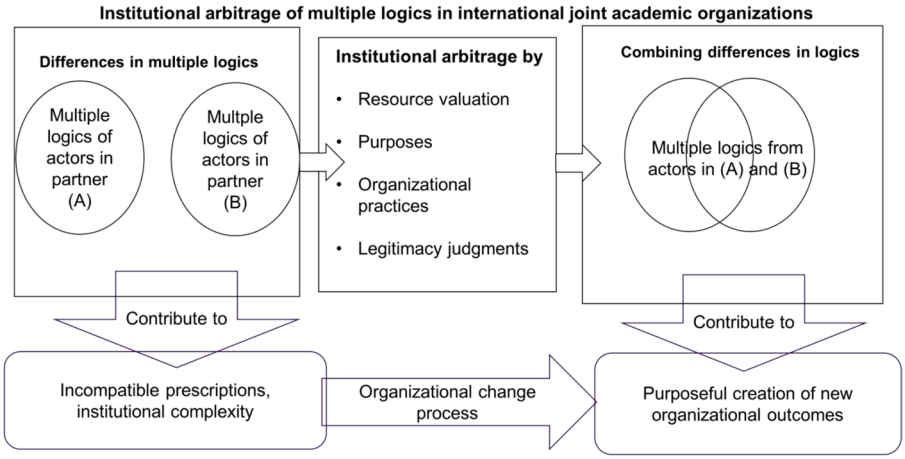

Fig. 1 Analytical framework for understanding the organizational change in an international joint academic organization from the perspective of institutional arbitrage of multiple logics

complexity does not always lead to conflicts. Multiple logics can be purposefully *combined* to create new organizational outcomes in a process called institutional *arbitrage* (Perkmann et al., 2022). Perkmann et al. (2022) suggest four distinct yet interrelated arbitrage tactics applied separately or jointly: (a) resource valuation, (b) purpose, (c) organizational practices, and (d) legitimacy judgement. Inspired by this approach, we develop a mid-level theory analytical framework based on this higher-level theory to empirically apply the arbitrage to international HE in joint international academic organizations. We approach such joint entities as organizational hybrids (Battilana et al., 2017) as they are formed by actors from at least two distinct organizations—partner (A) and partner (B). Each partner is from a different country, grounded in their respective jurisdictions and national HE systems. As such, joint international academic organizations need to constantly respond to divergent demands from multiple actors, each shaped by different norms, values, beliefs, and practices in their respective national contexts. Actors (individuals acting in or on behalf of the organization) from each partner (A) and (B) may place incompatible prescriptions on the joint organization. To reconcile conflicting demands, actors can utilize four arbitrage tactics to bring differences between underlying logics closer together. The first tactic through *resource valuation* occurs when "actors create benefits by combining logics that differ in what is valued within the logic" (Perkmann et al., 2022, p. 20). For instance, the market logic might be common in partner (A) organization (e.g. a university works closely with industry), but it may be innovative for the partner (B), which can access such logic through the joint organization. A second arbitrage tactic arises when actors create benefits by combining differences in logics' *purpose*, helping to reduce competition and opportunism. For example, partner (A) exploits the differences of purpose between them and partner (B), e.g. to advance the transnational knowledge transfer through their joint organization. The third tactic aims at combining logics characterized by different *organizational practices*. This allows actors to pursue practices that would otherwise be difficult to obtain within their own domain. For example, actors can draw on practices aligned with a logic from partner (A) to create innovation in the joint organization (e.g. partner (A) changes their PhD supervision model according to a practice from the partner (B). Finally, the fourth tactic helps actors generate benefits by associating with an additional logic and broadening the audience who considers them legitimate. For instance, actors from partner (A) purposefully introduce a new research direction into the joint organization to gain legitimacy from a new community, thereby creating possibilities to access new resources. Such acts of arbitrage are carried out by social actors to create local combinations of institutional elements, drawn from different logics, to achieve a *local* advantage. The outcomes of the arbitrage process support certain *organizational* goals but do not seek to drive broader institutional changes.

Methodology

Research design

We adopt the qualitative case study as our research strategy, enabling in-depth exploration of a single case within its local context by, using multiple data collection techniques and diverse data sources for triangulation (Flick, 2004; Ozcan et al., 2017; Piekkari & Welch, 2018; Piekkari et al., 2014). The focus of our observation is the Sino-German Postgraduate College (CDHK) at Tongji in Shanghai. The case has been selected purposefully due to its

prominent role in international HE cooperation between Germany and China, serving as an extreme case (Patton, 2002; Yin, 2018). However, the "casing"—the process of delimiting "the case" (Ragin, 1992)—was not straightforward. The CDHK as a Sino-German organization hosted by Tongji has fluid boundaries. In addition to Tongji, CDHK partners include almost 30 German, mostly technical, universities (*Universitäten* and *Technische Universitäten*) and a few universities of applied sciences (*Fachhochschulen*). The CDHK is also financed by the German government and German companies. The academic programs and research at CDHK cover four thematic areas, namely mechanical engineering, electrical engineering, business and management, and automotive engineering. We focused on a specific field among the aforementioned thematic areas, one in which Germany traditionally excels: mechanical engineering.

To explore the phenomenon comprehensively, we employed three principal methods of qualitative case study research—interviews, documents, and fieldwork (Simons, 2009; Yin, 2018). As shown in Table 1, we conducted interviews with 22 research participants (10 German, 12 Chinese) from April 2023 to February 2024. The research participants included research and teaching staff, current and former management, and students, who provided their individual, subjective accounts on the phenomenon. As the study focuses on the case organization's responses to changes in its institutional environment, the analysis primarily relied on perspectives from staff and management. The students' perspectives

Table 1 Overview of research participants

No	Code	Gender	Nationality	Organization	Position	Discipline
1	R1	Male	Chinese	Tongji	Professor	Mechanical engineering (ME)
2	R2	Male	Chinese	Tongji	Professor	ME
3	R3	Male	Chinese	Tongji	Professor	ME
4	R4	Male	German	Tongji	Doctoral student	ME
5	R5	Female	Chinese	Tongji	Assistant professor	ME
6	R6	Male	German	Tongji	Assistant professor	ME
7	R7	Male	Chinese	Tongji	Professor	ME
8	R8	Male	Chinese	Tongji	Professor	ME
9	R9	Female	German	TU Berlin	Manager	Chinese studies
10	R10	Male	German	Tongji	Professor	Chinese studies
11	R11	Male	German	Tongji	Professor	German studies
12	R12	Male	German	Tongji	Manager	ME
13	R13	Male	Chinese	Tongji	Professor	ME
14	R14	Female	German	DAAD	Manager	HE
15	R15	Male	German	DAAD	Manager	HE
16	R16	Female	German	DAAD	Manager	Chinese studies
17	S1	Male	German	Tongji	Master student	ME
18	S2	Male	Chinese	Tongji	Doctoral student	ME
19	S3	Male	Chinese	Tongji	Doctoral student	ME
20	S4	Female	Chinese	Tongji	Doctoral student	ME
21	S5	Male	Chinese	Tongji	Master student	ME
22	S6	Male	Chinese	Tongji	Master student	ME

were included as complementary data to provide additional contextual insights. The interviews were conducted in Chinese, English, and German, either in person (in Shanghai and Berlin) or via Zoom and WeChat. All interviews were transcribed and translated into English for analysis.

We complemented the interview data with an analysis of archival documentation (Coffey & Atkinson, 2017). The documents we reviewed included various university texts, such as newsletters, annual reports, WeChat posts, job advertisements, promotional materials, press releases, website information, flyers, photos, videos, and presentation slides. The document collection also included notices from Chinese and German relevant ministries and governmental agencies (e.g. BMBF, MoE, DAAD) as well as from companies. In total, we analysed over 70 documents. The third source of material consisted of our own fieldwork notes and prolonged engagement in the field (Welch & Piekkari, 2017).

We conducted a thematic analysis guided by the conceptual framework and the principles of systematic combining in case study research (Dubois & Gadde, 2002). Our approach began with a broad theoretical framework to formulate a hypothesis and an initial coding system. As we generated the research data, we continuously refined our insights through abductive reasoning (Weston et al., 2001). This iterative process was important since we initially hypothesized that the deterioration of the political relationship between China and Germany was the primary driver behind recent changes in the joint organization. However, the data analysis challenged this assumption as being too simplistic. Therefore, to explain our analytical process, it is necessary to first introduce the case itself.

The empirical setting and case description

Entering Tongji University's Sino-German Building (also known as "the German house") feels like stepping into Germany in the heart of Shanghai. Visitors are greeted by a bust of Leibniz at the entrance. The security guard watches over the reception area, which features stylized silver seats and tables resembling oversized nails and screws—a subtle nod to the connecting elements as a symbol of Germany's engineering dexterity. Throughout the building, signs are displayed in both German and Chinese. Strings of Chinese flags hang from the ceiling along the corridors, reminiscent of birthday party decorations. The elevator, adorned in Germany's signature red, black, and yellow colour scheme, transports visitors to various Germany-related offices spread across all 11 floors of the building. The head office of the CDHK occupies the sixth floor of the German house.

The CDHK opened its doors in 1998, making it one of the oldest and largest HE collaborations between the Germany and China. At that time, both countries shared a strong mutual interest in building up robust political and economic ties, with academic collaboration serving as a facilitator. The location was not random: Tongji was founded by the German government and medical community, led by German doctor Erich Paulun, in 1907; Tongji's rectors were traditionally fluent in German. Endorsed by Chancellor Helmut Kohl and Deng Xiaoping, the CDHK was designed to train Chinese students following the German engineering education model. The main purpose was to develop a skilled workforce for German companies seeking to expand in the Chinese market. The German Academic Exchange Service (*Deutscher Akademischer Austauschdienst*, DAAD), the primary funder of German partner organizations involved in the CDHK, worked with the Chinese Ministry of Education (教育部, MoE) to establish the joint college. They have also supported its undergraduate "sibling," the Sino-German College for Applied Sciences (中德工程学院, *Chinesisch-Deutsche Hochschule für Angewandte Wissenschaften*, CDHAW),

along with two other institutes, the Sino-German Institute of Vocational Education (*Chinesisch-Deutsches Institut für Berufsbildung*, CDIBB) focusing on vocational education and the Sino-German Campus (*Chinesisch-Deutscher Campus*, CDC), promoting cultural exchanges. They are all placed under the umbrella of the CDH (*Chinesisch-Deutsche Hochschule,* 中德学部), which connects various Germany-related initiatives at Tongji.

The CDHK blends elements of both education systems and is governed by a hybrid structure with dual Chinese and German management. After its launch, the college established itself a semi-autonomous entity with special rights within Tongji's formal organizational structures, such as an exclusive authority to award its own degrees and a strong involvement from German industry. German companies would fund chair professorships in one of its four thematic areas: mechanical engineering, electrical engineering, automotive industry, and business administration. The CDHK gradually established itself as a hub for academic collaboration between Germany and China, frequently hosting high-profile political visits and facilitating cultural events.

Over time, the original reasons for establishing the CDHK started to erode. Tongji, once unique in its strong German connection, evolved into one of China's leading universities in fields such as urban planning, engineering, architecture, medicine, and natural sciences. Its rise in international rankings was accompanied by a decline in Tongji's historical "monopoly on Germany" as many other Chinese HEIs developed their own German-related programmes. CDHK was initially designed to train Chinese students, who, in addition to their academic subjects, studied the German language and Chinese political curriculum. But as the Chinese economy grew, German companies started to lose their allure as attractive graduate employers, prompting the college to broaden its scope and open also to German students. As CDHK celebrated its 20th anniversary in 2018, it hosted 370 Chinese and 145 German students in a double degree or exchange programs (CDH, 2019). More change was imminent; the deterioration in the political relationship between Germany and China further complicated the environment. The shifting conditions required a fundamental transformation as summarized by a German research participant (R15):

> Imagine a garden with only a lawn, where a gardener plants an orchid. Then, as the years go by, it rains, the sun shines, flowers sprout, some of which grow into large shrubs. They all become eventually bigger than the orchid, so you can't even see the orchid anymore. The CDHK was that orchid back when there was nothing else (…) but gradually a lot of competition developed. We noticed this and came up with the idea to end the project in its current form, to transform ourselves.

Findings

Differences of multiple logics in the Sino-German joint college

To answer the first question on how actors in a Sino-German college perceived the change in the China–Germany environment surrounding academic collaboration since 2019, we turn to the differences in logics between actors from Tongji as partner (A) and actors from the German consortium as partner (B). Our analysis shows the environment surrounding academic collaboration changed in the following ways.

Firstly, the rising dominance of state logics both in Germany and in China brought an increased bureaucracy load and state regulation. Bureaucratic procedures, once a

straightforward processes, became arduous, costly, and unpredictable, instilling hesitancy and caution among staff. A major consequence, attributed by the research participants to the state logic in Germany, was the decline in German research funding. This was evident in the field of mechanical engineering due to its high relevance to industry as well as its civil-military interface. Mechanical engineering was highly affected by export controls due to its potential dual use of technology. Both countries have increased regulatory oversight on which goods and data can be exchanged. Some research participants perceived the US-China rivalry as the indirect culprit; the Russia–Ukraine war also pushed China further from the West. Mechanical engineering also contributes to the defence technologies, so the German state, to limit potential collaboration with the Chinese military, introduced funding restrictions in certain sensitive fields, such as intelligent manufacturing. The CDHK-affiliated professors therefore increasingly relied on Chinese funding, national key technology R&D programs, Ministry of Science and Technology (MoST), the National Natural Science Foundation of China (NSFC), or the Shanghai Science and Technology Commission. Missing funding exacerbated the disparities between the two academic systems and further hindered collaboration. Existing partnerships could be preserved, but negotiating new projects became problematic:

> It may be that the /German/ professor wants to co-operate with us very much, but once the matter comes to the school, and the school is required to produce some supporting documents, this will be a big problem. The school is reluctant to provide the documents, which means the co-operation cannot be implemented. (R1)

Secondly, the results show that the dominance of state logic diverged from the professional logics in academia, increasing academics' reluctance. More conservative projects, in which each partner carried out their part independently, became more common as a means of controlling risk. German professors could still act as advisors to Chinese projects and teach as guest professors, but some became more hesitant to do so. German partner HEIs became also less willing to accept Chinese doctoral students, who faced increasing difficulties obtaining visas to Germany. The pandemic significantly affected the relationship among Chinese and German staff. Strict entry requirements and lockdowns in China, along with the absence of regular, in-person communication, eroded trust. German research participants noted an increase in organizational control from Tongji during the pandemic; they felt excluded from certain decision-making processes concerning the joint college during a crucial time of its transformation. Even after the pandemic was over, a sense of reluctance prevailed in Germany. China was no longer a priority for German actors, although they still recognized the mutual gain in collaboration. However, the benefits of running a joint college were no longer as obvious. For Chinese actors, though, keeping the cooperation going remained a priority, in order to cultivate talents by sending students for training to Germany and to access German university-industry links.

Ongoing concerns heightened a sense of incompatibility between the logic of the academic profession and the market. This issue was salient in mechanical engineering, where working with industry is essential. Chinese research participants knew that Chinese science had advanced significantly, and they wished to expose their German colleagues to Chinese innovation while enhancing their joint research, to remain competitive with universities in Shanghai and across China. Through the college, Chinese actors could identify and access the best partners in German-speaking countries. They mentioned Germany was not as far ahead in mechanical engineering as before, and, in some fields, China already exceeded them. At the same time, German technology was still overall regarded as more mature, and their university-industry collaboration system as more developed. Yet, maintaining the CDHK's

industry partnerships has become more challenging. Although the Chinese market remained appealing for some German professors due to its size and quick commercialization potential, the economic slowdown during and after the pandemic affected the willingness of German businesses to continue funding the CDHK.

Finally, the interplay between market and state logics showed incompatibility between German and Chinese actors. The college has always thrived on support from German joint venture companies in China, which endowed its chair professors. The private sector's primary motivation used to be training students who could later work for them. At its peak, CDHK secured funding from 24 German companies to support chair professorships—45 in total over the course of its existence. In 2023, 16 of these partnerships remained. The composition changed: Large German firms gave way to more mid-sized German companies, Chinese branches of German firms, and local Chinese companies. New industry partners prioritized research over education, as they appreciated access to laboratories and the ability to invest in small research projects and test a research direction without committing to it. After the pandemic, even as German businesses wanted to return to collaboration, the global economic and political dynamics prompted them to diversify away from China. Chinese domestic companies have become competition for German industries, especially in new sectors, supported by the Chinese government in the attempt to remove technology "bottlenecks" and replace dependence on foreign technologies with home-grown innovation, such as in the new electric vehicles industry, robotics, and advanced manufacturing. The increased market competition was acknowledged by Chinese research participants.

> Germany has felt the pressure of China's manufacturing industry. We've become competitors. People are not making whatever clothes and socks like we used to. They (German companies) feel we are crowding them out of the market. So, this is all understandable. If you are slowly squeezing me out of the market, I cannot give you my technology. That's not possible. (R3)

Table 2 below summarizes the reflections of multiple logics underpinning the actions of German and Chinese actors. Although we categorize the actions to each institutional logic, some actions might by underlined by more than one logic. Our aim is to emphasize the dominant logic rather than oversimplifying the complexity of the logics involved.

The analysis of the interview data not only highlighted the differences in how German and Chinese actors reflected on multiple institutional logics but also revealed variations in the interactions among these logics on both sides. These differences contributed to the complexity of the institutional environment. On the German side, the strengthening state logic, combined with the consistently strong profession logic, played a dominant role in motivating German actors to uphold shared academic values, particularly academic freedom. This dominance of the state and profession logics diminished the influence of market logic, limiting the space for initiation of new collaborations in China to reduce risk. In contrast, on the Chinese side, while state logic exerts a dominant influence on the overall development of higher education, specific aspects of international academic cooperation were decisively influenced by market and profession logics. Driven by strengthening market and profession logics, Chinese actors demonstrated a strong willingness to sustain existing collaborations and even initiate new research partnerships with German counterparts after the pandemic. These dynamics also contributed to differing perceptions, understandings, and attitudes between German and Chinese actors within the college.

Table 2 Reflections of multiple logics perceived by German and Chinese actors in the Sino-German joint college

Institutional logics	German actors	Chinese actors
Academic profession	- Access to local students, researchers and data to increase research output - Access to local equipment and increasingly advanced technology - Considering Chinese partners have become academically more advanced and carefully evaluating the mutual benefits of academic collaboration - Considering the fast pace of Chinese actors might compromise the quality of academic work	- Access to talent cultivation and doctoral training in/with Germany - Access to joint university-industry projects to train Chinese students - Continuing importance of Germany to learn from its academia and their university-industry linkages - Learning mature technology from Germany
Market	- Continuing importance of the large Chinese market - Possibility to test new research direction - Declining industry investment for academic collaboration, based on the consideration of unpredictable return - Attention to "return on investment" in collaboration with China, as they are seen as market competitors	- Continuing importance of German university-industry links - Considering the slow pace of German actors might risk the efficiency and effectiveness of cooperation - Increasing industry funding for research to cooperate with German universities - Attention to "return on investment" in academic collaboration with Germany, as it is perceived to less advanced as before in some fields - Appetite to restart cooperation after the pandemic
State	- More caution to share advanced technology with Chinese counterparts - Increased risk management and attention to research security - Increased bureaucracy and state regulations - Cautious to restart cooperation after the pandemic - Declining government research funding as engagement with China is reevaluated as risky	- Increased export control and other regulatory checks on mechanical engineering - Increased bureaucracy, state government and Communist Party's oversight - Continued emphasis on international cooperation, including an increase in state funding, to serve Chinese domestic strategic needs

Institutional arbitrage of differences between the multiple logics and its outcomes

In the second step, we asked how the college evolved against the backdrop of this complexity. Our findings show the actors purposefully leveraged the complex situation to transform the joint college. The core measure involved dividing the four thematic parts of the college and integrating them into four Tongji faculties, while the college itself remained as a coordinating "umbrella." The decentralization process was carried out in all four thematic areas, including mechanical engineering, through various arbitrage tactics which included (a) a new thematic focus on energy and sustainability research, (b) establishing a doctoral school, (c) creating small research centres with new industry partnerships, and (d) a renewed focus on intercultural competence training.

The data shows that through the decentralization, CDHK "offloaded" most of its resources, staff and students, to the respective Tongji faculties. To maintain the German identity, small Sino-German research centres were established in each faculty. Each such centre focused on a specific research area, such as in the case of the School of Mechanical Engineering (SME), where the Sino-German Centre for Mechanical Engineering (中德机械工程中心, *Chinesisch-Deutsches Zentrum fur Maschinenbau,* CDZM) opened in 2019. The new research centre worked primarily with their long-standing partner German universities (mainly Ruhr University Bochum in mechanical engineering), but they also expanded to new German partners. In addition to in-faculty Sino-German research centres (as Fig. 2 shows with the example of the School of Mechanical Engineering), a new Sino-German Doctoral school, working with all faculties, was formed. By doing so, the CDHK, formerly semi-independent, purposefully integrated itself closer into Tongji organizational structure. However, this arrangement had an unintended consequence: the CDZM effectively found itself competing with Sino-German centres in other faculties, as they all depended on the same university resources.

This analysis revealed that CDHK leveraged its purpose to newly emphasize research related to green energy transition, carbon neutrality, and sustainability—as "safe" areas where both German and Chinese actors could collaborate effectively. The data shows the new purpose was to capitalize on China's technological rise, while also considering

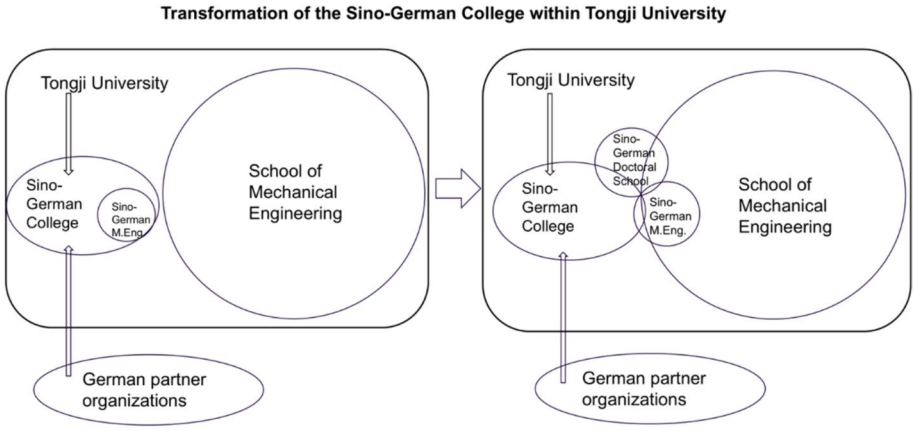

Fig. 2 Structural transformation of the case organization

Germany's reluctance to engage with China as closely as before. New joint efforts were often intentionally framed as green or sustainable:

> Projects that deal with the (ecological) environment are easier to get in. Let's say you are a professor for chairs. Don't say, "let's make the best chair". You must say, "let's do the environmentally best chair"! This is the coping strategy. It is not optimal, because maybe you want the best chair and not the environmentally best chair, but this is the way we do it now. – R6

The evidence also showed arbitrage of organizational practice through the establishment of a new Sino-German doctoral school (中德博士生院, *Chinesisch-Deutsches Doktorandenkolleg,* CDDK). The plan was for the school to allocate 50 places for Chinese and 50 for German PhD students, all of whom would receive dual Sino-German supervision. The four-year PhD programme was inspired by doctoral schools increasingly popular in Germany and the EU. In 2023, over 40 Chinese students were recruited. Chinese research participants stressed the doctoral school would help them cultivate talent; however, the German actors felt this tactic stemmed from Tongji's internal strategy of allocating PhD slots and that German students would scarcely benefit from it. They considered enrolling 50 German students as unrealistic: German mechanical engineers could do a PhD in Germany with better working conditions and higher salary.

However, German research participants placed high emphasis on the renewed focus on regional competencies to signal legitimacy to new audiences. Tongji's Sino-German building houses various German centres, programs, projects, and a German library, and the CDHK provides a roof over intercultural competence training for students as well as their internships at companies. CDHK aimed at strengthening its position as a place where students and researchers from Germany gain "China competence" in a safe, well-established environment. The "China expertise," a skillset highly valued by the German government (Auswärtiges Amt, 2023), was leveraged by the CDHK as a unique selling point to send German students to Shanghai to participate in summer schools, intercultural training, student exchange programmes, double degrees, and internships. Conversely, Chinese actors also claimed to enhance the development of new German-related partnerships and initiatives, aligned with Tongji strategy "Germany Cooperation 2.0" in 2022 (CDHK, 2022). In April 2024, German Chancellor Olaf Scholz's delegation visited Tongji (including the CDHK), which stood out as the only university included. This indicated the organization remained a legitimate, important player in the context of German–Chinese academic collaboration. Yet, the transformation process is still ongoing, with its main tenets summarized by Table 3.

Conclusion

Based on the theoretical insights of institutional arbitrage of multiple logics, this case study of a Sino-German college in Shanghai reveals the institutional complexity in Europe–China academic collaboration and how academic organizations can leverage this complexity to their advantage. Theoretically, the study proposes an analytical framework for understanding how international joint academic organizations can use differences between partner organizations for realizing a certain organizational goal within their institutional environment. This framework, developed and refined through the Sino-German college case, demonstrates its applicability in the context of Europe–China academic collaboration.

Table 3 Institutional arbitrage as performed by Chinese and German actors to transform the Sino-German college

Arbitrage tactic	Chinese actors	German actors	Outcome at the CDHK
Resource valuation	Integrating into the bigger School of Mechanical Engineering (SME) to attract more students and more funding and be more competitive vis-à-vis other Tongji faculties	Integrating into the SME to offload resources, and have a tighter, more decentralized coordination the German consortium	Establishing a new research centre (CDZM) to access more funding, bigger talent pool of students and staff, and keep steady connections to Germany
Purpose	Changing purpose to focus more on research and research training, as opposed to only education, supporting "green" cooperation and carbon neutrality	Changing purpose to focus on research and research training; Capitalizing on China going "green" by joint work on energy transition and carbon neutrality	The launch of the new research centre (CDZM) added directions supporting green cooperation and carbon neutrality
Organizational practice	Establishing a doctoral school to train 50 Chinese students under dual supervision	Getting new doctoral slots for German students (although it is not considered an attractive option for most)	Creation of a new doctoral school (CDDK) borrowing the German organizational practice of structured doctoral training
Legitimacy judgment	Responding to Tongji's internal structural changes and the "Strategy 2.0 for Cooperation with Germany", and the need of talent cultivation to help get funding and doctoral slots	Training German students in "China expertise" through summer schools, exchange programmes, double degrees and internships in Shanghai; Branding environmentally sustainable cooperation to be in line with Germany's China strategy	Keeping the CDHK core office as a coordinating "umbrella" for all intercultural activities in Tongji, a "German bridge to China"

Empirically, the case study highlights three key findings that enhance our understanding of the field since 2019.

First, the study revealed that the same set of logics—state, market, and profession—was reflected in the perceptions of German and Chinese actors. Both sets of actors were influenced by a strengthening state logic, creating ever more incompatibilities with profession and market logics. Such a finding echoed previous discovery on the strengthening impacts of political forces in Europe–China academic cooperation (Cai & Zheng, 2024), with empirical evidence from a German–Chinese example.

Second, the study highlights the differences between German and Chinese partners in how each side reflects a certain logic. This not only adds new evidence from the German and Chinese contexts to the comparative studies of European and Chinese HE but also sheds light on the underlying nature of these differences. The variations in how German and Chinese partner organizations interpret these logics reveal the growing incompatibilities in collaboration between academic organizations in China and Germany, and potentially other European countries, contributing to their "engaged but not married" relationship (Braun Střelcová, 2021).

Third, by arbitraging the differences of the logics, purposeful actions were undertaken, such as establishing new research centres, providing joint research training, and introducing new research directions. These initiatives enabled the organization to grow within the university, securing new financial and human resources, expanding research into green energy and sustainability, adopting new governance in doctoral education, and becoming a hub for intercultural competence training and internships. Santiago et al. (2022) noted that joint funding schemes and mobility programs were crucial for sustaining Europe–China academic collaboration in healthcare. This study demonstrates how such collaborations can be effectively implemented at the organizational level, with evidence from mechanical engineering. Nevertheless, since this study mainly focused on the development of the case organization from 2019 to 2024, it is hard to argue that the case organization has achieved its desired goals in the long run, despite purposefully adopting new actions. Determining whether the transformation will prove successful as a long-term strategy to sustain the organization requires time. Despite adopting these actions, the case organization continues to face challenges, such as securing sustainable financial support and reconciling the incompatible needs of its diverse actors. The study also found the arbitrage brought in unexpected outcomes, such as the unclear identity of the case organization within its university as well as its relation (potentially competition) with other German research centres and initiatives. The remaining and emerging challenges call for a longitudinal study to examine the effectiveness of the adopted strategies.

What is more, the study has its limitations. First, as a single case study of a Sino-German joint academic organization with a long tradition, its experiences are not easily generalizable. More empirical research, such as multiple case studies, are needed to explore the theoretical inferences drawn from this case study. As mentioned, a future longitudinal study could provide deeper insights into the long-term development of the case organization. Second, the environmental factors, notably the pandemic intertwined with geopolitical environment changes, were difficult to interpret from the institutional theoretical perspective, and may have been simplified in the data analysis. Interviews with the participants of Europe–China academic organizations can be carried out to explore the inter-relation of different environmental factors and their impacts. Third, the constructed analytical framework needs to be refined through more empirical evidence to determine, for example, whether it can also be applied in interdisciplinary or intersectoral hybrid organizations, which all confront incompatible logics. Fourth, whilst the theory presupposes arbitrage is

the purposeful leveraging of differences to create valued outcomes, it does not explain well the unintended outcomes created along the process. We would like to invite future research also to examine the expected and unexpected outcomes of the arbitrage practices.

Acknowledgements We would like to express our sincere gratitude to all research participants as well as to Prof. Yao Xiao, Mr. Maobo Pan and Mr. Qiang Xu for their assistance during the data collection process. Our special thanks go to Prof. Yuzhuo Cai and Prof. Anna Lisa Ahlers for their profound insights on China-Europe academic cooperation, which were instrumental in developing the study from the beginning. We would also like to extend our appreciation to Dr. Jan Harder, as well as the reviewers and editors for their constructive feedback, which helped us sharpen the manuscript.

Funding Open access funding provided by Tampere University (including Tampere University Hospital). The study was supported by the following organizations, to which we are grateful: (1) China's National Education Scientific Planning Project (CGA230337); (2) Tampere University Library (for the open access of the publication).

Declarations

Conflict of interest The authors declare no competing interests.

References

Ahlers, A. L., & Christmann-Budian, S. (2023). The politics of university rankings in China. *Higher Education*. https://doi.org/10.1007/s10734-023-01014-y

Altbach, P., & De Wit, H. (2021). *Despite concerns, should universities engage with China?* University World News. https://www.universityworldnews.com/post.php?story=20210430105646452

Auswärtiges Amt. (2023). *China-Strategie der Bundesregierung*. https://www.auswaertiges-amt.de/blob/2608578/810fdade376b1467f20bdb697b2acd58/china-strategie-data.pdf

Balbachevsky, E., Cai, Y., Eggins, H., & Shenderova, S. (Eds.). (2021). *Building higher education cooperation with the EU: Challenges and opportunities from four continents*. Brill Sense.

Bao, Y., Kehm, B. M., & Ma, Y. (2018). From product to process. The reform of doctoral education in Europe and China. *Studies in Higher Education, 43*(3), 524–541. https://doi.org/10.1080/03075079.2016.1182481

Battilana, J., Besharov, M., & Mitzinneck, B. (2017). On hybrids and hybrid organizing: A review and roadmap for future research. In R. Greenwood, C. Oliver, T. Lawrence, & R. Meyer, *The SAGE handbook of organizational institutionalism* (pp. 128–162). SAGE Publications Ltd. https://doi.org/10.4135/9781446280669.n6

Blothwell. (2018). *Call to rethink China branch campuses over academic freedom risks*. Times Higher Education (THE). https://www.timeshighereducation.com/news/call-rethink-china-branch-campuses-over-academic-freedom-risks

BMBF. (2022). *China—Partner, systemischer Rivale und Wettbewerber*. Bundesministerium für Bildung und Forschung - BMBF. https://www.bmbf.de/bmbf/de/europa-und-die-welt/vernetzung-weltweit/asiatisch-pazifischer-raum/china/china.html

Braun Střelcová, A. (2021). Engaged, not married: Past, present and future of Europe's research collaboration with China. https://doi.org/10.17617/2.3286012

Braun Střelcová, A., Cai, Y., & Shen, W. (2022). The Experience of European Researchers in China: A Comparative Capital Advantage Perspective. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-022-00982-3

Cai, Y. (2013). Erasmus Mundus joint programme and EU's Strategy on higher education collaboration with China: Lessons from the MARIHE Programme. *Journal of European Higher Education Area, 2*, 95–112.

Cai, Y., & Mehari, Y. (2015). The use of institutional theory in higher education research. In *Theory and method in higher education research* (Vol. 1, pp. 1–25). Emerald Group Publishing Limited. https://doi.org/10.1108/S2056-375220150000001001

Cai, Y. (2019). China-Europe higher education cooperation: Opportunities and challenges. *Frontiers of Education in China, 14*(2), 167–179. https://doi.org/10.1007/s11516-019-0009-5

Cai, Y. (2022). Towards a new model of EU-China innovation cooperation: Bridging missing links between international university collaboration and international industry collaboration. *Technovation*, 102553. https://doi.org/10.1016/j.technovation.2022.102553

Cai, Y. (2024). Decoding discord: Paradoxes, misperceptions and risks in EU–China higher education cooperation. *International Higher Education, (116)*, 9-11. https://ejournals.bc.edu/index.php/ihe/article/view/17355

Cai, Y., & Zheng, G. (2024). Navigating shifts in Europe-China higher education cooperation: An institutional logics perspective. *Journal of Studies in International Education*, 10283153241296209. https://doi.org/10.1177/10283153241296209

Cai, Y. (2010). Global isomorphism and governance reform in Chinese higher education. *Tertiary Education and Management, 16*(3), 229–241. https://doi.org/10.1080/13583883.2010.497391

Cai, Y. (2014). Institutionalization of internationalization of higher education in China. *Frontiers of Education in China, 9*(2), 175–181.

Cai, Y., & Zheng, G. (2021). China's policies and practices with respect to higher education cooperation with the EU. In E. Balbachevsky, H. Eggins, & S. Shenderova (Eds.), *Building higher education cooperation with the EU* (pp. 68–85). Brill Sense. https://doi.org/10.1163/9789004445420_005

CDH. (2019). *CDH Jahresbericht (*中德学部年报*)*. https://static.daad.de/media/daad_de/pdfs_nicht_barrierefrei/laenderinformationen/asien/cdh-jahresbericht-2019.pdf

CDHK. (2022). *Tongji University launches '2.0 Strategy of Cooperation with Germany' (*同济大学推出"对德合作*2.0*战略"*)*. https://cdhk.tongji.edu.cn/0b/0c/c26489a264972/page.htm

Clark, B. R. (1986). *The higher education system: Academic organization in cross-national perspective*. University of California Press.

Coffey, A., & Atkinson, P. (2017). Analysing documentary realities. In D. Silverman (ed.), *Qualitative research: Theory, method and practice* (3rd ed.), Sage Publications.

DAAD. (2024). *Academic cooperation with China: A realistic approach. DAAD recommendations to German higher education institutions.* DAAD. https://www.daad.de/en/the-daad/communication-publications/press/press_releases/2024/die-wissenschaftskooperation-mit-china-realistisch-gestalten/

de Matos, J. A., e Cunha, M. P., & de Berredo, R. F. (2022). Leading university internationalisation: The future of Euro-Chinese academic cooperation. *European Journal of Education, 57*(1), 65–77. https://doi.org/10.1111/ejed.12490

d'Hooghe, I., Montulet, A., de Wolff, M., & Pieke, F. N. (2018). Assessing Europe-China collaboration in higher education and research. L. A. Centre. https://www.merics.org/sites/default/files/2019-02/LeidenAsiaCentre%20Report%20-%20Assessing%20Europe-China%20Collaboration%20in%20Higher%20Education%20and%20Research_2018.pdf

Dubois, A., & Gadde, L.-E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research, 55*(7), 553–560. https://doi.org/10.1016/S0148-2963(00)00195-8

EC RTD. (2024). *Proposal for a Council Recommendation on enhancing research security*. (Document 52024DC0026). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52024DC0026. Accessed 24 Feb 2025.

European Commission(2019). EU-China – A strategic outlook. Joint Communication to the European Parliament, the European Council and the Council.(Document 52019JC0005). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52019JC0005. Accessed 24 Feb 2025.

Flick, U. (2004). *Triangulation in qualitative research*. SAGE Publications.

Frietsch, R., Neuhäusler, P., Karpenstein, A., Conlé, M., Schüler-Zhou, Y., Schüller, M., & Wieczorek, I. (2018). *Monitoring des Asiatisch-Pazifischen Forschungsraums (APRA) mit Schwerpunkt China. 1. Bericht (2018)* (DLR Projektträger, Fraunhofer-Institut für System- und Innovationsforschung ISI, Leibniz-Institut für Globale und Regionale Studien (GIGA), & Deutscher Akademischer

Austauschdienst (DAAD), Eds.). Kooperation international. https://www.kooperation-international.de/fileadmin/user_upload/apra_performance_2018.pdf

Gao, J. (2020). Repositioning China in the global education hierarchy: Sino-Foreign educational partnerships in the belt and road initiative. Working Papers on University Reform nr 31, CHEF, Danish School of Education, Aarhus University. https://dpu.au.dk/fileadmin/edu/Forskning/Working_papers/Working_paper_31_Repositioning_China_in_the_Global_Education_Hierarchy.pdf

Greenwood, R., Raynard, M., Kodeih, F., Micelotta, E. R., & Lounsbury, M. (2011). Institutional complexity and organizational responses. *Academy of Management Annals, 5*(1), 317–371. https://doi.org/10.5465/19416520.2011.590299

Jay, J. (2013). Navigating paradox as a mechanism of change and innovation in hybrid organizations. *The Academy of Management Journal, 56*(1), 137.

Jonkers, K., & Cruz-Castro, L. (2010). The internationalisation of public sector research through international joint laboratories. *Science and Public Policy, 37*(8), 559–570. https://doi.org/10.3152/030234210X12767691861056

Kroll, H., Schüller, M., Conlé, M., Schäfer, C., & Knüttgen, N. (2022). *Monitoring des Asiatisch-Pazifischen Forschungsraums (APRA): Chinas Wissenschafts- und Technologiepolitik: Förderung von Hochtechnologie und technologischer Unabhängigkeit*. https://www.kooperation-international.de/fileadmin/user_upload/01_APRA_2022_China_5.pdf

Lai, M., & Jung, J. (2024). Internationalisation with Chinese characteristics: Exploring the paradox in students' experiences at Sino-foreign cooperative universities. *Studies in Higher Education*, *0*(0), 1–14. https://doi.org/10.1080/03075079.2024.2386409

Lepori, B. (2016). Universities as hybrids: Applications of institutional logics theory to higher education. In *Theory and method in higher education research* (Vol. 2, pp. 245–264). Emerald Group Publishing Limited. https://doi.org/10.1108/S2056-375220160000002013

Liu, S., & Tu, X. (2023). Challenges and response strategies of Sino-Foreign joint institutions and programs after the pandemic (后疫情时代中外合作办学面临的挑战与对策). *Educational Sciences Selections (*教育科学文摘*), 2*, 36–38.

Mallapaty, S. (2023). Prestigious Pasteur Institute severs ties with China infectious disease lab. *Nature*. https://doi.org/10.1038/d41586-023-00694-x

Marginson, S. (2024). The new geo-politics of higher education 2: Between nationalism and globalism. *CGHE Working Papers, 108.* https://doi.org/10.5287/ora-wvbrzjz4g

Matthews, D. (2024). *Universities turn to private intelligence to assess China risk*. ScienceBusiness. https://sciencebusiness.net/news/r-d-funding/universities-turn-private-intelligence-assess-china-risk

Miani, M., & Picucci-Huang, S.-C. (2023). Learning and teaching in transnational education in China: Voices from Sino-foreign cooperative universities. *Chinese Education & Society, 56*(5–6), 303–308. https://doi.org/10.1080/10611932.2024.2303912

Mountford, N., & Cai, Y. (2022). Towards a flatter ontology of institutional logics: How logics relate in situations of institutional complexity. *International Journal of Management Reviews*, *n/a*(n/a). https://doi.org/10.1111/ijmr.12313

Ozcan, P., Han, S., & Graebner, M. E. (2017). Single cases: The what, why, and how. In R. A. Mir & S. Jain (Eds.), *The Routledge companion to qualitative research in organization studies* (1st ed.). Routledge.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). SAGE Publications Ltd.

Perkmann, M., Phillips, N., & Greenwood, R. (2022). Institutional arbitrage: How actors exploit institutional difference. *Organization Theory, 3*(2), 263178772210903. https://doi.org/10.1177/26317877221090313

Piekkari, R., Welch, C., Paavilainen, E., Piekkari, R., Welch, C., & Paavilainen, E. (2014). The case study as disciplinary convention: Evidence from international business journals. In M. Tight, *Case Studies* (pp. IV185–IV185). SAGE Publications Ltd. https://doi.org/10.4135/9781473915480.n66

Piekkari, R., & Welch, C. (2018). The case study in management research: Beyond the positivist legacy of Eisenhardt and Yin?. In C. Cassell, A. Cunliffe, & G. Grandy, *The SAGE handbook of qualitative business and management research methods: History and traditions* (pp. 345–358). SAGE Publications Ltd. https://doi.org/10.4135/9781526430212.n21

Pinna, C. (2009). EU-China relations in higher education: Building bridges in global cultural dialogue. *Asia Europe Journal, 7*, 505–527. https://doi.org/10.1007/s10308-009-0238-y

Plé, A., Kunkis, M., & Droste-Franke, B. (2023). *Risks in international research cooperation: Causes, correlations and effects*. https://www.safeguarding-science.eu/wp-content/uploads/Risks-in-international-research-cooperation.pdf

Ragin, C. C. (1992). "Casing" and the process of social inquiry. *What is a case?: Exploring the foundations of social inquiry* (pp. 217–223). Cambridge University Press.

Reillon, V. (2015). *EU scientific cooperation with third countries* [European Parliament]. https://www.europarl.europa.eu/RegData/etudes/BRIE/2015/564393/EPRS_BRI(2015)564393_EN.pdf

Santiago, A., Rodrigues, C., Diogo, S., & da Silva, J. T. (2022). Challenges on the European Union-China cooperation in higher education from 'people-to-people dialogue' perspective: The case of health-related joint projects. *International Journal of Chinese Education, 11*(3). https://doi.org/10.1177/2212585X221143392

Shen, W., Liu, D., & Chen, H. (2017). Chinese Ph.D. students on exchange in European Union countries: experiences and benefits. *European Journal of Higher Education, 7*(3), 322–335. https://doi.org/10.1080/21568235.2017.1290885

Shih, T. (2021). *Swedish-Chinese research collaboration: Experience from joint Swedish-Chinese mobility programme*. STINT.

Shih, T., & Forsberg, E. (2023). Origins, motives, and challenges in Western-Chinese research collaborations amid recent geopolitical tensions: Findings from Swedish-Chinese research collaborations. *Higher Education, 85*(3), 651–667. https://doi.org/10.1007/s10734-022-00859-z

Simons, H. (2009). *Case study research in practice*. SAGE Publications Ltd.

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. https://doi.org/10.1086/210361

Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective: A new approach to culture, structure and process*. Oxford University Press.

Wang, L., & Wang, X. (2017). Who sets up the bridge? *Tracking Scientific Collaboration. Research Evaluation, 26*(2), 124–131. https://doi.org/10.1093/reseval/rvx009

Wang, S., & Jones, G. A. (2021). Competing institutional logics of academic personnel system reforms in leading Chinese Universities. *Journal of Higher Education Policy and Management, 43*(1), 49–66. https://doi.org/10.1080/1360080X.2020.1747958

Welch, C., & Piekkari, R. (2017). How should we (not) judge the 'quality' of qualitative research? A re-assessment of current evaluative criteria in International Business. *Journal of World Business, 52*(5), 714–725. https://doi.org/10.1016/j.jwb.2017.05.007

van der Wende, M. (2020). EU-China cooperation along the New Silk Road: A balanced approach towards common goals?. In van der W. M, W. C. William C. Kirby, N. C. L. Liu, & S. Marginson (Eds.), *China and Europe on the New Silk Road: Connecting universities across Eurasia*. Oxford University Press.

Weston, C., Gandell, T., Beauchamp, J., McAlpine, L., Wiseman, C., & Beauchamp, C. (2001). Analyzing interview data: The development and evolution of a coding system. *Qualitative Sociology, 24*, 381–400.

Xue, E., & Li, J. (2023). Examining Chinese-foreign cooperation in running schools during the epidemic period: A macro education policy analysis. *Beijing International Review of Education, 4*(4), 766–772. https://doi.org/10.1163/25902539-04040017

Yang, R. (2005). Internationalisation, indigenisation and educational research in China. *Australian Journal of Education, 49*(1), 66–88. https://doi.org/10.1177/000494410504900104

Yin, R. K. (2018). *Case study: Research and applications. Design and methods* (6th ed.). SAGE Publications.

Zhang, Y., Mok, K. H., Gao, X., & Zhang, Q. (2024). Understanding the Chinese−foreign cooperation in running schools: From the perspective of loose coupling theory. *Journal of Asian Public Policy*, 1–20. https://doi.org/10.1080/17516234.2024.2395021

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. https://doi.org/10.1080/21568235.2017.1290877

Zheng, G. (2020). *Quality and quality assurance of Europe-China joint doctoral education: An institutional logics perspective*. trepo. Tampere. http://urn.fi/URN:ISBN:978-952-03-1584-9.

Zheng, G., & Li, W. (2024). Critical policy analysis of the second round of the double first-class project in China. *ECNU Review of Education*, 20965311241265372. https://doi.org/10.1177/20965311241265372

Zhou, P., & Bornmann, L. (2015). An overview of academic publishing and collaboration between China and Germany. *Scientometrics, 102*(2), 1781–1793. https://doi.org/10.1007/s11192-014-1418-0

Zhou, P., & Glänzel, W. (2010). In-depth analysis on China's international cooperation in science. *Scientometrics, 82*(3), 597–612. https://doi.org/10.1007/s11192-010-0174-z

Zhu, C., Cai, Y., & François, K. (2017). Perceptions of European and Chinese stakeholders on doctoral education in China and Europe. *European Journal of Higher Education, 7*(3), 227–242. https://doi.org/10.1080/21568235.2017.1290866

Zhu, C., & Zayim-Kurtay, M. (2018). University governance and academic leadership: Perceptions of European and Chinese university staff and perceived need for capacity building. *European Journal of Higher Education, 8*(4), 435–452. https://doi.org/10.1080/21568235.2018.1458636