

The Intensity and Forms of Collaboration between Czech and Taiwanese universities

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Abstract: Recently, interactions between the Czech Republic and Taiwan in the business, tourism, and academic spheres have intensified following joint efforts by the governments of both countries. The article aims to evaluate the collaboration of Czech universities with their Taiwanese university partners. Specifically, the analyses focus on the intensity and forms of the collaboration and interrogate whether there are patterns regarding the type and size of the Czech universities. Forms of collaboration are defined as exchange of students, exchange of academics and joint projects. The dataset was derived from published long-term plans, internationalisation strategies, action plans, and university websites of 26 Czech public universities. The results indicate that student exchange is the most common form of cooperation between Czech and Taiwanese universities, followed by academic exchange. Joint projects appear to be a challenging and less frequent form of cooperation. Compared to other Czech universities, technical universities cooperate more intensively with Taiwanese partners (in all areas). Large and medium-large sized Czech universities intensively collaborate in all areas with Taiwanese universities. The intensity of collaboration between small and small-medium sized Czech universities and Taiwanese universities is rather low, except of the exchange of students that is moderate. These results can guide the policy makers when designing better internationalisation policies in higher education.

Keywords: Higher education, Czech Republic, Taiwan, Academic cooperation, Universities

JEL Classification: I21, I23, F22

1 Introduction

The internationalisation of universities became a comprehensive global endeavour (Altbach, 2004) that goes beyond mere student mobility (Knight, 2004) and is determined by various internal and external drivers (de Wit, 2002). Despite Taiwan's unique diplomatic status under the One-China policy, recent interactions between the Czech Republic and Taiwan in the business, tourism, and academic spheres have intensified following joint efforts by the governments of both countries. Furthermore, the accompanying wave of Taiwanese investment in the Czech Republic is rapidly positioning Czechia as an important part of an emerging high-tech cluster within the European Union. Such a progression underscores the critical need to analyse the role of academic and research collaboration between the Czech Republic and Taiwan because the successful coupling of economic structures often necessitates local partnerships with universities to facilitate the exchange of knowledge, establish advanced manufacturing and future R&D centres and train of skilled workforce and future industry leaders.

Against this backdrop, the article focuses on understanding the expanding inter-country academic partnership between Czech and Taiwanese universities. The article aims to evaluate the collaboration of Czech universities with their Taiwanese university partners. Specifically, it analyses the intensity and forms of the collaboration and interrogates whether there are patterns regarding the type and size of the (Czech) university. A thorough understanding of these academic linkages is essential for informing public policy, ensuring alignment (among others) with national and European semiconductor strategies, and maximising the mutual benefits derived from high-tech research and talent development.

Collaboration in Education and Research between the Czech Republic and Taiwan

An important milestone in the development of educational and research collaboration between the Czech Republic and Taiwan was the opening of Economic and Cultural Offices, both in Prague in 1991 (Taipei Economic and Cultural Office in Prague, 2025a) and in Taipei in 1993 (Czech Economic and Cultural Office in Taipei, 2025). Given Taiwan's status in the system of international relations, these offices replace the traditional roles and functions of embassies.

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In 2008, a cooperation agreement was signed in Prague between the Czech Science Foundation and the National Science and Technology Council. The goal of this agreement was to establish or increase the level of cooperation in the field of science and research between researchers and institutions of both countries, as well as to enable the exchange of information, skills, and techniques in areas of common interest. The program supports joint Czech-Taiwanese projects in all scientific fields (Czech Scientific Foundation, 2025). The institutional framework for research cooperation was subsequently strengthened in 2010 by a memorandum between the Technology Agency of the Czech Republic and the National Science and Technology Council, focusing on applied research in priority areas such as nanotechnology, ICT, biotechnology, pharmaceuticals, genomic medicine, and digital archiving (Technology Agency of the Czech Republic, 2010). In 2015, the Oriental Institute of the Czech Academy of Sciences established the "Taiwan Center" a branch office at Academia Sinica, to support the exchange of academic staff and Ph.D. students (Oriental Institute, 2025). Furthermore, since 2016, the Project-based Personnel Exchange Program framework has been implemented between the Czech Academy of Sciences and the National Science and Technology Council, aiming to support bilateral scientific cooperation and the exchange of scientific personnel. Especially in the last decade, mutual delegation visits have intensified, and these visits have laid the groundwork for specific agreements and the strengthening of existing partnerships. In 2023, six memoranda were signed under the auspices of the Minister for Science, Research and Innovation (VědaVýzkum.cz, 2022). In 2024, the Czech Centre in Taipei (Czech Centre in Taipei, 2025) was opened, which focuses on promoting Czech culture and language abroad.

In 2024, a memorandum of cooperation between university alliances was signed, ratified by representatives of 13 Czech and 12 Taiwanese universities. The coordinators of this cooperation are Charles University and National Taiwan University. This memorandum covers a wide range of disciplines, including semiconductors, mechanical engineering, advanced technologies, life sciences, agriculture, social sciences and humanities, and arts. Various activities are anticipated, such as student programs, internships, courses, joint research, and cooperation between industry and academia (Czech National Agency for International Education and Research, 2024). These various cooperation activities were further complemented by projects within which the Taiwanese government supports the development of the semiconductor ecosystem in the Czech Republic. Specifically, this involves the Supply Chain Resilience Center (Supply Chain Resilience Center, 2025) at Charles University and the establishment of two "chip academies" (Advanced Chip Design and Research Centers, one in Prague and one in Brno). In January 2025, Charles University and the Taipei Economic and Cultural Office in Prague signed an agreement to establish the "Global Taiwan Chair" position at the Faculty of Arts, Charles University. The goal is to deepen academic and cultural dialogue between the Czech Republic and Taiwan through teaching and research (Taipei Economic and Cultural Office in Prague, 2025b).

Recently, in July 2025, the first Taiwan-Czech Higher Education Forum took place in Taipei. The event was jointly organized by the Foundation for International Cooperation in Higher Education of Taiwan, the Czech National Agency for International Education and Research, and the Czech Economic and Cultural Office in Taipei. The forum was attended by nearly 100 representatives from 51 Taiwanese institutions and 36 representatives from 17 Czech universities. The goal of this event was to deepen mutual cooperation and exchange in the field of higher education between Taiwan and the Czech Republic, and discussions covered the current situation in higher education, emerging development opportunities, industry-academia cooperation, and talent cultivation (StudyinTaiwan, 2025).

2 Methods

The analysis is focused on factors determining the intensity and forms of collaboration of Czech universities with Taiwanese university partners. Scholarly work (e.g. Mok & James, 2005; Choudaha, 2015; Cattaneo et al., 2016; Seeber, 2016; Alhalwaki & Hamdan, 2019; Sahin & Brooks, 2023; De Wit & Altbach, 2023) have unfolded the multi-level determinants of a university's level of internationalisation e.g. organisational factors (e.g. leadership and strategy, faculty engagement or resources and infrastructure), political and regulatory factors (national government policy and funding or geopolitics and diplomacy), economic and market factors (knowledge economy and global labour market, competition for revenues, research funding landscape, Global University Rankings), technological factors (rise of digital communication and online learning platforms), socio-cultural factors (need for intercultural skills, demographics in sending countries), and environmental factors (pandemics). Specifically, the analysis is centred around two hypotheses.

First, the literature on organisation capabilities and learning (Penrose, 1959; Teece, 2019) suggests that developing the capability to engage in international collaboration effectively may be highly difficult and time-consuming and increase costs associated with skills' development and additional labour requirements. Drawing from this earlier work we hypothesise that the size of a Czech university serves as a predictor of its level of engagement in collaborations with

Taiwanese partners, with larger universities showing greater activity. We used the number of enrolled students in the recent period to represent the size of the university.

Second, as mentioned in the introduction, the intensifying relationship between the Czech Republic and Taiwan, coupled with significant Taiwanese investment into an emerging high-tech cluster in Czechia, highlights a critical need for university-industry partnerships. The successful integration of these economic structures—specifically in areas like establishing advanced manufacturing and future R&D centres, and the training of a skilled workforce—demands academic collaboration focused on technical expertise. Given that these specific requirements are the primary domain of technical universities, it is reasonable to hypothesize that Czech technical universities will exhibit a greater intensity of collaboration with Taiwanese academic institutions compared to other types of universities in the Czech Republic. This collaboration is driven by the necessity of matching the educational and research output with the specialized needs of the incoming high-tech Taiwanese investment.

Data and other methodological notes

Unfortunately, there is no database that contains information about the internationalisation activities of Czech universities. Thus, the methodology of data collection for this publication was in the form of secondary data analysis combined with document analysis. The dataset was derived from published long-term plans, internationalisation strategies, action plans, and university websites of 26 Czech public universities: Charles University (47,000 students), Masaryk University (35,000), Palacky University Olomouc (21,000), Czech university of Life Sciences Prague (19,000), Brno University of Technology (19,000), Czech Technical University in Prague (19,000), Technical university of Ostrava (16,000), Prague University of Economics and Business (15,500), University of West Bohemia (11,500), University of South Bohemia in České Budějovice (10,500), Mendel University in Brno (9,500), Tomas Bata University in Zlín (9,400), University of Ostrava (9,000), Jan Evangelista Purkyně University in Ústí nad Labem (8,700), University of Pardubice (8,400), University of Hradec Králové (7,200), Technical University of Liberec (6,600), Silesian University in Opava (5,500), Institute of Technology and Business in České Budějovice (4,000), University of Chemistry and Technology Prague (4,000), University of Veterinary Sciences Brno (3,000), College of Polytechnics Jihlava (2,300), The Academy of Performing Arts in Prague (1,400), The Janáček Academy of Performing Arts (750), Academy of Arts, Architecture and Design in Prague (500), The Academy of Fine Arts in Prague (320).

However, such an approach also has its weaknesses. The primary weaknesses of using document analysis as a research method revolve around issues of availability, bias, and completeness of the documents (Yin, 2016). Researchers are constrained by the documents that are accessible, meaning they often deal with an incomplete picture and may suffer from low retrievability of crucial information. Crucially, documents are often riddled with author or creator bias, reflecting the specific perspective, agenda, or institutional narrative of the originator. Furthermore, the quality and reliability can be uneven, as documents may be incomplete, contain errors, or lack the specific detail required to comprehensively answer a research question, forcing researchers to triangulate their findings with other data sources to ensure validity.

The documents were analysed to identify and measure the intensity and forms of collaboration with Taiwanese university partners. Intensity is defined as a variable indicating whether cooperation occurs or not (yes or no). Thus, it doesn't reveal any quality of collaboration, nor does it reveal intensity in a strict sense (how many students or how many projects?).

The specific forms of collaboration extracted from these documents served as the key variables:

- Exchange of Students
- Exchange of Academics
- Joint Projects

The final step involved a form of systematic evaluation of the gathered data to assess the frequency and presence (intensity) of each collaboration form and the relationship between collaboration intensity and the characteristics of the Czech university (technical vs. other type; size).

3 Research results

Specialisation as a predictor of engagement in collaborations with Taiwanese partners

The collaboration of Czech universities with their Taiwanese university partners was analysed in terms of the area of specialisation to evaluate whether there are any patterns regarding the exchange of students, exchange of academics and

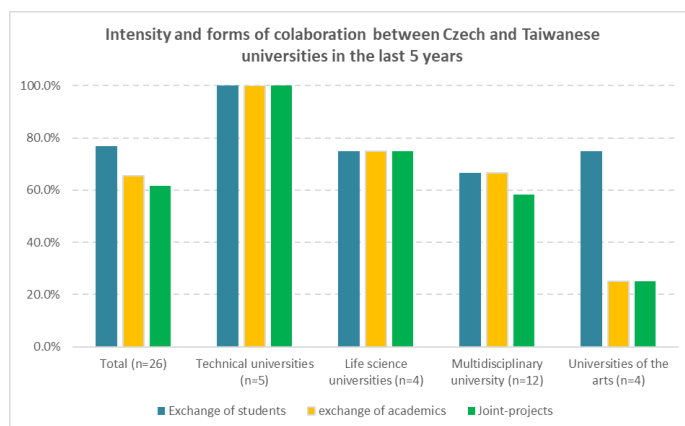
joint projects (Figure 1). Universities were grouped according to their specialisation, and the following four groups were constructed:

- Technical universities: Brno University of Technology, Czech Technical University in Prague, Technical University of Ostrava, Technical University of Liberec, University of Chemistry and Technology Prague,
- Life Science Universities: Czech University of Life Sciences Prague, Mendel University in Brno, University of South Bohemia in České Budějovice, University of Veterinary Sciences Brno,
- Multidisciplinary universities: Charles University, Masaryk University, Palacky University Olomouc, University of West Bohemia, Tomas Bata University in Zlin, University of Ostrava, Jan Evangelista Purkyně University in Ústí nad Labem, University of Pardubice, University of Hradec Králové, Silesian University in Opava, Institute of Technology and Business in Ceske Budejovice, College of Polytechnics Jihlava,
- Universities of Arts: Academy of Performing Arts in Prague, The Janáček Academy of Performing Arts, Academy of Arts, Architecture and Design in Prague, and the Academy of Fine Arts in Prague.

This division captures the prevailing nature of the universities, but it is important to note that these universities often consist of faculties of various specialisations, both technical and non-technical in nature.

Generally, about one fourth (23.1%) of the Czech universities do not have any form of collaboration with any Taiwanese university. The rest of the Czech universities implement with their Taiwanese university partners at least one of the following three internationalisation activities: exchange of students, exchange of academics and joint projects. The student exchange is the most common form of collaboration between Czech and Taiwanese universities (76.9%), followed by academic staff exchange (65.4%) and joint projects (61.5%). The academic staff exchange and joint projects appear to be a challenging and less frequent form of cooperation when compared to the exchange of students.

Figure 1 Intensity and forms of collaboration according to the specialisation of the Czech universities



Source: Own construct based on the collected data

The data show that technical universities collaborate more intensively with Taiwanese partners when compared to life science and multidisciplinary universities and universities of arts. The academic staff exchange and joint projects appear to be a challenging and less frequent form of cooperation when compared to the exchange of students. All analysed technical universities exchange students and faculty and participate in joint projects with Taiwanese university partners. Our results suggest that Czech technical universities exhibit a greater intensity of collaboration with Taiwanese academic institutions compared to other types of universities in the Czech Republic.

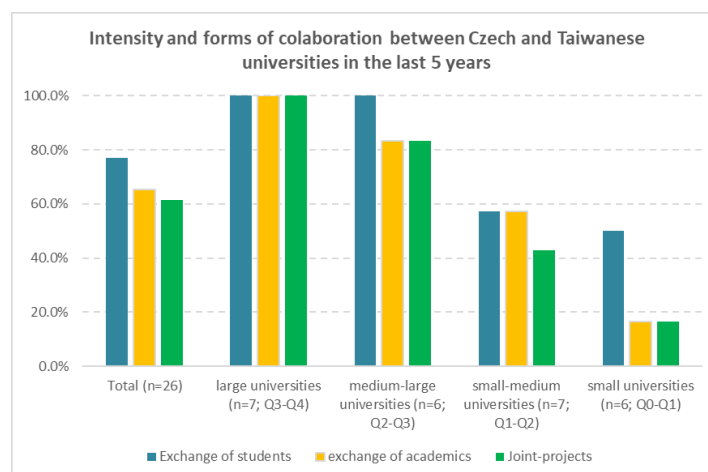
Size as a predictor of engagement in collaborations with Taiwanese partners

The collaboration of Czech universities with their Taiwanese university partners was also analysed in terms of the size of Czech universities (Figure 2). Universities were grouped according to their size (approximated using the total number of enrolled students), and the following four groups were constructed:

- Large universities: Charles University, Masaryk University, Palacky University Olomouc, Czech University of Life Sciences Prague, Brno University of Technology, Czech Technical University in Prague, Technical University of Ostrava,

- Medium-sized to large-sized universities: Prague University of Economics and Business, University of West Bohemia, University of South Bohemia in České Budějovice, Mendel University in Brno, Tomas Bata University in Zlín, University of Ostrava,
- Small-sized to medium-sized universities: Jan Evangelista Purkyně University in Ústí nad Labem, University of Pardubice, University of Hradec Králové, Technical University of Liberec, Silesian University in Opava, Institute of Technology and Business in Ceske Budejovice, University of Chemistry and Technology Prague,
- Small-sized universities: University of Veterinary Sciences Brno, College of Polytechnics Jihlava, The Academy of Performing Arts in Prague, The Janáček Academy of Performing Arts, Academy of Arts, Architecture and Design in Prague, The Academy of Fine Arts in Prague.

Figure 2 Intensity and forms of collaboration according to the specialisation of the Czech universities



Source: Own construct based on the collected data

Results show that large and medium-sized to large-sized Czech universities intensively collaborate with Taiwanese partners in all forms. The intensity of collaboration between small and small to medium-sized Czech universities and Taiwanese universities is rather low, except for the moderate exchange of students. Our results suggest that the size of a Czech university (measured by the number of enrolled students) serves as a predictor of its level of engagement in collaborations with Taiwanese partners, with larger universities showing greater activity. This is in line with studies (Wagner, 2008; McAleer, et al., 2019; Bicak & Taylor, 2020) that positive link between the size of the university and its international activity.

4 Conclusions

This article investigates the expanding academic partnership between universities in the Czech Republic and Taiwan. The central research objective was to evaluate the intensity and forms of the inter-country collaboration specifically within the population of Czech higher education institutions engaged with Taiwanese counterparts. The article contributes to the global knowledge by corroborating the positive link between the size of a university (measured by the number of enrolled students) and its level of engagement in international collaboration activities, with larger universities showing greater activity. It also contributed to the local knowledge (in the context of Czech and Taiwanese relations), providing evidence that technical universities in the Czech Republic collaborate more intensively with Taiwanese partners when compared to other universities.

Policy implication

A thorough understanding of these academic linkages is essential for informing public policy, ensuring alignment (among others) with national and European semiconductor strategies, and maximising the mutual benefits derived from research and talent development. This suggests that larger, more resource-rich universities often serve as the hubs in the global science system. Their scale and established reputation (a proxy for size and quality) allow them to attract and sustain more international partnerships. Policymakers should also consider interventions that support the internationalisation activities of smaller and local Czech universities with Taiwanese partners. Such a policy could help to expand the university collaboration between Czech Republic and Taiwan also in non-technical disciplines as well as it can facilitate knowledge spill-over effects to other regions outside the main educational hubs in the Czech Republic.

Limitations and perspectives of future research

This investigation provides valuable insights based on a university-wide analysis; however, a more granular examination at the faculty level was not feasible within the current scope. Furthermore, the lack of open-source information on certain key metrics necessitated a constrained methodology. Further research should use more extensive triangulation to cross-validating the document analysis findings with data from other sources, such as interviews, observations, or surveys. Therefore, these findings should be considered preliminary, and further research is strongly recommended to validate and expand upon these results by incorporating faculty-level data and seeking alternative data sources. This analysis was limited to the variables reported herein. However, a review of the literature reveals several other factors, including organisational, political and regulatory, economic and market, technological, socio-cultural, and environmental factors, that may influence the outcome and should be integrated into future investigative models.

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