

# The Impact of the Belt and Road Initiative on Chinese Higher Education

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**Abstract.** When the Chinese government created an economic path with the Belt and Road Initiative (BRI) in 2013, many domestic policies were amended after extensive research conducted on industrial development. However, there have been few study to date of the relationship between the BRI and higher education (HE). This paper analyzes how the BRI influences China's HE to generate greater opportunities for cross-border collaboration amongst the countries along the route. The three pillars of the triple-helix system—government, industry and institutions—were examined. The paper argues that HE within the BRI is a complex system comprised of many stakeholders and notes several transformations currently taking place in highly HE-oriented industries. These findings pave the way for both Chinese policymakers and their counterparts at HE to build mutual understanding and promote further international collaboration.

**Keywords:** higher education; China's Belt and Road Initiative; impact analysis; global transformation.

## 1. Introduction

In 2013, when Chinese President Xi Jinping visited Kazakhstan and Russia, the BRI was launched with the construction of an economic passageway based on the original Silk Road. President Xi took the initiative to build the BRI in the same year that he aimed to strengthen infrastructure, trade, and investment links between China and some 65 other countries. These countries collectively account for over 30% of global GDP, 62% of the population, and 75% of known energy reserves [Derudder, Liu, & Kunaka, 2018]. The BRI, also known as the Silk Road Economic Belt and 21st-Century Maritime Silk Road, was conceived as a development strategy by the Chinese government to promote the sustainable development of the economies of 152 countries and international organizations in Europe, Africa, Asia, Latin America, and the Middle East [Xinhua, 2019]. To facilitate the development of social sciences, the BRI has also gradually established a multi-layered mechanism and platform for communication by encouraging student mobility, offering short-term research projects, and training staff from the selected countries. It speaks of a shared commitment to fostering comprehensive cooperation in education, technology, culture, health, sports, media, and tourism. To date, however, there is relatively little literature on how the BRI has implemented this rhetoric into these areas, particularly in the higher education sector. Since educators are important accelerants of multilateral cooperation, it is crucial for researchers in the field of International Education to ask how Chinese HE should respond to this initiative to implement national and cross-border changes. Accordingly, this paper emphasizes dissecting the relevant data and discourses about the BRI to deepen multilateral understandings of educational transformation among the countries along the route and on a global scale.

## 2. Conceptual Framework

The multidimensional and multifaceted volumes of this project led to the decision to adopt the triple helix as the holistic conceptual framework and the constant comparison method as the research approach for coding the data of each section. The Triple Helix concept was developed by the Triple Helix Research Group at Stanford University [2020], led by Professor Henry Etzkowitz, to investigate “theoretical and empirical aspects of college-industry-government interactions.”

Although the system has been applied primarily in the United States, it encompasses the key players for the development of a society that is highly dependent on its potentials to create scientific knowledge and thus suitable for complicated subjects that have multi-layered interactions with society, such as the BRI. The viable Triple Helix Model conceptualizes “the knowledge-based regional development as a series of multi-linear dynamics” [Etzkowitz, 2005].

Consistent with this structure, the emergence of “the interactions” can be identified as a key factor in regional development. Analyzing the impacts of BRI on the internationalization of higher education happens to be a similar process to mapping the above three portions relevant to the academic sector onto the dynamic developmental stages of the BRI countries. Based on the triple helix, the three macro-perspectives of the comparison can produce a more comprehensive understanding of the changes brought about by the BRI, as this framework sets forth the contrasting responses before and after the introduction of the BRI in each sector. Furthermore, this is not the first time the triple helix has been used to analyze higher education. Beecher and Streitwieser [2018] used the triple helix to provide a comprehensive assessment of the education hubs they studied. In addition to the relationships among the three components of the helix, three configurations—statist, laissez-faire, and balanced—were defined. Since the Chinese government manages universities and industry, China has a triple-helix statistical system.

In order to develop in-depth concepts for each section, this paper adopts the constant comparative method, a versatile method used in social research, to “generate successive concepts through inductive processes of comparing data in each sector”, regarding the BRI as a node [Vancell, 2018]. It uses an analytical procedure of constant comparison for the properties of the three theoretical categories in the triple helix to determine the impact of the BRI on China’s higher education [Glaser, 1965]. Not only is it considered as the dominant principle of the analytical process in qualitative research, but constant comparison also “converts qualitative data into crudely quantifiable forms” to reflect the dynamic nature of policy, industry, and institutions [Boeije, 2002]. These data-based qualitative descriptions reveal the variable relationships of “the interactions” in the triple helix by processing the information contained in the literature from multiple perspectives [Lin, 2009]. By collecting and coding the systematic data of different time periods with theoretical samples, i.e., before and after the BRI—the method presents the logical relations among the university, industry, and government and clarifies the reasons why these changes occur by taking the role of the BRI for the development of each section into account. The use of multiple methods enables a multifaceted approach and creates an opportunity to corroborate findings, which can in turn enhance the validity of the results. This makes it possible to reinforce the consistency of the data across the methods, effectively providing support to the analysis as opposed to taking the data at face value [Riege, 2003]. Guided by the Triple Helix Model and constant comparative method, the following sections investigate the three components --- government, industry and university by examining trends in social education of China and identifying various efforts to promote mobility.

## **2.1 The Triple Helix**

### **2.1.1 Government (Policy)**

. In order to guide the nation’s efforts to further internationalize higher education, political policy must keep abreast of the latest global issues and constantly regulate its own national characteristics and conditions. The national policy on the internationalization of China’s higher education dates back to the conversation between Deng Xiaoping, vice chairman of the Central Committee of the Communist Party of China (CPC), and the principal of Tsinghua University. The discussion specified the action plans to “boldly and dramatically increase the number of students going abroad” [Liu, 2018, my translation]. The same year, the Ministry of Education issued the Notice on the Recruitment of Students in Education Abroad Programs, determining that the target number of students sent to study abroad should rise to 3,000 [Ministry of Education, 1978]. Furthermore, to

encourage more students with advanced talent to pursue further study abroad opportunities, in 1982, together with the Ministry of Education and Ministry of Public Security, four state administration institutions cooperatively introduced the Regulations of Studying Abroad at One's Own Expense. These official documents first epitomized the "going out" strategy in Chinese higher education internationalization, which remained significant for the next three decades, until the introduction of the BRI.

In the 21st century, to fully implement the strategies of "reinvigorating China through science and education" and "strengthening the nation through human resource development," the national study abroad policies have been further promoted and enhanced as an integral component of the going out strategy. During this period, the going out strategy served as a kernel for related policies that would be introduced later, and it has since promoted significant bilateral and multilateral cooperation with other nations, primarily developed countries [Jackson, 2003]. In 2002, the Ministry of Education with the Ministry of Public Security, the Ministry of Foreign Affairs, and other ministries and commissions, collaboratively formulated the measures for the implementation of multiple convenient entries and exits and long-term residence for outstanding overseas graduates, primarily in Korea, Canada, and Finland [Sina Education, 2004]. The intellectual personnel flow aside, the bilateral funding between the Chinese government and the Canadian International Development Agency (CIDA) reached up to \$150 million, distributed among more than 100 joint initiatives between Canadian universities and Chinese institutes. It generated far-reaching effects at all levels in higher education cooperation between China and Canada [Jackson, 2003]. Additionally, the Ministry of Education formally established the National Scholarship for Distinguished Self-financed Students Abroad to cultivate increased domestic talent with global perspectives [2003a]. The implementation of the scholarship policy was piloted in five developed countries, including the United States, Japan, the United Kingdom, France, and Germany, and the number of awards for the pilot phase was 100 each [MOE, 2003b]. The foremost cooperative partners before the construction of the BRI were developed countries with analogous educational development levels. Therefore, the array of innovative models adopted in these countries in research, teaching, policy, and public services generally presented a similar form in terms of capacity building, means of intervention, and analyzing procedures of comparative advantages.

In 2010, the going out strategy for the internationalization of China's higher education culminated after the 18th CPC National Congress [Wu & Song, 2018]. In July of 2010, the "Outline of the National Medium and Long-Term Education Reform and Development Plan" (2010-2020) was released, emphasizing the need to continually expand the nation's educational opening to the outside world. It put forward requirements for introducing high-quality educational resources, and improve the level of exchanges and cooperation. The proposal of these requirements laid a foundation for the BRI, which shifted the focus of Chinese higher education internationalization from the going out strategy to the bringing in strategy.

As the BRI is one of the most essential national strategies for the great rejuvenation, its advent in 2013 has become known as the inauguration of the Second Reform and Opening-Up building on the legacy of the First Reform and Opening-Up, which began in 1979 [National Development and Reform Commission, 2015]. The internationalization of China's higher education similarly heralded a new era. Rather than highlighting the going out strategies of previous years, the internationalization of higher education shifted its emphasis to bringing in strategies after the construction of the BRI. For example, the Silk Road Promotion Plan for Studying Abroad included in the Jointly Promoting Educational Actions on the Belt and Road Initiative [2016] was a program designed for 100,000 students to participate in two-way exchange learning projects. Additionally, educational programs incorporated the China-ASEAN Two-Way Program, through which the Belt and Road Chinese Government Scholarship was first established, with the aim of financially supporting 10,000 students from the countries along the route to study in China. The total number of students awarded the BRI scholarship comprised 61% of the population of international students who received scholarships in China, significantly higher than the 2012 rate of 8.4% [British

Chamber of Commerce in China, 2019)]. As more supportive and comprehensive policies were enacted and distinct Chinese characteristics of education increasingly extended the scope of the education system to an international level, more foreign groups were motivated to participate in local settings of China. According to 2016 statistics, 310,720 foreign students arrived from countries along the BRI route, accounting for 64.85% of the total international student population in China and rising twice as fast as the period before the BRI, i.e. from 1978 to 2013 [British Chamber of Commerce in China, 2019].

In addition to the transformation of communication strategies, the scope of educational collaboration has also changed under the influence of the BRI. As mentioned, the strategy of opening up Chinese higher education to the outside world primarily focused on interactions with developed countries. However, because of the prevalence of developing countries along the BRI route, the BRI, to a large extent, offsets the regional differences of collaboration across borders with the internationalization of Chinese higher education. For instance, the Ministry of Education of China signed education cooperation agreements with the relevant departments of Russia, Kazakhstan, Bosnia and Herzegovina, Estonia, and Laos. It also signed the Agreement on Mutual Recognition of Higher Education Qualifications and Degrees with Cyprus and established a music education alliance of higher institutions with the countries along the Belt and Road [Li, 2017]. To realize educational interconnectedness with these developing countries, the policy of Jointly Promoting Educational Actions on the Belt and Road Initiative further normalized academic degree certification universal standards on the basis of Regulations of the People's Republic of China on Sino-foreign Cooperation in Running Schools issued by the State Department in 2003 [British Chamber of Commerce in China, 2019]. According to data from the Ministry of Education, by 2018, China had signed the higher education degree and diploma mutual recognition agreement with 46 countries across three continents, including Poland, Hungary, Romania, Thailand, Vietnam, Russia, Egypt, and Mongolia, and 94% of these were developing countries [British Chamber of Commerce in China, 2019].

In light of the diverse developmental stages, cultures, and diplomacies of these developing countries along the Belt and Road, collaborations in higher education between China and other countries update the former singular model, which was designed for developed nations in particular, to a comprehensive plural model [Li, 2017]. Guided by policies and top-level design, the international higher education collaborative models of China vary by country and are rooted in each country's unique conditions. In January of 2017, the State Council issued the 13th Five-Year Plan for the Development of National Education. It particularly emphasized that five crucial factors must be taken into account to drive forward the planning of the integrated educational opening-up as well as coordinate with the educational systems of different countries, considering their unique material conditions. This optimization policy of education incorporated the layout for an all-around opening-up, raising the level and quality of the opening-up, actively participating in global education governance, and establishing mutually beneficial relationships through diversified cooperation [Guo, 2019]. For instance, for countries that have a relatively higher level of educational development, such as Russia, Singapore, Israel, and Greece, the government adopted a balanced, two-way cooperation model to cultivate internationally-developed compound talents for the common good. As for less developed countries like Nepal, Myanmar, and Cambodia, it is imperative that the Chinese authorities implement cooperative aid models centered on educational exports such as curriculum design, faculty, and preservice training [Li, X., 2017].

The production of BRI has facilitated the internationalization of Chinese higher education through comprehensive reforms and innovation-driven systematic development. Since 2016, China's management system for study abroad programs has been essentially sound [Wu & Song, 2018]. Meanwhile, the efficiency of foreign-related education and the quality of education in China became more attractive for international students, which effectively expanded the breadth and depth of bilateral and multilateral education collaborations. In the stage of comprehensively promoting the construction of worldclass universities and first-class disciplines, the BRI serves to further

strengthen international exchanges and cooperation and is regarded as an important means of realizing education development.

### 2.1.2 Industry

. There is a misalignment between domestic and external industrial development. Domestically, the Chinese government plays a leading role. This positioning does not mean that industry is completely restricted by the government, instead that the government empowers relatively more decision-making autonomy to industry. Internationally, Chinese companies act as pioneers in the integration of industry with local surroundings. To some extent, the reason that the BRI highlights progress in infrastructural connectivity, trade, financial integration, and industrial cooperation is that China could take advantage of its industrial strength to catalyze such development in other countries. The primary aim of industrial development is to build economic trade and perfect transportation hubs along the route. To connect such purposes to the higher education sector, institutions' decision-makers tend to use industrial localization to simultaneously increase communication with local participants.

#### *The BRI and the Seaport.*

. The BRI is essentially a form of diplomatic outreach between China, neighboring Asian countries, and the wider region [UNWTO, n.d.]. According to credible estimates, the entire BRI project aims to affect more than 60% of the world's population and approximately 35% of the global economy [Simon, 2020]. Yet, many people do not know that the trade along this route, renowned as the modern Silk Road, could soon account for almost 40% of total world trade, a large portion of which is by sea [Simon, 2020]. This vision of the future is expected to incorporate several European countries, such as Italy and Poland, into the "Maritime Silk Road" and ultimately form a linkage between India, Africa, and China. Since the natural environment of some of these regions can serve as a barrier to the development of local industry, the BRI program leads the initiative to cover various infrastructural establishments and wide-reaching connectivity projects. These programs are introduced and tailored with the purpose of transforming China's 21st-century footprint and include the adoption of new technologies, improvement of educational ecosystems, and measuring of environmental regulations [UNWTO, n.d.]. This has no doubt aided emerging countries by empowering them to move forward. Now, the prospect of industrial progress within each participating country can be realized as planned. The land route of the Silk Road, however, still appears to remain a niche project in terms of its projected transport volume [Simon, 2020].

In line with these strategies, the BRI is attempting to build transport routes connecting seaports and to acquire support from the maritime industry. In 2015, one Chinese leader, Jiechi Yang, claimed that the program should be involved with all forms of educational marine science and research especially for sea transportation [Yang, 2015]. Further efforts will be undertaken to intensify cooperation in the disciplines of marine survey, observation technologies, renewable energy, seawater desalination, and marine bio-pharmacy [UNWTO, 2019]. In the meantime, domestic research groups are encouraged to develop partnerships with local industries in establishing overseas bases. Together with other countries, China not only institutes oceanic demonstration zones offshore but also opens onshore industry parks, technology parks, and training spaces for ocean-related personnel [Yang, 2015]. On these grounds, a joint educational database could be set aside to build the Center for Marine Meteorological and Oceanographic Climate Data and conjunctly develop marine big data and cloud platform technologies to launch public information-sharing platforms serving the development of academic research [UNWTO, 2019]. This kind of interflow and collaboration should be highlighted as significant for the development of international higher education. One example is the China-ASEAN Marine Sciences school based on a Xiamen University campus in Malaysia. According to the website of XMUM [2019], the school is supported by a fund to cultivate talents and promote technological innovation for localized people. As the school is an international branch campus (IBC), its establishment could serve as a model for opening an IBC with strong industry connections.

#### *The BRI and the University*

. As mentioned above, universities that would like to participate in the BRI program could also accumulate schooling experience by acquiring support from a relevant industry. Consequently, the industry and university constitute a living community and should embrace bilateral communication by utilizing R&D (Research & Development) as a platform.

However, industry-university transformation raises an issue: companies, even large industrial entities, find it challenging to apply universities' research findings to reality. In most cases, in the case of ambiguity in the ownership of a study's results or any controversial placement, laws and social norms favor universities rather than companies. For instance, article 339 of the contract law explicitly states that "the commissioned party," which usually refers to universities in China, is entitled to manage R&D results unless an additional prior agreement was made between the parties [Lou & Yao, 2012]. In China's "statist model," companies' options are limited when facing this kind of conflict. Such difficulty is a representation of the gap between ideality and reality. In an ideal situation, a university functions as an axis between industry and government to improve indigenous innovation. In reality, industries have few incentives to partner with universities. It is theoretically possible that universities could transfer government funding or support to industries to lower the cost of business because they should undertake their mission to boost social production, particularly R&D [Range & Etzkowitz, 2013]. However, the current gap between higher education and industry has hindered transformations in research, which in turn has led to the deficiencies of Chinese educational industrialization.

It is hardly accidental that the BRI has overcome barriers to increasing the efficiency between industry and university and encouraging similar improvement in joint countries. Three factors illustrate what the Chinese government, university, and industry itself, respectively, have achieved for industrial development: tax breaks, university-sponsored technology business incubators, and entities' independent researches. According to Xinhua News, in 2014, Premier Li Keqiang announced a policy by which companies could decrease their taxes and assign importance to their R&D efforts if they upgraded their high-tech equipment to improve the manufacturing industry. Meanwhile many universities in China have government-funded business incubators on campus to encourage more entrepreneurs to design start-ups through which they can apply their research findings into practice. Regardless of whether they are students or instructors, these entrepreneurs are allowed to obtain more financial support, such as funding, from universities directly and from the government indirectly. In detail, Premier Li's policy asserts that more than 90% of venture capital funds in China are derived from governments domestically [Tang et al., 2014]. Though the government also funds incubators in the university, it expects tertiary education entities to balance government and industry and to decentralize to improve the markets' efficiency and innovation. Likewise, many leading enterprises have been seeking ways to develop their innovation competence to meet market demands. Take Huawei, the largest mobile manufacturer and hi-tech company in China, as an example to illustrate how this might occur. According to a recent interview with Zhengfei Ren [2019], the company's founder, Huawei built a team of researchers, including 6,000 foundation researchers and 60,000 engineers in all disciplines.

The proportion approaches 45% of the entire Huawei workforce; over 80,000 employees were involved with R&D. Huawei's R&D investment over the past decade has reached CNY480 billion [Huawei, 2019]. Though small companies have limited resources to support such independent research on a large scale, large entities could generate more opportunities and progress for Chinese markets by conducting R&D independently. By these means, they could also bring market changes to many BRI countries. These further protections foreground the research values designed to bring about benefits for the higher education sector.

### 2.1.3 Institutions

. At a fundamental level, the BRI is designed to share China's higher education development and reformation experience with countries along the route and to obtain common prosperity. According to official statistics, China has carried out educational consociation with over 46 important international organizations in a short period. Without a doubt, this fabulous network constitutes a

significant opportunity to steer BRI countries away from excessive debt dependence toward new multipolar politics [Michael, 2019]. Behind this historic façade, Chinese institutions, as the primary productive force in the field of domestic scientific innovation, economic progress, and social evolution, act as a vital model for the going out collaboration strategy as well. Moreover, the Office of the Leading Group for Promoting the Belt and Road Initiative [2019] also underlines that one of the most imperatives for these institutions is to bear the responsibility of increasing academic yield and promoting educational exchange.

#### *Exploring Educational Collaborations*

. With the ever-growing number of infrastructure and construction projects, the BRI program has boosted the demand for quality higher education on unique fronts [Linney, 2019]. The situation eventually incorporates educational institutions as a necessary component of industrial development and produces ripple effects across the globe.

The BRI gives international institutions credit for providing educators with greater opportunities. The Chinese government assigns great importance to the symbiotic relationships among major organizations, such as the East Asia Summit (EAS), Asia-Pacific Economic Cooperation (APEC), China-Arab States Cooperation Forum (CASCF), and UNESCO. Through joint efforts, numerous regional platforms, such as The Alliance of International Science Organization (ANSO), have been established to reinforce collaboration in the field of higher education. More specifically, this department was launched under the framework of the BRI and involves volunteers from participating countries and institutions. The latest report shows that the first 37 ANSO members have discussed and worked out the ANSO Action Plan for 2019–2020. It plans to set up awards, scholarships, industry associations, and joint training projects to build an optimal mechanism and platform for sci-tech cooperation, meet common challenges, and promote sustainable development [Michael, 2019]. Another example is the China-Africa Think Tank Forum. According to a rough estimate, at least 18 private African higher education institutions have signed the cooperative agreement and unveiled a plaque for the China-Africa Education Research Center. By 2018, 539 programs had begun to provide education at the undergraduate level or higher in many different fields, such as marine technology, special education, philosophy, law, and finance and investment management [Chen, 2018].

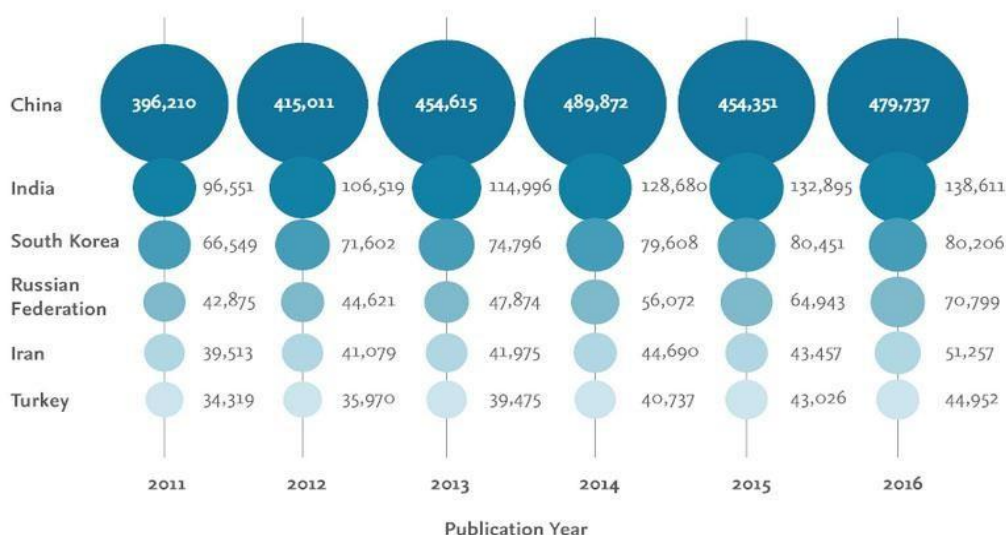
#### *Unconstrained Communication*

. The ancient trade routes that crisscrossed China and the Eurasian continent also fostered the confluence of diverse cultures and languages. Not only were goods transported and exchanged along the Silk Roads, but a continuous flow of ideas, cultures, religions, and languages were also an important part of the exchange [Millward, 2009; V. Hansen, 2017]. At present, Chinese institutions, as the outbound pioneers on the Modern Silk Road, face a similar situation. To reduce language barriers and build links with other countries, the Chinese government has established an open courseware consortium. The project aims to expand outreach and language learning exchange programs at the organizational level. In addition, with the top-down implementation of educational strategies in the BRI, the International Division of the Ministry of Education signed a cooperative agreement in 2015 called The Multi-Faceted Construction of Language Program with Beijing International Study University, which intends to offer 94 language majors. As such, Chinese institutions have comparatively completed coverage of the curriculum design of foreign languages [Ke & Wan, 2017]. Moreover, the measure explicitly provides an ideal opportunity for each party to cultivate advanced practical language personnel and improve the quality of foreign language education.

As previously discussed, it is thus not difficult to imagine that students from nations along the route of the BRI are pouring into China, reshaping regional education, and affecting global higher education. In the past year alone, enrollment from Belt and Road partner nations has jumped 12% to 317,000 students, which makes Chinese educational institutions a “magnet target” for many BRI developing countries [Michael, 2019]. In regard to academic output, significant gains from the numerous international students are already evident. Based on authentic data, China is the most

prolific producer of scholarly output compared to the other countries on the Belt and Road. In 2016, China produced 479,737 publications— 246% more than India, the country with the 2nd highest research output of the Belt and Road countries [Evans, 2017a]. This will surely draw forth an upward spiraling effect, encouraging educational neighborliness that will in turn create attractive academic context by means of diversified academic productions' sharing. Furthermore, multicultural exchange will generally stimulate improvements to the academic environment. The figure below indicates an increase over time in collaborative communication, a trend likely to be further accelerated by the initiative [Evans, 2017b].

Fig. 1. The Amount of Publications in BRI for Major Countries



Evans, L. [2017]. The Amount of Publications in BRI for Major Countries.

(<https://www.elsevier.com/connect/infographichow-chinas-one-belt-one-road-initiative-will-change-research-collaboration>). Copyright 2017 by Scopus.

### 3. Results & Conclusions

Internationalization in Chinese higher education is buttressed by the BRI and has thus entered a new phase since the construction of the BRI in 2013. A shift from internationalization abroad with its strong focus on a small elite group of mobile students, faculty, administrators, and programs toward internationalization for all members of the academic community has become more urgent than ever [Hans & Altbach, 2020]. This process of internationalization is constantly evolving in response to local, national, regional, and global environments. Not only has the BRI transformed the strategies of China's higher education internationalization, but it has also fostered the evolution of internationalization from a traditional process to one based on the values of cooperation, partnership, exchange, and mutual benefits. The transformation of internationalization itself has centered on the "scope and scale of cross-border initiatives" [Deardorff, 2012], including branch campuses, the multilateral recognition of degrees and diplomas, faculty and student mobility schemes, franchised programs, and research networks. Based on the aforementioned discussion, the impacts of the BRI on Chinese higher education can be illustrated by two major points: the supply side vs the demand side and bringing in vs going out.



### 3.1 Supply Side and Demand Side

Given the gathering momentum of the BRI, the importance of nurturing an international system, adjusting customs to ease international relations, for all the people along the route has become increasingly prominent. Considering its mighty engineering, which involves the cooperation of various sectors of society, the construction of the BRI requires the scientific integration of the “supply side” of international talents trained in Chinese higher education and “the demand side” of the countries along the Belt and Road. Subsequently, this need to enlist the labor markets of various industries rests on the pivotal function of institutions to stimulate the academic output in the BRI. At present, the “demand side” of talent in the countries along the route incorporates numerous fields, which are principally categorized as infrastructure construction, regional economy and trade, and cultural exchange and cooperation [Qu, 2015]. First, the infrastructure of these countries is generally below the global average. According to the Logistics Performance Index (LPI) report released by the World Bank in 2013, the average LPI of these countries was only about 2.8 points, which was lower than the world average (2.9 points) [Pu, 2015]. At the same time, according to the assessment report by the Asian Development Bank, from 2010 to 2020, countries in the Asian region alone will need to construct thousands of cross-border transportation, energy and power, and petrochemical projects, and the total funds required to realize these projects is close to eight trillion dollars. Hence, the urgent demand placed on the countries along the route enhances the need to cultivate international talent from the supply side in the areas of engineering technology, project design, and engineering management. Second, it is not difficult to determine that the majority of the countries along the BRI route are in the process of economic development. The average GDP growth rate of these countries is as high as 3.9%, which is much higher than the world average of 2.2% [OECD, 2018]. The persistent trade cooperation and economic exchanges that bolster this rapid economic growth are owed to a high degree of dependence on cross-border trade. According to the World Bank report [2019], the dependence on foreign trade of the countries along the route increased from 32.6% to 34.5% between 2012 to 2019, while the global average during the same period was only 24.3%. Consequently, the favorable formation of the economic and trade order necessitates a large number of international professionals who are well acquainted with international rules, capital operations, and economic management. Finally, despite the above-mentioned advances in language education, over 100 languages are spoken in the countries along the Belt and Road, nearly 20 minor language programs still remain to be fully established in China [V. Hansen, 2017]. Effective language communication is a key prerequisite for cooperation in political, economic, and cultural exchanges. Thus, it is imperative to enhance the training of minor language talents who are equipped with local knowledge. In general, in the course of the internationalization of higher education, China and the other participants in the BRI must adjust according to the symbiotic connection between the supply side and the demand side in order to synchronize national needs with the path of educational development and coordinate the relationships of governments, industries, and institutions.

### 3.2 Bringing In and Going Out

By and large, the world has a large regional development gap constraining trade, openness, and future prosperity [OECD, 2018]. The gap is not only severe on a material level and economically backward, but it is also barren in a spiritual sense and exacerbated by deficiencies in education. To simplify the matter, it means that the lack of the regional recognition in the educational domain in some countries drags the overall civilization of spirit into the stagnant stage. Multiple organizations, departments, and even countries, however, are working hard to help resolve this disparity. Most recently, China, the entrepreneur of the BRI program, has pursued various options to determine if all the participating countries and international participants would benefited from its initiative. As mentioned above, the BRI is overseen by a leading group of local governors, who manage the bringing in initiative, but generally speaking, the weak link in the national investment project is not the development of domestic industry but the strategy of going out. To implement this strategy, the

Chinese government is estimated to contribute over 1 trillion USD of outward funding for foreign infrastructure over the 10-year period beginning in 2017. While new vehicles have been constructed to facilitate financing, such as the Silk Road Fund, most of the Chinese funding for these projects will come from state-directed development and commercial banks [OECD,

2018]. This endeavor is confirmed by Chinese President Xi's statement during a public speech in 2017 as well: "China will actively promote international cooperation through the Belt and Road Initiative. In doing so, we hope to achieve policy, infrastructure, trade, financial, and people-to-people connectivity and thus build a new platform for international cooperation to create new drivers of shared development" [Betz, 2020]. As such, no one disputes that these efforts will surely be fruitful in the end. Yet, as is often the case, the communication between different countries faces the challenge of "multicultural hybridization." In this regard, the culture clash could be occurring in many fields implicitly and could then seep into the BRI program more broadly. In other words, if involved sectors leave the issue unchecked, a significant amount of work will be wasted, and the slogan going out will become empty rhetoric. Attempts to address this problem include ensuring that all recruits should be trained as cross-cultural practitioners and that legislators tailor specific ordinances or promotions for these cases. At present, discussion of these treatments among official authorities in different countries, of course, is no more than a platitude, but it is true. Fortunately, there are better ways of handling this conundrum that is, economic impact. The English language dominates today's international business communications, largely thanks to the investment and trade impact of Western economies. Nevertheless, many Belt and Road countries communicate in Russian, Arabic, Persian, and many other languages, as they mainly engage in regional trade rather than global business [Yung, 2016]. Moreover, Chinese investors, largely state-owned enterprises, have made significant investments in various fields in the countries along the route. Not surprisingly, these economic interactions can promote cultural blending as well as serve as a tool to transmit a single cultural concept of value. Under the context of the BRI, the impacts of Chinese cultural sphere have been widely perceived as diffuse and permanent features for the societies in the nearby countries to absorb its quintessence and apply it into different material departments---government, institution and industry. Therefore, not only can the cultural factors shape the outlook of the economic development, but the economic growth can also define the components of culture. Neither could supplant the other.

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