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The Belt and Road Initiative and University Efficacy in Shandong Province, China: A Critical Literature Review

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ABSTRACT: The expansion of higher education internationally is an aspect of university growth, particularly with regard to the Belt and Road Initiative (BRI) of China. Educational projects connected to the BRI enable universities to improve their international partnerships, staff's academic collaboration, and student movement across borders, and enhance their institutions. However, transformation of universities in this regard depends on university strategies and the best use of available resources. This paper reviews "literature on the Belt and Road Initiatives (BRI) and university efficacy, and offers new research on university efficacy in Shandong Province, China. Using the literature on higher education, the review will examine university efficacy concerning staff and student academic performance and research, the physical and social infrastructure of the university, and international exchange of students. University Globalisation Level (UGL) and Policy Implementation Effectiveness (PIE) will be the main conceptual elements of the review. The review aims to identify research and theory gaps. The review will analyze and interpret research within the boundaries of the region, and offer ideas to academic and policy issues. The review will develop research strategies and plans to address the gaps. The main purpose of the review is to present a research design to conceptualize the relationship that exists between university globalisation and University outcomes. The design offers a way to conceptualize university globalisation and university outcomes, as well as describes ways to do research to address gaps related to university globalisation, especially in universities of Shandong Province.

1. INTRODUCTION

Background of the Study

Higher Education has internationally with Academic and Student mobility and collaboration. This has resulted in Internationalisation of Higher Education systems. Each University has a strategy on how to Internationalise its system. Important to note is that the Internationalisation of Higher Education is not restricted to establishing International partnerships. Rather Universities must review how International partnerships and mobility are integrated in the University's Academic and Research priorities, processes and services.

The Belt and Road Initiative has was formulated to enhance International Cooperation in various sectors including Education and Research. Chinese Universities are actively collaborating to develop International partnerships and initiatives focusing on Internationalising higher education and Talent development. These collaborations have also focused on addressing Educational needs in various regions (Liu et al, 2022). It is important to understand International initiatives that Universities are engaged in and the outcomes of such activities. This however does not necessarily mean improved performance of a university.

Numerous aspects of the relationship have been addressed in different studies. For instance, Gong et al. (2020) looked at the influence of the Belt and Road Initiative (BRI) on the internationalization strategy of Chinese universities. Ge and Ho (2022) looked at the role of vocational education and international cooperation in the context of internationalization of Chinese higher education. Other studies looked at international student mobility in the context of the BRI (e.g., Li et al., 2026). While international student mobility is a positive development in higher education, not all positive developments indicate improvements in other aspects of higher education.

University efficacy is the ability of higher education institutions to achieve their educational and administrative goals. In this study, University efficacy is analysed in regard to academic performance, the development of university infrastructure, and the establishment and implementation of international student exchange. Of the three aspects, the development of international student exchange is directly related to student mobility. Academic performance encompasses the entire spectrum of the academic and research activities of the institution. University infrastructure encompasses facilities and resources for the achievement of the goals of the institution.

Another aspect worth considering is the presence of internationalisation policies. International partnerships and agreements can offer universities an opportunity for development, but how effectively these opportunities are implemented depends on the commitment of the institutions involved. It has been documented that China's implementation of internationalisation has encountered challenges due to a lack of organisational alignment (Jin et al., 2020). Considering these cases, it is important to look into the policies that universities have in place and assess why international activities lead to differing outcomes.

Shandong Province offers a context for this assessment. It is important to look at the existing studies on Chinese higher education and determine whether the studies address the issues faced by universities in Shandong Province. When there is a lack of studies addressing issues in Shandong, the review outlines possible reasoning for national-level phenomena and assesses whether they are applicable to Shandong Province.

Problem Statement and Research Gap

Existing scholarship has explored higher education, internationalization and student mobility within the framework of the Belt and Road Initiative. Nonetheless, these studies do not always elucidate the relationship between engagement and the various dimensions of university performance. Internationalization research has sometimes analyzed academic collaboration, policy, and student mobility without addressing the impact on university structures and exchange.

Related issues occur with respect to institutional policy implementation. While international agreements and strategies, when combined with University policy, provide evidence that the goals of the agreements and strategies may be realised, they do not demonstrate that the universities have the means to do so. Furthermore, they do not illustrate how the universities would organise and manage the strategies. Thus, evaluation of the effectiveness of policy implementation may highlight the relations between university internationalization and university policy.

Also related is the potential of a more applied research focus on the Belt and Road Initiative (BRI) to the higher education sector. Research focusing on the development of higher education policy or the internationalization of education in specified countries or institutions may not easily transfer to other countries or institutions. Thus, the applicability of prior research to Shandong Provice must be assessed.

This study integrates, and enhances through criticism, published literature on the convergence of Belt and Road Initiative (BRI), Internationalization of Universities and Research Policy. It focuses on the University Globalization Level (UGL) and the Effectiveness of Policy Implementation (PIE) in the context of higher education and research. In critiquing existing literature, this study assesses the possible implications for Internationalization at Universities of Shandong Province. It will not, however, implement or substantiate the suggestions offered in the literature reviewed.

Aim and Research Questions

The aim of this paper is to critically examine the literature on the Belt and Road Initiative (BRI) in Shandong Province, China, regarding the participation of higher education institutions (HEIs) in the BRI and to establish a conceptual framework on the role of HEIs in achieving institutional effectiveness through the integration of internationalization and other policies.

The review addresses three research questions:

1. What is the existing literature on BRI-related international education and university internationalisation?
2. What is the role of policy implementation in connecting university globalisation, academic achievement, and performance, and in establishing international student exchange and other academic and related activities?
3. In what ways and to what extent do current literature and research have conceptual and contextual limitations when dealing with university efficacy in Shandong?

2. REVIEW METHODOLOGY

The study uses a critical literature review to examine the existing literature and research on Belt and Road Initiative (BRI) and higher education internationalisation, and assesses the possible implications of the research to university efficacy in Shandong province. This review incorporates different types of literature including theoretical and empirical research. This review aims to develop and construct theories and frameworks. This review does not aim to study causal relationships or to prove the presence of theories and frameworks in Shandong province.

2.1 Search Strategy and Search Record

A literature search on publicly available scholarly works and publications was conducted on 14th October, 2026. The search focused on integration of literature and research on Belt and Road Initiative (BRI), higher education and internationalisation; Internationalisation of Chinese universities; international student mobility and academic exchange; and the internationalisation of higher education in Shandong. Search strings were broad, and literature was assessed at title and abstract levels. Relevant literature was accessed and examined in its entirety.

Search Terms Used: (1) "Belt and Road Initiative" AND "higher education" scholarships; (2) "Belt and Road" AND "higher education" AND international student mobility; (3) China higher education internationalization; (4) international education cooperation; (5) site:doi.org "Belt and Road" higher education and internationalization; (6) China "International cooperation"; (7) Jin Wen Zhou 2020; (8) higher education institutional performance.

Performed eight searches and the search interface showed 27 results. The 27 results shows the results displayed by the search interface. The results do not show the total records held by a database. After removing the repeat results, 17 records remained. I assessed these records and 13 records were relevant to this study and one record was not related to the subject of the study and was remove. These data refer to public web searches and do not represent searches from Scopus or Web of Science.

2.2 Screening and Eligibility

Materials were selected if they pertained to at least one of the following: Sino-British higher education collaboration as exemplified by case studies of other Sino-foreign collaboration in higher education, internationalization of Chinese higher education, internationalization of Chinese universities, teaching and learning of international students/mobile learners, and contextual/empirical evidence related to higher education of Shandong province. Peer reviewed articles took precedence. University webpages were considered contextual evidence. Higher education reforms of broader nature and not pertaining to the review questions were excluded. The focus of the review was the synthesis of evidence. In the absence of published articles, significant effort was made to locate and review other available literature. Peer reviewed articles and other relevant publications may exist but could not be located. During the review of the literature, evidence of collaboration between the researchers was found but was not systematic. Available titles and abstracts along with information made available by publishers and/or repositories were the basis of the review. Where the full text was not available, the review was based on the abstract.

The researcher was exploratory and transparent with respect to the extent and methods of the search rather than making a claim of having searched exhaustively. The hits reported for Web of Science (WOS) and Scopus in this search would have undoubtedly been higher. Other researchers are likely to obtain the same or similar results using the same searches and dates. It is possible that over time, the results ranked lowest in relevance may change.

2.3 Search and Screening Summary

Search date: 14th October 2026. Search methods: Scholarly web results, publisher pages and institutional repositories. Searches conducted: 8. Maximum results shown: 27. Distinct results after deduplication: 17. Literature reviewed: 13. Literature excluded after title and abstract screening: 4. No PRISMA-style flow diagrams are included.

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The literature included studies on the BRI's international and policy trends (Ge & Ho, 2022; Gong et al., 2020; Jiang, 2021; Ma, 2021; Yue et al., 2022), university alliances and knowledge diplomacy (Chou & Demiryol, 2024; Li & Ruby, 2020; Liu et al., 2025), international student mobility (Li et al., 2026), university level barriers to internationalization in China (Jin et al., 2020) and international student education in Shandong and University level internationalization in Shandong (Wang & Li, 2016; Wang et al., 2025; Zhu, 2021). Literature has been reviewed based on the evidence and methods employed and not integrated.

Table 1

Screening category	Count	Decision/interpretation
Search queries executed	8	Exact strings listed in Section 2.1
Result entries displayed	27	Displayed entries across eight public-web searches; not total database hits
Distinct records after deduplication	17	Repeated items across result pages removed
Retained for core synthesis	13	Direct/contextual relevance to BRI, Chinese higher-education internationalisation, implementation, mobility, or Shandong
Excluded after title/abstract-level screening	4	Broad/general items or institutional promotional content not suitable for core scholarly synthesis

Table 2. Record-level screening decisions

Record/source	Decision	Reason
Jiang (2021), BRI and higher-education internationalisation review	Retain	Directly addresses BRI-related higher-education internationalisation
Ma (2021), BRI and change in Chinese higher-education internationalisation	Retain	Policy and internationalisation context
Ge and Ho (2022), China's tertiary-level internationalisation under BRI	Retain	Directly relevant policy analysis
Gong et al. (2020), Chinese universities' overseas education markets	Retain	Empirical analysis of BRI and overseas expansion
Jin et al. (2020), implementation of a university internationalisation plan	Retain	Evidence on institutional implementation barriers
Liu et al. (2025), Chinese universities and knowledge diplomacy	Retain	Case-based evidence on university BRI programmes
Li and Ruby (2020), BRI and higher education alliances	Retain	Context on university alliances and internationalisation

Li et al. (2026), BRI and international student mobility to China	Retain	Quantitative evidence on student mobility
Yue et al. (2022), review of BRI higher education themes	Retain	Synthesis of relevant BRI/higher-education themes
Wang and Li (2016), foreign-student education in Shandong	Retain	Regional evidence on international student education
Wang et al. (2025), internationalisation strategies in Shandong public universities	Retain	Recent Shandong-specific empirical evidence
Zhu (2021), internationalisation in Shandong university system	Retain	Regional case study covering 12 universities
Chou and Demiryol (2024), university alliances and BRI	Retain	Conceptual context for alliance purposes and knowledge diplomacy
Si (2026), broad review of internationalisation in China	Exclude from core count	Broad national review; useful background but not counted among 13 core retained records
China higher-education reform review (2022)	Exclude	Broad reform synthesis not sufficiently focused on BRI or Shandong outcomes
Shandong University Weihai international strategy webpage (2024)	Exclude	Institutional webpage; contextual only, not peer-reviewed research
2026 geopolitical-shifts article on internationalisation	Exclude	Broad comparative policy topic not sufficiently focused on the review questions

3. THEORETICAL FOUNDATIONS AND CONCEPTUAL PERSPECTIVES

3.1 Higher Education Internationalisation and University Globalisation

A body of work exists on internationalization of higher education focusing on international networks and alliances, mobility of students and academics, and transborder movement of knowledge. Knight (2004) conceptually positioned internationalization of higher education as incorporation of international and intercultural/interdisciplinary dimensions in the missions and operations of universities. It should be understood as a progressive and systemic change within the university and not an increase in the number of international students or partnerships.

The same author (Ma, 2021) provides an analysis of the influence of the BRI on the internationalization of Chinese higher education, and illustrates how international cooperation and other linkages assisted the Chinese universities to define their strategies. Internationalization of Chinese higher education and the integration of BRI have also been explored in other works (Liu et al., 2025).

University Globalisation Level (UGL) in this study is defined by the extent of international collaboration in academic work, student and staff exchange, and online and off-site teaching. UGL resides at the institutional level and has not been previously studied, thus, it is difficult to specify its influence on the effectiveness of universities. It should, however, be noted that establishment of international partnerships does not necessarily mean that the University has improved its academic staff, research and student outcomes, or its physical and academic infrastructure.

3.2 The Belt and Road Initiative and Chinese Higher Education

The policy has largely facilitated the international staff and student recruitment, research collaboration and higher education service provision. These have in turn shaped transnational higher education partnerships. The research and higher education service provision along the BRI have also been noted.

The policy has influenced the mobility of international students. One of the strengths of this study is that it has discussed the influence of the BRI on the mobility of international students to China. It is, however, important to understand that increased international student mobility does not improve university effectiveness. Enhancing university effectiveness through international student mobility depends on the variety of student services, the level of academic integration of international students, and the quality of academic and research collaborations.

These viewpoints are applicable to Shandong University because they help describe how universities in the region transform world-wide cooperation opportunities into specific measures. The potential impact of various country-level reforms on universities in Shandong is an case-specific, empirical question.

3.3 Policy Implementation Effectiveness

Internationalization is a strategy through which universities are positioned to achieve global presence and engagement. As shown by Jin et al. (2020), before universities in a given country/region implement internationalization strategies, they need to look inwards to identify and address the challenges that such an implementation may pose. In the end, the challenges of implementation will likely shape the strategies of internationalization.

Implementation of internationalization plans calls for cooperation and integrated efforts of multiple administrative units of a university. Whether such a will exists is an empirical question. The PIE framework, in the context of internationalization of higher education, helps evaluate international focus of universities. The framework provides a way of conceptualizing the existence of internationalization plans and structures in universities.

PIE and UGL are not necessarily correlated. While a university may not implement and evaluate internationalization strategies, other university structures may enable the university to create, sustain and strengthen international linkages. The same structures may enable a university to transform available international opportunities into its educational and organizational benefits. The intent of the PIE Framework is to describe potential internationalization of higher education.

3.4 University Efficacy and Institutional Outcomes

This study measures university efficacy along three lines: academic performance, infrastructure, and international student exchange. These lines reflect distinct but complementary aspects of institutional performance.

Academic performance refers to achievements in learning, teaching and researching, as well as scholarly activities and collaboration. Internationalization of higher education may facilitate the development of international partnerships and engage the institution in knowledge and research collaborations. The extent to which international contacts and collaborations improve academic performance depends on various factors and requires assessment through appropriate institutional indicators.

Infrastructure refers to the physical and digital resources and services on which an educational system and its institutions rely. The same is true for human, financial and other resources. International collaboration may promote development of innovative research and educational infrastructures. In the absence of adequate resources and capacity, improvement of research and education infrastructures through international cooperation may not occur.

International exchange of students is one dimension of internationalization of higher education. Student exchange enables the cross-border mobility of students and is recognized as one of the most relevant forms of educational collaboration (Li et al., 2026).

Along the three dimensions mentioned, university efficacy may be considered in relation to specific policies, strategies and infrastructural capacities (PIE) and further considerations may be warranted. It is proposed as a basis for further study and research.

4. CRITICAL REVIEW OF EXISTING LITERATURE AND RESEARCH GAPS

4.1 Internationalisation and BRI-Related Educational Engagement

Internationalisation of higher education as concerned with the flow of students and academics across national boundaries. The special case of Internationalisation in managerial control is also found in the literature (Knight 2004; Qiang 2003). Knight (2004) proposes that Integration of International, Intercultural or Global dimension should reflect in the strategies and operation of the university. Qiang (2003) takes the position that Internationalisation should embrace the policy, administrative, and financial functions of a university, and should not be limited to international mobility.

These views offer support for the construct of University Globalisation Level (UGL). However, reliance on international alliances and/or international student enrollments should not be the only/sufficient criteria to validate/confirm UGL of an institution. It may engage in extensive International collaborations, but University curriculum, research, governance, and other policies may remain unaltered.

This field of study embraces research on the role and policies of the BRI in Internationalising higher education in China (Ma 2021) and related migration and education services (Ge and Ho 2022). Another study (Gong, et al. 2020) focuses on BRI's role in Internationalisation of Higier Education in China and its Impact on the Quality of Education in China. Ge and Ho's (2022) study describes the role of higher education in BRI. Additional studies describe Internationalisation of higher education in China (Fransen and Holten 2019) and the role of China in Internationalising higher education (Galtung 2004; Ma 2020, 2021; Nelson 2020). These studies may also contribute to the validation/verification of research on University Globalisation Level (UGL) but should not be entirely depended upon.

We must consider the differences in evaluating efficacy claims. Internationalization allows universities access to different networks, funding and markets. However, there are also costs and risks, including inefficient use of resources, reputation and operational risks. Li and Ruby (2020) also note that the connection between cooperation and higher education in the context of the BRI is of interest. Regarding challenges in the implementation of various policies and the prioritization of other policies, recent literature confirms the analyses of Li and Xue (2022). Overall, it supports the analysis of the BRI as an enabling factor and not as an evaluation of a university's performance. It also shows that for different reasons, including resources and strategy, universities can have different cooperative partnerships.

4.2 International Student Mobility and Academic Outcomes

In the context of higher education and the Belt and Road Initiative (BRI), international student movement is one of the few phenomena that can be measured. Using a difference-in-differences framework, Li et al. (2026) analyze the impacts of the BRI on international student movement to China and find evidence of an increase in student inflows. In a separate study, Li et al. (2025) provide evidence on the factors influencing the choice of international students in terms of the destination country of their higher education. Overall, the studies provide evidence on student flows to and choice of higher education destinations, respectively, and reinforce the case for considering international student mobility as a distinct area of study.

Establishing exchange programs between higher education institutions and incorporating them within curriculum sequencing and other similar initiatives, while assessing the impact on learning outcomes of the participating students and addressing academic performance of the host universities does not require evidence in the form of student flows. Thus, in the absence of evidence, it cannot be concluded that such programs contribute to improvement in academic performance of the universities.

Liu et al. (2025) examine three Chinese case studies of educational partnerships in Central Asia, Southeast Asia, and Africa. Their analysis employs a knowledge diplomacy framework to demonstrate how Chinese universities enhance their country's international relations and development goals. This analysis offers context but does not aim to determine average case studies across Chinese universities. Gong et al. (2020), in a different context, focus on the international activities of Chinese universities rather than students studying in or out of China. Taken together, the literature addresses the internationalization of higher education in a variety of ways, including the influx of students, exchange programs, and academic offerings.

A key point is that the number of students and quality of students should not be conflated. The performance of a program is evaluated through various mechanisms, including the existence of exchange programs and agreements, students' completion of programs, the recognition of academic credits, and the overall experience of students. International student exchange programs are one of several methods to improve the internationalization of higher education offered by a university. In this context, it is

necessary to differentiate international exchange programs and the benefit realized by students, as the international offerings of universities may vary widely based on their location.

4.3 Policy Implementation as an Institutional Mechanism

The inability to translate engagement with international organisations into the establishment of international branches and campuses may be explained by reference to the factors that influence the implementation of internationalisation strategies and plans. Jin et al. (2020) examine the implementation of an internationalisation plan in a leading Chinese research university, and highlight the gaps within the University management team as an implementation barrier. Li and Xue (2022) identify similar barriers in the formulation and implementation of various policy instruments of higher education internationalisation in China. Liu et al. (2025) identify a similar situation, where universities focused their international activities on both institutional and external priorities, in the process of implementing collaborative projects.

Based on Jin et al. (2020), barriers to implementing internationalisation plans at an institution may be amenable to policy adjustment. Li and Xue (2022) and Liu et al. (2025), on the other hand, identify the need for deeper, integrated policy implementation to achieve broader, transformative changes, beyond the higher education sector, focusing on rebalancing and modernising the international functions of the state. Overall, the studies identify a need for the establishment of integrated policies, implementation, and coordination to leverage institutional and human resources in order to effectively manage the institution's international activities.

While the framework places PIE as a potential mediating mechanism, it does not identify it as a causal mechanism. As such, the framework proposes that international engagement, specifically in the context of higher education, creates opportunities. However, it is implementation capacity that ultimately determines if and how these opportunities lead to activities and results. It is useful to consider alternative rationale for internationally engaged higher education institutions. More affluent higher education institutions may be more internally and externally engaged, and may achieve better outcomes. Successful higher education institutions may attract more partners and engage in more activities. Finally, some countries, regions, and/or localities may encourage higher education institutions to be externally engaged and achieve positive outcomes. These rationale should be meaningfully accounted for in research, for example with adequate controls, and/or through research designs such as the Temporal and/or Quasi-Experimental approach.

4.4 Research Gaps and Contribution of the Present Study

First, existing research covers different aspects of international engagement, including international higher education cooperation, outbound internationalisation and mobility of students and academics (Li et al., 2026; Gong et al., 2020; Ge & Ho, 2022). Lack of integration of these fields leads to lack of knowledge about the relationship between international engagement and higher education institution outcomes. Integration of UGL with various outcomes may help clarify international engagement and higher education outcomes.

Second, the integration of 'strategic internationalisation' with 'implementation' in outcome-related models is rare. Studies regarding the barriers to the implementation of strategies in higher education point to 'inert' organisational constraints (Jin et al., 2020) and limitations to the adoption of strategies (Li & Xue, 2022). In this regard, PIE aims to reflect an institutional process. At this stage, the focus of the reviewing studies is on the rationale of the construct. Thus, measurement of the construct or assessment of its mediation role is beyond the scope of the reviewed studies.

Third, definitions of outcomes tend to be less broad than various conceptions of university efficacy. Research on student mobility can illustrate differences in the choices learners make and other alternative pathways, but can't account for academic results and/or lack of necessary faculty and infrastructure. The evaluation of educational systems suggests that for indicators to be useful, they must be congruent with the requirements and procedures of the organization being assessed; Chinta, Chowdhry, Alam, & Krishnan (2016) propose a multiple-dimensional framework to assess higher education systems. The authors' suggestions add to the assessment of university efficacy and reinforce the need to operationalize all dimensions of the construct.

Fourth, the sources relied on in this paper could not generate evidence to establish the relationships of universities in Shandong Province as a whole. It is possible there are related studies at the provincial level that have not been identified; this is a contextual limitation and not an absence of evidence. Reseach strategies, case studies and/or examples involving other universities,

particularly involving diverse international student mobility, may not be applicable to other institutions with varying capabilities and/or mission. Therefore this research provides a context-specific, testable framework and shows that evidence is lacking and/or might not be available to support the framework paths.

5. PROPOSED CONCEPTUAL FRAMEWORK AND RESEARCH PROPOSITIONS

5.1 Conceptual Framework

The UGL framework reflects universities' international academic linkages, collaborations, and student transfers. The PIE framework addresses universities' internal processes and structures to internationalize. UGL indicates universities' internationalization potential and effectiveness. This is expressed by three components: academics, infrastructure, and the international student mobility programs.

The UGL framework is grounded in Knight's (2004) definition of internationalization in higher education and studies on the internationalization of higher education in China (Jin et al., 2020). It takes into account the role of international education within the context of the Belt and Road Initiative (Ma, 2021; Liu et al., 2022).

Figure 1 demonstrates that UGL has three direct relationships, that is, positive relationships with university efficacy outcomes, as well as a positive relationship with PIE. The framework has three relationships between UGL and PIE, as well as three relationships between PIE and each of the university efficacy outcomes. The three indirect relationships are represented by P5a-P5c, and the other six relationships are represented by P6a-P6c.

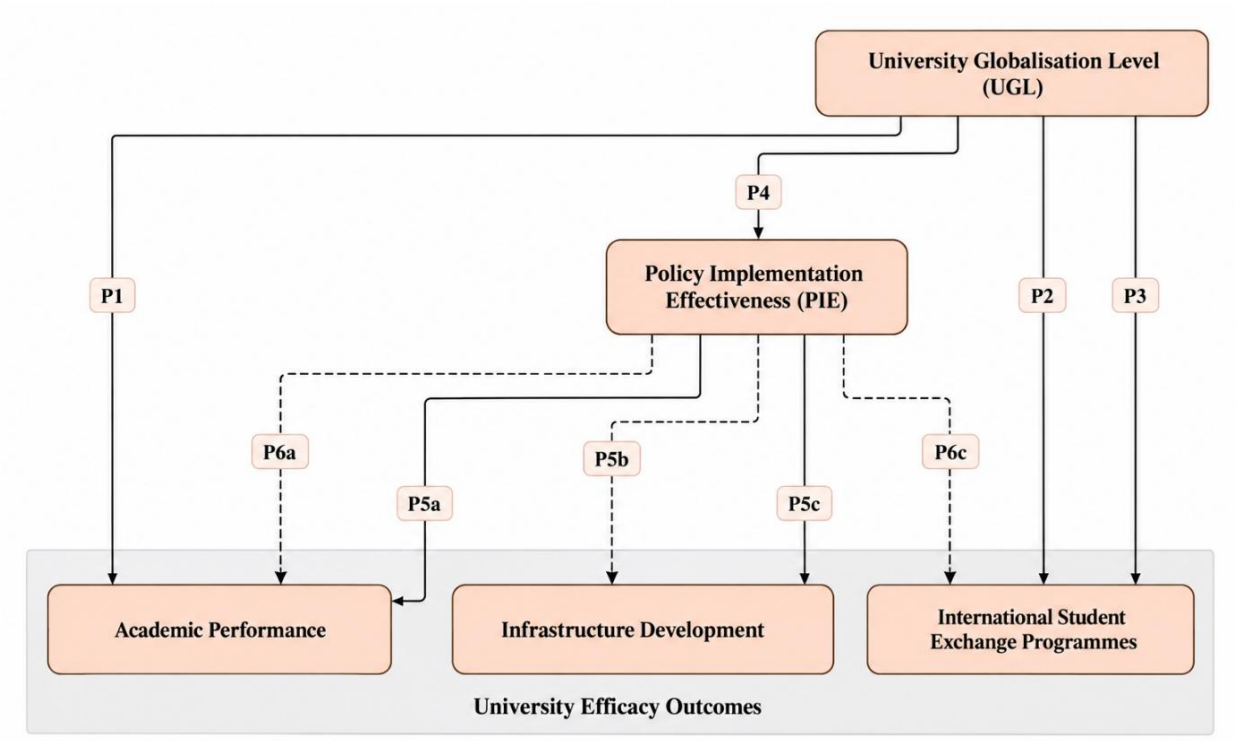


Figure 1. Proposed Conceptual Framework

Source: Authors' conceptualisation based on Knight (2004), Jin et al. (2020), and Ma (2021).

5.2 Proposed Relationships

International engagement has the potential to strengthen the three university efficacy outcomes. Engagement in international collaborations and initiatives offers ample opportunities for international exchange of knowledge, skills, and experience, and promotes development and infrastructure activities. This, however, depends on the readiness of the institution to take advantage of international opportunities and engagements.

Mediating Relationships: It is hypothesized that UGL is positively related to PIE. Additionally, it is hypothesized that PIE is positively related to the three efficacy outcomes. In the case that a university implements internationalization strategies adequately, it is possible that the university could improve its international partnerships and alliances, and leverage its resources to achieve its strategic goals and objectives. PIE could, therefore, be bridging the relationships between UGL and academic performance, and the infrastructure and international student exchange programs, and other alliances.

5.3 Research Propositions

Depending on the empirical evidence collected, the conceptual framework proposed in this study could test the validity of the nine hypothesized relationships between UGL, PIE, and university efficacy.

Direct relationships

- P1 is anticipated that UGL will be positively related to academic performance.
- P2 is anticipated that UGL will be positively related to the level of university infrastructure.
- P3 is anticipated that UGL will be positively related to international student exchange.
- P4 is anticipated that UGL will be positively related to PIE.

Relationships between policy implementation effectiveness and university efficacy outcomes

- P5a is anticipated that PIE will be positively related to academic performance.
- P5b is anticipated that PIE will be positively related to university infrastructure.
- P5c is anticipated that PIE will be positively related to international student exchange.

Mediating relationships

- P6a is anticipated that PIE will mediate the relationship between UGL and academic performance.
- P6b is anticipated that PIE will mediate the relationship between UGL and university infrastructure.
- P6c is anticipated that PIE will mediate the relationship between UGL and international student exchange.

These hypotheses describe theoretical relationships, and empirical verification requires testing using situation data from universities in Shandong Province, China.

5.4 Framework Implications

The novelty of the framework is to conceptualize university internationalization as a multidimensional process and to propose implementing country-specific policies as a process, and academic performance, institutional development and infrastructure, and student exchange as end states.

For universities in Shandong Province, the framework allows the exploration of the role of internationalization in the context of what country-specific policies are implemented and the relationship between the two in achieving institutional outcomes. The framework also addresses the conditions under which BRI-related country-specific policies are used in higher education to support the internationalization of universities.

6. DISCUSSION

6.1 Internationalisation as a Potential Driver of University Efficacy

From the literature, internationalization in higher education is an institutional process and is more sophisticated than adding international partnerships and students. Knight (2004) focuses on the integration of international and intercultural dimensions in higher education and, Ma (2021) has analyzed the relation of the Belt and Road Initiative (BRI) and Internationalization in China. Although the two authors do not focus on internationalization and University development, their views contribute to the examination of internationalization processes.

Rising international engagement does not always bring uniform benefits to higher education institutions. Gong et al. (2020) explore the internationalization of higher education in China. Li et al. (2026) look at international student flows to China. Both works have positive contributions to the field; however, they do not represent the same dimensions of higher education and do not contribute to the understanding of University advancement.

Taking into account the above, the framework examines University Globalization level (UGL) and assesses the relationship with three institutional outcomes.

6.2 Policy Implementation Effectiveness as a Mediating Mechanism

The use of Policy Implementation Effectiveness (PIE) as a mediating variable in the framework is original. The inclusion of PIE is justified by the fact that for the attainment of set goals of Internationalisation, their translation into practice is of immense importance. Jin et al. (2020) identified several barriers associated with the implementation of Internationalisation Plans of a Chinese Research University, and it shows that challenges related to the implementation of policies affect the pace and internationalisation process of universities.

The framework allows for the integration of international exchange and academic and infrastructural collaboration. Effective coordination and the right mix of resources would help universities transform international opportunities into on-campus outcomes. While this appears reasonable, it needs to be validated.

The framework also states that there will be variation in the extent to which a university is able to convert its global engagement opportunities into developments in its unit. This is due to the range of available resources, the prioritization of internationalization by university management and the international experience of staff, among other factors. It would be useful to identify and explore these variables in the context of other universities.

6.3 Implications for Universities in Shandong Province

The framework allows for the assessment of BRI related internationalisation of Higher Education in Shandong Province and beyond. Local and Regional variations in Chinese HE internationalisation are documented (Ma 2021) as are the roles of international staff, mobility and knowledge diplomacy (Li et al. 2026, Liu et al. 2025).

For University managers the framework outlines that international alliances and linkages should be strategically aligned to the University's goals and objectives. It proposes that University internationalisation policies and strategies can be re-appraised to include outcomes of education, research and scholarly collaboration (e.g. establishment of international joint degrees and educational alliances) and the built environment.

For policymakers, the case describes how assessing transnational education requires analysis of the resources and capabilities of the higher education institution. Support for transnational collaboration should be addressed in combination with the adequate means, organization, and mechanisms to assess impact. These suggestions for planning are based on the case description of higher education institutions in Shandong Province and not on an evaluation of these institutions.

6.4 Theoretical Contribution

The framework integrates the following three, often-unrelated, areas of study: higher education internationalization, policy and implementation, and university effectiveness. As a first, it presents UGL as a higher education institution-level construct that leads to multiple end-states. Next, it presents PIE as a bridge between internationalization of higher education and the university's internationalization. Last, it differentiates the end-states of academic and research performance, university infrastructure and the facilities to support it, and international student exchange.

Beyond describing internationalization of higher education to encompass transnational education, the framework remains at a general level. While it gives suggestions for further research, it does not claim to have proved the suggested connections and relationships in the framework.

6.5 Limitations of the Existing Evidence

There is a wealth of information on certain aspects of higher education internationalization relating to the Belt and Road Initiative, international student mobility, and internationalization of higher education. However, not all of these aspects of research provide information on the same level of university or higher education institution effectiveness.

More evidence is needed before conclusions on internationalization and universities in Shandong Province can be drawn. The current framework relies on contextual analysis to interpret institutional indicators. Research in the field should attempt to define UGL, PIE and their respective outcomes, validate the definitions and measures, and examine the proposed relationships. Relevant data should be analyzed.

The relationships discussed in the previous sections demonstrate the value in studying the relationship between internationalization and university efficacy in the context of both external activities and internal processes. This framework provides a context in which to integrate these relationships and clarify areas of ambiguity.

7. PRACTICAL AND POLICY IMPLICATIONS

7.1 Implications for University Administrators

The authors suggest that universities in Shandong Province should pay more attention to the internal aspects of internationalization, and benchmark internationalisation more in terms of institutional outcomes rather than the numbers of international partnerships or exchange programs. It should be noted that the approaches suggested by the authors are more generally applicable to universities worldwide rather than being particular to universities in China or Shandong Province.

Managers should ensure that internationalization activities are prioritized by setting clear responsibilities, and funding international collaborative research and faculty development. Finally, university managers should encourage international activities (both research and teaching) which are aligned to the University's strategic plan.

7.2 Strengthening Policy Implementation

Policy Implementation Effectiveness (PIE) provides insights into the domestic employability of international work/study-related experiences. Jin et al. (2020) describe the challenges of implementing internationalization at a Chinese University. This illustrates the need to evaluate the internal functioning of universities to address internationalization.

International offices should be partnered with academic and research units, student services and planning units. Plans to implement internationalization should set and communicate expectations regarding responsibilities, performance and resources. Plans should be evaluated to identify barriers to the implementation of internationalization. Aligning the internationalization strategy with the goals of the university should facilitate the achievement of the objectives of internationalization.

These recommendations are drawn from the conceptual framework of the study. Their validation should be based on case studies conducted in the universities of Shandong province.

7.3 Improving International Student Exchange Programmes

There is a need to evaluate both the process and outcome of international student exchange. Student exchange should be considered in the context of other facets of international engagement. The study by Li et al. (2026) shows that the Belt and Road Initiative (BRI) promotes students' international mobility and provides insight into another facet of international student exchange.

There is a need to collect data regarding the extent to which international students integrate academically, the support international students access, the extent to which international students engage with the peer group and the quality of intercultural learning. Barriers to international student engagement and exchange should be identified through research that evaluates international student engagement. Exchange arrangements should be modified based on the research findings.

7.4 Policy Implications for Higher Education Authorities

Higher education authorities can develop guidelines and emphasise the importance of internationalisation at home by encouraging universities to connect their international partnerships with broader international education and development goals. Policy formulation must consider the extent to which a university is internationally engaged as well as the university's capacity and the quality of education provided.

In the case of Shandong Province, greater consideration of the variety of institutions might be more appropriate. When developing evaluation frameworks, academic and institutional collaboration and partnerships, and international student exchange, could be considered, without assuming the same goals would be appropriate for all cases.

Recognizing the diversity of institutions, policy encouragement of internationalisation should include the provision of tools to assess international collaboration and an improved standard for comparative reporting.

7.5 Implications for Future Institutional Evaluation

The framework defines potential pathways for analyzing the interconnections between University Globalisation Level (UGL), PIE, and University efficacy. Further analysis of universities should examine these pathways and determine whether the framework supports empirical evidence.

Indicators of university internationalisation can be found in the presence and strength of partnerships, academic collaboration, internationalisation strategies and plans, and university infrastructural investments. Student exchange can also serve as an indicator of internationalisation. These suggestions are examples of how internationalisation can be measured. They have not been formally validated.

This framework promotes the integration of internationalisation policies with a university's strategic plan, and provides pathways for the evaluation of the policies. The framework does not draw a relationship between the engagement of universities with the Belt and Road Initiative (BRI) and the effectiveness of universities.

8. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

8.1 Limitations of the Review

The goal of this study was to conceptually and theoretically build upon the body of knowledge relating the Belt and Road Initiative and university efficacy. The breadth of the literature analyzed and drawn upon to draw these conclusions was the main constraint of the study. Most of the literature in this field has been focused on other aspects of internationalization, including internationalization of higher education, research and policy (Gong et al., 2020; Liu et al., 2025).

A second limitation concerns the scope of the study. Findings on Chinese higher education and international student mobility cannot be extended to universities in Shandong without further investigation. Universities in Shandong may have different internationalization-related resources, and international partnerships and collaboration as well as varying levels of administrative capacity. These factors may result in different internationalization strategies and practices, and ultimately influence the relationship between internationalization and institutional outcomes.

The third limitation refers to the conceptual framework. In particular, the constructs University Globalisation Level (UGL) and Policy Implementation Effectiveness (PIE) and the three university outcomes warrant further operationalization. Relationships described in the reviewed literature have provided the foundation for the conceptual framework. However, the validity and reliability of the framework has not been assessed and verified in this study. Therefore, while the framework identifies potential direct and mediating relationships, these should not be construed as actual relationships.

8.2 Future Empirical Research

The author supports a quantitative study using UGL and PIE to assess their relationships with other constructs, such as university performance and infrastructure, and the extent of international student exchange. Before statistical analysis can be conducted, these relationships must be grounded in empirical evidence.

A qualitative study employing different research methods such as articulating the perspectives of university administrators, international program coordinators, faculty members, and policymakers may help explain the barriers to implementation and variation in institutional practice. If the outcome of the study demonstrates the Framework has adequate coverage of the actual phenomenon of interest, it would reinforce the author's confidence in the validity of the Framework.

Future work could consider the relationship between the extent of internationalization and the extent of its educational effects. For instance, future studies may measure if the quality and consistency of partnerships is more relevant than the number of partnerships. Further, future studies may consider the effects of studying abroad and if this experience has positive impacts on students' academic or employment careers.

8.3 Testing the Mediating Role of Policy Implementation Effectiveness

There is great opportunity for future research to examine if the Effectiveness of Policy Implementation (PIE) mediates the UGL relationship and each university outcome. In this regard, the author would appreciate if the research community develops

proper measures for international engagement and implementation and if they consider othercontextual variables (i.e. university size and resources).

Longitudinal studies allow researchers to investigate the sequence of events and determine the relationship between international engagement and implementation actions. The choice of research methods should be dependent upon the measurement attributes of the available data.

8.4 Comparative and Longitudinal Research

Compared to other Provinces in China, Shandong may represent a relatively atypical case in the country. Comparative work in other Provinces may help clarify the degree to which findings are specific to Shandong. Longitudinal studies in other Provinces may also represent a valuable resource.

Longitudinal studies might examine changes in internationalization strategies and methods over time, and the resulting shifts in institutional outcomes. This type of research could provide evidence that helps distinguish between short- and long-term changes in internationalization.

More generally, research should progress from consideration of the relationships of the concepts to the identification and testing of those relationships. The framework should be tested on other universities and over time, in order to consider its applicability to internationalization of higher education within the context of the Belt and Road Initiative (BRI).

9. CONCLUSION

The aim of this study is to elaborate the possible interconnections between the BRI and higher education internationalization in Shandong province, China. This review extends the consideration of the effects of internationalization of higher education beyond the boundaries of international partnerships and student mobility to the extent of other kinds of engagement that internationalization may foster within higher education institutions.

The aim of this framework is to advance and integrate the existing literature on the internationalization of higher education in China, particularly with regard to the role and relevance of international engagement in higher education. The framework is based on research on internationalization in the field of higher education in China and suggests that international engagement may be associated with improvements in the effectiveness of the university policies and practices.

The main contribution of this study is presenting these relationships in a unified, conceptual research framework, which will be useful in future studies of universities located in Shandong Province. This framework identifies the importance of differentiating between international relations and the outcomes of the institutions, and identifies policy implementation as an important mechanism in this framework. The framework also identifies a number of areas where research can be conducted to develop research-based measurements, and identifies existing differences among institutions.

The relationships identified in the framework have a conceptual nature, and must be verified with research. It is inevitable that further research must be conducted to review the framework and relationships at the level of individual institutions. Further, research must be conducted to review the framework and relationships using various combinations of research and statistical methods. It must be determined the extent to which the relationships are influenced by different situations and contexts of individual institutions, and how individual situations and contexts affect relationships over time.

The focus of this research is on certain relations and frameworks within the context of internationalization of universities and increasing academic relationships" with other parts of the world. Given the extent of participation of Chinese higher education institutions in the framework of BRI, such relationships must be prioritized.

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