Called to Serve Local and Global Communities: How Internationalization at Public Research Universities Differs with Varying Levels of Publicness

by

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A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Approved November 2020 by the
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ARIZONA STATE UNIVERSITY

December 2020

ABSTRACT

Universities have played a key, but often understudied, role in international development through technical assistance, the education of international students and the research of critical global issues (Morgan, 1979; BIFAD, 2011). Understanding internationalization in higher education can help uncover nuances of the role that United States (U.S.) universities play in U.S. international development efforts. This paper seeks to answer: “How do internationalization activities differ in public research universities with varying levels of publicness?” The study follows multicase qualitative methodology and a framework from Horn et al. to collect data on 5 dimensions of internationalization, students, scholars, research orientation, curriculum content and organizational support, to compare internationalization at four U.S. public research universities with varying levels of state funding and state change (2007). Case selection is grounded on dimensional publicness theory to provide a theoretical foundation for the variables used: level of state appropriations and percent change of state appropriations. Through a purposeful case selection process, four U.S. public research intensive universities with similar size, endowment and research activity were selected. Results showed that all universities have internationalization efforts across all dimensions but nuances exist in how internationalization is actualized at institutions. Cases with low state funding differed noticeably in student and research characteristics but did not differ in curricular and organizational support. Differences across cases can be explained by an economic rationale for the need to subsidize state budget cuts with full-paying international students and increased research grants. Similarities can be explained by other non-economic rationales that may insulate curriculum and organizational support from budgetary costs. While results demonstrate a clear commitment to internationalization, further research will need to be conducted to determine if results hold true against a dramatic shift in world events since 2017 which include a rise in nationalism, a global pandemic and decrease global standing of the United States.

DEDICATION

This work is dedicated to Natalia and Alexander, my two kids and my inspiration. Thank you to my husband for his unwavering support throughout my Master's program; to my parents for always being there whenever I needed help; and to Rosa for providing the space to actually finish my thesis.

ACKNOWLEDGEMENTS

To my committee for their endless patience and support. To Dr. Grossman, thank you for always being there. To Dr. Parmentier, thank you for your thoughtfulness and to Dr. Webb, thank you for jumping in whole-heartedly.

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CHAPTER 1

INTRODUCTION

The fourth point of Harry Truman's Inaugural Address of 1949, also known as the Four Point Speech, called on the nation to "embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas" (Truman, 1949). Central to the United States' scientific advances were and continue to be American Research Universities (Morgan, 1979; BIFAD, 2011). American Research Universities have and continue to play an important role in international development by playing a key role "in building human and institutional capacity, developing new knowledge and technologies, and transferring that knowledge to the user" (BIFAD, 2011). In 1975, Title XII, an amendment to the Foreign Assistance Act of 1961, explicitly allocated funds for "land-grant" universities to advance international development related to agriculture and food security. It is important to note that for the purpose of this study, this paper assumes the definition of international development that is used by United States Agency for International Development (USAID) in which it is the use of foreign assistance efforts to advance the development of other countries, such as the reduction of poverty and the improvement of global health, that aligns with the interests of the donor country (U.S. Department of State and USAID, 2019). In the 1970 and 80s, American higher education institutions were key in advancing USAID's goals through long-term degree training which has been recognized as one of USAID's "most valuable investments to build institutional and human capacity in developing countries" (BIFAD, 2011). However, the momentum around higher education internationalization efforts ebbed during the Vietnam War when national interests were focused on domestic issues (deWit, 2002). Therefore, while federal policy was a clear driver of international efforts at U.S. universities after the Second World War and through the Cold War, federal policy alone did not drive international efforts in higher education institutions (de Wit, 2002). Other factors outside and within the institution influence how international education looks (deWit, 2002; Knight, 2004). Just like internationalization efforts changed when federal policy shifted to focus on domestic issues, how do pressures, particularly

economic pressures, from state governments affect how public U.S. universities develop international education efforts?

Statement of the Problem

U.S. public research universities have played an important role in the actualization of U.S. efforts in international development, particularly through land-grant universities which were explicitly called upon to leverage their technical expertise for the advancement of U.S. international development efforts through technical assistance projects and the education of less commonly taught languages (BIFAD, 2011). However, U.S. public universities by design were also developed to serve the needs of their local communities and state (Crow and Dabars, 2015). Therefore, U.S. public research universities, must juggle their efforts, prioritization and focus between developing local communities tied to their state mandate and developing global communities tied to their increased efforts in internationalization. Little research exists looking at the tension between international efforts and local needs that public research universities must balance.

In an effort to better understand how this local-global tension may impact how universities engage in international efforts, this paper applies dimensional publicness theory, which assumes that an organization, regardless of legal entity, has a mix of public (political) and private (economic) authority that influences the organization's behavior and culture (Bozeman and Bretschneider, 1994). In other words, using dimensional publicness theory, this study seeks to understand whether variance in public authority, via state funding, influences the university's efforts around internationalization. By design, state universities were created to serve the needs of the state population. Thus, state funding to universities presumably comes with a set of commitments for universities to serve the needs of the state by educating the state's population, providing research and economic benefit for the local communities and providing expertise for the state (Feeney and Welch, 2012). Those state commitments can be in tension with internationalization efforts, such as the enrollment of international students versus the enrollment of state students or efforts to serve the needs of local communities versus global communities

(Cheslock and Gianneschi, 2008; Bound, Braga, Khanna and Turner, 2016; Shih, 2017). It is not to say that universities with higher state funding do not seek internationalization but rather that *how* universities implement and what they choose to focus on could vary. Understanding how universities engage internationally may lead to a better understanding of the nuanced roles that universities play in actualization of US international development efforts and forces which may aid or inhibit their involvement.

Scope of Research

This research aims to better understand how a variance in state funding may affect how internationalization is manifested across U.S. public universities. More specifically, this research looks at American public research-intensive universities to understand the similarities and differences of how universities engage internationally through its students, faculty and research in the face of changing public funding. A public research intensive university is defined as "research intensive, doctorate-granting institutions that receive[s] a share of funding from state and local appropriations and serve[s] as a critical component of the overall higher education landscape" (American Academy of Arts and Sciences, 2015). These universities are classified as R1 research institutions by Carnegie Classification of Institutions of Higher Education to indicate the universities that have the highest levels of research activity when compared to other universities (Carnegie Classification of Institutions of Higher Education; Association of American Universities).

Significance

This study adds to the understanding of internationalization in American higher education, particularly the effects of decreased state funding on internationalization efforts. In addition, it adds to international development literature around the role that universities play and potential forces that may help or hinder their involvement in the application of U.S. international development strategies.

First, this paper adds to our understanding of how internationalization manifests differently across universities. Stevens and Miller-Idriss (2009) note a lack of "systematic information about the variety of internationalization efforts through the U.S. academy". While

internationalization is happening across universities, there are limited studies that seek to understand internationalization in universities across multiple dimensions. Most internationalization studies focus on student and international mobility and institutional strategies focused on student learning and new forms of transnational education (Woldegiyorgis et al., 2018). This paper will provide a greater nuanced understanding of how internationalization efforts may vary between public universities, adding to the field's understanding of how funding pressures affect how internationalization is actualized. This can help scholars and administrators understand internationalization efforts that best fit their situation. Moreover, this paper may further uncover tensions between internationalization and state pressures that public research universities face. This is important in potentially highlighting nuances between public and private research universities. Finally, by comparing different internationalization activities with varied state funding, higher education administrators may better understand different strategies universities have taken to combat decreased state funding. It may also help universities who face state criticism uncover internationalization activities that are aligned with state motivations.

Secondly, this paper seeks to begin to uncover various ways in which universities are involved in U.S. international development efforts. This is particularly important to help recognize that universities as organizations play an important role in the international development efforts in the U.S. Recognizing the role of universities is important to ensure continued support for federal grants and favorable policies. Examples include USAID grants focused towards universities, funding for title VI centers and policies that continue to make universities attractive to international students which not only helps financial stability of universities but is also a part of foreign aid strategy of the U.S. (Morgan, 1979).

In the end, this study provides significant contributions for internationalization scholars to understand *how* internationalization manifests across different campuses and how local tensions may change the way internationalization is implemented. Moreover, it adds nuances of how universities engage in international development which may help policy makers understand the importance of universities in the application of U.S. foreign aid policies.

Summary

Understanding internationalization in American higher education is linked to better understanding the role that U.S. universities play in international development efforts. As a reminder, in this paper, international definition is defined using USAID's definition of international development of foreign assistance projects that advance the economic and social development of countries. U.S. universities are involved in international development through technical assistance projects and in the past were key in providing highly technical education to foreign students. What may have started for universities as internationalization efforts with a political rationale, eventually grew to include other reasons why universities engage in internationalization. Now, how universities engage in internationalization varies by rationales and is driven by different internal and external factors. This paper tries to better understand how state pressures may influence *how* and possibly *how much* a university is involved in internationalization thus contributing to an understanding of competing priorities that public state universities must navigate. Further, the results will help expand our understanding of internationalization across multiple dimensions and the impact of changing funding composition on the types of internationalization activities that universities pursue. This will be valuable for internationalization scholars, higher education scholars and higher education administrators.

CHAPTER 2

LITERATURE REVIEW

The following literature review provides background on American research universities with a special focus on public research intensive universities, or doctoral degree granting institutions with the highest level of research activity compared to other higher education institutions, as defined by the Carnegie Classification of Institutions of Higher Education. Following is a section on publicness theory to help explain the varying state pressures a public university may feel from varying amounts of state funding support. Then a section on internationalization provides background into internationalization in U.S. universities, the relationship between internationalization and globalization, rationales for integrating

internationalization on campus and criticisms of internationalization. A separate section explains the literature around evaluation of internationalization highlighting the difficulty of a standardized tool to help compare different institutions given that motivations for internationalization vary across universities.

The American Research University

The higher education sector is complex and comprises of over 4,500 degree-granting post-secondary institutions varying from length of study (two-year, four-year undergraduate), to the structure (public vs. private; for-profit vs non-profit), accessibility (open access to highly exclusive), and research intensiveness (no research, teaching only institutions to high-levels of research) (U.S. Department of Education, 2019; Weisbrod et al., 2008: 1). Of the 4,500 post-secondary institutions, 266 are classified as R1 research universities and award almost half of doctoral degrees in the United States even though they serve a small percentage of the total number of institutions (Carnegie Classification of Institutions of Higher Education; Association of American Universities). The American Research University is an evolution of the twentieth century that combined research intensiveness of Germanic universities and the focus on students' intellectual development of Britannic universities (Cole, 2009). One keenly American feature of American research universities evolved from the 1862 Morrill Act which provided federal lands to states for the development of public colleges and universities that would be "distinctly American" by providing "practical education" teaching home economics, mechanical arts, military tactics and agriculture, while still teaching other liberal arts (Rhodes, 2001; Cole, 2009). This ideal of developing universities for the purpose of providing practical education for the masses and diffusing the knowledge for the betterment of the community differentiates American Universities from other models. The triad of teaching, research and service gave rise to a new model of higher education (Cole, 2009). Clark Kerr, a renowned university president of the University of California in the 1960s noted, "a university anywhere can aim no higher than to be as British as possible for the sake of the undergraduates, as German as possible for the sake of

the graduates and the research personnel, as American as possible for the sake of the public at large" (Cole, 2009, pg. 38).

The public purpose of a university's research stems from the German higher education model where professors were viewed as public servants and universities were expected to share knowledge with the government and the public (Rhoten and Calhoun, 2011). In the United States an explicit expectation of service is seen through land-grant universities and public universities which were created to serve the needs of their local communities (Crow and Dabars, 2015). As mentioned earlier, the Morrill Act founded the land-grant universities to educate the masses and transfer practical knowledge to the communities through the cooperative extension service (Rhodes, 2001). To this day, many land-grant universities leverage their extension services to provide education to its communities. In addition, public universities serve as anchors in their communities, drive economic growth and are key to social mobility by providing access to education to the state's population (American Academy of Arts and Sciences).

Inherently, the American research university regardless of its ownership status serves some level of public interest from the research an institution produces to address public needs to the education and sharing of knowledge (Rhoten and Calhoun, 2011). Private universities also provide a public value through the education of society, technological transfer and creation of knowledge (Rhoten and Calhoun, 2011; Rhodes, 2001). Some may argue that several land-grant and state universities have forgotten their public mission in efforts to seek exclusivity and prestige (Crow and Dabars, 2015). Some public universities may cite a decrease in state funding causing universities to seek private funding and increased tuition (Kezar et al, 2005). Overall, across the American higher education sector, there is a fear of the economic market pressures shifting the culture of public universities away from their public value as key social institutions that serve a public good. (Kezar, 2005). Therefore, some scholars may argue that the distinction between public and private universities is "a phenomenon of the past" (Geiger, 1985). However, it is important to remember that private and public institutions are still governed differently (Rhodes, 2004). Private universities are governed by a volunteer board versus public institutions are

governed by a politically appointed group of individuals (Rhodes, 2004). There is no denying however that the power that the state may have over institutions may be diminishing as state funds decrease and that as noted above some public universities act more like private universities (Rhodes, 2004). However, as Feeney and Welch note lumping all universities together into one type of university "does not give us a clear understanding of the ways in which origins, funding, structure, priorities and values are related to variations in the production of public outcomes" (2012, pg. 272).

Publicness Theory

Whether an organization is public or private has typically been defined by ownership: government owned versus privately owned (Bozeman and Bretschneider, 1994). The legal type "provides a simple but powerful distinction" between public and private organizations and past research has shown organizational differences in job satisfaction, motivation, and perceptions of rewards, structure and performance between private and public ownership labels (Bozeman and Bretschneider, 1994). However, the traditional conceptualization of the difference between public and private entities is ill equipped to explain publicness in organizations that straddle public and private legal definitions such as universities, social enterprises and hospitals to name a few (Bozeman and Bretschneider, 1994; Lee, 2017; Min, 2017). Instead, dimensional publicness popularized by Bozeman and Bretschneider looks beyond legal status and is defined as "a characteristic of an organization which reflects the extent the organization is influenced by political authority" (Bozeman and Bretschneider, 1994). This approach to publicness assumes that an organization regardless of legal entity has a mix of public and private authority that influences the organization's behavior and culture (Bozeman and Bretschneider, 1994). Political authority can be a combination of public ownership, public regulation, and level of public funding (Bozeman and Moulton, 2011; Merritt and Farnsworth, 2018). One way to assess the dimensional publicness is by analyzing resource origins to determine public or private influence on an organization. In other words, one can determine institutional publicness by the percentage of

resource coming from either public or private revenue streams as one way to determine the influence that either authority has on an institution (Lee, 2017).

Beyond the dimensional publicness approach, recent scholarship has focused on realized or normative publicness, a public-values approach that analyzes an organization's realization of "public values demonstrated by organizational behavior or outcomes" and whether institutionalized public values influence publicness (Moulton, 2009; Bozeman and Moulton, 2011; Feeney and Welch, 2012). Unlike dimensional publicness, realized publicness seeks to explain the difference between public and private institutions not through ownership or revenue streams but rather how an organization achieves public values or public interest ideals. For the purposes of this study, the argument set forth uses the theory of dimensional publicness to help explain why varying levels of state funding may cause differences in how internationalization is actualized across various universities.

Understanding universities' publicness is important in understanding the shifts and evolution of the higher education landscape. "How universities are funded and governed makes a big difference" (Rhoten and Calhoun, 2011). As state funding decreases, and public universities are forced to seek other revenue streams, does it distract their mission towards serving their local communities? One study by Young-Joo Lee (2017) found that there was a negative correlation between state funding and public service. Therefore, as state funding decreased, so did the public service of a university.

In the end, dimensional publicness can help explain why state universities may feel competing pressures from the state and the market to serve the needs of its local constituents and its new customers as it seeks to balance the cuts from state funding. One way in which universities may seek new customers is through international students. While increased funding is one of the reasons why universities seek to increase international student enrollment, such efforts are part of a broader trend in higher education related to internationalization.

Internationalization of U.S. Universities

Internationalization is often confused and misunderstood as an end goal instead of a process and is often used interchangeably with globalization (de Wit, 2017). As the widely accepted definition from Jane Knight (2004) states: internationalization is “the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education” (pg. 11). Knight uses the term process deliberately because internationalization should be viewed as an ongoing and continuing effort that should “reflect the particular priorities of a country, an institution or a specific group of stakeholders” (2004, pg. 11). The definition includes functions such as teaching, research and scholarly activities (Knight, 2004).

Why is internationalization important for higher education institutions? Internationalization at institutions is a combination of rationales, trends and enablers that have resulted in a growth of internationalization across higher education institutions (Pohl, 2015). There are various rationales for internationalization in post-secondary institutions including social/cultural (e.g., intercultural understanding, citizenship development), political (e.g., foreign policy, technical assistance, peace and mutual understanding), academic (e.g., institution building, profile and status, enhancement of quality) and economic (e.g., economic growth and competitiveness) that occur at a national and institutional level (Knight, 2004). Rationales may occur at the national or institutional level. For example, social or cultural rationales may be driven by an institutions’ internal desire to promote student intercultural understanding, but it also may be externally driven by the desire of the community or businesses to have students who are more multicultural and thus the institutions adopt that rationale. The importance of internationalization in higher education can also be explained through drivers. Drivers such as globalization, increased higher education competition, and the complexity of problems that require increased global collaboration, to name a few. Globalization and internationalization are related but are not the same concept and should not be used interchangeably. Globalization is defined “as the economic, political, and societal forces pushing 21st century higher education toward greater

international involvement" (Altbach and Knight, 2007). Finally, various enablers have created an environment for internationalization in higher education to increase including, increased global wealth that has made U.S. higher education more attainable, the increased technology related to spread of information to allow universities to reach new audiences and policies and regulations that encourage student and scholar mobility and collaboration (Pohl, 2015). In sum, the importance of internationalization in higher education can be explained by a variety of rationales and drivers across politics, technology and economics have pushed the growth of internationalization in higher education. One may argue that the drivers which have pushed internationalization in higher education can just as easily hinder its growth.

Throughout history, there has been a variance in higher education internationalization. University involvement globally is not new. Higher education institutions have had an international dimension since the middle ages; however, efforts were "more incidental than organized" (de Wit, 2002, pg. xvi). It wasn't until after WWII that efforts of international education became more organized (de Wit, 2002). Then after the Cold War, efforts for higher education to internationalize grew into more deliberate strategic processes (de Wit, 2002). De Wit purposefully uses variation of terms: international dimension, international education and internationalization to demonstrate the development of internationalization in higher education, from disparate to more intentional strategies. This evolution of internationalization in higher education into a more formalized and coherent field of research is also documented by Bedenlier et al. (2018) where the authors analyzed 20 years of journal articles in the Journal of International Education and documented the evolution of the journals from the delineation of the field to institutional internationalization to a more transnational view.

In the United States, the study of internationalization particularly focused on research universities is limited (Horn, Hendel and Fry, 2007). Most internationalization research focuses on the student and curriculum with little scholarship on the comprehensive view of internationalization (e.g., internationalization that includes students, staff, research and organizational support) and also little scholarship on individual dimensions like research

(Woldegiyorgis, Proctor and de Wit, 2018). Internationalization in the United States entered a period of growth between the two world wars, immediately after World War II and during the Cold War, driven by a political rationale of peace and mutual understanding, defense and foreign policy (de Wit, 2002). Harry Truman, during his inaugural address of 1949, now famously known as the Four Point Speech, said,

> "We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas…The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for the assistance of other peoples are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible." (Truman, 1949).

The scientific techniques and knowledge mostly stemming from American research universities was called to serve national interest. One example was the development of the Fulbright Program in 1946 as a catalyst for international academic exchanges both for American students and faculty and international students and faculty (de Wit, 2002). Then in the 1960s, Title VI of the Higher Education Act provided federal funding for universities to "develop multi-disciplinary area study and foreign language centers" driven by America's new role as "leader of the free world" (de Wit, 2002; Altbach and de Wit, 2015). While the catalyst for internationalization in American universities may have been national interest and foreign policy, other rationales such as economic, academic or social also play a part in how universities internationalize today (Knight, 2004). For example, at present, there is growing economic interest at the institutional level for the growth of internationalization due to the purchasing power of international students and the importance of international students as a key tuition revenue source (Horne et. al, 2007).

It is important to note, while this paper assumes internationalization as a positive factor in higher education, internationalization can cause harm. For example, increased internationalization globally can negatively affect the flow of educated individuals from lower

income countries to higher income countries and thus promoting “brain drain” (Woldegiyorgis et al., 2018). In addition, given English is the language of choice for international research, global competition for institutions to be involved in international research efforts and collaborations are causing a decrease in research in local languages (Woldegiyorgis et al., 2018). Both brain drain and decrease use of local languages in research play a part in a broader criticism of internationalization around inequality (Woldegiyorgis et al, 2018; Marginson, 2018). Inequality in internationalization exists at the individual, institutional and national level. At the individual level, internationalization favors higher economic status students who can afford to either pay for education abroad or can compete for international grants to study abroad (Vavrus and Pekol, 2015). At the institutional level inequality exists in the access to funding to compete for research grants or for funding to have the facilities to execute certain research capabilities (Vavrus and Pekol, 2015; Woldegiyorgis et al., 2018). Finally, inequality at the national level relates to the power imbalance that already exists between the Global North and South (Vavrus and Pekol, 2015). The individual and institutional inequalities further exacerbate national inequalities. The negative implications of internationalization require a more thoughtful approach to its implementation in higher education (Stein, 2017).

Evaluating Internationalization of American Research Universities

There is limited research on the evaluation of comprehensive internationalization of American research universities, particularly research that allows for comparison between institutions (Horn et al., 2007). Comprehensive internationalization looks at the various dimensions of internationalization including students, staff, curriculum, research, and organizational support (Olson, Green and Hill, 2006). Even at the international level, there is limited research on measurement tools to help compare internationalization performance (Gao, 2015; Woldegiyorgis et al, 2018). Part of the difficulty in developing a standard evaluation of internationalization is that internationalization by definition is a process and not a goal, therefore, measuring the level of internationalization across institutions, particularly across national boundaries is difficult because the goals of the institution or the rationales may vary (Gao, 2015).

One of the few research studies that compared internationalization of research universities was Horn et al. (2007). Horn et al., (2007) developed a ranking framework that looked at the “multifaceted conception of internationalization” of top research universities in the United States. The authors compared 19 indicators from publicly available sources, across five dimensions using data from 2002-2003. The five dimensions compared included student characteristics, scholar characteristics, research orientation, curricular content, and organizational support. In more than 15 years later, there has not been a more updated comparison of internationalization at research universities. Internationalization across American higher education has changed since the early 2000s and has become a more strategic process at the institutional level (Bedenlier et al., 2018). There is a need to better understand internationalization across American research universities and how it may vary at different universities.

Summary

American public research universities provide unique social benefit to society by providing educational opportunities to students, producing research and scholarship, providing economic development to its communities, state and nation and serving as nexus for collaborations (American Academy of Arts and Sciences, 2015). By definition, public universities are governed by states and receive funding from states (American Academy of Arts and Science, 2015). The amount of funding in recent years has decreased dramatically causing universities to re-evaluate not only their funding sources but their capacity to respond to the needs of the state (Academy of Arts and Science, 2015). As a result, universities seek private funding that creates new economic pressures to respond to new stakeholders such as donors, companies and out-of-state/international students, to name a few. Those pressures from new revenue sources sometimes are in tension with the needs of the state. One strategy that some colleges seek as a way to increase revenue is internationalization. The increase of international students can sometimes be in tension with the needs of the state particularly when there are capacity issues, such as the case with the University of California where thousands of students are turned away because of capacity issues (Bound et al, 2016). However, not all internationalization efforts are in

tension with state needs as internationalization brings improved academic offerings to help train global leaders; may help with branding and prestige; and increase research expenditures (APLU, 2017). Therefore, this paper hypothesizes that internationalization activities in universities with low levels of state funding differs from universities with high levels of state funding. In particular, differences between low state funding universities and high state funding will be more noticeable in internationalization efforts associated with new revenue sources.

CHAPTER 3

METHODOLOGY

In order to answer the question: "How do internationalization activities differ in public research universities with varying levels of publicness?" the study employs a qualitative multiple case study analysis. The qualitative approach is best suited for studies looking to answer the "how" of a question, as is in this study (Baxter and Jack, 2008). Further, using a multiple case study analysis allows for "a better understanding of the issue or to theorize about a broader context" by allowing for the comparison within and across each unit of analysis. (Chmiliar and Chmiliar, 2009). For this study, using a multiple case study approach allows for the analysis of internationalization within each university but also a comparison of how internationalization may vary across the universities to better understand similarities and differences.

Case Study Design

Multiple case study design is made up of a "system bounded by space and time" (Chmiliar and Chmiliar, 2009). This study is specifically comparing internationalization of public research universities between 2007 and 2017. More specifically, it compares four public research universities with opposite variances in state funding to allow a clear comparison between the universities on how different levels of state publicness may affect internationalization.

In helping assess internationalization at the universities, this study employs a modified framework by Horn et al. that compares five different dimensions of internationalization: student characteristics, scholar characteristics, research orientation, curricular content and organizational support (2007). Student characteristics focus on student mobility and international exchange by

looking at concentration of international students and engagement of domestic students abroad (Horn et al, 2007). Scholar characteristics capture the domestic and international faculty concentration. The research orientation captures the global nature of research and university's involvement in international research through research centers and international development grants. Curriculum captures the level of internationalization in teaching and learning by analyzing critical languages, majors with international focus and global general education requirements. Lastly, organizational support captures institutions' commitment to internationalization efforts by determining if an institution has invested in a senior position and a central strategy as seen by institutions having a centralized website to communicate global efforts. The framework from Horn et al. is used because it was developed for ranking various institutions, uses publicly accessible information and seeks to evaluate institutions' holistic approach to internationalization not just one dimension as it is often found in the literature (Horn et al., 2007). While the study does not seek to rank the institutions, using the identified dimensions allows for comparing institutions more easily. The publicly available information will come primarily from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), the university's website and grant databases of funding organizations such as the United States Agency for International Development (USAID). Descriptions of all categories are in table 1.

Table 1

Description of Measures

Dimension	Category	Description	Source
Student characteristics	International undergraduate students	Percentage of international undergraduate students on campus	IPEDS
	International graduate students	Percentage of international graduate students on campus	IPEDS
	Study abroad	Number of undergraduate study abroad participants	Institute of International Education
	International scholarships	Number of Rhodes, Marshall, Boren and Fulbright Scholars	Universities' website
	Peace Corps Volunteers	Total number of peace corps volunteer per institution	Peace Corps website
Scholar characteristics	Faculty Fulbright Scholars	Number of faculty who have been Fulbright Scholars	Fulbright website
	Visiting Fulbright Scholars	Number of Fulbright scholars from other countries	Fulbright website
	International Faculty	Percentage of international faculty and research associates	IPEDS
Research Orientation	International research centers	Number of campus centers focused on international research	Institutions' website
	International development research*	Funds received from USAID	USAID grant database website
	Title VI centers	Number of title VI centers	Institutions' website
Curricular content	Less commonly taught languages	Number of less commonly taught languages	Institutions' website
	Global or culture general education requirement	International perspective credit requirements	Institutions' website
	Majors with international focus	Number of majors with global/international focus	Institutions' website
Organizational support	International senior administrator	Presence of senior administrator for international activities (Vice President, Vice Provost level)	Institutions' website
	International presence**	Office or location abroad	Institutions' website
	International visibility on home page	Visibility of international focus on institutions' home page	Institutions' website

Sample Selection

A purposive sample of four public research universities that exemplify opposite state funding and percentage change of funding was used. To help select universities with distinct levels of state funding, a quadrant was developed to help select the correct cases based on two variables: first, the level of state funding and second the percent change in state funding between 2007 and 2017. It is important to compare not just high state funding versus low state funding but also compare high change and low change in state funding. Doing so controls for dramatic changes in state funding which may influence how a university engages in internationalization across various dimensions. Furthermore, the selection of the universities is based on selecting public research universities that are similar in size, research expenditures and endowment size and that exemplifies one of the following quadrants: 1) High state funding, small percent change in funding since 2008 recession. 2) High state funding, high percent change in funding since 2008 recession 3) Low state funding, small percent change in funding since 2008 recession. 4) Low state funding, high percent change in funding since 2008 recession. The purpose of the study is to be able to compare similar universities to one another that fit one of the quadrants listed above. Further research will be needed to determine whether study findings are generalized across research universities and broader higher education landscape.

In order to identify the final four cases, data were primarily pulled from the Integrated Postsecondary Education Data System (IPEDS) for FY 2007 and FY 20017 for all public research intensive universities as defined by The Carnegie Classification of Institutions of Higher Education's definition of public research intensive universities. Furthermore, the selection of the universities focused on universities that do not operate a hospital. To clarify, a university may not operate a hospital but still have a medical school, this distinction simply is meant to exclude universities whose revenues and expenses include the operation of a hospital.

The data pulled from IPEDS included a list of research intensive public universities with no hospital, revenues from state appropriations per full time enrolled for fiscal year 2007 and

fiscal year 2017 and the number of full time enrolled students for fiscal year 2017. In addition to IPEDS data, using National Science Foundation data, amounts for 2017 NSF research expenditures were pulled to control for research activity and information about endowment size was gathered from each individual university website.

Based on data collected, a list of public research intensive universities was created. To identify the four cases, the funding change of state appropriation per FTE for each university was calculated. Then the average and standard deviation for funding change and funding amount of fiscal year 2017 was calculated. From there, case selection was based on universities that fit each quadrant and were controlled for student enrollment, endowment size and research expenditures. The study controls for size, research expenditures and endowment size to compare similar types of public research universities assuming that universities with similar size will have similar composition of students and staff. Regarding research expenditures and endowments, the goal is to control for influences from different funding streams and potentially different levels of capacity and focus on variations of state funding levels.

Final Case Selection

From IPEDS FY 2007 data were filtered for Carnegie research intensive public universities and controlled for universities with no hospital resulted in a list of 44 universities. Out of those universities, 4 universities were removed due to a lack of self-reported data in the IPEDS financial information, making it not possible to compare them in the group. The universities removed were: University of Delaware, Pennsylvania State University, University of Pittsburgh and Temple University. The remaining 40 universities were cross-listed with the FY 2017 data to ensure that a percent change could be calculated. After comparing the lists, Montana State University, Rutgers University New Brunswick, University of Connecticut, were removed from the list due to not appearing in the 2017 list of research intensive public universities. Deleting those universities resulted in a final list of 37 universities to compare. After taking the average and identifying one standard deviation for the state appropriations per full time enrollment for fiscal year 2017, and the average and standard deviation for percent change in state funding, the final

selection of universities were based on characteristics (funding and percent change) for each quadrant controlled for enrollment, research and endowment.

The four cases that met the criteria above included the University of Illinois Urbana Champaign, Indiana University Bloomington, University of Maryland College Park and North Carolina State University Raleigh. University of Illinois Urbana Champaign, represents high change and low state appropriations with 2017 state appropriations of $1,327 per FTE representing a negative 79% change from 2007. Indiana University Bloomington represents low funding, low change with 2017 state appropriations of $5,107 per FTE representing a negative 16% change from 2007. Next, the University of Maryland College Park, represents a high funding, high change case with 2017 state appropriations of $14,267 representing a 22% positive increase from 2007. Finally, North Carolina State University, Raleigh represents a high funding low change case with 2017 state appropriations of $16,812.00 representing 6% positive change from 2007. See table 1 for a summary of the four cases. For a list of the universities considered including the average and standard deviation values see the appendix.

These four universities provide distinct cases related to state funding amounts but are similar size based on student, research and endowment to provide an accurate comparison between each university. Both North Carolina State University and Indiana University Bloomington have the University of Illinois Urbana Champaign and University of Maryland College Park as a peer institution set by their board of trustees for institutional benchmarking (Indiana University 2019, North Carolina State University 2011). In order to explore the purpose of the study of how internationalization may vary with variance in state funding, the purpose of the case selection is to ensure similarities across the universities that fit within each quadrant type. These case selections serve as outliers within the comparison of other public research intensive universities. Further research will be needed to determine how generalizable the case findings are.

Table 2

Final Case Selection

(case type) Institution Name	2007 State Funding Revenues per FTE	2016 State Funding Revenues per FTE	% Change	FTE 2017	2017 Endowment (in millions)	2017 research expenditures (in millions)
(Low funding, high change) University of Illinois at Urbana-Champaign	$6,235.00	$1,327.00	-79%	44,138	$1,534,717	$372,619
(Low funding, low change) Indiana University-Bloomington	$6,054.00	$5,107.00	-16%	42,785	$1,081,730	$540,421
(High Funding, High Change) University of Maryland-College Park	$11,741.00	$14,267.00	22%	37,349	$548,749	$548,885
(High Funding, Low Change) North Carolina State University at Raleigh	$15,839.00	$16,812.00	6%	29,421	$1,122,932	$500,445
Standard deviation (sd)		$3,495.73	23.06%			
Average		$9,324.59	-12%			
+1 sd		$12,820.32	11%			
-1 sd		$5,828.87	-35%			

Note: Given the limited number of examples for universities that fit the controls and exemplify high funding, the cases are as close to the parameters as possible.

Summary

The study uses a qualitative multicase study design method to explore how internationalization may vary with different levels of publicness. Using a purposive selection criteria of four distinct cases, four U.S. public research intensive universities were selected to exemplify opposing levels of state funding and percentage change in state funding between fiscal year 2007 and fiscal year 2017. Each case was controlled for total enrollment, endowment size and research activity to ensure similar university types were compared. Then to analyze internationalization within and across the university, study uses Horn et. al (2007) internationalization dimension framework to compare five internationalization dimensions (e.g., student characteristics, scholar characteristics, research orientation, curriculum content and organization support). Further research will be needed to determine how generalizable the case findings are across the broader higher education landscape.

CHAPTER 4

RESULTS

As a reminder, the purpose of this study is to better understand how universities with varying levels publicness engage in internationalization efforts. By applying dimensional publicness theory, the study compares four public research universities representing opposite spectrums of state funding. The results of the study are organized following a multiple case study analysis where each individual case results are discussed and then the comparison of internationalization across the different public universities are presented. When comparing each case individually, UIUC and NCSU align with the expectations of the study where internationalization across the universities differs in various dimensions. UIUC representing a case of low state funding has higher internationalization efforts linked to revenue such as number of international students and research funding whereas, NCSU is stronger in areas that focus on teaching and learning such as study abroad and curricular content when compared to their international students and research efforts. IUB as a low funding, low change example saw similar results and results show an increase in international students and research, but unlike

UIUC, IUB had stronger curriculum content. UMCP results are less clearly aligned with what one may expect and while they do have decreases in research, differences were less stark in other areas. When analyzing the cases across each dimension, student and research dimensions appear to be most influenced by changes in state funding as both dimensions saw the largest difference between low funding institutions and high funding institutions. Dimensions that didn't appear to be influenced by changes in state funding were organizational support and to some extent curriculum content.

Table 3

Student Dimension of Internationalization

Characteristics	(Low funding, high change) University of Illinois Urbana Champaign		(Low funding, low change) Indiana University Bloomington		(High funding, low change) North Carolina State University-Raleigh		(High funding, high change) University of Maryland College Park	
	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017
International undergraduate students	3.54%	16%	5.73%	10.39%	1.39%	4.68%	2.24%	4.63%
International graduate students	22.5%	39.6%	22.66%	26.08%	21.88%	28.37%	24.7%	31.57%
Study Abroad Total Students	2052	1945	1686	2839	500	1426	1366	1800
International scholarships	Fulbright: 6 Boren: 1 Rhodes; 0 Marshall: 1	Fulbright: 13 Boren; 1 Rhodes; 0 Marshall: 1	Fulbright: 8 Boren: 1 Rhodes; 0 Marshall: 0	Fulbright: 21 Boren; 0 Rhodes; 0 marshall: 0	Fulbright: 1 Boren: 0 Rhodes; 0 Marshall: 0	Fulbright: 7 Boren, 0 Rhodes, 1 Marshall: 0	Fulbright: 3 Boren: 0 Rhodes; 0 Marshall: 0	Fulbright: 11 Rhodes; 0 Boren: 9 Marshall, 1
Peace Corps Volunteers	49	37	44	37	n/a	37	57	42

Table 4

Scholar Characteristics of Internationalization

Characteristics	(Low funding, high change) University of Illinois Urbana Champaign		(Low funding, low change) Indiana University Bloomington		(High funding, low change) North Carolina State University-Raleigh		(High funding, high change) University of Maryland College Park	
	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017
Faculty Fulbright Scholars	3	2	3	12	2	2	8	4
Visiting Fulbright Scholars	9	8	9	6	1	3	6	7
International Faculty (Full-time instruction staff)	6.1%	5.45%	14.39% (2010)[a]	13.75%	4.76%	10.35%	14.07%	13.62%

a. Indiana University Bloomington faculty diversity data from IPEDS did not accurately capture nonresident alien faculty due to a logic error in their internal data practices (Indiana University, 2020).

Table 5

Research Orientation of Internationalization

Characteristics	(Low funding, high change) University of Illinois Urbana Champaign		(Low funding, low change) Indiana University Bloomington		(High funding, low change) North Carolina State University-Raleigh		(High funding, high change) University of Maryland College Park	
	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017
International research centers[a]	8	15	21	27	3	6	15	25
International development research[b]	26,600,345	99,882,369	835,641	39,359,248	14,509,641	2,435,209	24,001,846	9,314,669
Title VI centers[b]	15	7	17	19	2	0	3	2

a. FY 2007 count of international research centers is an estimate and based on archived website information. Therefore, data reflect website information and provides an approximation.

b. International development research for FY 2007 shows the amount of funding from USAID from 2001-2007. Subsequently FY 2017 shows from 2008-2017.

c. Title VI centers include CIBE, FLAS, IRS, LRC, and NRC. In 2017, data capture centers granted for 2018-2021. 2007 column captures centers funded on or through 2007.

Table 6

Curriculum Content of Internationalization

Characteristics	(Low funding, high change) University of Illinois Urbana Champaign		(Low funding, low change) Indiana University Bloomington		(High funding, low change) North Carolina State University-Raleigh		(High funding, high change) University of Maryland College Park	
	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017
Less commonly taught languages [a]	3	6	25	48	7	5	10	8
International perspective credit requirements	yes	yes	yes	yes	no	yes[b]	--	no[c]
Global focused undergraduate majors [d]	20	22	26	22	14	21	14	22

a. Less commonly taught languages do not include German, French, Italian and Spanish based on the definition by the National Council of Less Commonly Taught Languages

B. NCSU global requirement is as a co-requisite and doesn't require a certain amount of credit hours to fulfill the global requirement

c. UMCP requires a diversity course that may include a global focused course

d. global focused undergraduate majors are majors that explicitly list a global or international focus. e.g., international business, a foreign language or global politics to name a few examples.

Table 7

Organizational Support of Internationalization

Characteristics	(Low funding, high change) University of Illinois Urbana Champaign		(Low funding, low change) Indiana University Bloomington		(High funding, low change) North Carolina State University-Raleigh		(High funding, high change) University of Maryland College Park	
	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017	FY 2007	FY 2017
International senior administrator [a]	yes	yes	no	yes	yes	yes	yes	yes
International presence [b]	yes	yes	no	yes	yes	yes	no	no
Level of International visibility on home page [c]	1	1	1	2	2	3	3	2
Dedicated global website	yes	yes	yes	yes	yes	yes	yes	yes

a. International senior administrator was at the vice provost, vice president level and above for all four universities

b. International presence means at least one office and staff at a location outside of the United States

c. Level of International Visibility based on a scale of one to three. One being a clear link to international/global efforts, two is some reference to global efforts, three is no reference to global efforts. The rank is based on website archives for August 2017.

University of Illinois Urbana Champaign

The University of Illinois Urbana Champaign (UIUC) represents the case of low state funding in 2017, and high percentage change in state funding between 2007 and 2017. UIUC went from $6,235.00 per FTE in 2007 to $1,327 per FTE in 2017. This dramatic change in state funding is tied to years of structural budget issues that were further impacted by the global recession of 2008 (Jackson and Bedar, 2010). Across the internationalization characteristics, the greatest increase was seen related to concentration of international students and international research comparing 2007 and 2017. Next, UIUC saw little to no change in scholar characteristics, curriculum characteristics and organizational support. Lastly, a decrease was seen in the number of study abroad participants, number of Peace Corps volunteers, and number of title VI centers. In the case of UIUC, state funding change appears to have a connection to international student mobility and federal research funding sources, as those categories saw sharp increases when compared to other characteristics across the dimensions.

UIUC saw significant increases in the percentage of undergraduate and graduate students when comparing 2007 and 2017 numbers. For international undergraduate students, UIUC saw almost three fold increase in the percentage of undergraduate international students from 3.54% in 2007 to 16% in 2017. For international graduate students, the percentage of graduate students increased by almost two times from 22.5% in 2007 to 39.6% in 2017. Related to international scholarships, UIUC doubled the number of students awarded a Fulbright between 2007 and 2017. For research orientation, UIUC doubled the number of international research centers that have an explicit focus on international/global efforts from 8 to 15. Furthermore, UIUC almost doubled the total number of international development research grants awarded to the university by the United States Agency for International Development (USAID) from $26.6 million to $99.9 million. Lastly, UIUC saw an increase in the number of less commonly taught languages from three to six between 2007 to 2017.

Next, in the case of UIUC, when faced with low state appropriations, there was little to no change related to internationalization of faculty, curriculum content and organizational support.

These categories are tied to more teaching and learning and may demonstrate a commitment to the university on internationalization related to teaching and learning. There was a small but not significant change between scholar characteristics between 2007 and 2017. UIUC had 3 faculty Fulbright scholars in 2007 and two in 2017. The number of visiting Fulbright scholars went from nine to eight and the percentage of international faculty decreased slightly from 6.1% to 5.45%. Related to curriculum content, the university had a similar number of global focused undergraduate majors between 2007 and 2017 with 20 majors offered in 2007 and 22 majors offered in 2017. Moreover, the university saw no change in the international general education requirements since 2007. Therefore, the university has had a similar level of commitment to global curriculum content since 2007. Finally, UIUC saw no change in organization support characteristics. Since 2007, UIUC has had an international senior administrator, clear international presence, explicit visibility of international efforts on the home page and a dedicated global website.

Lastly, change was observed related to student involvement in international experiences including study abroad programs, Peace Corps and Title VI centers. UIUC saw a decrease of about 100 students between 2007 to 2017 for the total number of students who study abroad. In addition, the university saw a decline of total Peace Corps volunteers from 49 in 2007 to 37 in 2017. In relation to Title VI centers, the university went from 15 centers funded to 7 in 2017. It is unclear if the decrease in Peace Corps volunteers and Title VI centers were a result of changes in state funding or a result of changes from Peace Corps or available Title VI funding. Potential explanations will be discussed in the discussion session.

In sum, UIUC, which represents a case for low state funding and high change, saw increases in internationalization characteristics that bring in additional revenue to the university such as international students and international development grants, but saw continued commitment to scholar characteristics, organizational support and curricular content. The university only saw a slight decrease in the number of study abroad students and a larger

decrease in Peace Corps volunteers and Title VI centers, but such change may be a result of decrease in federal funding.

Indiana University, Bloomington

Indiana University, Bloomington (IUB), represents the case for low state funding and low change in state appropriations from 2007-2017. In 2007, IUB received $6,054.00 in state appropriations per FTE, compared to $5,107 in 2017. Therefore, while there was a 16% decrease in 10 years, when compared to other public research universities, the funding was minimally impacted in the 10 years and minimally impacted by the recession. When comparing 2007 and 2017 dimensions of internationalization, IUB saw an increase in internationalization efforts around most student characteristics, most research characteristics, and organizational support. In addition, IUB saw an increase in faculty Fulbright scholars and the number of less commonly taught languages. Little to no change for IUB was seen in the percentage of international faculty, Title VI centers, general education requirement, and a dedicated website. Lastly, slight decrease or change was seen for level of international visibility on the home page, global focused undergraduate majors, visiting Fulbright scholars and number of Peace Corps volunteers.

First, IUB saw an increase in various characteristics in each dimension across students, scholars, curricular content, research and organizational support. Related to students, IUB saw a growth for international undergraduate students and a more significant growth for the total study abroad participation and international scholarships. IUB saw a 5% increase of international undergraduate students from 5.73% to 10.39% between 2007 and 2017. For graduate students IUB saw a 3.42% increase from 22.66% to 26.08%. Further, related to the total study abroad numbers IUB saw almost a 1.5 times increase from 1686 to 2839, between 2007 to 2017, and for international scholarships saw a 2.5 increase in Fulbright scholars from 8 to 21. Next, IUB saw four times the increase of faculty Fulbright scholars from 3 to 12 between 2007 and 2017. Related to research orientation characteristics, IUB international research centers increased from 21 to 27 and international development research grants increased dramatically from $825,641 in 2001-2007 to $39,359,248 in 2008-2017. In curriculum content, the number of less commonly taught

languages went from 25 to 48. Lastly, in organizational support IUB increased support by establishing a higher level international administrator and significantly expanding their international presence from no presence to clear presence in 2017.

Second, IUB had little to no change in the percentage of international faculty, Title VI centers, general education requirement, and a dedicated website. The percentage for international faculty at IUB decreased by less than 1% from 2010 to 2017. Due to an error in data collection, IUB was not able to capture earlier numbers of international faculty. The number of title VI centers decreased by 2 from 17 to 19 from 2007 to 2017. Finally, there was no change in the dedicated global website, IUB has had a dedicated website since 2007.

Lastly, related to the areas of decrease, IUB saw a slight decrease between 2007 and 2017 for the level of international visibility on the home page, global focused undergraduate majors, visiting Fulbright scholars and number of Peace Corps volunteers. In 2007 IUB had an explicit tab for international efforts which was no longer on the home page in 2017. Related to global focused undergraduate majors, IUB saw a slight decrease from 26 to 22. For visiting Fulbright scholars IUB saw a slight decrease from 9 to 6. Lastly, for the total number of Peace Corps volunteers IUB saw a decrease from 44 to 37.

In sum, Indiana University, Bloomington which represents the low funding, low change in state funding, saw an increase in at least one characteristic across all dimensions showing an overall increase in internationalization efforts between 2007 and 2017. There was a particularly significant increase in student characteristics and research characteristics. Varied changes in dimensions occurred for scholar characteristics, organizational support and curricular content.

North Carolina State University, Raleigh

North Carolina State University, Raleigh (NCSU) represents high funding, low change in state appropriations from 2007-2017. When compared to other institutions, NCSU falls at one of the highest institutions in 2017 at $16,812, surpassed only by its fellow North Carolina institution, North Carolina University Chapel Hill. Across the 10 years, funding remained high and managed to keep up with inflation over the years. Internationalization at NCSU saw the most noticeable

increase in graduate international student numbers, study abroad participation, number of international faculty, and global focused majors. NCSU organizational support remained constant from 2007 and 2017 and little to no change in faculty Fulbright scholars and less commonly taught languages. Finally, NCSU had a decrease in international development research, Title VI centers and level of international visibility on the home page.

First increases in internationalization characteristics at NCSU occur across all dimensions. The dimension with the most increases across the characteristics was student dimension. Other characteristics with increases appear to relate to teaching and learning including number of international faculty, international credit requirements and global focus undergraduate programs. Between 2007 and 2017, NCSU saw a modest increase in international undergraduate and graduate students from 1.39% to 4.68% for undergraduate students and 21.88 to 28.37% for graduate students. For the number of study abroad participants, NCSU saw a dramatic increase from 500 to 1426, that's almost 3 times higher between 2007 and 2017. For the number of international scholarships NCSU increased from 1 Fulbright student to 7 Fulbright students. Related to scholar dimension, NCSU saw the percentage of international faculty double from 4.76% to 10.35% and the number of visiting Fulbright scholars increase from one to three. Next, NCSU international research centers increased from three to six. In curriculum content, NCSU increased the number of global focused undergraduate majors from 14 to 21 and added the international perspective general education credit requirement.

Next, NCSU saw little to no change in the number of faculty and visiting Fulbright's, and overall little change in the dimension for curricular content and organizational support. For scholar dimension, NCSU had no change in the number of faculty Fulbright scholars with two scholars in both 2007 and 2017. There was little change in the number of less commonly taught languages with 7 languages taught in 2007 and 5 languages taught in 2017. Finally, related to organizational support NCSU saw no change in international senior administrator, an international presence and dedicated global website. Little change in organizational support shows continued support for internationalization efforts in the university.

Finally, NCSU had the largest decrease in the research dimensions than other dimensions and had a slight decrease in organizational support from a change in international visibility on the home page. NCSU in 2007 had won $14.5 million between 2001-2007 in international development research grants but that dropped dramatically in 2017 to $2.4 million from grants acquired in 2008-2017. NCSU also had a decrease in the number of Title VI centers from 2 in 2007 to zero in 2017. Lastly, NCSU had a slight decrease in the visibility of international efforts on the home page going from slight reference of global efforts in 2007 to no reference of international efforts in 2017. The decrease in research characteristics may not be related to NCSU state publicness but rather increased competition for federal funding, further discussed in the discussion.

In sum, NCSU, representing a high level of state publicness has seen steady organizational support as evidenced by a senior administrator and centralized international efforts. Internationalization efforts appear to be connected to characteristics that will benefit domestic students. This is seen in three times increase in study abroad participants, doubled percentage of international faculty, and an increase or continued efforts related to curricular content. NCSU did see an increase in the number of international students which may just be a reflection of a larger trend in higher education and not a result of NCSU's state publicness. NCSU is weakest in internationalization efforts related to research where the institution saw a steep decrease in the research orientation dimension with decrease in Title VI centers and more dramatically a decrease in international development research grants. Overall, while NCSU does have internationalization efforts across all dimensions, and while there are characteristics that have comparable numbers to the other cases, it is the overall weakest in terms of the level of internationalization when compared to the other institutions.

University of Maryland, College Park

The University of Maryland, College Park (UMCP) represents a case for high funding, high change. UMCP was one of the few universities on the list with high percent positive change between 2007 and 2017. In 2007, UMCP received $11,741 of state appropriations per FTE and

$14,267 per FTE in 2017. In fact, Maryland has consistently been a strong supporter of higher education as shown by consistent state funding as well as strong commitment to increasing educational attainment even though it's already one of the highest ranked states in relation to educational attainment (Perna, Finney and Callan, 2012). UMCP appears to have internationalization efforts across all dimensions, with almost all characteristics related to students seeing an increase between 2007 and 2017 while other dimensions saw a mix of increase and decrease in internationalization characteristics. For scholar dimension, there was little change to visiting Fulbright scholars and international faculty but a decrease in faculty Fulbright scholars. For research orientation, there was an increase in international research centers but a decrease in international development research and little to no change for Title VI centers. For curriculum content, there was an increase in global focused undergraduate majors but little to no change in less commonly taught languages. Finally in organizational support there was little to no change across the dimension.

First, UMCP consistently had an increase in the student characteristics. For International undergraduate students UMCP saw a 2% increase from 2.24% in 2007 to 4.63% in 2017. For graduate students, UMCP saw a 7.5% increase from 24.7% increase in 2007 to 31.57% increase in 2017. Similarly, for study abroad total students, UMCP saw an increase from 1366 to 1800 students and for international scholarships an increase from 3 to 11 between 2007 and 2017. Other areas of increase included the total number of international research centers from 15 to 25 and total number of global focused undergraduate majors from 14 to 22 between 2007 and 2017.

Next, there was little to no change in Visiting Fulbright scholars, international faculty Title VI centers, less commonly taught languages and organizational support. For Visiting Fulbright Scholars, UMCP went from 6 in 2007 to 7 in 2017. The total number of international faculty decreased less than 1% from 14.07% to 13.62% in the 10 year gap. The number of title VI centers decreased by one from three to two centers in 2017. The number of less commonly taught languages decreased slightly from 10 to eight between 2007 and 2017. Lastly, UMCP saw no change in organizational support characteristics, they still had an international senior

administrator and a dedicated global website but did not have international presence in 2007 nor 2017. Lastly, level of international visibility on home page varied slightly from no reference in 2007 to some reference in 2017 of their international efforts.

Finally, UMCP saw a decrease in the characteristics such as number of Peace Corps Volunteers, Faculty Fulbright Scholars, and a sharp decrease in the amount of international development research. In the number of Peace Corps volunteers, UMCP decreased from 57 in 2007 to 42 in 2017. In the number of faculty Fulbright scholars, UMCP number of scholars decreased by 50% from 8 to 4 in those ten years. Lastly, UMCP saw the highest decrease out of any characteristic in the amount of international development research going from $24 million in grants from 2001-2007 to $9.3 million in grants between 2008-2017.

In sum, UMCP as the high funding, high change case, had internationalization efforts across all dimensions but little pattern occurred across each dimension with the exception of students and research. The results showed modest increase in student dimension showing increase across all characteristics except Peace Corps volunteers. The highest negative change occurred in the research dimension with sharp decrease in international development grant amount between 2007 and 2017. Overall, UMCP does appear to have strong internationalization efforts though their efforts don't clearly appear to have a connection with state publicness. There appear to be other factors that may influence internationalization efforts at UMCP.

Comparison of Student Dimension

Shifting from analyzing dimensions within each university, this section refers to Table 3 *Student Dimensions of Internationalization,* and seeks to understand variances across the different cases for each dimension. As a reminder, UIUC represents a low funding, high change case; IUB represents a low funding low change case; NCSU represents a high funding, low change case; and UMCP represents a high funding, high change case. In the student dimension for internationalization, results show differences between low funding and high funding universities around international undergraduate students, a slight difference between UIUC and the other universities for graduate international students, and a difference in NCSU growth in

study abroad participants. All universities saw an overall increase of international undergraduate and graduate students, international scholarships and interestingly, a shared decrease in the number of Peace Corps volunteers.

First, when comparing international undergraduate students, there is a difference in the 2017 numbers between universities with low funding (UIUC and IUB) and universities with high funding (NCSU and UMCP). In 2017, UIUC had the highest percentage of international undergraduate students at 16% compared to 10.39% IUB, 4.68% NCSU and 4.64% UMCP. That means that UIUC had almost 4 times higher percentage of international students than NCSU and UMCP. Not only did UIUC had the highest percentage in 2017, but UIUC saw the sharpest increase in international undergraduate students from 3.54% in 2007 to 16% in 2017, that is an increase of 13.5%, which was a significantly higher growth rate than the other schools who saw growth between 2-5%. UIUC saw the highest negative percent change in state funding which may explain why UIUC saw the highest change in undergraduate international students. Next, when looking at international graduate students, all universities saw an increase in international graduate students. Unlike the undergraduate international numbers, there was no pattern associated with low and high funding. In 2017, UIUC had 39.6% graduate international students, followed by UMCP at 31.57%, NCSU at 28.37% and IUB at 26.08%. While no pattern emerged between low and high funding, UIUC growth increase stands out from the others. UIUC has 17.1% increase from 2007, which is more than double any other university. Other universities' percentage increases varied from 3.42 (IUB) to 7.5% (UMCP). This difference between UIUC growth in international students may flag a significance related to the drop in state funding. For both undergraduate and graduate international students UIUC had the largest percentage of international students. UIUC receives the lowest state funding per student at $1,327 per student, which is almost 4 times less than IUB ($5,107) and more than 10 times less than UMUC.

Next, when comparing study abroad totals, no pattern emerges between low and high state funding. Overall, IUB, NCSU, UMCP saw an increase of the total number of study abroad participants, while UIUC saw a slight decrease. NCSU saw the highest growth in study abroad

participants from 500 to 1426. Related to international scholarships, all universities saw an increase in the number of Fulbright student scholars. Finally, related to Peace Corps Volunteers, all universities saw a decrease in the number of volunteers between 2007 to 2017. Notably, NCSU 2007 number was not found and thus are unable to compare NCSU. However, based on the other universities, the consistent decrease may indicate that the decrease is due to a limit in the number of Peace Corp numbers accepted than something due to changes from the university.

In sum, results related to the student internationalization show that there is a clear difference between university state publicness and the level of undergraduate international students. Moreover, results show that a greater increase to the number of undergraduate and graduate international students may be linked to the sharp negative change in state funding that UIUC faced. Both universities with high state funding had increases in study abroad participants with NCSU seeing three times the number in 2017 compared to 2007, however no definitive pattern emerged when comparing low and high funding cases. Finally, all universities saw a decrease in Peace Corps volunteers which may be linked to a limit of acceptances from the organization and not necessarily a result of universities internationalization efforts.

Comparison of Scholar Characteristics

This section refers to table 4 *Scholar Characteristics of Internationalization.* As a reminder, UIUC represents a low funding, high change case; IUB represents a low funding low change case; NCSU represents a high funding, low change case; and UMCP represents a high funding, high change case. When analyzing the scholar dimension, NCSU percentage of international faculty increase stood out when compared to other universities and UIUC had less than half the percentage of international faculty when compared to the other cases. For the number of international faculty, all universities but NCSU saw a slight decrease in the percentage of international faculty with less than one percent change from 2007 to 2017, while NCSU saw a significant increase, more than doubling the percentage of international faculty from 2007 to 2017 from 4.76% to 10.35%. This increase may be attributed to the desire to be more on par with other universities. On the other hand, for UIUC, the percentage of faculty in 2017 was less than other

universities and could be attributed to an overall lack of funds to entice new faculty members. For the other characteristics, no clear pattern emerged.

Comparison of Research Orientation Characteristics

This section refers to table 5, *Comparison of Research Orientation of Internationalization.* As a reminder, UIUC represents a low funding, high change case; IUB represents a low funding low change case; NCSU represents a high funding, low change case; and UMCP represents a high funding, high change case. Comparing the research orientation dimension of internationalization across the four cases, there is a clear pattern between low funding cases and high funding cases related to international development research, with low funding cases seeing an increase when comparing 2007 and 2017 and high funding universities seeing a sharp decrease when comparing that same window. All universities saw a general increase in the number of research centers focused on global efforts. No clear pattern emerged in relation to the number of title VI centers; some universities saw an increase while others saw a decrease.

When looking at the international development research characteristic, low funding universities saw an increase while high funding universities saw a decrease. UIUC almost doubled the amount of grants going from $26.6 million from grants in 2001-2007 to $99.9 million in grants from 2008-2017. IUB increased dramatically from $835,641 to $39.4 million in grants that's more than 4 times greater in 2017 when compared to 2007. On the other hand, NCSU went from $14.5 million in 2007 to $2.4 million in 2017. UMCP went from $24 million to $9.3 million. UIUC and IUB may have become more aggressive in seeking federal USAID grants and NCSU and UMCP may have met increased competition from other universities such as UIUC and IUB. Potential conclusions will be further addressed in the discussion. Next, in looking at the number of research centers with an international focus, all universities had a significant increase. Most of the universities increased the number of research centers by one and a half times. UIUC went from 8 to 15 centers, IUB went from 21 to 27, NCSU went from 3 to 6 and UMCP went from 15 to 25 between 2007 and 2017. This growth seen by all universities may hint at the globalization of research or potentially the increased complexity of problems that require global collaboration.

Finally, there was no clear pattern in Title VI centers as some universities decreased and others increased the number of Title VI centers. Three of the four universities decreased, UIUC went from 15 to 7, NCSU went from 2 to 0 and UMCP went from 3 to 2 between 2007 and 2017. However, Indiana University Bloomington went from 17 to 19 in the same time period.

In all, the most significant pattern for research dimension is related to international development research where universities with decreased state funding, or decreased state publicness saw an increase in USAID grant when compared to NCSU and UMCP who saw a decrease in USAID grants.

Comparison of Curriculum Content

This section refers to table 6, *Curriculum Content of Internationalization.* As a reminder, UIUC represents a low funding, high change case; IUB represents a low funding low change case; NCSU represents a high funding, low change case; and UMCP represents a high funding, high change case. All universities have some level of internationalization related to curriculum content as evidenced by a consistent number of globally focused undergraduate majors and more than 5 less commonly taught languages. IUB stands out with having a significantly higher number of less commonly taught languages than the other three universities. On the other hand, UMCP stands out as the only university with no international perspective credit requirement. It is important to note that they do require a diversity credit but not necessarily an explicitly international credit.

Comparison of Organizational Support

This section refers to table 7, *Organizational Support of Internationalization.* As a reminder, UIUC represents a low funding, high change case; IUB represents a low funding low change case; NCSU represents a high funding, low change case; and UMCP represents a high funding, high change case. Finally, related to organizational support, no clear pattern emerges. All universities have a Vice Provost or similar that focuses on global efforts and a website dedicated to collecting information about their global efforts. All universities but UMCP have international presence in which IUB has the strongest international presence with international

staff/locations in 5 different countries. Interestingly enough, while all universities have clear international efforts, only UIUC has a visible tab from the homepage that directs people to more information about the global efforts. IUB and UMCP reference some international efforts and NCSU had no mention of international work on the homepage.

Summary

In sum, in answering the question “how internationalization activities differ in public research universities with varying levels of state funding”, the study shows there is a clear difference between universities with low state funding having higher numbers of undergraduate students when compared to universities with higher funding, and higher research international development grants. On the other hand, universities with higher state funding had a higher number of international faculty, which may be tied to having higher funding to attract and retain faculty. Just as telling, there was no clear difference between universities with high and low state funding related to curriculum content and organizational support, which may indicate some processes of internationalization may be driven by rationales that are not impacted by the level of publicness.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

This study aimed to better understand how internationalization varies across public research universities with varying state funding. U.S. public research universities have been intentionally involved, at some level, in internationalization for more than half a century when Truman called upon American technical expertise as a key vehicle for the delivery of foreign policy (Truman, 1949; de Wit, 2002). While initially, public research universities may have been motivated by a political rationale of national security and peace to advance internationalization on campus, over time, other rationales such as social/cultural, economic and academic have influenced how internationalization is actualized. Public research universities were selected because of their “distinctly American” design to serve the needs of local communities and their current battle for state funding which forces institutions to navigate tensions between their public

design and their need to seek private influence (Rhodes, 2001; Cole, 2009; Rhoten and Calhoun, 2011). Grounded in dimensional publicness theory which is particularly suited for an organization straddling public and private divide such as public research universities, the study looked at four distinct cases of public research universities with extreme levels of state funding to determine if and how internationalization at public research universities, with varying levels of publicness, differ (Bozeman and Bretschneider, 1994; Lee, 2017; Min, 2017). Using a multicase study research design to analyze each case individually and then across each dimension, the study results demonstrated that public research universities with varying levels of state funding do differ in internationalization related to student characteristics and research characteristics. Equally telling, results showed that institutions do not vary greatly related to curriculum content and organizational support.

Understanding the Differences

Unsurprisingly, key differences in internationalization efforts across the cases are tied to revenue or budget for public research universities. First, the volume of international undergraduate students was noticeably different for low funding cases (UIUC and IUB) compared to high state funding cases (UMCP and NCSU). Not surprisingly, as the literature shows, international student enrollment is a key revenue source for universities which becomes particularly important after the global recession (Altbach and Knight, 2007; Horn et al 2007). International students became a particularly important market for public research universities due to the fact that they paid full tuition that was double or sometimes triple tuition compared to in-state residents (Shih, 2017). In fact, while critics questioned whether international students stole seats from domestic students, research has shown that international student enrollment can cross-subsidize domestic enrollment (Shih, 2017). Thus after the economic downturn, universities that were hit the hardest by state cuts, were motivated to seek other ways to offset the cost. This is particularly noticeable in the UIUC case where compared to the other universities, UIUC had the highest change in undergraduate and graduate international students while NCSU which had the highest amount of state funding had the lowest percentage and percentage change in the

number of international undergraduate and graduate students. While such difference across low and high funding cases is not seen with the percentage of international graduate students, UIUC still had the highest percentage change (17.1%) in international graduate students causing UIUC to lead in percentage of international graduate students (39%) by more than 10% when compared to the other universities. Therefore for UIUC, dramatically increasing the number of graduate students was tied to an economic rationale, whereas, for other universities, the rationale for attracting a higher number of graduate students may be different such as an academic rationale explained by the traditional role of international students in international research and teaching (Urban and Bierlein Palmer, 2014). Moreover, historically graduate international students in the US have been a higher percentage of the student population compared to undergraduate students (Shih, 2017). In fact, for many sectors such as science and engineering, international graduate students have outnumbered domestic students (Shih, 2017). Therefore, state cuts in public research universities seem to encourage international student numbers, which provides critical tuition revenue to offset the cost of state budget cuts.

In addition to international students, there was a clear difference in international development research between cases with low state funding and high state funding. Universities with lower funding (UIUC and IUB) saw a dramatic increase in international aid funding through USAID compared to cases with high state funding (NCSU and UMCP). Similar to international student numbers, universities with lower funding may be motivated by an economic rationale to increase resources to the university by searching for new funding opportunities and becoming more aggressive in the pursuit of those funds. While economic rationale could probably be one of the reasons why lower state funding universities seek increase in international aid grants, other explanations for the difference in international research funding may include overall increase in competition for research grants, shifting focus of international development grants away from the expertise of the higher funded universities to the lower funding universities (e.g., shifting from reconstruction to other sustainable development goals; changing focus areas due to change in administrations) (Musselin, 2017; USAID, 2016). Another explanation from the difference in

research may also be tied to the increased effort from low state funding universities to attract and retain foreign students. Having more international students may make it so that international graduate students or scholars at universities are applying more to international development funding. Further research is needed to decouple rationales behind increased international development funding.

Understanding the Similarities

While there were key differences between dimensions and the cases, there were also important similarities. First, all universities saw an increase in international students. The increase of international students across all cases is explained by the overall positive trend in higher education for the number of international students in U.S. higher education (Shih, 2017). However, it appears that such growth in international students may soon plateau or decrease due to a challenging political environment making international students more hesitant to come to the United States (Kang, 2020). Next, all cases demonstrated consistent and clear organizational support. By 2017, all universities had appointed a senior administrator to oversee global or international efforts. By 2017, three out of the four universities had an international presence and all universities had dedicated websites to communicate international efforts to different stakeholders. Such results demonstrate that regardless of state publicness, institutions were serious about advancing internationalization efforts and set in motion structural changes at these universities that have endured changes in state funding (Helms and Brajkovic, 2017). Such efforts may also hint at the commitment of public research universities to not only serve the local needs but also a commitment to be “world class” institutions which require a strategic involvement in internationalization efforts that enhance their teaching, research and service as seen by Indiana University Bloomington’s globalization report in 2007 (Indiana University Bloomington, 2007). Finally, similarities in the commitment towards internationalization in curriculum content makes the case that regardless of the level of publicness, global curriculum content can be a benefit both for domestic and international students, thus limiting the impact of variance in state funding on curriculum (Simm and Marvell, 2017). In the end, similarities across the four cases illustrate the

impact of globalization on institutions and the clear commitment that institutions have towards internationalization.

The study sought to understand how internationalization varies across public research universities with varying state funding. Underpinned by a theory in dimensional publicness, the study showed that while state publicness appears to be connected to internationalization efforts that are tied to economic rationales such as international students and research grants, university's state publicness doesn't appear to impact curriculum and institutional support, or internationalization rationales that are driven beyond economic gains. Internationalization at universities is present and the four cases each had engagement across all five dimensions which illustrates regardless of publicness, internationalization plays a key role in public research universities.

Further Research

Further research is needed to confirm rationales of the key differences between the cases, which goes beyond the scope of the study. This study sought to determine how things may differ and while the discussion included some hypothesis, further research is needed to confirm whether the rationales listed in the discussion are correct. In addition, further research can scale the study to compare public and private research universities to determine if the patterns found in this small sample applies across American higher education. Lastly, more research is needed related to internationalization in research with a particular lens in international development. As noted in the introduction, universities' involvement in international development has been present since the mid-20th century, however, limited research on the changing role of universities in international development and how that is tied to broader internationalization scholarship would benefit not only international scholars but also higher education scholars by furthering our understanding of the varied roles of higher education.

Conclusions

The impetus of this study was a result of limited research available on the tensions that U.S. public universities must face by their public mission to serve the needs of the community and state while also being called upon by the federal government to play a key role in foreign policy through the sharing of technical knowledge (Truman, 1945). It is important to note, given the current U.S. economic crisis, global coronavirus pandemic, and impending state budget cuts for higher education across the country, it is unclear if the findings will hold in the future context (Kang, 2020). As history has demonstrated, internationalization has ebbed and flowed with the changing global dynamics (de Wit, 2002). With increased nationalistic viewpoints, increased anti-immigration regulation in the U.S. and continued economic crises, internationalization will look different. Some scholars prior to the pandemic were already forecasting an impending change in internationalization due to the rise of nationalism and populism across the world with President Trump, Brexit and increased support of right wing parties across the world (Altbach and de Wit, 2017). While this mean that universities may face decreased financial support for internationalization activities, it is still up to the universities to continue to advance internationalization efforts. While current context may make the future of internationalization more complex, history has also shown that level globalization oscillates (Bordo and Schenk, 2019). And it may be that the universities that continue to thoughtfully explore internationalization efforts will be better positioned to engage and succeed in a more globally connected world.

U.S. public research universities, must juggle their efforts, prioritization and focus between developing local communities tied to their state mandate and developing global communities tied to their increased efforts in internationalization. The study is the beginning of further understanding such tensions. This study clearly shows that there is a difference in internationalization efforts between low funding and high funding cases as it relates to internationalization efforts tied to economic rationales. However, just as telling, is that there were similarities across the cases in curriculum and organizational support which are less economically

driven and may be driven by other rationales such as academic, social/cultural or political. The purpose of the study is not to show *if* internationalization happens in universities, but recognize that *how* internationalization happens at universities may differ. While further research is needed to determine generalizability of the study, there is a need to better understand rationales or *why* universities consciously and unconsciously engage in different internationalization efforts. Such understanding is important for higher education scholars and in the world of development, better understanding such reasons can unearth insights as to the different roles that universities as actors play in U.S. international development efforts.

REFERENCES

Altbach, P., & De Wit, H. (2015). Internationalization and Global Tension: Lessons From History. *Journal of Studies in International Education, 19*(1), 4-10.

Altbach, P. & De Wit, H. (2017). *The new nationalism and internationalisation of HE.* Retrieved October, 11, 2020. Altbach, from University World News. https://www.universityworldnews.com/post.php?story=20170914073027157

Altbach, P., & Knight, J. (2007). The Internationalization of Higher Education: Motivations and Realities. *Journal of Studies in International Education, 11*(3-4), 290-305.

American Academy of Arts and Sciences. (2015). Public Research Universities: Why they matter.

Association of Public & Land-grant Universities Commission on International Initiatives (APLU). (2017) Pervasive Internationalization: a call for renewed leadership.

Baxter, Pamela, and Susan Jack. "Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers." Qualitative report 13.4 (2008): 544–. Print.

Bedenlier, S., Kondakci, Y., & Zawacki-Richter, O. (2018). Two Decades of Research Into the Internationalization of Higher Education: Major Themes in the Journal of Studies in International Education (1997-2016). *Journal of Studies in International Education, 22*(2), 108-135.

Board for International Food and Agricultural Development (BIFAD) (2011). Title XII Report to Congress FY 2009 and FY 2010. Washington D.C. Retrieved from: https://www.aplu.org/projects-and-initiatives/international-programs/bifad/BIFAD_Library/fy-2009-2010-title-xii-report-to-congress/file

Bordo, M.D. & Schenk, C.R. (2019). *Unusual, Unstable, Complicated, Unreliable and Temporary" Reinterpreting the Ebb and Flow of Globalization.* Economics Working Paper 19114. Hoover institute https://www.hoover.org/sites/default/files/research/docs/19114-bordo_schenk.pdf

Bozeman, B., & Bretschneider, S. (1994). The "Publicness Puzzle" in Organization Theory: A Test of Alternative Explanations of Differences between Public and Private Organizations. *Journal of Public Administration Research and Theory: J-PART, 4*(2), 197-223.

Bozeman, B., & Moulton, S. (2011). Integrative publicness: A framework for public management strategy and performance. *Journal of public administration research and theory*, *21*(suppl_3), i363-i380.

Bound, J., Braga, B., Khanna, G., & Turner, S. (2016). A Passage to America: University Funding and International Students. National Bureau of Economic Research.

Cantwell, B. (2015). Are International Students Cash Cows? Examining the Relationship between New International Undergraduate Enrollments and Institutional Revenue at Public Colleges and Universities in the US. *Journal of International Students, 5*(4), 512.

Cheslock, G. (2008). Replacing State Appropriations with Alternative Revenue Sources: The

Case of Voluntary Support. *The Journal of Higher Education (Columbus)*, *79*(2), 208–229. https://doi.org/10.1080/00221546.2008.11772092

Chmiliar, L., & Chmiliar. (2009). Multiple Case designs. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), Encyclopedia of case study research. Sage Publications.

Cole, J. (2009). *The great American university its rise to preeminence, its indispensable national role, and why it must be protected* (1st ed.). New York: Public Affairs.

Crow, Michael M, and William B Dabars. Designing the New American University. Baltimore, MD: John Hopkins University Press, 2015. Print.

de Wit, H. (2002). "Internationalization of Higher Education in the United States of American and Europe: A historical, comparative and conceptual analysis". Connecticut: Greenwood Press.

de Wit, H. (2017). "Global: Internationalization of Higher Education: Nine Misconceptions". In *Understanding Higher Education Internationalization*. Leiden, The Netherlands: Brill | Sense. doi: https://doi.org/10.1007/9789463511612_004

Feeney, M., & Welch, E. (2012). Realized Publicness at Public and Private Research Universities. *Public Administration Review, 72*(2), 272-284.

Gao, Y. (2015). Toward a set of internationally applicable indicators for measuring university internationalization performance. *Journal of studies in international education*, *19*(2), 182-200.

Geiger, R. (1985). The private alternative in higher education. *European Journal of Education*, 385-398.

Helms, R. M., Brajkovic, L., & Struthers, B. (2017). Mapping internationalization on US campuses: 2017 edition. *Washington, DC: American Council on Education*.

Horn, A. S., Hendel, D. D., & Fry, G. W. (2007). Ranking the international dimension of top research universities in the United States. *Journal of Studies in International Education*, *11*(3-4), 330-358.

Indiana University. (2007). Globalization and the Internationalization of the IU Bloomington Campus. A Self-Study conducted for the Campus Accreditation by the Higher Learning Commission of the North Central Association 2007. *Archives of Institutional Memory.* http://institutionalmemory.iu.edu/aim/handle/10333/4907

Indiana University. (2019). Peer Institution List. *University Institutional Research and Reporting.* https://uirr.iu.edu/resources/peers/

Jackson, John S. and Bedar, Carol, "Higher Education Funding in Illinois: 1997-2010" (2010). The Simon Review (Occasional Papers of the Paul Simon Public Policy Institute). Paper 17.

Kang, J. (2020, Oct 27) International Students Don't Want to Study in the US Anymore. *The Nation.* https://www.thenation.com/article/world/international-students/

Kezar, Chambers, Burkhardt, Kezar, Adrianna J, & Burkhardt, John. (2005). *Higher*

education for the public good : Emerging voices from a national movement (1st ed., The Jossey-Bass higher and adult education series). San Francisco: Jossey-Bass.

Knight, J. (2004). Internationalization Remodeled: Definition, Approaches, and Rationales. *Journal of Studies in International Education, 8*(1), 5-31.

Lee, Y. J. (2017). Understanding higher education institutions' publicness: Do public universities produce more public outcomes than private universities?. *Higher Education Quarterly*, *71*(2), 182-203.

Lombardi, J. V., Abbey, C. W., & Craig, D. D. (2018). *The top American research universities*. The Center for Measuring University Performance at University of Massachusetts Amherst and the University of Florida.

Marginson, S. (2018). "Higher Education and Science in the Age of Trump, Brexit and Le Pen". In *Under Pressure*. Leiden, The Netherlands: Brill | Sense. doi: https://doi.org/10.1163/9789004398481_002

Merritt, C.C. and M. D. Farnworth. (2018). 'Antecedents to managing publicness: a study of professional and cultural socialization', in Edmund C. Stazyk and H. George Frederickson (eds), The Handbook of American Public Administration, London: Edward Elgar, pp. 244-58.

Min HS, Park Y, Kim CY. Recognition of the Concept of Publicness in Healthcare: a Content Analysis of Korean Newspapers. *J Korean Med Sci*. 2017;32(3):393–400. doi:10.3346/jkms.2017.32.3.393

Mohrman, K., M.Wanhua, D. Baker. (2008) The research university in transition: the emerging global model. *Higher Education Policy, 21, (5-27).*

Morgan, Robert P. Science and Technology for Development: the Role of U.S. Universities. Elmsford, New York: Pergamon Press Inc., 1979. Print.

Moulton, S. (2009). Putting Together the Publicness Puzzle: A Framework for Realized Publicness. *Public Administration Review, 69*(5), 889-900.

Musselin, Christine. "New Forms of Competition in Higher Education." Socio-economic review 16.3 (2018): 657–683. Web.

North Carolina State University. (2011). Peer Institutions. *Institutional Strategy and Analysis.* https://oirp.ncsu.edu/facts-figures/peer-comparisons/peer-institutions/

Perna, L., Finney, J. & Callan, P. (2012) *Much accomplished, much at stake: Performance and policy in Maryland higher education.* Institute for Research on Higher Education.

Pohl, Hans. (2015). How to Measure Internationalization of Higher Education. In Ullberg, Eskil editor. New Perspectives on Internationalization and Competitiveness: Integrating Economics, Innovation and Higher Education. DOI: 10.1007/978-3-319-11979-3_4.

Rhodes, F. H. T. (2001). *The creation of the future: The role of the American university*. Cornell University Press.

Rhodes, F.H.T. (2004) Governance of U.S. Universities and Colleges. In Luc E. Weber and J.J. Duderstadt (eds.) Reinventing the Research University. (213-226).

Rhoten, D., & Calhoun, C.J. (2011). *Knowledge matters: The public mission of the research university* (Columbia/SSRC book). New York: Columbia University Press.

Stevens, M. L., & Miller-Idriss, C. (2009). Academic Internationalism: US Universities in Transition. *Social Science Research Council*.

Simm, D. and Marvell, A. (2017) Creating global students: opportunities, challenges and experiences of internationalizing the Geography curriculum in Higher Education, Journal of Geography in Higher Education, 41:4, 467-474, DOI: 10.1080/03098265.2017.1373332

Shih, Kevin. (2007) "Do International Students Crowd-Out or Cross-Subsidize Americans in Higher Education?" Journal of public economics 156 (2017): 170–184. Web.

State Higher Education Executive Officers Association. (2019). State Higher Education Finance: FY 18. Boulder, CO.

Stein, S. (2017). Internationalization for an Uncertain Future: Tensions, Paradoxes, and Possibilities. *The Review of Higher Education, 41*(1), 3-32.

Truman, H. S. (1949, January 20). Inaugural address of Harry S. Truman. Yale Law School, The Avalon Project Documents in Law, History and Diplomacy. https://avalon.law.yale.edu/20th_century/truman.asp

The Carnegie Classification of Institutions of Higher Education (n.d.). About Carnegie Classification. Retrieved July 2, 2019 from http://carnegieclassifications.iu.edu/

Urban, E. L., & Palmer, L. B. (2014). International students as a resource for internationalization of higher education. *Journal of Studies in International Education*, *18*(4), 305-324.

U.S. Department of Education, National Center for Education Statistics. (2019). *Digest of Education Statistics, 2017* (NCES 2018-070), Chapter 2.

United States Agency for International Development (USAID) (2016). President Obama's Commitment to Global Development. retrieved Oct. 12, 2020 from: https://www.usaid.gov/news-information/fact-sheets/jul-20-2016-president-obamas-commitment-global-development

U.S. State Department and USAID. (2019). FY 2018 Annual Performance Report. FY 2020 Annual Performance Plan. Retrieved Nov. 11, 2020 from: https://www.usaid.gov/results-and-data/progress-data/annual-performance-report

Vavrus, F., & Pekol, A. (2015). Critical Internationalization: Moving from Theory to Practice. FIRE: Forum for International Research in Education, 2(2). http://dx.doi.org/10.18275/fire201502021036

Wall Street Journal. 2015. "How International Students Are Changing U.S. Colleges" retrieved Sep. 2, 2019. Retrieved from: http://graphics.wsj.com/international-students/

Weisbrod, B. A., Ballou, J. P., & Asch, E. D. (2008). Mission and money: Understanding the university. Cambridge University Press.

Woldegiyorgis, A. A., Proctor, D., & de Wit, H. (2018). Internationalization of research: Key considerations and concerns. *Journal of Studies in International Educatio*n, 22(2), 161-176.

APPENDIX A

STATE APPROPRIATION OF 32 PUBLIC UNIVERSITIES WITH NO HOSPITAL

Institution Name	2007 State Funding Revenues per FTE	2016 State Funding Revenues per FTE	% Change	FTE 2017	2017 Endowment (in millions)	2017 research expenditures (in millions)
University of Illinois at Urbana-Champaign	$6,235.00	$1,327.00	-79%	44,138	$1,534,717	$372,619
University of South Carolina-Columbia	$7,094.00	$3,610.00	-49%	31,705	$610,273	$208,670
Arizona State University at the Tempe Campus	$7,822.00	$4,389.00	-44%	48,255	$665,488	$545,016
Indiana University-Bloomington	$6,054.00	$5,107.00	-16%	42,785	$1,081,730	$540,421
University of Cincinnati-Main Campus	$6,811.00	$5,906.00	-13%	30,626	$1,280,295	$455,250
Michigan State University	$7,624.00	$5,914.00	-22%	46,251	$3,084,973	$694,917
University of Arizona	$12,003.00	$6,454.00	-46%	38,815	$843,529	$622,200
Oregon State University	$8,064.00	$6,704.00	-17%	25,575	$549,448	$267,068
Washington State University	$9,946.00	$7,109.00	-29%	27,129	$975,177	$356,901
Iowa State University	$10,870.00	$7,475.00	-31%	33,840	$910,356	$323,584
Louisiana State University and Agricultural & Mechanical College	$11,367.00	$7,506.00	-34%	28,965	n/a	$266,177
Virginia Polytechnic Institute and State University	$9,211.00	$7,586.00	-18%	31,369	$987,600	$522,425
Kansas State University	$8,791.00	$7,636.00	-13%	21,541	$450,462	$196,478
Purdue University-Main Campus	$6,952.00	$7,643.00	10%	37,995	$2,347,515	$622,814
The University of Texas at Austin	$6,484.00	$7,662.00	18%	49,019	$3,678,480	$652,187

Institution Name	2007 State Funding Revenues per FTE	2016 State Funding Revenues per FTE	% Change	FTE 2017	2017 Endowment (in millions)	2017 research expenditures (in millions)
Wayne State University	$8,343.00	$7,745.00	-7%	21,708	$339,467	$227,728
University of California-Santa Barbara	$9,265.00	$8,772.00	-5%	24,015	$322,419	$238,246
University of South Florida	$10,083.00	$8,805.00	-13%	35,410	$1,605,037	$557,889
University of Wisconsin-Madison	$10,310.00	$9,127.00	-11%	39,938	$3,759,387	$1,193,413
University of Kansas	$10,497.00	$9,222.00	-12%	24,744	$1,634,789	$300,319
University of California-Berkeley	$13,937.00	$9,403.00	-33%	38,396	$1,909,978	$770,822
Georgia Institute of Technology-Main Campus	$13,478.00	$9,477.00	-30%	22,588	$1,985,802	$804,301
Florida State University	$13,077.00	$10,079.00	-23%	37,514	$639,371	$282,901
University of California-Santa Cruz	$8,035.00	$10,148.00	26%	18,461	$96,639	$124,344
University of Massachusetts Amherst	$11,267.00	$11,099.00	-1%	26,102	n/a	$210,416
University of California-Riverside	$9,058.00	$11,363.00	25%	22,451	n/a	$163,632
University of Georgia	$13,212.00	$11,413.00	-14%	34,364	$1,151,904	$455,432
The University of Tennessee	$14,881.00	$11,429.00	-23%	25,864	$1,214,619	$203,800
University of Minnesota-Twin Cities	$12,842.00	$11,952.00	-7%	43,966	$3,290,771	$921,681
Texas A & M University	$9,965.00	$12,206.00	22%	60,310	$10,808,501	$905474
University of Nebraska-Lincoln	$11,654.00	$12,267.00	5%	23,510	$958,039	$302,204
SUNY at Albany	$10,521.00	$12,305.00	17%	15,582	$65,342	$156,386

Institution Name	2007 State Funding Revenues per FTE	2016 State Funding Revenues per FTE	% Change	FTE 2017	2017 Endowment (in millions)	2017 research expenditures (in millions)
University of Hawaii at Manoa	$13,306.00	$13,672.00	3%	15,276	$307,777	$292,021
University of Florida	$13,091.00	$14,056.00	7%	47,063	$1,612,003	$801,418
University of Maryland-College Park	$11,741.00	$14,267.00	22%	37,349	$548,749,570	548885
North Carolina State University at Raleigh	$15,839.00	$16,812.00	6%	29,421	1,122,932	500445
University of North Carolina at Chapel Hill	$19,007.00	$17,363.00	-9%	26,697	2,947,111	1,102,063
Standard deviation	$2,955.23	$3,495.73	23.06%	10,463.50	175,197,719	275,895.04
Average	$10,506.41	$9,324.59	-12%	32,669	55,235,486	478,663
+1 stand dev	$13,461.64	$12,820.32	11%	43,132	230,433,205	754,558
-1 stand dev	$7,551.17	$5,828.87	-35%	22,205	-119,962,234	202,768