

**The Internationalization of Higher Education:**

A US Perspective

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(ABSTRACT)

Globalization affects many sectors of society. Higher education is no exception. Universities worldwide respond to challenges presented by globalization in various ways. One response is the internationalization of the university campus. This paper argues that many US higher education research institutions engage in processes of internationalization. This study examines the geography of international education programs associated with US research institutions and shows that world cities emerge as popular places for US institutions to interact with other universities. The paper contributes to both educational and globalization literature by examining on a macro-scale the internationalization programs associated with US research institutions.

This research shows that Paris, Tokyo, Seoul, London, and Melbourne emerge as the top five locations for US abroad activities among the universities studied. While in many instances US abroad programs displayed characteristics that allowed students and researchers the opportunity to gain exposure to another language and culture, some abroad programs expanded the opportunities for participants by including the opportunity to work and interact with international firms and pursue degrees (international business, masters of economics, and international law) that make individuals competitive in the global employment market. Finally, this research shows that many US universities locate abroad programs in world cities. Although no clear reason or relationship for this phenomenon emerged during the course of this research, it illustrates an area for potential further study in a variety of fields.

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## INTRODUCTION

Universities play an important role in the generation of ideas, knowledge, and technology. The relationship between a university and the surrounding area provides insight into the flows and transactions that occur between the two entities. Flows of information are bidirectional, indicating that both the university and the surrounding area stand to gain from interaction.

Transnational processes refer to the flow of information on a global scale within and between state borders. In higher education transnational processes allude to the increase in the number of satellite campuses, international co-operations, and study abroad programs offered by universities world wide (International Association of Universities 2004). In relation to business and service firms, transnational processes describe the increased ease with which information, knowledge, and communication occurs between places (Sassen 2000). Transnational activity of service, telecommunication and banking firms led to the emergence of cities as key business locations (Sassen 2000). However, there is little mention of cities in the education literature, and there is little mention of transnational education in globalization literature. The possible gap between globalization literature and educational literature that discusses transnational education serves as the impetus for this research.

The purpose of this paper is to first, examine the location of transnational educational facilities associated with United States (US) research universities, and second examine what relationships may exist between US transnational educational programs and the nature of individual cities.

This research hypothesizes that transnational educational facilities are located in cities because they provide programs that promote skills geared towards the knowledge-based economy. Second, this research hypothesizes that universities, educators and students respond to globalization by participating in transitional activities such as study abroad, foreign exchanges, and international co-operations (UNESCO 2003). Third, this research hypothesizes that the cities with the highest concentration of US institution's international educational programs and facilities emanate certain characteristics that influence the economic, political, and social make-up of the city. Three objectives emerge from these hypotheses:

- A) To fill a gap in literature on the relationship between educational literature on transnational education and globalization literature focusing on transnational processes.
- B) To examine the location of US institution's transnational education opportunities.
- C) To understand the types of programs that US institutions offer abroad and how they relate to specific places.

A systematic analysis of qualitative and quantitative data, coupled with a literature review provides the framework for the remainder of this paper. This research shows that many US institutions provide the opportunity for students and faculty to engage in transnational educational opportunities.

## REVIEW OF LITERATURE

Universities represent the traditional source of knowledge in society. They provide an environment that generates ideas, skills, and inventions, all components of knowledge. Universities constantly face pressure to conform to the needs of society, however what makes universities unique is their power to withstand times of change, and time after time, reemerge as the key providers of knowledge. Similar to many other facets of society, many universities across the United States responded to the transition from an industrial to a knowledge-based economy. Responses by universities to this structural change in the economy often included an examination of how the university is structured, how programs are delivered, and what role the university plays in the development of new technologies. This literature review seeks to examine the structure of the university, the relationship between globalization and universities, the transnationalization of education, the importance of knowledge in the knowledge-based economy, and the role of the university in the wake of globalization, the knowledge-based economy, and world cities. Each topic will be discussed in turn.

### **The structure of the university**

As the role of the university has evolved in recent years, so has the structure of research universities and Land Grant Universities. *The Business of Borderless Education: UK perspectives*, Bjarnason et al (2000) found that one of the strongest pushes for change within universities resulted from the telecommunications revolution and the increasing need for “life-long” learning. Campuses once geographically bound to one physical place now have the opportunity to expand and network between states,



regions, and international locations. In addition, technology enables professors and students access to a world of information previously available only at high costs and over long periods of time. The desire for education created by a population that continually seeks education, further supports changes within the university. These forces continue to alter the structure of the university in three ways, which included changes to the structure of governance, expansion of campus networks, and enhancement of university-community partnerships.

Universities historically benefit from self governance with little interference from external forces such as the State or a board of directors. However, in an era of legitimacy and accountability, universities are better served by adopting policies that illustrate transparency. Therefore, one challenge that a university faces when adopting policies to promote “borderless education” is maintaining its legitimacy, while allowing outsiders in to examine and explore the structure of the university (Bjarnason et al 2000). A second change to the governance of a university focuses on the types of knowledge that the university supports. As a result, universities need to explore how the diversification into nontraditional mechanisms of learning can benefit a university. Walshok (1997) suggests that universities re-structure programs and policies to reflect support for flexible formats of information dissemination, ongoing evaluation of programs developed by the university, and high connectivity between upper administration and university programs.

Critics of the restructuring of university administration feel that many policies spread administrators and educators too thin. As a result, the quality of programs decline and do not represent the best product that a university could produce.

The second change to universities structure relates to the expansion of campuses. Many universities have chosen to expand their campuses for several reasons. When a campus reaches maximum student capacity, one option often presented to campus leaders is to build a satellite campus in a region where the university draws a large portion of their applicants. For example, Virginia Tech's main campus is in Blacksburg, but it also has satellite facilities in Northern Virginia, Hampton Roads, and Richmond. Similar, the University of North Carolina has located satellite campuses all over the state, which created an educational network well beyond Chapel Hill. A recent article written by the National Alliance for Business, *Postsecondary Learning for Everyone* (2000), suggests that high growth regions attract satellite campuses of college systems and postsecondary institutions because they give the institutions access to high growth areas. This article further suggests that that the location of satellite campuses in high growth areas provides the population postsecondary education that was previously unavailable. The above statements illustrate that both the university and the city benefit from the creation of satellite campuses in cities.

Historically, universities located in cities develop a relationship that is mutually beneficial to both entities. Shils (1988) elaborates on the long-standing, mutually beneficial relationship between the University of Chicago and Chicago. In short, the University of Chicago receives from Chicago financial support, moral support, respect, and a unique opportunity to operate in a "harsh, animated, and demanding environment" (Shils 1988, 212). Chicago receives claim to a major university, which promotes pride among the population and the use of teacher resource in the collaboration on some city

projects (Shils 1988). The mutual benefits between a city and university possibly exist on a smaller scale with the creation of satellite campuses in high growth urban areas

While the expansion of campus networks focuses predominately on how the university system expands, the enhancement of university-community partnerships explores how universities spill out of the classroom and into the communities. These spillovers help strengthen the economic vitality of a community. In a recent speech, Richard M. Rosan, president of the Urban Land Institute (2002), summarized this phenomenon with the suggestion that research institutions “have the resources to provide a stream of knowledge know how and human capital, serving as the fuel for innovation, entrepreneurship and regional synergy.” Universities become promoters of economic development and places of technology generation. Specific tools that assist in the creation of strong university-community relationships include solid partnerships between stakeholders, the examination of all issues to develop trust, communities and universities should embark on a series of short and long term strategic planning efforts, and after implementation of programs continuous evaluation should occur (Rosan 2002). The result of strengthened university community partnerships include improved town-gown relationships, increased support base for university activities, and increased out of classroom educational opportunities for students.

Another force that influences the role and structure of the university is globalization. The next two sections specifically address the impact of globalization on the university. The first section Universities and globalization examines general trends and impacts of globalization on higher education. The second section, Transnational

education: The impact on the state, concentrates on the relationship between European states and extended campuses, international co-operations, and satellite campuses.

### **Universities and Globalization**

Globalization affects many facets of society. The delivery of higher education is no exception. Recently, the International Association of Universities (IAU), a subsidiary of the United Nations Educational, Scientific, and Cultural Organization (UNESCO), identified globalization as a thematic priority area in the realm of higher education.

UNESCO defines globalization as

“the flow of technology, economy, knowledge, people, values ... across borders.

Globalization affects each country in a different way due to each nation’s individual history, traditions, cultures, resources, and priorities”

(UNESCO 2003, 4).

The issues for higher education that UNESCO identifies include

- The growing importance of the knowledge society/economy
- The development of new trade agreements which cover trade in education services
- Innovations related to information and communication technologies (ICTs)
- The emphasis on the role of the market and the market economy

Source: (UNESCO 2003, 6)

These issues change the ways in which institutions, states, and regions shape policy and make educational decisions. One solution to the issues raised by globalization is internationalization. Sometimes the terms internationalization and globalization are used interchangeably, however the more correct interpretation is that internationalization

acts as a solution to issues raised by globalization (UNESCO 2003). Knight (2003, 2) defines internationalization “at the national, sector, and institutional levels ... as the process of integrating an international, or global dimension into the purpose, functions or delivery of postsecondary education.” More specifically, internationalization “includes a broad range of elements such as curriculum, teaching learning, research, institutional agreements, student/faculty mobility, development cooperation” (UNESCO 2003, 4-5). Therefore, higher educational institutions operationalize internationalization through the creation and execution of study abroad programs, the management of centers and institutes, and the facilitation and participation in international research cooperation and exchanges.

In the context of this research, globalization and internationalization both serve as relevant terms. The argument presented within this research suggests that the forces of globalization as identified by UNESCO have created the need for universities to respond through the internationalization of educational programs. Universities have aggressively pursued the expansion of educational programs and opportunities by offering and participating in study abroad programs, international co-operations, and satellite campuses. The forms of education described above all fit into the guise of transnational education. Transnational education describes, “all types of higher education study programs, or sets of courses of study, or educational services (including those of distance education) in which the learners are located in a country different from the one where the awarding institution is based. Such programs may belong to the education system of a State different from the State in which it operates, or may operate independently of any national education system” (International Association of Universities, Accessed 2004).

Transnational education has grown significantly over the last several decades (International Association of Universities, Accessed 2004). With the growth of transnational education, barriers to expansion emerged. Middlehurst (2001) identifies seven barriers to crossing national borders: 1) national legislation in general and in relation to higher education policies in particular, 2) qualification authorities and their policies, 3) customs regulations, 4) visa regulations 5) telecommunications' laws 6) intellectual property rights 7) bureaucratic over-regulation by quality and funding agencies. In response to these barriers, higher education providers must meet the needs of their student population. In addition, universities need to ensure that the quality and distribution of services accurately reflect the ideals and standards of the university, State, and region. Currently many of the organizations that offer codes of practice to guide in the administration of transnational education provide only voluntary guidelines (Adam 2001). As a result, quantifying the impact of transnational education on a Nation, State and/or region proves challenging (Adams 2001).

### **Transnational education: Impact on the State (A European perspective)**

Transnational education acts as a force that changes the geographical landscape, policy reforms, and the university structure. However, very few sources of data that describe the networks and flows of transnational education are available to researchers. Adams (2001) shares this frustration in his efforts to collect data on the European network of higher education. He concludes that transnational education bypasses traditional providers of education, and that “virtually no country maintains statistical data on it and few educational experts had considered the phenomenon in any detail” (Adams 2001, 12). Adam’s conclusion that very few countries collect and maintain statistical

data on transnational education provides partial motivation for this study. This research furthers the effort to collect quantifiable data through an examination of where US institutions locate and operate transnational education programs.

Despite difficulties acquiring data, Adams (2001) examines the structure of transnational education in Europe. Often times, states had not considered the issue of transnational education. Adams’ study reviews 17 Western European States and their policies on transnational education. Many states do not regulate or put pressure on transnational educational facilities to abide by any distinct method or process of accreditation. However, internally many states maintain an accreditation system, and a university must be recognized by the accrediting agency to award degrees. Several states recognized that they were places where external universities located. These states provided insight as to what they perceive as some of the advantages and disadvantages associated with transnational education.

**Table 1: Advantages and disadvantages of transnational education**

<b>Advantages</b>	<b>Disadvantages</b>
Stimulated economic competition ( <i>Spain</i> )	Risk of losing national cultures and minority languages ( <i>Portugal</i> )
Fosters diversity ( <i>Netherlands</i> )	Consumer Protection ( <i>Netherlands</i> )
Fosters new approaches to education ( <i>Germany</i> )	Determining legal status and quality of education ( <i>Italy</i> )

Source: Adams (2001)

The advantages and disadvantages listed above highlight the multi-perspective elements associated with transnational education. Transnational education brings potential economic benefits to regions, as Spain recognized. Institutions that establish

campuses bring people and resources to the regions that contribute to the economic base through the purchase of goods and services. Culturally, the impact of transnational education creates mixed results. One perspective sees the influx of students to the region as improving atmosphere for learning. However, some countries worry that cultural flight occurs when nationals leave the country. Smaller countries with a small and declining population base hold the later view on culture and transnational education. The final area that transnational education impacts the State involves the politics and governance of universities, which spills over into politics. As Italy suggests in response to the survey administered by Adams, “the responsibility for quality assurance of transnational education is seen to be shared between: the national authorities of the importing country, the receiving institution, the authorities of the exporting country, national quality assurance agencies and a new supranational authority” (Adams 2001, 27-28). Many States lack a political infrastructure that remotely models Italy’s recommended framework. As a result, States and institutions struggle over governance, power, and control.

In addition to the advantages and disadvantages of transnational education, the study conducted by Adams (2001) reveals general characteristics of transnational education in Europe. The focus of programs includes graduate business programs, “information technology, computer science, and the teaching of foreign languages” (Adams 2001, 43). These programs reflect the demands of knowledge consumers in a knowledge-based economy. Increased communication between education providers who deliver educational services, and the state that they operate in, creates opportunity for policy change and reform at the international, national, and state level.



Transnational education clearly holds many implications for educational sector worldwide. Factors such as the transition to a knowledge-based economy, the accessibility and ease of communications, and the trend towards international learning all contribute to the emergence of transnational education. Noticeably absent from the literature is a discussion on what transnational education means to a country, region, and/or city. Adams (2001) begins to address these issues, but only at a very elementary level. Most of his analysis focuses on implications for the educational sector. The following sections Knowledge in the knowledge based economy and Knowledge and cities continue the discussion on why these topics emerge/should emerge in the discussion of transnational education.

### **The role of knowledge in the economy**

The transition from an industrial-based society to a knowledge-based society reflects the change in modes of production and consumption away from manufacturing and towards services. As Harris (2001, 22) notes, in the simplest form a knowledge-based economy represents “the notion that economic wealth is created through the creation, production, distribution and consumption of knowledge and knowledge-based products.” Firms located in regions that transition to a knowledge based economy benefit from market expansion and the opportunity to outsource internal activities as markets for specialized services become more viable (Malizia and Feser 2000). A region that transitions from an industrial-based economy to a knowledge-based economy benefits from the emergence of external economies (Malizia and Feser 2000). One of the external economies that benefit industries includes knowledge spillovers. When industries benefit

from knowledge spillovers it suggests that the “firm benefits (or learns) by interacting with industry leaders” (Malizia and Feser 2000, 231). Other outcomes associated with the notion of knowledge-based economic theory include cluster regions of highly advanced services and the emergence of knowledge networks (Harris 2001). Firms, who benefit from the above mentioned outcomes, adopt practices of flexible production, which makes them competitive in the global economy and better situated to meet the demands of consumers (Malizia and Feser 2000).

In a knowledge-based economy, the role of human capital becomes pivotal to the future growth and development of a company or region. Human capital is often measured in terms of knowledge, which can mean a variety of things. The Merriam Webster online dictionary (2004) provides several definitions of knowledge. One of which is “the fact or condition of knowing something with familiarity gained through experience or association” (Merriam Webster 2004). In a knowledge-based economy citizens often are referred to as knowledge citizens, which imply that these individuals have the skills and resources to operate in a competitive economic environment. Knowledge is created in the university through programs that educate individuals, and on a less concrete level, through the creation of objects such as books, technologies, and patents.

### **The role of the university**

In a knowledge-based economy the university serves in many functions, which include providers of knowledge, interactions with communities through outreach activities, and more recently as collaborative research and technology parks. Since the

emergence of universities in the 11<sup>th</sup> century, the generation of knowledge has been the primary focus of the institution (*The Economist* 1997). Universities originally provided knowledge in the form of grammar, logic, rhetoric, music, and astronomy. Modern day universities have adapted to the needs of a knowledge-based economy, and therefore provide knowledge in the form of community service, product creation, and research development (*The Economist* 1997). Although the shape of knowledge has evolved over time, universities have maintained their role as the key providers of knowledge. Walshok (1995) suggests that the knowledge needs of today's society have evolved from the traditional get an education and enter the workforce philosophy into knowledge needs that are continuous and present in everyday life. Walshok (1995, 141-151) specifically identifies eight "knowledge needs" that research universities can meet. These knowledge needs include 1) basic education for socially, economically, and culturally diverse population, 2) general education in social traditions, cultural values, and building blocks of knowledge essential to the development of learning skills and critical thinking, 3) credentialing and certification for the work of the world, 4) professional/work related updates in response to economic, social, environmental, and workplace change, 5) knowledge brokering across fields and industries, 6) technological updates through technology diffusion, transfer, and exchange, 7) development of skills for participation in civic events, and 8) enhancement of the quality of life. Universities' transition from formal teaching methods to participatory teaching methods reflects the changes in the knowledge needs of the public.

Universities now functions in a dual role. On the one hand, they provide the basic building blocks of knowledge to undergraduates in the form of traditional lecture classes

such as biology, english, and calculus. On the other hand, universities develop a network of services delivered through various outlets. Luger and Goldstein (1997), for example, identify university-based programs, which include technology parks, research centers, collaboration between public and private entities, and new product development.

University based programs occur outside of the main campus classroom, and involve the access and utilization of resources in the community. These programs suit the needs of a knowledge-based economy by providing opportunities for continuing education needs.

The type of knowledge associated with university-based programs include human capital formation, transfer of existing know-how, technological innovation, capital investment, provision of regional leadership, knowledge-based infrastructure, and the contribution to the regional milieu (Luger and Goldstein 1997).

Within university-based programs, the role of the university begins to shift away from traditional methods of teaching and learning. For example, the role of the university in technological innovation has significantly increased since the late 1970's (Luger and Goldstein 1997). Many research institutions now have offices on campus that deal explicitly with patents and licenses (Luger and Goldstein 1997). The creation of these offices represents the trend towards participation in the community, not just educating the community.

Another perspective described by Conceicao and Heitor (1999), views the accumulation of knowledge (ideas and skills) as the primary responsibility of the university in the knowledge-based economy. They suggest that teaching represents the ability of the university to educate through a process referred to as learning by learning. Teaching provides the basic building blocks necessary to develop the ideas and skills

needed to participate in the knowledge based economy. Challenges to traditional teaching include dispersal of resources and changing needs of the target audience. Conceicao and Heitor (1999) also identify research as the objective of the university in the knowledge based economy. They suggest that universities play more critical role today than years ago in the areas of research and demand, research and teaching, and research and learning. These many facets of research illustrates the universities need to be flexible in a variety of situations.

### **Knowledge and cities**

Many of the services, products, and functions of the knowledge-based economy are found in cities. As Sassen (2000) established, cities emerge as strategic places because of the high concentration of command and control centers located within the city. Cities are the key location for marketplaces of leading and emerging industries, and cities serve as major places of production. Firms locate within cities to take advantage of the agglomeration of industries in the city (Sassen 2000). They gain access to highly concentrated services, which allows firms to share knowledge and ideas.

The concentration of services and businesses influences the demographic nature of the city. Often a class of highly educated, highly skilled individuals emerges (Sassen 2000). These individuals have “life-long” educational needs because of the changing nature of the professions that they are involved in (Walshok 1995). Employees benefit from the opportunity to access other individuals who share similar jobs, but work for other companies. This face-to-face interaction promotes entrepreneurship and increases levels of research and development within firms (Sassen 2000). This describes a

knowledge niche associated with corporate universities described by Bjarnason et al (2000) as corporate universities. These universities offer “knowledge-focused activities, from education and training to research, consultancy, best practice benchmarking and knowledge management, available primarily to staff, but also to customers, and occasionally ... to the wider public” Bjarnason et al (2000, 10). Potential exists for the traditional public/not for profit university to create partnerships with corporate universities to access the unique way that corporate universities deliver programs (Bjarnason et al 2000).

Cities network and interlink, which creates a set of world cities that emerges as the primary producers and servers of banking, law, and telecommunication services. Major world cities or Alpha world cities as described by Taylor et al. (2002) in the article, *Global Networks, Linked Cities* include London, Paris, Tokyo, New York, Chicago, Frankfurt, Hong Kong, Los Angeles, Milan, and Singapore. In relation to this study, major world cities emerge as places that US higher educational institutions operate transnational educational programs such as study abroad, partnerships, and exchanges. This research intends to show that the educational programs and exchanges offered and supported by US educational institutions in major world cities seek to provide participants the opportunity to develop skills to maintain competitive in the global economy.

Another type of city that also proves relevant to this research is the historically and/or culturally rich city. These cities include places such as Madrid, Rome, and Berlin. Sometimes recognized as global cities, although to a lesser extent than those mentioned in the above paragraph, these cities provide a different natural environment. The

concentration and agglomeration of firms does not exist to the same degree, but in its place is a strong city center focused on traditional architecture and alluring art forms. For US institutions, these cities create the opportunity to develop traditional international programs that focus on the development of language skills and cultural experience.

## METHODOLOGY

### Data collection

The first phase of this research involved the selection of sources for data collection. The primary objective was to obtain a list of American research universities, and the programs and activities they engaged in that relate to transnational education. Several sources of data were considered and evaluated including the Integrated Postsecondary Education Data Survey, studies conducted by the Higher Education Research Institute, and the International Association of Universities (IAU). In the end, no one source provided a data set that met the needs of this study. As a result, a compilation of sources was utilized to create the data set that this study utilizes.

The creation of the data set relied on a variety of sources. The first task that the data needed to address was the vast number of American universities. The number of American universities well exceeds over 5,000. To narrow the number of universities down to an evaluative scale I examined various ways that public, private, and non-profit organizations rank American universities. Various methods emerged, which included by quality of education (data obtained by student and faculty surveys), size of the university, and research dollars. This research utilizes the list of American universities generated by The Center, a non-profit organization that concentrates on issues in higher education. Their ranking is based on the amount of research expenditures per university. The Center generates this list annually, and for this research the most recent list (2001) was used. The justification for utilizing the Center's rank rests in their use of research expenditures, a concrete measure, rather than surveys or other more subjective approaches to ranking.



The list generated by The Center displays the top 200 public and private American research universities. The total list contains fifty-six private universities and 144 public universities. The range of expenditures between the highest and lowest ranking university equals \$999,246,000 for the highest ranking university and \$23,492,000 for the lowest ranking university. Since The Center's list of universities contained only 200 universities, this met the first data criteria that the number of universities had to be on a measurable scale. In addition, for the purpose of this study it was reasoned that The Center's list generated a group of universities that would possibly perceive benefits from engagement in the internationalization of their universities.

Once the initial list of 200 universities was obtained from The Center, a second source of data, the IAU, was consulted to determine the level of international educational activity within American universities. The IAU, produced by the United Nations Education and Science Organization (UNESCO), surveys universities worldwide and asks universities to list international co-operation and campuses. Both of these sections were initially screened to determine any international co-operation and campuses that the universities, previously identified by The Center, had self-identified. If a university did not self-identify any activities under the two IAU categories, than they were eliminated from the original list of 200 universities. After the cross reference between the universities identified by The Center, and the IAU data set the number if universities remaining in the data set totaled eighty-two.

## **Data set creation**

The cross referenced list of eighty-two universities provided two key points of information. First, it provided the name of the university and in some instances, such as University of Alabama and University of California, which branch campus examine. This piece of information originated from The Center data. The second key piece of information in the list of eighty-two universities emerged from the IAU data, which in many instances listed where or at least who to contact with regard to international activity on the campus.

University websites served as the primary source of the remaining data collection. In order to obtain the most complete list of places where these eighty-two universities engage in international relationships each colleges main website was searched for the following terms.

- “office of international programs”
- “center for international programs” and
- “study abroad programs”

These three search terms provided a wealth of information for fifty-nine of the eighty-two universities. The main focus of the data collected is on study abroad programs and international exchanges between two universities. Unfortunately, twenty-three universities were discarded because they did not have sufficient information available online or the data that was online did not clearly state the purpose and nature of the program. In these instances more specific data may have been available through an office or center.

At the conclusion of the data collection phase of this research a data set emerged that explored the international nature of fifty-nine universities. Of the fifty-nine universities, forty-one are public and eighteen are private (see Appendix 1 for complete list of institutions surveyed). Six of the seven continents are represented (Antarctica is not), hundreds of cities, and even more universities are shown to have connections to American research institutions. Several cities emerge as key places in which US institutions to form international relationships.

### **Methodological Issues**

Before a discussion of the results can be undertaken, it is necessary to discuss several issues that surround the methodology applied to the creation and analysis of a data set of this nature. First, the method applied to the creation of the list of universities utilized in this research ignores smaller research universities since The Center evaluates universities based on research expenditures. As a result, smaller but perhaps highly active universities in the terms of international activity are not captured. Furthermore, the application of the IAU as a screen eliminated research universities because they did not indicate on the IAU survey any type of international activity and/or co-operation. Universities that in all actuality consider international education a component of their research efforts were removed from the list. A final caveat to the methods of data analysis relates to the use of websites as the primary source of data collection. Websites provide one perspective of data, however a larger picture may have been obtained from alternative methods of data collection, such as mail surveys, phone interviews, and/or in person visits to given campuses.

Although several issues emerge around the methods applied to this research the data set that emerges provides a strong starting point to analyze how and where education internationalizes. Adam's (2001) comments on the difficulty of measuring data proved true, however not impossible to overcome. The next section describes the results generated from the established data set.

## RESULTS

This section discusses the findings generated by this research. The discussion of results first focuses on the macro level analysis, which examines the location of US abroad programs. A total of 375 cities emerged as locational choices for US abroad, exchange programs, and/or centers. Within these 375 cities, 174 have one connection to a US institution, seventy-two cities have two connections, twenty-seven cities have three connections to a US institution, twenty-two have four connections to US institutions, thirteen cities have five connections to US institutions, eighteen cities have six connections to US institutions, eleven have seven connections to US institutions, three cities have eight connections to US institutions, and nine cities have nine connections to US institutions. Therefore, the total number of cities with nine or less connections to a US institution equals 349. Of the remaining twenty-six cities, twenty-one have between ten and twenty connections to US abroad programs. Each of the five remaining cities have twenty-two, twenty-four, twenty-six, thirty-one, and thirty-four connections to US abroad programs, respectively. Table 1 ranks the cities with ten or more connections to a US institution. Please see Appendix 2 for the complete ranking of all 375 cities.

**Table 2: Cities ranked by concentration of US higher education institutions**

<b>Rank from this study</b>	<b>City</b>	<b>Number of US Institutions/US Abroad Programs in a City</b>
1	Paris	34
2	Tokyo	31
3	Seoul	26
4	London	24
5	Melbourne	22
6	Madrid	19
7	Sydney	18
8	Perth	17
9	Berlin	16
10	Beijing	15
10	Lancaster	15
11	Dublin	14
11	Hong Kong	14
12	Manchester	13
13	Glasgow	12
13	Rome	12
14	Cork	11
14	Edinburgh	11
15	Lyon	11
15	Ankara	10
15	Florence	10
15	Nagoya	10
15	Prague	10
15	Pueblo	10
15	San Jose	10
15	Santiago	10

The table above illustrates that many capital and world cities emerge as places that US higher education institutions create relationships (centers, exchanges, co-operation) with other institutions.

Further findings include the predominance of study abroad programs and exchanges over the choice of US institutions to designate faculty and/or centers in a given

city. Possible explanations for this phenomenon include high costs, maintenance, and varying lack of interest from year to year in a city abroad.

The data obtained for each individual city reveal several significant results. First, in several cities one institution may facilitate a bulk of the exchange programs. For example, in Seoul, Korea Yonsei University, an all male university, and its female counterpart Ehwa Women's College facilitate fifteen of the twenty-six exchanges between the City and US institutions. This phenomenon is even more present in Pueblo, Mexico where the Universidad de las Americas facilitates all ten programs between US institutions and the City. In contrast, other cities are highly diversified in the number of host institutions and centers represented. In Rome, five US institutions have designated at the very minimum full time faculty in the City, and in many instances the US institutions rented or purchased a facility for students to operate out of when abroad. The significance of the diversity of programs within a given city will be discussed further in the analysis section.

## ANALYSIS OF RESULTS

As highlighted in the literature review, globalization literature, and specifically world cities literature, highlights the predominance of cities as centers of transnational activity, however education plays a minimal role in this discussion. Education literature on the other hand recognizes the transnationalization of education, but does not necessarily discuss the prevalence of cities. US institutions still establish international relationships to provide their students with the opportunity to experience another culture and/or language. However, this research suggests that the presence of graduate programs and programs specialized towards economics, law, business, and communications indicates that US institutions recognize the benefits students can obtain from learning these skills in a world city.

In addition to programs offered by individual institutions, universities formed alliances that then offered a range of programs or operated a facility abroad. These alliances reduced the costs of administering and monitoring programs. Many times the alliances formed along the US regional groupings of colleges. For example, several New England universities operate a facility in London.

Many of the cities with the highest concentration of relationships with US institutions are also classified as world cities. In the article “Firms and their Global Service Networks” Taylor et al. (2002) examine the emergence of a possible network of world cities. The article produces a list of cities classified as Alpha, Beta, and Gamma world cities. Alpha cities have the highest concentration of producer services, while Gamma cities have less concentrated levels of producer services. In addition, the authors classify several cities as having either relatively strong evidence of world city formation,



some evidence of world city formation, and minimal evidence of world city formation. The total list contains 122 cities categorized as either world cities or as having evidence of world city formation, however since this research only examines cities outside of the US, only non-US cities will be considered in the analysis. As a result, only 105 cities listed in the article will be considered as relevant for comparison purposes.

This research identified a total of sixty-eight cities that were also been identified by Taylor et al. (2002) as world cities or as having evidence of world city formation. The following discussion examines the relationship between world cities (Alpha, Beta, and Gamma level cities) and the data collected within this research. Table 2 below shows the relationship between cities that emerge with the highest concentration of links to US institutions and cities the cities classified as Alpha world cities by Taylor et al.

**Table 3: Alpha Cities**

<b>Rank from this study</b>	<b>Location</b>	<b>Total Frequency</b>	<b>World City Classification (Taylor et al. 2002)</b>
1	Paris, France	34	Alpha World City
2	Tokyo, Japan	31	Alpha World City
4	London, England	24	Alpha World City
11	Hong Kong	14	Alpha World City
16	Singapore	9	Alpha World City
13	Milan, Italy	5	Alpha World City
22	Frankfurt, Germany	3	Alpha World City

The above table illustrates that all of the non-US cities classified by Taylor et al. as Alpha cities are present in this research. Furthermore, Paris, Tokyo, and London have the first, second, and fourth, respectively highest concentrations of relationships with US institutions. A minor connection exists between the high concentration of educational relationships and the classification of these cities as Alpha world cities. Within this set of cities a clear break exists between the cities with the greatest concentration of US

educational activity (Paris, Tokyo, and London) and the next four cities. The reason for decline in educational activity within the lower ranking Alpha cities is not clear.

**Table 4: Beta Cities**

<b>Rank from this study</b>	<b>Location</b>	<b>Total Frequency</b>	<b>World City Classification (Taylor et al. 2002)</b>
3	Seoul, Korea	26	Beta World City
6	Madrid, Spain	19	Beta World City
7	Sydney, Australia	18	Beta World City
21	Brussels, Belgium	4	Beta World City
21	Sao Paulo, Brazil	4	Beta World City
22	Mexico City, Mexico	3	Beta World City
22	Moscow, Russia	3	Beta World City
24	Zurich, Switzerland	1	Beta World City

At the Beta level all of the possible cities emerged with the exception of Toronto. Similar to the Alpha cities, a clear dichotomy exists between the rank of the top Beta cities and the lower cities. In the Beta cities one possible explanation for the extreme difference in the concentration of educational activities may be the nature of the city. For example, while Zurich is recognized as a world city predominately for its role in international banking it has little to offer in terms of political and cultural activity, especially when compared to the cities ranked higher than it.

**Table 5: Gamma Cities**

<b>Rank from this study</b>	<b>Location</b>	<b>Total Frequency</b>	<b>World City Classification (Taylor et al, 2002)</b>
5	Melbourne, Australia	22	Gamma World City
9	Berlin, Germany	16	Gamma World City
10	Beijing, China	15	Gamma World City
13	Rome, Italy	12	Gamma World City
15	Prague, Czech Republic	10	Gamma World City
15	Santiago, Chile	10	Gamma World City
16	Copenhagen, Denmark	9	Gamma World City
18	Buenos Aires, Argentina	7	Gamma World City
18	Montreal, Canada	7	Gamma World City
18	Taipei, Taiwan	7	Gamma World City
19	Barcelona, Spain	6	Gamma World City
19	Osaka, Japan	6	Gamma World City
20	Istanbul, Turkey	5	Gamma World City
20	Munich, Germany	5	Gamma World City
21	Bangkok, Thailand	4	Gamma World City
21	Stockholm, Sweden	4	Gamma World City
23	Shanghai, China	2	Gamma World City
23	Warsaw, Poland	2	Gamma World City
24	Manila, Philippines	1	Gamma World City

At the Gamma level fewer cities matched between the data this research generated, and the results found by Taylor et al. Of the possible twenty-eight matches that exist, only nineteen cities had links to US institutions. The cities absent from this list include Amsterdam, Caracas, Düsseldorf, Geneva, Jakarta, Johannesburg, Budapest, Hamburg, and Kuala Lumpur. Several of the cities at the gamma level still have ten or more links to US institutions. Capital cities continue to emerge at the top of the list with the highest rank.

In total, thirty-six of a possible forty-five matches exist between documented world cities (Alpha, Beta, and Gamma cities) and where US institutions predominately locate. In other words, eighty percent of the cities mentioned by Taylor et al also have

standing relationships with US higher educational institutions. For a complete list of the cities, rank, frequency, and correlation to Taylor et al.'s work (Alpha, Beta, Gamma, relatively strong evidence of city formation, some evidence, and minimal evidence) please see Appendix 3.

Sassen's global city theory suggests that cities function in a network of shared resources, ideas, and interactions. This research shows that within the global city network, US higher education research institutions have created relationships with other higher educational institutions in global cities. The function and nature of these relationships vary. While many of the relationships between universities appear to have been in existence for several years, and even decades in some cases, the nature of the programs suggests that the cities provide students, faculty, and researchers access to goods and services associated with the knowledge-based economy. This adds another dimension to the traditional experience (culture, language, and diversity) acquired by participants in exchange programs. Students and faculty experience and witness first hand the activities of a global city. For example, the amount of services students have access to in the cities in terms of transportation, financial activities (banking, stock markets), and media coverage surpass that of many university towns in the United States. As a result, students and faculty alike become global citizens with first hand exposure to the effects, both positive and negative, of globalization and world cities.

To better understand how students and researchers benefit from participation in exchange programs based in global cities in terms of the knowledge-based economy a series of five case studies comprise the remaining discussion of the results section. The case studies are broken down into two categories. The first category examines London,

Paris, and Tokyo with a focus on the types of programs offered in these cities. The second category of case studies examines Florence, and Madrid. While, not prominent world cities, this category focuses on the idea that exchange programs in these cities concentrate largely on the cultural, historical, and artistic aspects of the cities. At the end of these case studies, a section will contrast Paris, London and Tokyo as world cities and Florence and Madrid as world cities in their own right that also offer educational opportunities focused on culture, history, and art. The discussion will focus on the implications that the different types of cities hold for educational programs and participants.

### **Paris, London and Tokyo**

A global city is a geographical reference to an area that makes up and participates in the global economy. The defining characteristics of global cities include intensified levels of banking, telecommunications, and political activity (Sassen 2001). Sassen (2001) refers to the centralization and agglomeration of these activities in cities as command and control centers. The cities with the highest concentration of activities within the city, and networks to other cities emerge as global cities. Paris, London, and Tokyo all have prominence as global cities.

The dynamics offered by London, Paris, and Tokyo as cities creates a natural environment for students of US higher educational institutions to gain access to the skills set and life experience necessary to operate in a global society. Many US institutions appear to capitalize on this opportunity in the design and execution of their research and exchange programs. The structure of the US programs relies on host institutions to serve

as the location to administer and deliver the programs. Centers created by US institutions in these three cities are less frequent than in more culturally centered cities, and when they do exist, centers are often developed and operated by several US institutions. In London, Paris, and Tokyo educational programs frequently focus on economics, communications, and political science. This indicates that universities realize the unique learning opportunity provided by these global cities and have tailored their educational programs to this setting.

London's role as a world city has both historical and modern day components. Historically, London led in the creation and implementation of social welfare provisions, especially in the area of sanitation (Hall 1998). In addition, many influential urban planners contributed to the development of the City. The City's demographics historically reflect a highly educated population. As Hall (1998, 120) suggests, by the 1600's London developed a "concentration of rich, titled, ambitious, educated, sophisticated, and relatively idle people, shaping a complex, cosmopolitan culture." Trade influenced, and continues to influence, the development of the City. In the 1600's London served as the center of overseas trade for England, accounting for at two-thirds of the nation's foreign trade (Hall 1998). Today London's trade markets focus on finance and services. London maintains strong links to many other world cities, such as New York and Tokyo, through trade activities. The combination of strong historical roots in trade, urban development and social welfare provisions combined with London's current role in the world cities network makes it an ideal place for US institutions to locate abroad programs and facilities.

In London, of the twenty-four programs offered six programs are centers, fourteen are direct exchanges, and four are study abroad programs. The direct exchange programs focus on economics, communications, and politics. The University of London, “a federation of 40 quasi-autonomous colleges and schools” (UPENN Abroad) maintains two exchange programs with US institutions, University of Michigan and University of Pennsylvania. Students from these two US institutions have the opportunity to engage in a range of activities including technology studies, economics, and political science.

Tokyo’s attributes as an ideal host for programs associated with US institutions rest in its emergence over the last century as a leading producer of electronics. Since the 1930’s “Japan’s key manufacturing industries have shifted from energy-intensive to knowledge-based ones” (Hall 1998, 462). Electronic manufactures locate their research and demand centers in Tokyo and scatter their factories throughout Japan (Hall 1998). The unique business model that Japanese producers operationalize potentially attracts US institutions to the region. The Japanese business model has three main components (Hall 1998). First, it includes a unique banking and financing system for companies, which allows manufactures to adopt a long-term planning philosophy (Hall 1998). Second, the implementation of practices, such as life long employment and promotion through the ranks, improves horizontal communication within the firm (Hall 1998). Finally, the Japanese business model relies on the ability of large-scale producers to sub-contract to smaller firms that fill technology and knowledge gaps (Hall 1998). The opportunity for students and researchers to witness the Japanese business model first hand supports Tokyo’s rank in this study as one of the top places for US institutions to locate programs.

The programs in Tokyo in large part are exchange based and concentrate on business. This suggests that the unique business model that firms adhere to in Tokyo draws educational programs to the region. Educational programs benefit from the possible opportunity to compare how US firms develop in regions such as Silicon Valley and how Japanese firms develop in and around Tokyo (Hall 1998). In Tokyo, US institutions can capitalize on their students experience by integrating an internship component into the program. For example, a student may study business for a semester at a university and then work in a Japanese firm witnessing the Japanese business model.

Since Paris is the capital of France, most of the countries economic, political, and social decisions occur within the boundaries of the city. In addition to being the countryseat for France, Paris also functions as a key economic linkage between Europe and the rest of the world. As Taylor and Derudder (2003) illustrate, Paris in combination with Frankfurt, creates strong economic links to Singapore, Hong Kong, and Tokyo. Many universities concentrate in the center of the city in close proximity to the active core of Paris (Mega-Cities 2002). Again, the universities close proximity to these activities facilitates the incorporation of real life examples and problems into the creation of classroom projects. The nature of the US abroad programs identified by this research associated with Paris focus on the following areas:

- Six programs are centers
- Six programs are located at Institut d'Estudes Politiques and focus on politics and management science
- The remaining programs (twenty-two) focus on varying topics including international business, economics, and language



This illustrates that many educational opportunities in Paris more often capitalize on the cultural and political aspects of the city. While several economic and communication based programs emerge in Paris with the examination between US institutions and their abroad programs, they do not appear to be the major focus of many institutions.

### **Florence and Madrid**

A number of cities that emerged during the course of this research do not necessarily have the high levels of economic and financial integration associated with major world cities. Rather, a set of cities emerge that offer citizens, travelers, or in reference to this study, participants in US abroad programs access to cultural, social, and historical elements. Cities classified under this framework include Florence and Madrid.

The educational opportunities offered by the programs in Florence often centralize around the ideas of art, architecture, and philosophy. The historical evolution and development of this city possibly explains this phenomenon. In Florence, the city's development around a deep appreciation for the arts, history, and philosophy created a population that considered education important (Hall 1998). Although Florence lacked any traditional universities, a network of highly skilled apprentices emerged to provide the region with many goods and services. By the 14<sup>th</sup> century, Florence functioned as the leading economic power in Europe with foundations in "the trade in textiles and other products, the textile industry itself, and banking" (Hall 1998, 79). The City reached world city status in the 14<sup>th</sup> century, and what remains today centers largely around the City's principles grounded in arts, philosophy, and history (Hall 1998, 79).

As a result, the US institution's programs in Florence reflect less of a concern about access to integrating the student's experience into the larger global market. This does not imply that the programs are of a lesser quality, rather, their aim and focus is less on global business and more on local culture. The programs offered in Florence seek to ensure that participants learn the language, see the sites (via day trips), and integrate their experience into the larger part of their education. In Florence, a total of four centers and six programs emerged in the course of this research. This suggests that US institutions invest capital resources in the more culturally centered cities.

In Madrid, the cultural, political and economic make up of the city contribute to its allure to US institutions. Madrid provides an alternative setting to larger European cities. Parsons (2002) argues that despite Madrid's growing economy and rich culture, the city has not received the attention it deserves in the discussion of the modern city. As a result, Parsons (2002, 24) suggests that Madrid may challenge the "critically accepted definitions and categories of Anglo-American or northern European modernism." While Madrid's path to development has not necessarily followed that of its European counterparts, Paris and London, the City has much to offer in terms of culture, aesthetics, architecture, and history. Madrid's uniqueness as a city that provides both exposure to significant historical Spanish traditions and modern day networks (business, art, and culture) contributes to its attractiveness to US institutions.

Madrid offers a cultural and language experience attractive to the students and faculty of US institutions. In Madrid, individuals have the opportunity to learn and experience the Spanish tradition. More specifically, they get exposure to native Spanish speakers and access to true Spanish dialect. Most of the education programs offered in

Madrid focused on an intensive language component where students were required to take between two and four classes in intensive Spanish and Spanish history. Similar to Florence, day trips often supplement the curriculum.

## CONCLUSION

On varying scales, programs in all five cities mentioned above meet the goals and objectives of educational internationalization. On the large scale, universities develop partnerships with universities and centers in cities throughout the world. Many of these cities themselves are highly active in the global economy. In the cities that rank the highest in terms of educational concentration there is a correlation to how active these cities rank in a world network of cities. The case studies also illustrate that the city's historical pattern of development may have some relationship to the types of programs offered by US institutions. In addition, the city's current structure influences the types of programs offered by US institutions in host cities.

This research hypothesized that transnational educational facilities provide programs that generate a skill set geared towards the knowledge-based economy, which is why transnational educational facilities exist in cities. No conclusive evidence is available on this topic. It seems that among the Alpha, Gamma, and Beta cities there is a sub-set of cities that have a high concentration of educational facilities. Many of the programs offered do promote the knowledge-based economy skills, however there is still an underlying theme within the programs that seeks to give students the opportunity to experience another culture and language.

Second, although a gap in the literature exists between the discussion of transnational education and in the transnationalization of services, delivery of goods, and product streams. Adam's (2001) study provides validation that similar phenomena occur in both fields. The larger problem still rests in collecting measurable data. This research

contributes to this current gap by mapping the geography of transnational programs associated with select US higher educational research institutions.

A component of this study examined the relationship between cities and educational facilities. Specifically, this research explored the notion that cities with the highest concentration of transnational educational facilities emanate certain characteristics that influence the economic, political, and social make-up of the city. While this cannot be proven by this study, the case studies on London, Paris, and Tokyo highlights how educational programs may be influenced by the existing characteristics of a city. As regions continue to specialize in terms of industry and services so will the programs offered at universities located in the heart of these operations. This research also showed that traditional education abroad programs continue to provide value and opportunity to American research institutions. In addition, US research institutions often base physical capital in less prominent world cities.

This study provides a general overview and discussion on the links between transnational education and globalization literature. Several areas for further research exist. First, this study could be repeated from other state's perspectives around the world. For example, using English universities as a starting point, and asking where do they establish transnational educational programs? Second, this topic would benefit from a microanalysis of transnational education in individual cities. For example, taking London, Paris, and Tokyo and mapping and collecting data related to educational activity (transnational and otherwise) within the city, and then looking to see if patterns emerge with relation to types of programs and city make-up. The biggest hurdle in all future studies will be the collection and dissemination of data.

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## APPENDIX 1 - Universities surveyed

University
Auburn University
Boston University
Brown University
Carnegie Mellon University
Clemson University
College of William and Mary
Colorado State University
Columbia University
Cornell University
Dartmouth University
Duke University
Florida State University
George Mason University
Indiana University
Iowa State
Johns Hopkins University
Kansas State
Louisiana State University
Massachusetts Institute of technology
Michigan Technological University
NC State University
Northeastern University
Ohio State University
Oklahoma State University
Oregon State University
Penn State
Purdue University
Rice University
San Diego State University
Southern Illinois University

University
Stanford University
Syracuse University
Temple University
Texas Tech
Tulane University
University of Alabama - Tuscaloosa
University of Alaska - Fairbanks
University of Arizona
University of California - Davis
University of Florida
University of Georgia
University of Illinois - Chicago
University of Illinois - Urbana Champaign
University of Iowa
University of Kansas
University of Maine
University of Massachusetts
University of Michigan - Ann Arbor
University of Missouri - Columbia
University of New Mexico
University of Notre Dame
University of Pennsylvania
University of Pittsburgh
University of Rhode Island
University of Utah
University of Virginia
University of Wisconsin
Vanderbilt University
Virginia Tech

Sources: The Center 2001 and IAU 2003

**APPENDIX 2 - Cities ranked by concentration of US higher education institutions**

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Paris, France	1	34
Tokyo, Japan	2	31
Seoul, Korea	3	26
London, England	4	24
Melbourne, Australia	5	22
Madrid, Spain	6	19
Sydney, Australia	7	18
Perth, Australia	8	17
Berlin, Germany	9	16
Beijing, China	10	15
Lancaster, England	10	15
Dublin, Ireland	11	14
Hong Kong	11	14
Manchester, England	12	13
Glasgow, Scotland	13	12
Rome, Italy	13	12
Cork, Ireland	14	11
Edinburgh, Scotland	14	11
Lyon, France	14	11
Ankara, Turkey	15	10
Florence, Italy	15	10
Nagoya, Japan	15	10
Prague, Czech Republic	15	10
Pueblo, Mexico	15	10
San Jose, Costa Rica	15	10
Santiago, Chile	15	10
Adelaide, Australia	16	9
Arhus, Germany	16	9
Cairo, Egypt	16	9
Copenhagen, Denmark	16	9
Norwich, England	16	9
Oxford, England	16	9
Quito, Ecuador	16	9
Rio de Janeiro, Brazil	16	9
Singapore	16	9
Brisbane, Australia	17	8
Helsinki, Finland	17	8
Scarborough, England	17	8

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Buenos Aires, Argentina	18	7
Canberra, Australia	18	7
Cape Town, South Africa	18	7
Gernoble, France	18	7
Montreal, Canada	18	7
Nottingham, England	18	7
Strasbourg, France	18	7
Swansea, England	18	7
Taipei, Taiwan	18	7
Tubingen, Germany	18	7
Utrecht, The Netherlands	18	7
Aix-en-Provence, France	19	6
Auckland, New Zealand	19	6
Barcelona, Spain	19	6
Birmingham, England	19	6
Bologna, Italy	19	6
Bristol, England	19	6
Christchurch, New Zealand	19	6
Fukuoka, Japan	19	6
Guadalajara, Mexico	19	6
Leiden, The Netherlands	19	6
Osaka, Japan	19	6
Queensland, Australia	19	6
Reading, England	19	6
Sapporo, Japan	19	6
Seville, Spain	19	6
St. Petersburg, Russia	19	6
Uppsala, Sweden	19	6
Vancouver, Canada	19	6
Alcala, Spain	20	5
Colchester, England	20	5
Heidelberg, Germany	20	5
Istanbul, Turkey	20	5
Kyoto, Japan	20	5
Leeds, England	20	5
Lille, France	20	5
Lund, Sweden	20	5
Milan, Italy	20	5
Montpellier, France	20	5
Munich, Germany	20	5

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Newcastle, Australia	20	5
Valencia, Spain	20	5
Aberdeen, Scotland	21	4
Bangkok, Thailand	21	4
Bonn, Germany	21	4
Brussels, Belgium	21	4
Burnaby, Canada	21	4
Cambridge, England	21	4
New Delhi, India	21	4
Exter, England	21	4
Freiburg, Germany	21	4
Galaway, Ireland	21	4
Hirakata, Japan	21	4
Jonkopink, Sweden	21	4
Lyngby, Denmark	21	4
Nice, France	21	4
Oslo, Norway	21	4
Sao Paulo, Brazil	21	4
Stockholm, Sweden	21	4
Sunderland, England	21	4
Sussex, England	21	4
Tampere, Finland	21	4
Toulouse, France	21	4
Wollongong, Australia	21	4
Aberystwyth, Wales	22	3
Angers, France	22	3
Brighton, England	22	3
Brno, Czech Republic	22	3
Budapest, Hungary	22	3
Cave Hill, Barbados	22	3
Chiba, Japan	22	3
Dar es Salaam, Tanzania	22	3
Dundee, Scotland	22	3
Frankfurt, Germany	22	3
Groningen, The Netherlands	22	3
Leipzig, Germany	22	3
Lulea, Sweden	22	3
Mannheim, Germany	22	3
Mexico City, Mexico	22	3
Moscow, Russia	22	3
Nanjing, China	22	3

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Pforzheim, Germany	22	3
Rouen, France	22	3
santiago de Compostela, Spain	22	3
Sendai, Japan	22	3
Siena, Italy	22	3
Stuttgart, Germany	22	3
Townsville, Australia	22	3
Trondhiem, Norway	22	3
Venice, Italy	22	3
Victoria, Australia	22	3
Accra, Ghana	23	2
Antwerp, Belgium	23	2
Athens, Greece	23	2
Ballart, Australia	23	2
Bangor, Wales	23	2
Barabados, Caribbean	23	2
Belo Horizonte, Brazil	23	2
Besancon, France	23	2
Blagoevgrad, Bulgaria	23	2
Bradford, England	23	2
Canterbury, New Zealand	23	2
Clermont-Ferand, France	23	2
Coimbra, Portugal	23	2
Curitiba-Parana, Brazil	23	2
Daegu, Korea	23	2
Dubrovnik, Croatia	23	2
Durban, South Africa	23	2
Falmer, England	23	2
Fortaleza, Brazil	23	2
Frederickton, Canada	23	2
Gifu, Japan	23	2
Gold Coast, Australia	23	2
Granada Spain	23	2
Graz, Australia	23	2
Haare, Zimbabwe	23	2
Haarlem, The Netherlands	23	2
Haifa, Israel	23	2
Ho Chi Minh City, Vietnam	23	2
Hobart, Australia	23	2
Innsbruck, Austria	23	2
Jerusalem, Israel	23	2

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Kanazawa, Japan	23	2
Kiel, Germany	23	2
Kobe, Japan	23	2
La Paz, Bolivia	23	2
Lapland, Finland	23	2
Legon, Ghana	23	2
Leicester, England	23	2
Lennoxville, Canada	23	2
Liege, France	23	2
Limoges, France	23	2
Maastricht, The Netherlands	23	2
Marseille, France	23	2
Mitaka, Japan	23	2
Monterrey, Mexico	23	2
Nanyang, Singapore	23	2
Natal, South Africa	23	2
Negocia, France	23	2
Niigata City, Japan	23	2
Odense, Denmark	23	2
Oulu, Finland	23	2
Padova, Italy	23	2
Poitiers, France	23	2
Quebec City, Canada	23	2
Reutlingen, Germany	23	2
Reykjavik, Iceland	23	2
Rostock, Germany	23	2
Salamanca, Spain	23	2
Salzburg, Austria	23	2
Santander, Spain	23	2
Shanghai, China	23	2
Sippy Downs, Australia	23	2
St. Augustine, Trinidad	23	2
Sterling, England	23	2
Tilburg, The Netherlands	23	2
Trento, Italy	23	2
Tsukuba, Japan	23	2
Valladolid, Spain	23	2
Vienna, Austria	23	2
Vina del Mar, Chile	23	2
Warsaw, Poland	23	2
Xalapa, Mexico	23	2

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Aachen, Germany	24	1
Addis Abba, Ethiopia	24	1
Alicante, Spain	24	1
Amman, Jordan	24	1
Antigonish, Canada	24	1
Ariccia, Italy	24	1
Armidale, New South Wales	24	1
As, Norway	24	1
Basel, Switzerland	24	1
Ballerup, Denmark	24	1
Ballyvaughan, Ireland	24	1
Bamberg, Germany	24	1
Baoding, China	24	1
Barga, Italy	24	1
Barga, Italy	24	1
Barquisimeto, Venezuela	24	1
Bath, England	24	1
Bavaria, Germany	24	1
Belfast, Ireland	24	1
Belfast, Northern Ireland	24	1
Belgrano, Argentina	24	1
Bergamo, Italy	24	1
Bergen, Norway	24	1
Bochum, Germany	24	1
Bangor Regis, England	24	1
Bordeaux, France	24	1
Braunschweig, Germany	24	1
Bruchsal, Germany	24	1
Cadiz, Spain	24	1
Calgary, Canada	24	1
Canton Aargau, Switzerland	24	1
Cape Coast, Ghana	24	1
Carleton, Canada	24	1
Caterbury, New Zealand	24	1
Cachan, France	24	1
Cergy-Pontoise, France	24	1
Chennai, India	24	1
Chicoutimi, Canada	24	1
Ching Mai, Thailand	24	1
Chubu Prefecture, Japan	24	1

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
City of Jena, Germany	24	1
Cologne, Germany	24	1
Compiègne, France	24	1
Concepcion, Chile	24	1
Cordoba, Spain	24	1
Cortona, Italy	24	1
Coventry, England	24	1
Cirencester, England	24	1
Cuernavaca, Mexico	24	1
Darwin Australia	24	1
Den Haag, The Netherlands	24	1
Dundee, Scotland	24	1
Derry, Ireland	24	1
Dilman, Philippines	24	1
Dornbirn, Austria	24	1
Dortmund, Germany	24	1
Dresden, Germany	24	1
Egham, England	24	1
Eindhoven, The Netherlands	24	1
Eskisehir, Turkey	24	1
Essex, Great Britain	24	1
Fez, Morocco	24	1
Fremantle, Australia	24	1
Futwangen, Germany	24	1
Gaborone, Botswana	24	1
Genoa, Italy	24	1
Gerakina, Greece	24	1
Germersheim, Germany	24	1
Gottingen, Germany	24	1
Greater Bunbury, Australia	24	1
Halifax, Canada	24	1
Halle, Germany	24	1
Hamilton, New Zealand	24	1
Hangzhou, China	24	1
Hannover, Germany	24	1
Hanoi, Vietnam	24	1
Hefei, China	24	1
Herts, England	24	1
Hikone, Shiga	24	1
Hirosaki, Japan	24	1
Hiroshima, Japan	24	1



<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Honefoss, Norway	24	1
Huixquilucan, Mexico	24	1
Hull, England	24	1
Hyderabad, India	24	1
Ifrane, Morocco	24	1
Jyvaskyla, Finland	24	1
Keele, England	24	1
Kensington, England	24	1
Kiryu City, Japan	24	1
Krakow, Poland	24	1
Kristiansand, Norway	24	1
Kumasi, Ghana	24	1
L'Aquila, Italy	24	1
Lausanne, Switzerland	24	1
Lemgo, Germany	24	1
Leon, Spain	24	1
Leuven, Belgium	24	1
Leysin, Switzerland	24	1
Ljubljana, Slovenia	24	1
Lueven, Belgium	24	1
Luton, England	24	1
Macarthur Australia	24	1
Macau, China	24	1
Manila, Philippines	24	1
Marburg, Germany	24	1
Merida, Mexico	24	1
Mexicali, Mexico	24	1
Mitchell Bathurst, Australia	24	1
Morelia, Mexico	24	1
Muenster, Germany	24	1
Nancy, France	24	1
Nanterre, France	24	1
Nantes, France	24	1
Newport, England	24	1
Niamey, Niger	24	1
Neiman, The Netherlands	24	1
North Ryde, Australia	24	1
Nurnberg, Germany	24	1
Oaxaca, Mexico	24	1
Okayama, Japan	24	1
Orleans, France	24	1

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Ostfriesland, Germany	24	1
Oestrich-Winkel, Germany	24	1
Pamplona, Spain	24	1
Panama City, Panama	24	1
Pietermaritzburg, South Africa	24	1
Plymouth, England	24	1
Pontypridd, Wales	24	1
Portsmouth, England	24	1
Pretoria, South Africa	24	1
Priory Middlesbrough, England	24	1
Regensburg, Germany	24	1
Rennes, France	24	1
Rio Piedras, Puerto Rico	24	1
Riva San Vitale, Denmark	24	1
Ronda, Spain	24	1
Rotterdam, The Netherlands	24	1
Rzeszow, Poland	24	1
Saarbruecken, Germany	24	1
San Juan, Puerto Rico	24	1
San Marcos, Peru	24	1
San Sebastian, Spain	24	1
Santa Teresa, Mexico	24	1
Saxony, Germany	24	1
Sicily, Italy	24	1
Southern Cross, Australia	24	1
Southampton Exchange, South Korea	24	1
St. Andrews, Scotland	24	1
Staffordshire, England	24	1
Taejon, Korea	24	1
Tianjin, China	24	1
Tasmania, Australia	24	1
Thessaloniki, Greece	24	1
Tohoku, Japan	24	1
Toledo, Spain	24	1
Tromso, Norway	24	1
Troyes, France	24	1
Turku, Finland	24	1
Tuscany, Italy	24	1
Tver, Russia	24	1
Ubon Ratchathani, Thailand	24	1
Umea, Switzerland	24	1

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>
Vallendar, Germany	24	1
Vaxjo, Sweden	24	1
Vic, Spain	24	1
Vicosa, Brazil	24	1
Viscosa, Brazil	24	1
Wellington, New Zealand	24	1
Wiener Neustadt, Austria	24	1
Winterthur, Switzerland	24	1
Yokohama, Japan	24	1
Zululand, South Africa	24	1
Zurich, Switzerland	24	1

**APPENDIX 3 – Individual cities, rank from this study, frequency, and correlation to Taylor et al. (2002)**

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Paris, France	1	34	Alpha World City
Tokyo, Japan	2	31	Alpha World City
London, England	4	24	Alpha World City
Hong Kong	11	14	Alpha World City
Singapore	16	9	Alpha World City
Milan, Italy	20	5	Alpha World City
Frankfurt, Germany	22	3	Alpha World City

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Seoul, Korea	3	26	Beta World City
Madrid, Spain	6	19	Beta World City
Sydney, Australia	7	18	Beta World City
Brussels, Belgium	21	4	Beta World City
Sao Paulo, Brazil	21	4	Beta World City
Mexico City, Mexico	22	3	Beta World City
Moscow, Russia	22	3	Beta World City
Zurich, Switzerland	24	1	Beta World City

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Melbourne, Australia	5	22	Gamma World City
Berlin, Germany	9	16	Gamma World City
Beijing, China	10	15	Gamma World City
Rome, Italy	13	12	Gamma World City
Prague, Czech Republic	15	10	Gamma World City
Santiago, Chile	15	10	Gamma World City
Copenhagen, Denmark	16	9	Gamma World City
Buenos Aires, Argentina	18	7	Gamma World City
Montreal, Canada	18	7	Gamma World City
Taipei, Taiwan	18	7	Gamma World City
Barcelona, Spain	19	6	Gamma World City
Osaka, Japan	19	6	Gamma World City
Istanbul, Turkey	20	5	Gamma World City
Munich, Germany	20	5	Gamma World City
Bangkok, Thailand	21	4	Gamma World City
Stockholm, Sweden	21	4	Gamma World City
Shanghai, China	23	2	Gamma World City
Warsaw, Poland	23	2	Gamma World City
Manila, Philippines	24	1	Gamma World City

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Dublin, Ireland	11	14	Relatively strong evidence
Lyon, France	14	11	Relatively strong evidence
Rio de Janeiro, Brazil	16	9	Relatively strong evidence
Helsinki, Finland	17	8	Relatively strong evidence
Auckland, New Zealand	19	6	Relatively strong evidence
New Delhi, India	21	4	Relatively strong evidence
Athens, Greece	23	2	Relatively strong evidence
Vienna, Austria	23	2	Relatively strong evidence

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Manchester, England	12	13	Some evidence
Cairo, Egypt	16	9	Some evidence
Brisbane, Australia	17	8	Some evidence
Birmingham, England	19	6	Some evidence
Vancouver, Canada	19	6	Some evidence
Oslo, Norway	21	4	Some evidence
Stuttgart, Germany	22	3	Some evidence
Ho Chi Minh City, Vietnam	23	2	Some evidence
Cologne, Germany	24	1	Some evidence
Rotterdam, The Netherlands	24	1	Some evidence

<b>Location</b>	<b>Rank</b>	<b>Total Frequency</b>	<b>World City Classification</b>
Glasgow, Scotland	13	12	Minimal Evidence
Edinburgh, Scotland	14	11	Minimal Evidence
Adelaide, Australia	16	9	Minimal Evidence
Arhus, Germany	16	9	Minimal Evidence
Cape Town, South Africa	18	7	Minimal Evidence
Utrecht, The Netherlands	18	7	Minimal Evidence
Bologna, Italy	19	6	Minimal Evidence
St. Petersburg, Russia	19	6	Minimal Evidence
Leeds, England	20	5	Minimal Evidence
Lillie, France	20	5	Minimal Evidence
Antwerp, Belgium	23	2	Minimal Evidence
Marseille, France	23	2	Minimal Evidence
Calgary, Canada	24	1	Minimal Evidence
Dresden, Germany	24	1	Minimal Evidence
Genoa, Italy	24	1	Minimal Evidence
Hanoi, Vietnam	24	1	Minimal Evidence